August 24, 2012 Update (under construction)

Le Jardin de Mère Nature dans une Petite Planète

(Mother Nature's Garden on a Small Planet)

a SPECIES DISTRIBUTION LISTING for

TOWNSHIP 13 SOUTH, RANGE 14 EAST PIMA COUNTY, ARIZONA
Gila and Salt River Baseline and Meridian

Record Created and Maintained by William T. Kendall

"An increasing need for careful husbandry of the earth's natural resources has renewed interest in the classification and mapping of ecosystems. The inventory of our remaining biotic entities is particularly urgent because the increased aspirations of a constantly growing world population are placing ever greater stress on these generous, but finite, living resources."

United States Department of Agriculture, Forest Service, General Technical Report RM-73

St. Philip's In The Hills Episcopal Church, the parish campus is located northeast of the intersection of Campbell Avenue and River Road. At the entrance to the church you will find many fine examples of native trees and shrubs used in their landscaping, including the Velvet Mesquite (*Prosopis velutina*), Catclaw Acacia (*Acacia greggii* var. *greggii*), Blue Paloverde (*Parkinsonia florida*) and Graythorn (*Ziziphus obtusifolia* var. *canescens*) among others. This photograph was taken by William T. Kendall, April 28, 2011.

"To know the desert involves an acquaintance with all its aspects, and all its physical features, as well as all of the animals and plants that have learned how to find in it a congenial place to live. The most significant lesson that the desert dweller can learn from a familiarity with its plant and animal life is to regard himself not as an exile from some better place, but as a man at home in an environment to which his life can be adjusted without physical or intellectual loss."

Forest Shreve, The Cactus and Its Home, located in *Discovering the Desert*, by William G. McGinnies

MAJOR CONTRIBUTORS AND SOURCES OF INFORMATION

William T. Kendall *WTK (date of observation)*

Arizona Game and Fish Department, Heritage Data Management System - Special Status Species Reports *8*

Southwest Environmental Information Network (SEINet) *85 (a date of a search for information on the species)*

E. Lendell Cockrum. 1960. The Recent Mammals of Arizona: Their Taxonomy and Distribution, The University of Arizona Press, Tucson, Arizona. This inclusion is based on the general distribution maps and statements. *118 (distribution note, map - Figure Number and Page Number)*

Charles H. Lowe. 1964. The Vertebrates of Arizona with Major Section on Arizona Habitats, The University of Arizona Press, Tucson, Arizona. *55*

SPECIES DISTRIBUTION LISTINGS

Species Distribution Listings are being developed to encourage and promote the conservation of local native animals and plants. The listings are developed for legally defined geographic areas, and larger bodies of water. The listings include species reported as having been observed in or reported from the described area. Exotic and non-local landscaped plants are not included in the listings unless they have become naturalized into the surrounding native environment. Neither "Man" nor our domesticated animals, except for feral animals, have been included in the listings of species; however, they have had an impact on all natural areas, the future degree of this impact must be managed in order to restore and provide for the continuation of the natural interrelationships between all species.

Due to the continuing addition of species, the listings should be considered works in progress. In the listings, and most often in the listing of animals, species may have been included based on general distribution mapping and/or statements and not on an observation made in a specific location. It is recommended that we consider a species "confirmed" as occurring in a township or general listing area only after we have at least three recorded sightings cited in the footnotes with no more than one of those records being based on general distribution mapping for the species. Note that the Southwest Environmental Information Network (SEINet) *85* may have several collections recorded for a species within any given township or listing area, and that the date shown in parentheses is a date of the search of their records and not a date of recorded sighting. Note also that many of the individual species collection records found in SEINet include additional associated species. For assistance with the identification of a plant, contact the University of Arizona Herbarium (520-621-7243; FAX: 520-621-7186; P.O. Box 210036 Herring Hall, 1130 East South Campus Drive, Tucson, Arizona 85721).

The species are presented alphabetically by division, class, family and genus within their kingdoms. Unlike the usage by most authors, all common names have been capitalized, to normalize simply return uppercase letters, except for those used in proper names, to lowercase letters. Common names presented in languages other than English may lack the inclusion of certain characters/phonetic symbols because of an inability to be reproduce them. The vernacular names included by Daniel F. Austin in his book Baboquivari Mountain Plants: Identification, Ecology, and Ethnobotany are noted "[140]" with synonyms (dialectic variants or alternate transcriptions) printed in angle brackets <> or variations printed in brackets []. An attempt has been made to identify the range in mature heights reported for the plants. Whenever possible the flowering period is reported to early month (1st-10th), mid-month (11th-20th) and late month (21st-end of the month). The individual species records include a general description of the habitat which is provided to help visualize the types of natural habitats the species may be found in. These descriptions have been developed, in part, from herbarium records and general descriptions of habitat found in literature, and should not be considered limiting as to the type of habitat that a plant might occupy. The terms "streambed", "creekbed",

"riverbed" or "lakebed" refer to their dry aspects. Plants reported as occurring in recently burned areas were observed in that area within one year following a fire. The range in elevation has been rounded off to the nearest 100 feet up for the higher elevation, or down for the lower elevation. Species reported as being within 0 to 100 feet are recorded as occurring "from sea level". The reporting of the ecological formations generally follows the mapping presented in the "Biotic Communities of the Southwest" by David E. Brown and Charles H. Lowe, August 1980, with the exception of the "wetlands" which are being reported as an ecological formation in the listings; footnotes: Species not considered to be native to Arizona are shown as being EXOTIC, printed in red. Exotic plants are not recommended for use in landscaping or restoration projects. Plants that may be an attractive component of a restored native habitat are so noted. Plants reported as having been used by native peoples of North America and which might be investigated to determine their value as a home garden or commercial crop may be so noted, much of this information is based on the records of the Native American Ethnobotany website [University of Michigan - Dearborn], footnote *127*. When describing the "native range" of plants in North America northwestern refers to Alaska, northern refers to northern Canada (the Yukon Territory, Northwest Territories and Nunavut), northeastern refers to Greenland, central refers to southern Canada (north-central: British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Quebec, Newfoundland and Labrador, New Brunswick, Nova Scotia and Prince Edward Island) and the United States (south-central), and southern refers to Mexico, below which is Central America and South America. In the footnotes, the source(s) used for the inclusion of the species in the listing is printed in either green ***00*** (indicating that the entry is based on an actual sighting) or blue ***00*** (indicating that the entry is based on a general distribution description and/or mapping). Plants listed in the book "Livestock-Poisoning Plants of Arizona" by Ervin M. Schmutz, Barry M. Freeman and Raymond E. Reed and published in 1968 (80) as being either "Major Poisonous Range Plants" or "Secondary Poisonous Range Plants" are further identified by their listing heading being printed in red in the footnotes; plants considered to be "Rarely Poisonous and Suspected Poisonous Range Plants" and "Poisonous Cropland and Garden Plants" have also been noted.

Local native plants are recommended for use in landscape and restoration projects. Once established many native species require little, if any, irrigation. The inclusion of a plant in the township listing does not necessarily mean that the plant is suitable for the site in which you want to plant it. Ideally restoration should include those species of plants that were native to the property. The source material, of plants and seed, used in the project should be as local as possible. In order to determine what plants were native try to locate photographs of the area prior to clearing or look for natural areas and remnant populations and plants adjacent to where the restoration is to take place. Plants should be planted in their approximate original habitat and density and taking into consideration the original local native site and elevation of occurrence.

The use of local native plants in landscape and restoration projects encourages native animals to remain in the area and helps us to retain the area's natural beauty and unique identity and heritage.

A NOTE TO RANCHERS: The development of the Species Distribution Listings has been made, in part, with the hope that they will enhance the body of information you are using to assist you in your efforts to improve on the management of native rangelands, bringing about a more productive rangeland, enhanced wildlife management, and an economically and ecologically stable environment.

The Species Distribution Listings have been created and maintained by William T. Kendall. Any questions, concerns, corrections and/or comments, including the reporting of unrecorded species and information relating to historical distributions, may be sent to the following address: Kendall Environmental Surveys, P.O. Box 86091, Tucson, Arizona 85754-6091

DISCLAIMER: The information presented under "Township Notes" has been obtained from large scale mapping and should be used only as a general guide. The listings are not meant to take the place of on-site surveys for species. Information used in the listings is accepted from biologists and individuals interested in helping to promote the conservation of our natural resources. Mistakes are made in the identification of species, the interpretation of data and in the recording of information, and changes in nomenclature occur. For these reasons I can not and do not warrant the accuracy of these listings. Attempts are made to keep the information contained in the Species Distribution Listings as accurate as possible; however, I disclaim any implied warranty or representation about its accuracy, completeness, or appropriateness for any particular purposes. Users of the information found in the listings assume full responsibility for their use of the information and understand that Kendall Environmental Surveys is not responsible or liable for any claim, loss, or damage resulting from its use.

CAUTION: Many native desert plants have sharp thorns and spines. Care should be given when handling these plants and consideration should be given to public safety at sites where they are to be planted. Range plants having a known toxic or poisonous property may be so noted. Footnotes for plants whose sources may have cautionary statements, comments and information on rarely poisonous or suspected poisonous properties may be shown in red *00*. Many poisonous plants are similar in appearance to edible ones. No field collected plant should be eaten unless you know for a fact that it is safe for you to do so.

CONTENTS

TOWNSHIP NOTES

LOCATION: This township is located in northeastern Pima County in south-central Arizona. This township is bounded on the north by the alignment for Ina Road, on the south by the alignment for Grant Road and on the west by the alignment for First Avenue. A portion of the City of Tucson is located within the southwestern half of this township.

Historic Neighborhoods: The Historic Community of Binghampton is located in this township.

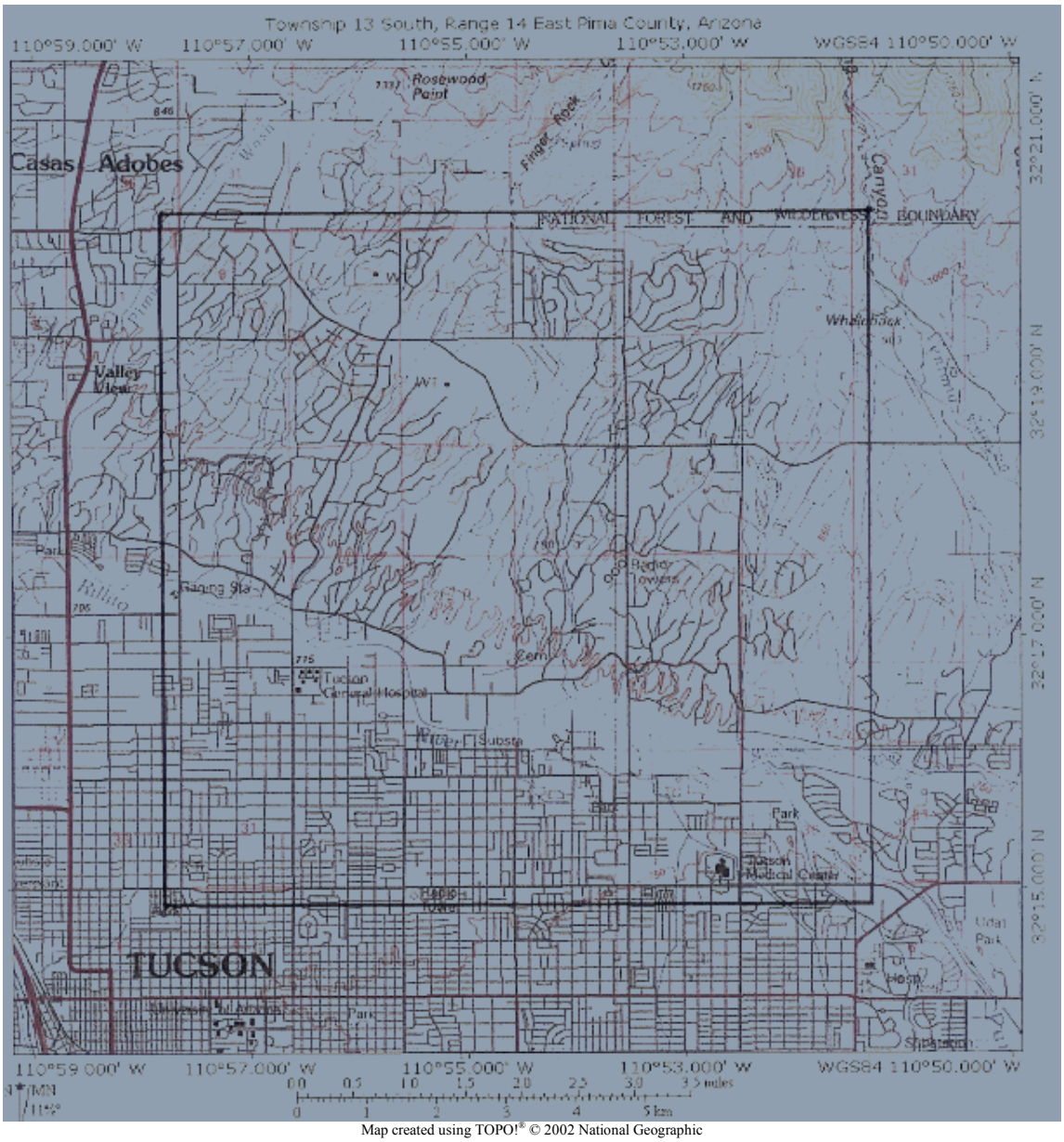
LANDMARKS: A southwestern portion of the Santa Catalina Mountains is located within this township. Named washes and creeks include the Arcadia Wash, Geronimo Wash, Pantano Wash, Pima Wash (crosses the northwest corner) and Tanque Verde Creek.

ELEVATION: Elevations range from approximately 2,315 feet in the Rillito Creek on the west township line to approximately 3,828 feet at the top of an unnamed peak located just south of the north township line about one and one-half miles west of the northeast corner (1).

PHYSIOGRAPHIC PROVINCE: This township is located within the Sonoran Desert Section of the Basin and Range Physiographic Province (2).

SOILS: Soils have been described as being Thermic (hot) Arid Soils (soils with mean annual temperatures of 59 degrees to 72 degrees Fahrenheit (15 degrees to 22 degrees Centigrade) and 5 to 10 inches (13 to 25 cm) mean annual precipitation) and/or Thermic (hot) Semiarid Soils (soils with mean annual temperatures of 59 degrees to 72 degrees Fahrenheit (15 degrees to 22 degrees Centigrade) and 10 to 16 inches (25 to 41 cm) mean annual precipitation) of the Grabe-Gila-Pima Association (deep soils of the floodplains), Mohave-Tres Hermanos-Anway Association (deep, arid soils on the valley plains), Pinaleno-Nickel-Palos Verdes Association (deep, arid, gravelly soils on deeply dissected uplands), Rillino-Latene-Cave Association (deep to very shallow, arid calcareous soils on uplands) and the Rock Outcrop-Lampshire-Cellar Association (rock outcrop and very shallow and shallow semiarid soils of the mountains and foothills) (3).

BIOTIC COMMUNITY: This township is located within the Arizona Upland Subdivision of the Sonoran Desertscrub Regional Formation of the Desertscrub Formation and associated Wetlands (4).



Map of Township, shown with adjacent sections

LISTED BELOW ARE A FEW OF THE NATIVE PLANTS REPORTED AS OCCURRING IN THIS TOWNSHIP THAT MIGHT BE CONSIDERED FOR USE IN LANDSCAPE AND RESTORATION PROJECTS

Common Name (Family Name: Scientific Name - range in reported mature heights)

Trees and Large Shrubs (over 7 feet maximum height)

Fremont Cottonwood (Salicaceae: *Populus fremontii* subsp. *fremontii* - 10' to 112' in height, see NOTES)
Western Black Willow (Salicaceae: *Salix gooddingii* - 4' to 98' in height, see NOTES)
Arizona Black Walnut (Juglandaceae: *Juglans major* - 5' to 66' in height, see NOTES)
Velvet Ash (Oleaceae: *Fraxinus velutina* - 40" to 65' in height, see NOTES)
Saguaro (Cactaceae: *Carnegiea gigantea* - 5' to 60' in height)
Netleaf Hackberry (Ulmaceae: *Celtis laevigata* var. *reticulata* - 40" to 60' in height)
Velvet Mesquite (Fabaceae: *Prosopis velutina* - 2' to 56' in height)
Blue Paloverde (Fabaceae: *Parkinsonia florida* - 40" to 40' in height)
Desert Elderberry (Caprifoliaceae: *Sambucus nigra* subsp. *canadensis* - 7' to 36' in height)
Desert Willow (Bignoniaceae: *Chilopsis linearis* subsp. *arcuata* - 5' to 33' in height)
Ocotillo (Fouquieriaceae: *Fouquieria splendens* - 5' to 33' in height)
Common Buttonbush (Rubiaceae: *Cephalanthus occidentalis* - 3' to 33' in height)
Soaptree Yucca (Agavaceae: *Yucca elata* - acaulescent to 30' in height)
Foothill Paloverde (Fabaceae: *Parkinsonia microphylla* - 40" to 26' in height)
Catclaw Acacia (Fabaceae: *Acacia greggii* var. *greggii* - 40" to 25' in height)
Blue Elderberry (Caprifoliaceae: *Sambucus nigra* subsp. *cerulea* - 6' to 20' in height)
Desert Hackberry (Ulmaceae: *Celtis ehrenbergiana* - 3' to 20' in height)
Whitethorn Acacia (Fabaceae: *Acacia constricta* - 1' to 20' in height)
Longleaf Joint-fir (Ephedraceae: *Ephedra trifurca* - 20" to 16½' in height)
Chain-fruit Cholla (Cactaceae: *Cylindropuntia fulgida* var. *fulgida* - 3' to 15' in height)
Staghorn Cholla (Cactaceae: *Cylindropuntia versicolor* - 3' to 15' in height)
Seep Willow (Asteraceae: *Baccharis salicifolia* - 1' to 15' in height)
Desert Lavender (Lamiaceae: *Hyptis emoryi* - 8" to 15' in height)
Desert Broom (Asteraceae: *Baccharis sarothroides* - 3' to 13' in height, see NOTES)
Southern Cattail (Typhaceae: *Typha domingensis* - 3' to 13' in height)
Greythorn (Rhamnaceae: *Ziziphus obtusifolia* var. *canescens* - 3' to 13' in height)
Kearney Snakewood (Rhamnaceae: *Condalia warnockii* var. *kearneyana* - 20" to 13' in height)
Creosote Bush (Zygophyllaceae: *Larrea tridentata* var. *tridentata* - 20" to 13' in height)
Arrow-wood (Asteraceae: *Hymenoclea monogyra* - 1' to 13' in height)
Jojoba (Simmondsiaceae: *Simmondsia chinensis* - 8" to 13' in height)
Pencil Cholla (Cactaceae: *Cylindropuntia arbuscula* - 20" to 12' in height)
Fishhook Barrel Cactus (Cactaceae: *Ferocactus wislizeni* - 8" to 11' in height)
Pancake Pricklypear Cactus (Cactaceae: *Opuntia chlorotica* - 2' to 10' in height)
Teddybear Cholla (Cactaceae: *Cylindropuntia bigelovii* - 20" to 10' in height)
Berlandier Lycium (Solanaceae: *Lycium berlandieri* - 20" to 10' in height)
Cane Cholla (Cactaceae: *Cylindropuntia spinosior* - 16" to 10' in height)
Smooth Chain-fruit Cholla (Cactaceae: *Cylindropuntia fulgida* var. *mamillata* - 2' to 9' in height)
Engelmann Pricklypear Cactus (Cactaceae: *Opuntia engelmannii* var. *engelmannii* - 20" to 8' in height)
Four-spined Klein's Cholla (Cactaceae: *Cylindropuntia* x *tetracantha* - 1' to 8' in height)

Shrubs (2 to 7 feet maximum height)

Canyon Ragweed (Asteraceae: *Ambrosia ambrosioides* - 1' to 7' in height)
Limberbush (Euphorbiaceae: *Jatropha cardiophylla* - 1' to 7' in height)
Tulip Pricklypear Cactus (Cactaceae: *Opuntia phaeacantha* - 10" to 7' in height)
Desert Christmas Cactus (Cactaceae: *Cylindropuntia leptocaulis* - 1' to 6' in height)
White Brittlebush (Asteraceae: *Encelia farinosa* - 1' to 6' in height)
American Threefold (Asteraceae: *Trixis californica* - 10" to 6' in height)
White Sagebrush (Asteraceae: *Artemisia ludoviciana* -8" to 5' in height)
Desert Mistletoe (Viscaceae: *Phoradendron californicum* - 8" to 5' in height, see NOTES)

Fairyduster (Fabaceae: *Calliandra eriophylla* - 4" to 5' in height)
Threadleaf Snakeweed (Asteraceae: *Gutierrezia microcephala* - 2" to 4½' in height)
Turpentine Bush (Asteraceae: *Ericameria laricifolia* - 10" to 50" in height)
Triangleleaf Bursage (Asteraceae: *Ambrosia deltoidea* - 1' to 4' in height)
Golden-flowered Agave (Agavaceae: *Agave chrysantha* - 20" to 40" in height)
Burroweed (Asteraceae: *Isocoma tenuisecta* - 6" to 40" in height)
Broom Snakeweed (Asteraceae: *Gutierrezia sarothrae* - 4" to 40" in height)

Grasses

Wright Sacaton (Poaceae: *Sporobolus wrightii* - 36" to 100" in height)
Spidergrass (Poaceae: *Aristida ternipes* var. *ternipes* - 16" to 79" in height)
Sourgrass (Poaceae: *Digitaria insularis* - 24" to 78" in height)
Spike Dropseed (Poaceae: *Sporobolus contractus* - 16" to 78" in height)
California Brome (Poaceae: *Bromus carinatus* - 12" to 72" in height)
Tanglehead (Poaceae: *Heteropogon contortus* - 8" to 60" in height, see NOTES)
Witchgrass (Poaceae: *Panicum capillare* - 6" to 60" in height)
Red Sprangletop (Poaceae: *Leptochloa panicea* subsp. *brachiata* - 4" to 60" in height)
Whiplash Pappusgrass (Poaceae: *Pappophorum vaginatum* - 16" to 52" in height)
Sideoats Grama (Poaceae: *Bouteloua curtipendula* - 3" to 52" in height)
Beardless Wildrye (Poaceae: *Leymus triticoides* - 16" to 50" in height)
Arizona Cottontop (Poaceae: *Digitaria californica* - 12" to 48" in height)
Sand Dropseed (Poaceae: *Sporobolus cryptandrus* - 12" to 48" in height)
Streambed Bristlegrass (Poaceae: *Setaria leucopila* - 8" to 48" in height)
Plains Bristlegrass (Poaceae: *Setaria vulpiseta* - 8" to 48" in height)
Grisebach's Bristlegrass (Poaceae: *Setaria grisebachii* - 4" to 48" in height)
Bush Muhly (Poaceae: *Muhlenbergia porteri* - 10" to 44" in height)
Plains Lovegrass (Poaceae: *Eragrostis intermedia* - 8" to 40" in height)
Arizona Brome (Poaceae: *Bromus arizonicus* - 4" to 40" in height)
Sixweeks Threeawn (Poaceae: *Aristida adscensionis* - 1¼" to 40" in height)
Feather Fingergrass (Poaceae: *Chloris virgata* - ½" to 40" in height)
Rothrock Grama (Poaceae: *Bouteloua rothrockii* - 8" to 30" in height)
Arizona Signalgrass (Poaceae: *Urochloa arizonica* - 6" to 26" in height)
Knotgrass (Poaceae: *Paspalum distichum* - 2" to 26" in height)
Fendler Threeawn (Poaceae: *Aristida purpurea* var. *longiseta* - 6" to 24" in height)
Sixweeks Grama (Poaceae: *Bouteloua barbata* - ½" to 18" in height)
Desert Fluffgrass (Poaceae: *Dasyochloa pulchella* - ½" to 6" in height)

Vines and Climbers

Drummond Clematis (Ranunculaceae: *Clematis drummondii* - 10' to 40' in length)
Canyon Grape (Vitaceae: *Vitis arizonica* - 16" to 33' in length)
Fringed Twinevine (Asclepiadaceae: *Funastrum cynanchoides* subsp. *cynanchoides* - 40" to 20' in length)
Hartweg Twinevine (Asclepiadaceae: *Funastrum cynanchoides* subsp. *heterophyllum* - 20" to 20' in length)
Sorrelvine (Vitaceae: *Cissus trifoliata* - 32" to 17' in length)
Trans-Pecos Morning-glory (Convolvulaceae: *Ipomoea cristulata* - 8" to 11½' in length)
Watson Indian Root (Aristolochiaceae: *Aristolochia watsoni* - 4" to 5' in length)

Shrubs (under 2 feet maximum height), Subshrubs, Herbs and Small Succulents

Hoary Indian Mallow (Malvaceae: *Abutilon incanum* - 8" to 7' rarely to 13' in height)
New Mexico Thistle (Asteraceae: *Cirsium neomexicanum* - 16" to 9½' in height)
Desert Night-blooming Cereus (Cactaceae: *Peniocereus greggii* var. *transmontanus* - 1' to 8' in height)
Sweet Four O'Clock (Nyctaginaceae: *Mirabilis longiflora* var. *wrightiana* - 24" to 78" in height)
Prairie Sunflower (Asteraceae: *Helianthus petiolaris* - 6" to 78" in height)
Parish Indian Mallow (Malvaceae: *Abutilon parishii* - 8" to 75" in height)
Coulter Globemallow (Malvaceae: *Sphaeralcea coulteri* - 6" to 6' in height)
Parry Penstemon (Scrophulariaceae: *Penstemon parryi* - 2' to 5' in height)
Brownfoot (Asteraceae: *Acourtia wrightii* - 1' to 5' in height)
Mexican Fireplant (Euphorbiaceae: *Euphorbia heterophylla* - 8" to 5' in height)

Brownplume Wirelettuce (Asteraceae: *Stephanomeria pauciflora* - 4" to 5' in height)
Yellow Monkeyflower (Scrophulariaceae: *Mimulus guttatus* - 2" to 5' in height)
Canaigre (Polygonaceae: *Rumex hymenosepalus* - 10" to 52" in height)
California Croton (Euphorbiaceae: *Croton californicus* - 12" to 51" in height)
Bluestem Pricklepoppy (Papaveraceae: *Argemone pleiacantha* subsp. *pleiacantha* - 20" to 4' in height)
Desert Tobacco (Solanaceae: *Nicotiana obtusifolia* var. *obtusifolia* - 12" to 42" in height, see NOTES)
Violet Ruellia (Acanthaceae: *Ruellia nudiflora* var. *nudiflora* - 12" to 40" in height)
Scarlet Hedgenettle (Lamiaceae: *Stachys coccinea* - 12" to 40" in height)
Desert Marigold (Asteraceae: *Baileya multiradiata* - 6" to 40" in height)
Purplestem Phacelia (Hydrophyllaceae: *Phacelia crenulata* var. *ambigua* - 4" to 40" in height)
Sandyseed Clammyweed (Capparaceae: *Polanisia dodecandra* subsp. *trachysperma* - 4" to 40" in height)
Chia (Lamiaceae: *Salvia columbariae* var. *columbariae* - 4" to 40" in height)
Distant Phacelia (Hydrophyllaceae: *Phacelia distans* - 3" to 40" in height)
Mesa Tansyaster (Asteraceae: *Machaeranthera tagetina* - 2" to 40" in height)
Rose Evening-primrose (Onagraceae: *Oenothera rosea* - 3" to 39" in height)
Desert Senna (Fabaceae: *Senna covesii* - 10" to 32" in height)
Mojave Lupine (Fabaceae: *Lupinus sparsiflorus* - 6" to 32" in height)
Arizona Centaury (Gentianaceae: *Centaurium arizonicum* - 5" to 32" in height)
Whitestem Paperflower (Asteraceae: *Psilostrophe cooperi* - 4" to 32" in height)
Covena (Liliaceae: *Dichelostemma capitatum* subsp. *pauciflorum* - 4" to 30" in height)
Caliche Globemallow (Malvaceae: *Sphaeralcea laxa* - 12" to 28" in height)
Spreading Fleabane (Asteraceae: *Erigeron divergens* - 2¾" to 28" in height)
Goodding Mock Vervain (Verbenaceae: *Glandularia gooddingii* - 6" to 24" in height)
Rose Bladderpod (Brassicaceae: *Lesquerella purpurea* - 6" to 24" in height)
Hairyseed Bahia (Asteraceae: *Bahia absinthifolia* - 4" to 24" in height)
Dakota Mock Vervain (Verbenaceae: *Glandularia bipinnatifida* - 4" to 24" in height)
Desert Zinnia (Asteraceae: *Zinnia acerosa* - 3" to 20" in height)
Esteve's Pincushion (Asteraceae: *Chaenactis stevioides* - 2" to 18" in height)
Bundle Hedgehog Cactus (Cactaceae: *Echinocereus fasciculatus* - 2" to 18" in height)
Spiny Cliffbrake (Pteridaceae: *Pellaea truncata* - 3" to 16½" in height)
California Goldfields (Asteraceae: *Lasthenia californica* subsp. *californica* - 3" to 16" in height)
Maxon's Goldback Fern (Pteridaceae: *Pentagramma triangularis* subsp. *maxonii* - 3" to 16" in height)
Toad Rush (Juncaceae: *Juncus bufonius* - 1" to 16" in height)
Arizona Phacelia (Hydrophyllaceae: *Phacelia arizonica* - 1" to 16" in height)
Miniature Woollystar (Polemoniaceae: *Eriastrum diffusum* - 1½" to 14" in height)
Desert Unicorn-plant (Pedaliaceae (Martyniaceae): *Proboscidea althaeifolia* - 7" to 12" in height)
Arizona Poppy (Zygophyllaceae: *Kallstroemia grandiflora* - 4" to 12" in height, stems to 4' in length)
Desert Holly (Asteraceae: *Acourtia nana* - 2" to 12" in height)
Sand Bells (Hydrophyllaceae: *Nama hispidum* - 2" to 12" in height)
Graham Pincushion Cactus (Cactaceae: *Mammillaria grahamii* - 1" to 12" in height)
Yellow Desert Evening-primrose (Onagraceae: *Oenothera primiveris* subsp. *primiveris* - to 4" in height)
Bisbee Beehive Cactus (Cactaceae: *Escobaria vivipara* var. *bisbeeana* - 2" to 3" in height)
Ledge Saliginella (Selaginellaceae: *Selaginella rupincola* - 1½" to 3" in height)

CONSERVATION RELATED AGENCIES AND ORGANIZATIONS

Arizona Department of Agriculture

http://www.azda.gov/

Native Plant Crimes HOTLINE: 602-364-0907

The mission statement of the Arizona Department of Agriculture is to regulate and support Arizona agriculture in a manner that encourages farming, ranching, and agribusiness while protecting consumers and natural resources.

NOTICE OF INTENT TO CLEAR LAND

The Arizona Department of Agriculture enforces the sections of the Arizona Revised Statutes commonly referred to as the "Arizona Native Plant Law". The statutes require, in part, that anyone who is clearing land notify the State of Arizona in advance of the clearing. Some land owners involved in the clearing of land allow for nurseries and people who are interested in salvaging

plants to do so prior to the clearing. The Arizona Department of Agriculture posts these notifications in their county offices. You may also contact the Arizona Department of Agriculture and, for a fee, be put on a mailing list of people receiving copies of the Notices of Intent to Clear Land.

Contact Information: Arizona Department of Agriculture, 1688 West Adams Street, Phoenix, Arizona 85007. Telephone number: 602-542-4373.

Arizona Game and Fish Department

http://www.gf.state.az.us/

Operation GAME THIEF: 602-942-3000

The mission statement of the Arizona Game and Fish Department is to conserve, enhance, and restore Arizona's diverse wildlife resources and habitats through aggressive protection and management programs, and to provide wildlife resources and safe watercraft and off-highway vehicle recreation for the enjoyment, appreciation, and use

As part of their conservation program the Arizona Game and Fish Department provides ideas on how to learn to live with, and landscape for, wildlife:

LIVING WITH WILDLIFE
http://www.azgfd.gov/w_c/urban_wildlife.shtml

Contact Information: Arizona Game and Fish Department, 5000 West Carefree Highway, Phoenix, Arizona 85086-5000. Telephone number: 602-942-3000

Arizona Native Plant Society

http://www.aznativeplantsociety.org/

The Arizona Native Plant Society is a statewide nonprofit organization devoted to Arizona's native plants. Its mission is to promote knowledge, appreciation, conservation, and restoration of Arizona native plants and their habitats. They work with the Southwest Rare Plant Task Force to develop strategies for protecting rare species and their habitats; they keep abreast of conservation issues concerning native plants species and responds to those through their Conservation Committee; they promote the use of native species in residential and commercial landscapes; they publish the Plant Press, support the publication of scholarly works and maintains a website with information and links about native plant, and they host a series of statewide events that provide forums to learn from professionals. Member activities and benefits include chapter and statewide gatherings; field trips and educational presentations; conservation through education, outreach and restoration; habitat restoration projects; informative website, newsletters and journals, and interactions with plant experts and enthusiasts.

LISTING OF SOURCES FOR NATIVE PLANTS AND SEEDS

The Arizona Native Plant Society maintains a listing of Native Plant and Seed Sources at:
http://www.aznativeplantsociety.org/sources.php

Contact Information: Arizona Native Plant Society, PO Box 41206, Tucson, Arizona 85717.

Tucson Cactus and Succulent Society

http://www.tucsoncactus.org/

The Tucson Cactus and Succulent Society is a non-profit organization dedicated to educating, teaching and learning about cacti and succulent plants. Their monthly programs feature knowledgeable individuals who can educate you and help you understand more about these fascinating plants. They conduct and sponsor native cactus and succulent rescue operations, plant sales, field trips, nursery and garden visits, conventions and conferences as well as other activities throughout the year.

NATIVE PLANT RESCUE NOTICE

Members of the Tucson Cactus and Succulent Society expend a tremendous amount of time and effort in organizing and overseeing their native plant rescue events. The native plant rescues carried out by the dedicated members of the Society provide an immeasurable service to our community. Members of the Tucson Cactus and Succulent Society organize native plant rescues in areas being cleared for development. If interested in rescuing plants and/or obtaining local native plants for your landscaping or restoration project join the Society and become a rescue crew member.

Contact Information: Tucson Cactus and Succulent Society, PO Box 64759, Tucson, Arizona 85728-4759. Telephone number: 520-885-6367.

Desert Survivors Native Plant Nursery

http://www.desertsurvivors.org/nursery.asp

The Desert Survivors Native Plant Nursery maintains a large selection of local native plants and is willing to consider growing any native plant for which there is a buyer.

Contact Information: Desert Survivors Native Plant Nursery, 1020 West Starr Pass Boulevard, Tucson, Arizona 85713. Telephone number: 520-791-9309.

Native Seeds/SEARCH

http://www.nativeseeds.org

The Native Seeds/SEARCH is a nonprofit conservation organization that seeks to preserve the crop seeds that connect the Native American cultures to their lands. The mission of the Native Seeds/SEARCH is to conserve, distribute and document the adapted and diverse varieties of agricultural seeds, their wild relatives and the role these seeds play in the cultures of the American Southwest and Northwest Mexico.

Contact Information: Native Seeds/SEARCH, 526 North Fourth Avenue, Tucson, Arizona 85705. Telephone number: 520-622-5561 or toll free at 866-622-5561; FAX 520-622-5561; e-mail: info@nativeseeds.org

LISTING OF PLANTS

STRICTLY ENFORCED LAWS PROTECT MANY OF ARIZONA'S
NATIVE PLANTS FROM COLLECTION, MUTILATION AND DESTRUCTION

Native Plant Crimes HOTLINE: 602-364-0907

Kingdom Plantae: The Plant Kingdom
Subkingdom Tracheobionta: The Vascular Plants

Division Lycopodiophyta: The Lycopods

CLASS LYCOPODIOPSIDA: The CLUBMOSSES, FIRMOSSES and SPIKEMOSSES

Selaginellaceae: The Spike-moss Family

Selaginella rupincola **L.M. Underwood: Rockloving Spikemoss**

COMMON NAMES: Ledge Selaginella; Rock-loving Spike-moss; Rockloving Spikemoss. DESCRIPTION: Terrestrial perennial forb/herb (slightly creeping, sprawling, decumbent, ascending and/or erect aerial stems 1½ to 3 inches in height); the aerial leaves are gray-green or green. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; rocky summits of peaks; cliffs; rock walls; rocky canyons; rocky canyon walls; rocky canyonsides; canyon bottoms; along crevices in boulders and rocks; shallow soil on bedrock, rock ledges; rocky ridgetops; foothills; rocky hills; rocky hillsides; bouldery, rocky, gravelly and loamy slopes; bases of slopes; bedrock and rocky outcrops; on boulders and rocks; amongst boulders and rocks; bases of boulders and rocks; arroyos; bouldery and rocky seepages; along streams; along creeks; near and in creekbeds; riverbeds; within bouldery drainages; rocky waterfalls; (rocky-sandy) banks of streams; around and in stock tanks, and gravelly riparian areas growing in moist and dry bouldery, rocky, rocky-gravelly, rocky-sandy, gravelly and sandy ground and loam ground sometimes reported as growing in the shade, occurring from 100 to 7,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Selaginella rupincola* is native to southwest-central and southern North America. *5, 6, 15, 43 (082810), 44 (040411 - no record of species; genus record), 46 (Page 29), 51 (Page 72, color photograph *34), 63 (082810), **85** (040411 - color presentation), 124 (040411 - no record of species; genus record), 140 (Page 305)*

Division Pteridophyta: The Ferns

CLASS FILICOPSIDA: The FERNS

Pteridaceae: The Maidenhair Fern Family

Pellaea longimucronata (see *Pellaea truncata*)

***Pellaea truncata* L.N. Goodding: Spiny Cliffbrake**

SYNONYMY: *Pellaea longimucronata* auct. non W.J. Hooker. COMMON NAMES: Calaguala (Spanish: Mexico)[140]; Cliff Brake (a name that is also applied to the genus *Pellaea*); Cliff-brake Fern (a name also applied to the genus *Pellaea*); Spiny Cliff Brake (English)[140]; Spiny Cliff-brake; Spiny Cliffbrake. DESCRIPTION: Terrestrial perennial evergreen forb/herb (ascending fronds are 3 to 16½ inches in length); the leaf blades are blue-green or gray-green with chestnut-brown, reddish or red-brown stipes; sporulation generally takes place from late spring to fall. HABITAT: Within the range of this species it has been reported from mountains; crags; mountainsides; rocky cliffs; cliff walls; niches and crevices in rock cliffs; along bases of cliffs; bouldery and rocky canyons; along canyon walls; along rocky canyon bottoms; rocky gorges; talus slopes; crevices in boulders and rocks; pockets of sandy soil in boulders; rocky bluffs; rock ledges; under rocky ledges; ridgelines; foothills; rocky hills; bouldery-rocky and rocky hillsides; bouldery, bouldery-rocky, bouldery-gravelly, rocky, gravelly, gravelly-loamy, sandy, sandy-clayey-loamy and clayey slopes; bajadas; bouldery and rocky outcrops; amongst boulders and rocks; along bases of boulders and rocks; basins; rocky arroyos; rocky draws; gulches; ravines; seeps; along streams; bouldery, rocky and sandy streambeds; along creeks; along rivers; along and in bouldery-sandy and sandy washes; within drainages; bog-like areas; gravelly swales; banks of creeks; edges of streambeds and rivers; sandy benches; silty-loamy terraces, and bouldery riparian areas growing in dry bouldery, bouldery-rocky, bouldery-gravelly, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, gravelly, gravelly-sandy and sandy ground; bouldery loam, bouldery-rocky loam, rocky loam, rocky-gravelly loam, gravelly-sandy loam and silty loam ground, and rocky clay and clay ground, occurring from 600 to 9,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Pellaea truncata* is native to southwest-central and southern North America. *5, 6, 15, 16, 28 (color photograph 13), 43 (081209), 44 (090311), 46 (recorded as *Pellaea longimucronata* Hook., Page 38), 51 (Page 169, color photograph 201), 63 (081209 - color presentation), 77, **85** (090311 - color presentation including habitat), 115 (color presentation), 124 (090311 - no record of species; genus record), 140 (Pages 232-234 & 303)*

***Pentagramma triangularis* (G.F. Kaulfuss) G.A. Yatskievych, M.D. Windham & E. Wollenweber subsp. *maxonii* (C.A. Weatherby) G.A. Yatskievych, M.D. Windham & E. Wollenweber: Maxon's Goldback Fern**

SYNONYMY: *Pityrogramma triangularis* (G.F. Kaulfuss) W.R. Maxon var. *maxonii* C.A. Weatherby. COMMON NAMES: Goldback Fern (a name also applied to other species and to the genus *Pentagramma*); Goldenback Fern; Goldfern (a name also applied to the genus *Pentagramma*); Maxon Gold-back Fern; Maxon Goldback Fern; Maxon Goldfern; Maxon's Gold-back Fern; Maxon's Goldback Fern; Maxon's Goldfern. DESCRIPTION: Terrestrial perennial evergreen forb/herb (fronds are 3 to 16 inches in length); the leaf blades are green above and silver, white, yellow or yellow-green below with black, brown or reddish-brown stipes. HABITAT: Within the range of this species it has been reported from mountains; cliffs; along rock faces; along bases of cliffs; rocky canyons; bouldery and rocky canyon bottoms; chasms; rocky gorges; crevices in rocks; buttes; rocky ledges; ridges; foothills; hillsides; bouldery, bouldery-rocky, bouldery-silty-clayey and rocky slopes; rocky outcrops, amongst

boulders and rocks; shaded areas at bases of boulders and rocks; seeps; along streams, rocky streambeds; bouldery creekbeds; in rocky washes; within rocky drainages; along water courses; sandy benches, and riparian areas growing in moist and dry bouldery, rocky and sandy ground; loam ground, and bouldery-silty clay ground and often reported as growing in sheltered or shaded areas, occurring from 300 to 8,300 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Pentagramma triangularis* subsp. *maxonii* is native to southwest-central and southern North America. *5, 6, 15, 43 (081209), 44 (040411), 46, 51 (species, Pages 171-172, color photograph 205 of a similar variety, recorded as *Pityrogramma triangularis* var. *triangularis*), 63 (081209), **85** (040411 - color presentation of dried material), 124 (040411 - no record of genus or species)*

Pityrogramma triangularis var. *maxonii* (see *Pentagramma triangularis* subsp. *maxonii*)

Superdivision Spermatophyta: The Seed Plants

Division Gnetophyta: The Gnetophytes

CLASS GNETOPSIDA: The GNETOPS

Ephedraceae: The Mormon-tea Family

***Ephedra trifurca* J. Torrey ex S. Watson: Longleaf Joint-fir**

COMMON NAMES: Brigham Young Tea (a name also applied to other species and the genus *Ephedra*); Cañatilla [Canatilla] ("Cane or Little Pipe", Spanish: Arizona and Texas)[140]; Canutillo (a name also applied to other species); Canutillo [del Campo] ("[Wild] Cane or Little Pipe", Spanish: New Mexico, Sonora)[140]; Desert Ephedra; Desert Joint-fir; Desert Jointfir; Ephedra Tea; Hierba de la Coyuntura ("Jointed Herb", Spanish: Mexico)[140]; ʔI:šíw (Yuman: Cocopa)[140]; Itama Real; Itamo Real ("Royal Spurge" a name also applied to other species, Spanish: Coahuila)[140]; Joint Fir (English)[140]; Joint Fir (a name also applied to other species and the genus *Ephedra*); Jumway (Yuman: Walapai)[140]; Kanutio (Yaqui); Ku:pag (Uto-Aztecan: Tohono O'odham)[140]; Ku:pag <ku'upok> (Uto-Aztecan: Hiá Ceḍ O'odham)[140]; Kuupag (Uto-Aztecan: Akimel O'odham)[140]; Kuuvid Nonovi <koovit nawnov> ("Pronghorn's Foreleg", Uto-Aztecan: Akimel O'odham)[140]; Long Leaf Ephedra; Long-leaf Ephedra; Long-leaf Jointfir; Long-leaf Mormon Tea; Long-leaf Mormon-tea; Long-leafed Ephedra; Long-leafed Joint-fir; Long-leaved Ephedra; Long-leaved Joint Fir; Long-leaved Joint-fir; Long-leaved Jointfir; Longleaf Desert Tea; Longleaf Ephedra; Longleaf Joint-fir; Longleaf Jointfir; Longleaf [Ephedra, Desert, Mexican, Mormon, Teamster's] Tea (English)[140]; Mexican Tea (a name also applied to other species and the genus *Ephedra*); Mexican-tea (a name also applied to other species); Mexican Mormon Tea; Mexican Mormon-tea; Mexican-tea; Mormon Tea (a name also applied to other species and the genus *Ephedra*); Mountain Rush (English)[140]; Ösvi <'ɜsivi> (Uto-Aztecan: Hopi)[140]; Popotilla (Hispanic); Popotillo (a name also applied to other species and the genus *Ephedra*, Spanish: Chihuahua, New Mexico, Texas)[140]; Sudupi (Uto-Aztecan)[140]; Tepopote (Spanish: northeastern Baja California, Chihuahua, Coahuila, Sonora, Texas)[140]; Teposote (Hispanic); Three-fork Ephedra (English)[140]; Three-forked Ephedra; Threefork Ephedra; Tł'oh 'azihii (Athapascan: Navajo)[140]; Tułbái <tułbil bida> ("Gray Water", Athapascan: Western Apache)[140]; Tuttumpi (Uto-Aztecan: Panamint)[140]; Tuttumpin (Uto-Aztecan: Shoshoni)[140]; Tutut (Uto-Aztecan: Cahuilla)[140]; Tụtụpụvụ (Uto-Aztecan: Ute)[140]; Túvūt (Uto-Aztecan: Cupeño, Luiseño)[140]; U'us Ti <oo-oosti> ("Sticks Tea", Uto-Aztecan: Akimel O'odham)[140]. DESCRIPTION: Terrestrial perennial evergreen shrub (20 inches to 16½ feet in height; one plant was observed and described as being 3 feet in height with a crown 5 feet in width); the stems are blue-green, green, olive-green or yellow-green; the twigs are light green turning yellow and finally gray with age; the leaves have been reduced to scales in whorls of three located at the nodes; the tiny flowers are pale yellow with male and female flowers occurring on separate plants; the production of the tan-brown strobili (female and male cones) generally takes place between early February and early June (additional records: one for mid-January and one for late July). HABITAT: Within the range of this species it has been reported from mountains; bases of mountains; gravelly mesas; canyons; clayey ridges; rocky ridgetops; foothills; rocky and gravelly hills; hilltops; rocky hillsides; knolls; rocky, rocky-gravelly, gravelly, gravelly-loamy and sandy slopes; rocky-sandy and gravelly-sandy alluvial fans; sandy bajadas; rocky outcrops; gravelly lava hills; sand hills; sand dunes; ridges of sand dunes; inter-dune swales; rocky, rocky-gravelly and sandy plains; rocky, gravelly and sandy flats; sandy basins; valley floors; roadcuts; along rocky, rocky-sandy, gravelly, gravelly-clayey-loamy and sandy roadsides; within sandy arroyos; riverbeds; along and in rocky, sandy and sandy-silty washes; within drainages; (rocky, gravelly-sandy-loamy and sandy) banks of arroyos, rivers and washes; edges of rivers and swales; (sandy) margins of lakes; gravelly terraces; bottomlands; floodplains; lowlands; along canals; riparian areas, and disturbed areas growing in dry rocky, rocky-gravelly, rocky-sandy, gravelly, gravelly-sandy and sandy ground; gravelly loam, gravelly-sandy loam and gravelly-clayey loam ground; clay ground, and sandy silty ground, occurring from sea

level to 6,600 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat and may live to be 50 years of age. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. This plant is valuable as a soil binder. This plant is browsed by Bighorn Sheep. *Ephedra trifurca* is native to southwest-central and southern North America. *5, 6, 13 (Pages 379-380), 15, 16, 18, 28 (color photograph 483 A&B), 43 (081209), 44 (031911), 46 (Page 61), 48 (genus), 58, 63 (081209 - color presentation), 77, 85 (082911 - color presentation), 91 (Pages 196-197), 124 (031911 - no record of species; genus record), 127, 140 (Pages 130-131 & 291), **WTK** (April 16, 2008)*

Division Magnoliophyta: The Flowering Plants

CLASS LILIOPSIDA: The MONOCOTS

Agavaceae: The Century-plant Family

***Agave chrysantha* R.H. Peebles: Goldenflower Century Plant**

SYNONYMY: *Agave palmeri* G. Engelmann var. *chrysantha* (R.H. Peebles) E.L. Little ex L.D. Benson. COMMON NAMES: Agave (a name also applied to other species, the genus *Agave* and the Agavaceae); Apache Trail Agave; Golden Flowered Agave; Golden-flower Agave; Golden-flowered Agave; Golden-flowered Century Plant; Goldenflower Century Plant. DESCRIPTION: Terrestrial perennial evergreen leaf-succulent forb/herb, subshrub or shrub (acaulescent 20 to 40 inches in height and 1to 6 feet in diameter with a flowering stem reaching to 6½ to 23 feet in height); the spreading to ascending leaves may be light blue-glaucous green, blue-gray-green, bluish-green, gray-green, gray-dark green (bluish), dark gray-green, grayish, pale green, green, dark green, green-gray, green-yellow, dark-green-gray, red or reddish (when in flower), yellow-green, yellow-glaucous green or yellowish-green and sometimes tinged with maroon; the flowers may be light cream, cream, golden-yellow, orange-yellow, white, pale yellow, yellow or yellow-orange; the anthers may be light brown, golden-yellow, lemon-yellow, white, light yellow or yellow; the stigma may be a deep orange-yellow; flowering generally takes place between late May and late August (additional records: four for early May, one for late September and one for mid-October. HABITAT: Within the range of this species it has been reported from mountains; rocky mesas; cliff faces; canyons; canyon bottoms; rocky knolls; rocky ledges; rocky ridges; ridgetops; foothills; rocky hills; hilltops; rocky and silty hillsides; bouldery and rocky slopes; bajadas; bedrock and rocky outcrops; amongst boulders; bouldery debris flows; rocky-clayey plains; bouldery flats; rocky roadsides, and within rocky-gravelly drainages growing in dry bouldery, rocky, rocky-gravelly, gravelly and sandy ground; rocky clay and clay ground, and silty ground, occurring from 2,300 to 7,000 feet in elevation in the forest, woodland, scrub, grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. Hummingbirds have been observed visiting the flowers. *Agave chrysantha* is native to southwest-central North America. *5, 6, 13 (recorded as *Agave palmeri* Engelm. var. *chrysantha* (Peebles) Little, Page 76), 15, 17, 28 (color photograph 137), 43 (032511), 44 (032511 - no record of species; genus record), 45 (color photograph), 46 (Page 195), 48 (genus), 63 (032511), 85 (032511 - color presentation including habitat), 91 (Pages 45-47), 124 (032511 - no record of genus or species), 115 (color presentation), **HR***

Agave palmeri var. *chrysantha* (see *Agave chrysantha*)

***Yucca elata* (G. Engelmann) G. Engelmann: Soaptree Yucca**

SYNONYMY: *Yucca elata* (G. Engelmann) G. Engelmann var. *elata*; *Yucca elata* (G. Engelmann) G. Engelmann var. *utahensis* (S.A. McKelvey) J.L. Reveal; *Yucca elata* (G. Engelmann) G. Engelmann var. *verdiensis* (S.A. McKelvey) J.L. Reveal; *Yucca utahensis* S.A. McKelvey; *Yucca verdiensis* S.A. McKelvey. COMMON NAMES: Amole (a name given to the roots); Datil; Palmella; Palmilla ("Small Palm", Spanish); Palmlilja Jukka; Palmilla; Palmella; Seifen-palmlilie (German); Soap-tree Yucca; Soaptree; Soaptree Yucca; Soap Weed (a name also applied to the genus *Yucca*); Soap-weed Yucca; Soapweed (a name also applied to the genus *Yucca*); Soapweed Yucca; Spanish Bayonet (a name also applied to other species and the genus *Yucca*); Takui (Tohono O'odham); Utah Yucca; Verde Yucca. DESCRIPTION: Terrestrial perennial evergreen leaf-succulent shrub or tree (acaulescent (rarely) and/or caulescent erect stems to 30 feet in height and 8 to 10 feet in diameter with a flowering stalk reaching 2 to 8 feet in height); the narrow leaves may be gray-green, pale green or green with dried leaves adhering to the stem; the bell-shaped flowers may be cream, cream-white with a light green (on outer tepals) and light yellow-green (on inner tepals) midstripe, creamish-white, creamy-white (often tinged with green or pink), greenish-white, white or yellowish-white; the anthers are yellow; the styles and stigmas may be cream-white, cream-light green-white, light green or white; flowering generally takes place between mid-April and early August (additional records: two for late February, one for late August, one for mid-September, one for early October and one for late November). HABITAT: Within the range of this species it has been reported from mountains; rocky-sandy-clayey-loamy and sandy mesas; plateaus; hanging gardens; rocky canyons; rocky canyon walls; canyon bottoms; meadows; rocky foothills; bases of foothills; hills; rocky and gravelly hillsides; along rocky, rocky-sandy-

clayey-loamy, shaley-gravelly-sandy, sandy and loamy slopes; sandy bajadas; sand dunes; prairies; sandy plains; shaley esplanades; gravelly, sandy, sandy-loamy and clayey-loamy flats; basins; gravelly-silty-loamy and sandy valley floors; along rocky-sandy, gravelly gravelly-sandy-clayey-loamy, sandy and sandy-loamy roadsides; along clayey arroyos; rocky draws; along creeks; along rivers; along and in gravelly and sandy washes; within drainages; within drainage ways; inter-dune swales; edges of rivers; benches; terraces; floodplains; lowlands, and disturbed areas growing in dry rocky, rocky-gravelly, rocky-sandy, shaley, shaley-gravelly-sandy, gravelly and sandy ground; rocky-sandy-clayey loam, gravelly loam, gravelly-sandy-clayey loam, gravelly-silty loam, sandy loam, sandy-clayey loam, clayey loam and loam ground, and silty clay and clay ground, occurring from 900 to 7,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food and/or fiber crop; it was also noted as having been used in toys or in games, as ceremonial drug or medication, as a decoration and as a commodity used in personal hygiene. The growth rate of wild growing plants is about 1 inch in height each year with taller plants being 200 to 300 years of age. *Yucca elata* is native to southwest-central and southern North America. *5, 6, 13 (placed in the Liliaceae, Pages 48-49, color photograph including habitat: Plate G.1., Page 395), 15, 16, 18, 26 (color photograph), 28 (color photograph 146), 43 (081309), 44 (032511 - no record of species; genus record), 45 (color photograph), 46 (recorded as *Yucca elata* Engelm., Page 188; *Yucca utahensis* McKelvey, Page 188, and *Yucca verdiensis* McKelvey, Page 188, genus *Yucca* placed in the Liliaceae), 53 (placed in the Liliaceae), 58, 63 (081309 - color presentation), 77, 85 (090411 - color presentation), 115 (color presentation), 124 (032111 - no record of species; genus record), 127, 134, **HR***

Yucca elata var. *elata* (see *Yucca elata*)

Yucca elata var. *utahensis* (see *Yucca elata*)

Yucca elata var. *verdiensis* (see *Yucca elata*)

Yucca utahensis (see *Yucca elata*)

Yucca verdiensis (see *Yucca elata*)

Cyperaceae: The Sedge Family

Cyperus aristatus (see *Cyperus squarrosus*)

***Cyperus esculentus* C. Linnaeus: Yellow Nutsedge**

COMMON NAMES: Amande de Terre (French); Amandes de Terre (French); ʾAráwp <kwarao> (Yuman: Cocopa)[140]; Bebollin; Cebollín (Spanish); Choufa (French); Chufa (a name also applied to other species, Portuguese); Chufa Flat Sedge; Chufa Flat-sedge; Chufa Flatsedge; Chufa Grass; Chufa Nut Grass; Chufa Nut-grass; Chufa Nutgrass; Chufa Nut Sedge; Chufa Nut-sedge; Chufa Nutsedge; Chufa Umbrella Sedge; Chufa Umbrella-sedge; Coquillo (Hispanic); Coquillo Amarillo (Hispanic); Earth Almond; Earth-almond; Earth-nut (a name also applied to other species); Edible Cyperus; Edible Galingale; Erdmandel (German); Field Nut Sedge; Field Nut-sedge; Galingale (a name also applied to other species and to the genus *Cyperus*, Indiana); Ground Almond (a name also applied to other species); Juncia Avellanada (Spanish); Northern Nut Grass; Northern Nut-grass; Northern Nutgrass; Nut Grass (a name also applied to other species and the genus *Cyperus*); Nut-grass (a name also applied to other species and the genus *Cyperus*); Peonía [Pieoneo] (a name also applied to other species, Spanish: Valley of Mexico)[140]; Rush Nut; Rush-nut; Sai´ (Hispanic); Souchet Comestible (French); Straw Sedge (a name also applied to other species); Straw-sedge (a name also applied to other species); Taboose; Taboose Grass; Tiger Nut; Tiger-nut; Tigernut; Tiririca (Portuguese: Brazil); Tiririca-amarela (Portuguese: Brazil); Tiririca-mansa (Portuguese: Brazil); Water-grass (a name also applied to other species); Yellow Nut Grass (a name also applied to other species); Yellow Nut-grass (a name also applied to other species); Yellow Nutgrass (a name also applied to other species); Yellow Nut Sedge (a name also applied to other species); Yellow Nut-sedge (a name also applied to other species); Yellow Nutsedge (a name also applied to other species); Zacate (a name also applied to other species, Hispanic). DESCRIPTION: Terrestrial perennial graminoid (2½ to 40 inches in height); the leaves are yellow-green or bright green above and whitish below; the spikelets may be dark brown, golden-brown, golden-tan, reddish, yellow-brown, yellowish or yellowish-brown; flowering generally takes place between mid-June and early November (additional records: two for early May, two for late May and one for late December). HABITAT: Within the range of this species it has been reported from mountains; sandy pockets of soils on top of cliffs; canyons; canyon walls; rocky, rocky-sandy, gravelly and sandy canyon bottoms; pockets of soil amongst rocks; bluffs; sandy-loamy, loamy and clayey meadows; foothills; hills; bouldery hillsides; rocky, sandy, loamy and clayey slopes; bouldery and rocky outcrops; amongst boulders and rocks; along marshy banks; plains; rocky, gravelly, gravelly-loamy, sandy-clayey-loamy and clayey flats; basins; silty valley bottoms; along rocky and gravelly-loamy roadsides; arroyos; sandy arroyo bottoms; seeps; along streams; along and in sandy streambeds; along sandy creeks; along creekbeds; along rivers; sandy riverbeds; along and in clayey washes; drainages; along drainage ways; palm oases; sandy-loamy ephemeral ponds; playas; bogs; marshes; gravelly-sandy and sandy depressions; sandy-loamy sinks; along (sandy-silty) banks of arroyos, streams, creeks, rivers and washes; (muddy and sandy) edges of rivers, pools, ponds, lakes and playas;

along (sandy) shorelines of lakes; gravel bars; sandy benches; rock shelves; bottomlands; sandy floodplains; around stock tanks (charcos); dikes of reservoirs; along canals; along and in ditches; cobbly and gravelly riparian areas, and disturbed areas growing in muddy and wet, moist or damp bouldery, rocky, rocky-sandy, cobbly, gravelly, gravelly-sandy and sandy ground; gravelly loam, sandy loam, sandy-clayey loam, humusy-clayey loam and loam ground; clay ground, and sandy silty and silty ground, occurring from sea level to 9,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC, no varieties have been reported as being native to Arizona. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop; it was also noted as having been used as a drug or medication. *Cyperus esculentus* var. *esculentus* is native to the Old World. *5, 6, 15, 30, 43 (081309), 44 (032111), 46 (Page 150), 58, 63 (081309 - color presentation), 68, 77, **85** (090511 - color presentation), 101 (color photograph), 124 (022111), 127, 140 (recorded as *Cyperus esculentus* Linnaeus [*Cyperus esculentus* Linnaeus var. *leptostachyus* Boeckeler], Pages 128, 141 & 290)*

Cyperus rotundus C. Linnaeus: Nutgrass

COMMON NAMES: Alho-bravo (Portuguese: Brazil); Almendra de Tierra (Spanish); Balisanga (Ilocano); Boto-botonis (Bicolano); Capim-alho (Portuguese: Brazil); Capim-dandá (Portuguese: Brazil); Castañuela (Spanish); Cebollín (Spanish); Chaguan Humatag (Chamorro); Chufa (a name also applied to other species, Spanish); Coco (Spanish); Coco Grass; Coco Nut-grass; Coco Nutsedge; Coco Sedge; Coco-grass; Cocograss; Coquillo Purpura (Spanish); Coquito (Spanish); Cortadera (Spanish); Hamasuge (Japanese); Herbe à Oignons (French); Ivako (Fijian); Juncia Real (Spanish); Kili‘o‘Opu (Hawaiian); Kili’o’Opu; Mala-apulid (Pampangan); Malanga (Fijian); Matie ‘Ōniāni (Maori); Mauku ‘Ōniāni (Maori); Mau‘u Mokae (Hawaiian); Mot Ha (Fijian); Mumuta (Samoan and Tokelauan); Mutha (Tagalog); Nut Grass (a name also applied to other species and the genus *Cyperus*); Nut Sedge; Nut-grass (a name also applied to other species and the genus *Cyperus*); Nut-grass Flatsedge; Nutgrass (a name also applied to other species); Nutgrass Flatsedge; Nutgrass Galingale; ‘Ōniāni Lau (Maori); ‘Ōniāni Rau (Maori); ‘Ōniāni Tita (Maori); Pakopako (Tongan); Purple Flat Sedge; Purple Flat-sedge; Purple Flatsedge; Purple Nut Grass; Purple Nut Sedge; Purple Nut-grass; Purple Nut-sedge; Purple Nutgrass; Purple Nutsedge; Red Nut Sedge; Red Nut-sedge; Red Nutsedge; Round Root; Round-root; Sedge; Soranakambani (Fijian); Soro ni Kabani (Fijian); Soronakambani (Fijian); Souchet à Tubercules (French); Souchet d'Asie (French); Souchet en Forme d'Olive (French); Souchet Rond (French); Southern Nut Grass; Southern Nut-grass; Southern Nutgrass; Suo Cao (transcribed Chinese); Sur-sur (Pampangan); Tamanengi (Palauan); Te Mumute (I-Kiribati); Tiririca (Portuguese: Brazil); Tiririca-vermelha (Portuguese: Brazil); Tuteoneon (Marshallese); Vucesa (Fijian); Vuthesa (Fijian); Xiang Fu Zi (transcribed Chinese); Yellow Nutgrass. DESCRIPTION: Terrestrial perennial graminoid (1 to 24 inches in height); the spikelets may be dark brown-purple, purplish, reddish or reddish-brown; flowering generally takes place between mid-May and late November (additional records: two for early March, four for mid-March and one for late April). HABITAT: Within the range of this species it has been reported from sandy clearings; slopes; dunes; sandy flats; valley floors; railroad right-of-ways; along gravelly-sandy-clayey and sandy roadsides; clayey creekbeds; in gravel along rivers; sandy riverbeds; along banks of arroyos, streams and rivers; along (gravelly and sandy) shorelines; benches; mesquite bosques; canal banks; ditches; ditch banks; sandy riparian areas; waste places, and disturbed areas growing in shallow water and wet and moist gravelly, gravelly-sandy and sandy ground; sandy loam ground, and gravelly-sandy clay ground, occurring from sea level to 7,500 feet in elevation in the forest, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America; it was noted as having been used for food. Nutgrass (*Cyperus rotundus*) is generally acknowledged as being the world’s worst weed. *Cyperus rotundus* is native to south-central and southern North America; Central America and coastal islands in the Caribbean Sea; South America; central and southern Europe; western, central eastern and southern Asia and coastal islands in the Indian and Pacific Oceans; Africa and coastal islands in the western Indian Ocean, and Australia, some authors consider this plant to be an Exotic that is native to the Old World. *5, 6, 43 (081409), 44 (040411), 46 (Page 150), 63 (040411 - color presentation), 68, 77, **85** (090511 - color presentation of dried material), 101 (color photograph), 106 (090511 - color presentation), 124 (040411), 127, 132*

Cyperus squarrosus C. Linnaeus: Bearded Flatsedge

SYNONYMY: *Cyperus aristatus* C.F. Rottbøll. COMMON NAMES: Apoyamate (Spanish)[140]; Awned Cyperus; Awned Flat Sedge; Awned Flat-sedge; Awned Galingale; Awned Nut-grass; Awned Nut-sedge; Awned Nutsedge; Awned Sedge; Awned Umbrella Sedge; Awned Umbrella-sedge; Beard Flatsedge; Bearded Flat Sedge; Bearded Flat-sedge (English)[140]; Bearded Flatsedge; Bearded Nutgrass; Curve-tip Flatsedge (Colorado); Dwarf Odorous Galingale; Dwarf Sedge; <grulla> (Spanish: Mountain Pima)[140]; Incurved Umbrella Sedge; Incurved Umbrella-sedge; Marsh Sedge; [Dwarf] Marsh Sedge (English)[140]; Nut-sedge (English)[140]; Rice-field Flatsedge; Ricefield Flatsedge; Squarrose Cyperus; Squarrose Flat-sedge; Squarrose Flatsedge; Squarrose Umbrella Sedge; Squarrose Umbrella-sedge; Teeł Níyiz <te.l ni’izi> (“Round Cattail” a name also applied to other species, Athapascan: Navajo)[140]; Tłoliyesze (“Plants That Stand Next To Horses”, Athapascan: Chiricahua and Mescalero Apache)[140]; To’ora (Uto-Aztecan: Mountain Pima)[140]; Tule (a name also applied to other species, Spanish)[140]; Tulillo (“Little Sedge”, Spanish)[140]; Umbrella Sedge; Vashai S-uuv (“Scented Grass”, Uto-Aztecan: Akimel O’odham)[140]; Waṣai S-u:w (Uto-Aztecan: Tohono O’odham)[140]. DESCRIPTION: Terrestrial annual tufted graminoid (½ to 4 inches in height); the spikelets are reddish-bronze to yellowish with green margins; flowering generally takes place between late June and late October (additional records: one for late May and one for late November). HABITAT: Within the range of this species it has been reported from mountains; mountain summits; rocky crags; mountainsides; mesas; along canyon rims; along sandy canyons; along rocky-sandy, gravelly and loamy canyon bottoms; sand-filled crevices; shallow pockets of soil; rocky ridgetops; clayey meadows; foothills; hills; rocky hillsides; rocky, rocky-loamy, sandy-loamy and loamy slopes; rocky outcrops; amongst boulders;

sandy prairies; sandy plains; salty flats; bedrock basins; bouldery-silty valley floors; along gravelly roadsides; arroyos; bottoms of arroyos; rocky draws; seeps; springs; along spring seeps; along seeping streams; along sandy streams; along sandy streambeds; along creeks; gravelly and silty creekbeds; along rivers; gravelly riverbeds; along and in rocky, gravelly and sandy washes; drainages; along bedrock and sandy drainage ways; waterholes; playas; bogs; ciénegas; marshes; sandy depressions; sandy swales; along (sandy and silty) banks of arroyos, streams, creeks, rivers and washes; edges of rivers, puddles, pools, lakes, playas and marshes; margins of washes, depressions, ponds and lakes; along (gravelly-loamy, pebbly-sandy and sandy) shorelines of ponds and lakes; mudflats; areas of drawdown; gravel, gravelly-sandy and sand bars; benches; coves; rock shelves; along bottomlands; sandy-clayey floodplains; lowlands; around and in stock tanks; sandy shores of reservoirs; along canal banks; riparian areas, and disturbed areas growing in wet, moist, damp and dry (seasonally wet) bouldery, rocky, rocky-sandy, gravelly, gravelly-sandy, pebbly-sandy and sandy ground; rocky loam, rocky-stony loam, gravelly loam, sandy loam and loam ground; sandy clay and clay ground, and bouldery silty, gravelly silty and silty ground, occurring from 100 to 8,300 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. *Cyperus squarrosus* is native to central and southern North America; Central America and coastal islands in the Caribbean Sea, South America; Australia; southern Asia, and Africa and coastal islands in the Indian Ocean. *5, 6, 43 (081409), 44 (040511), 46 (recorded as *Cyperus aristatus* Rottb., Page 149), 58, 63 (081409 - color presentation), 77, **85** (081509 - color presentation), 124 (040511), 127, 140 (Pages 127-128 & 290)*

Juncaceae: The Rush Family

***Juncus bufonius* C. Linnaeus: Toad Rush**

COMMON NAMES: Bog Rush (a name also applied to the genus *Juncus*); Coe Grass; Coe-grass; Common Toad Rush; Common Toad-rush; Common Toadrush; Frog Grass; Frog Weed; Frog-grass; Frog-weed; Frogweed; Juncus Palustris Humilior Erectus Etiam Repens; Salt Weed; Salt-weed; Saltweed; Toad Rush; Toad-grass; Toadweed. DESCRIPTION: Semi-aquatic and terrestrial annual graminoid (decumbent, ascending and/or erect stems 1 to 16 inches in height); the foliage may be dark red-purple or yellow-green; the flowers are green or greenish; flowering generally takes place between early March and mid-October (additional records: one for early November, one for late November, one for mid-December and one for late December). HABITAT: Within the range of this species it has been reported from mountains; sandy mesas; plateaus; bases of cliffs; rocky canyons; bouldery-gravelly-sandy, rocky-sandy, rocky-silty and sandy canyon bottoms; buttes; rock ledges; sandy-silty, clayey-loamy and loamy meadows; foothills; rocky hills; rocky hillsides; bouldery, bouldery-sandy, rocky, shaley, sandy and clayey slopes; amongst boulders; prairies; plains; sandy, clayey and silty flats; basins; valley floors; valley bottoms; along roadsides; along arroyos; sandy bottoms of arroyos; within sandy draws; bottoms of draws; ravines; along and in sandy and loamy seeps; along and in springs; along and in streams; along and in gravelly-sandy and sandy streambeds; along and in creeks; in rocky-sandy and cobbly creekbeds; in sandy-clay along rivers; rocky, rocky-clayey, sandy and sandy-clayey riverbeds; along and in rocky-sandy, gravelly, sandy and sandy-silty washes; within rocky and loamy drainages; palm oases; mudholes; around pools; around clayey vernal pools; poolbeds; around ponds; along lakes; bogs; clayey-loamy ciénegas; freshwater and saltwater marshes; swamps; clayey and clayey-loamy depressions; swales; along (muddy, sandy, sandy-clayey, sandy-silty and clayey) banks of streams, streambeds, creeks, rivers, poolbeds, ponds and lakes; edges of seeps, springs, streams, creeks, rivers and lakes; along (sandy and silty-loamy) margins of streamlets, streams, creeks, creekbeds, pools and ponds; along (sandy, sandy-clayey and clayey) along shorelines of rivers, lakes, lakebeds and lagoons; areas of drawdown; mudflats; rocky-sand, clayey-sand and sand bars; sandy beaches, benches; sandy bottomlands; rocky-sandy-clayey and silty-clayey floodplains; lowlands; around stock tanks; along edges of reservoirs; along and in gravelly ditches; stony-loamy, gravelly, gravelly-sandy, sandy, sandy-loamy and silty-loamy riparian areas, and disturbed areas growing in shallow water and mucky, muddy and wet, moist, damp and dry (seldom reported) bouldery, bouldery-gravelly-sandy, bouldery-sandy, rocky, rocky-sandy, shaley, cobbly, gravelly, gravelly-sandy and sandy ground; stony loam, sandy loam, clayey loam, silty loam and loam ground; rocky-sandy clay, sandy clay, silty clay and clay ground, and rocky silty, sandy silty and silty ground, occurring from sea level to 9,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. *Juncus bufonius* is native to North America; Central America and coastal islands in the Caribbean Sea; northern, western and southern South America; Europe; Asia and coastal islands in the western Pacific Ocean; northern and eastern Africa and coastal islands in the western Indian Ocean, and Australia. *5, 6, 15, 43 (040511), 44 (040511), 46 (Page 171), 58, 63 (040511 - color presentation), 80 (Species of the genus *Juncus* are listed as a Rarely Poisonous and Suspected Poisonous Range Plant, based on the report that a species of this genus has caused loss of cattle in Europe, but no losses have been reported from American species.), **85** (090611 - color presentation), 101 (color photographs), 124 (040511), 127, 140 (Page 294)*

Lemnaceae: The Duckweed Family

***Lemna gibba* C. Linnaeus: Swollen Duckweed**

COMMON NAMES: Fat Duck Weed; Fat Duck-weed; Fat Duckweed; Gibbous Duck-weed; Gibbous Duckweed (Nebraska); Humpbacked Duckweed; Humped Duckweed; Inflated Duckweed; Swollen Duckweed; Thick Duckweed. DESCRIPTION: Aquatic or semi-aquatic perennial forb/herb (1/16 to 1/4 inch in length); the stipes are white; the fronds are green, dark green or yellow-green sometimes with red markings; based on few records located, flowering generally takes place between late March and late September (flowering records: one for late March, one for late May, one for early June, three for late June, one for early July, one for early September and one for late September. HABITAT: Within the range of this species it has been reported from seeps, around and in springs; along and in streams; streambeds; along and in creeks; in rivers; riverbeds; in pools; in ponds; muddy pondbeds; around and in lakes; bogs; ciénegas; marshlands; swampy areas; sloughs; edges of rivers and lakes; margins of lakes; bottomlands; reservoirs; canals; within ditches, and riparian growing in quiet brackish, stagnant and fresh water and on muddy, wet and moist ground occurring from sea level to 10,100 feet in elevation in wetland ecological formations within the forest, woodland, grassland and desertscrub ecological formations. NOTES: The free-floating fronds are often coherent in groups. *Lemna gibba* is native to south-central North America and coastal islands in the Caribbean Sea; southeastern, central and southern South America; Europe; western, central, eastern and southern Asia, and Africa and coastal islands in the Atlantic Ocean. *5, 6, 43 (112110), 44 (040911), 46 (Page 166), 58, 63 (112110 - color presentation), **85** (040911 - color presentation of dried material), 124 (040911), 140 (Page 295)*

Liliaceae: The Lily Family

Brodiaea pulchella var. *pauciflora* (see *Dichelostemma capitatum* subsp. *pauciflorum*)

***Dichelostemma capitatum* (G. Bentham) A. Wood subsp. *pauciflorum* (J. Torrey) G. Keator: Bluedicks**

SYNONYMY: *Brodiaea pulchella* (R.A. Salisbury) E.L. Greene var. *pauciflora* (J. Torrey) C.V. Morton; *Dichelostemma pulchellum* (R.A. Salisbury) A.A. Heller var. *pauciflorum* (J. Torrey) R.F. Hoover. COMMON NAMES: Blue Dicks (a name also applied to the species and genus *Dichelostemma*); Bluedicks (a name also applied to the species and genus *Dichelostemma*); Brodiaea (a name also applied to the species); Covena (a name also applied to the species); Covenna (a name also applied to the species); Coveria (a name also applied to the species); Crow Poison (a name also applied to the species and other species); Desert Blue-dicks (a name also applied to the species); Desert Hyacinth (a name also applied to the species and other species); Few Flower Blue Dicks; Few Flowered Blue Dicks; Few-flower Blue Dicks; Few-flowered Blue Dicks; Few-flower Blue-dicks; Few-flowered Blue-dicks; Few-flowered Bluedicks; Few-flowered Covena; Fewflowered Blue Dicks; Fool's Onion (a name also applied to other species); Fool's-onion (a name also applied to other species); Grass Nuts (a name also applied to the species and other species); Grass-nuts (a name also applied to the species and other species); Hahd (a name also applied to the species, Pima); Indian Hyacinth (not recommended, a name also applied to the species); Papago Lily (a name also applied to the species); Purplehead (a name also applied to the species); Wild Hyacinth (a name also applied to the species and other species). DESCRIPTION: Terrestrial perennial forb/herb (4 to 30 inches in height); the leaves are dark green; the flowers may be pale blue, blue, blue-lavender-purple, blue-purple, bluish-lavender, lavender, pink, pink-purple, purple or white; flowering generally takes place between late January and mid-June (additional records: one record for early January, one record for mid-July, one record for mid-September and one record for early November). HABITAT: Within the range of this species it has been reported from rocky mountains; rocky mountainsides; gravelly and sandy mesas; plateaus; along rocky canyons; rocky canyon bottoms; buttes; gravelly ridges; rocky ridgetops; foothills; rocky hills; sandy hilltops; rocky, gravelly hillsides; rocky and sandy slopes; rocky-sandy alluvial fans; bajadas; rocky outcrops; amongst rocks; prairies; plains; gravelly, gravelly-loamy and sandy flats; basins; sandy valley floors; along roadsides; rocky arroyos; along draws; gulches; ravines; along streams; silty creekbeds; rivers; riverbeds; along and in rocky and sandy washes; sandy beaches; gravelly terraces; sandy lowlands; ditches; around stock tanks; riparian areas, and disturbed areas growing in dry desert pavement; rocky, rocky-sandy, cindery, gravelly and sandy ground; cobbly-silty loam, gravelly loam and sandy loam ground; rocky clay, stony clay and clay ground, and silty ground, occurring from 900 to 8,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, the flowers are reported to be fragrant. *Dichelostemma capitatum* subsp. *pauciflorum* is native to southwest-central and southern North America. *5, 6, 15, 28 (recorded as *Dichelostemma pulchellum*, color photograph 680), 43 (081609), 44 (100311), 46 (recorded as *Dichelostemma pulchellum* (Salisb.) Heller var. *pauciflorum* (Torr.) Hoover, Page 182), 58, 63 (081609 - color presentation), 77 (recorded as *Dichelostemma pulchellum* (Salisb.) Heller, color photographs #56 and #103), **85** (100411 - color presentation), 86 (note, *Dichelostemma pulchellum*), 115 (color presentation of the species), 124 (100311 - no record of genus, species or subspecies), **HR***

Dichelostemma pulchellum var. *pauciflorum* (see *Dichelostemma capitatum* subsp. *pauciflorum*)

Poaceae (Gramineae): The Grass Family

Agrostis semiverticillata (see *Polypogon viridis*)

Andropogon contortus (see *Heteropogon contortus*)

***Aristida adscensionis* C. Linnaeus: Sixweeks Threeawn**

COMMON NAMES: Annual Bristle Grass (a name also applied to other species); Dog-town Grass (a name also applied to other species); Flechilla (Spanish); Needle Grass (a name also applied to other species and to the genus *Aristida*); Plumilla (Spanish); Purple Beard Grass (a name also applied to other species); Six Weeks Three Awn; Six Weeks Three Awn Grass; Six Weeks Threeawn; Six-weeks Needle Grass; Six-weeks Needle-grass; Six-weeks Needlegrass; Six-weeks Three-awn; Six-weeks Three-awn Grass; Six-weeks Threeawn; Sixweeks Three Awn; Sixweeks Three-awn; Sixweeks Threeawn; Three-awn (a name also applied to other species and to the genus *Aristida*); Tres Barbas (Spanish), Triple-awn Beard Grass (a name also applied to other species and to the genus *Aristida*); Triple-awned Beard Grass (a name also applied to other species and to the genus *Aristida*); Triple-awned Beard-grass (a name also applied to other species and to the genus *Aristida*); Zacate Cola de Zorra (Spanish); Zacate de Semilla (Spanish); Zacate Tres Barbas (a name also applied to other species and to the genus *Aristida*, Spanish); 6-Weeks 3-Awn. DESCRIPTION: Terrestrial annual tufted graminoid (ascending to erect culms 1¼ to 40 inches in height); the color of the foliage has been described as being bright green, purple or yellow curing to straw; the florets may be purple, purplish or red-purple; flowering may take place year-round between early January and late December; the seed heads may be purple. HABITAT: Within the range of this species it has been reported from rocky mountains; mountaintops; mountainsides; bedrock, rocky, rocky-sandy-loamy, gravelly-sandy-clayey and sandy mesas; plateaus; rocky canyons; rocky and sandy canyon bottoms; rocky gorges; talus slopes; crevices in rocks; shallow pockets of soil; buttes; rocky ledges; rocky ridges; rocky ridgetops; meadows; foothills; rocky and sandy hills; rocky-gravelly and gravelly hilltops; rocky hillsides; escarpments; sandy bases of escarpments; bedrock, bouldery, bouldery-sandy, rocky, rocky-gravelly, rocky-clayey, stony, stony-clayey, gravelly, gravelly-sandy, gravelly-loamy, gravelly-clayey, gravelly-clayey-loamy, sandy, sandy-clayey, sandy-clayey-loamy, sandy-silty, clayey and clayey-loamy slopes; rocky alluvial fans; gravelly-sandy bajadas; rocky outcrops; amongst boulders and rocks; sandy lava flows; sand hills; sandy dunes; sandy-loamy prairies; gravelly-sandy, sandy and clayey-loamy plains; rocky, rocky-sandy, gravelly, gravelly-loamy, gravelly-sandy-loamy, sandy, sandy-loamy and sandy-clayey-loamy flats; valley bottoms; along rocky railroad right-of-ways; along roadbeds; gravelly roadcuts; along rocky, rocky-gravelly, rocky-sandy, rocky-clayey-loamy, gravelly, gravelly-sandy, gravelly-loamy, sandy and sandy-loamy roadsides; along sandy arroyos; rocky draws; ravines; seeps; silty springs; along streams; streambeds; along creeks; creekbeds; along rivers; sandy riverbeds; along and in rocky, rocky-sandy, cobbly-pebbly-sandy, gravelly, gravelly-sandy and sandy washes; bedrock drainages; within rocky drainage ways; silty depressions; swales; banks of draws; along (rocky) edges of washes; along margins of washes; mudflats; sandy benches; shelves; terraces; bottomlands; floodplains; ditches; gravelly-sandy riparian areas; sandy waste places, and disturbed areas growing in dry desert pavement; bouldery, bouldery-sandy, rocky, rocky-gravelly, rocky-pebbly, rocky-sandy, shaley, stony, cobbly-pebbly-sandy, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-gravelly loam, rocky-sandy loam, rocky-clayey loam, gravelly loam, gravelly-sandy loam, gravelly-clayey loam, sandy loam, sandy-clayey loam, clayey loam and silty loam ground; rocky clay, stony clay, gravelly clay, gravelly-sandy clay, sandy clay and clay ground, and gravelly-sandy silty, sandy silty and silty ground, occurring from below sea level to 12,700 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant may be confused with *Aristida purpurea* var. *parishii*. *Aristida adscensionis* is native to south-central and southern North America; Central America; South America, and other tropic, sub-tropic and warm-temperate regions of the world. *5, 6, 15, 16, 33 (Page 242), 43 (080109), 44 (032611 - color presentation including habitat), 46 (Page 120), 58, 63 (081709 - color presentation), 77, **85** (100811 - color presentation of dried material), 105, 124 (032611), 140 (Pages 197 & 298)*

Aristida longiseta (see *Aristida purpurea* var. *longiseta*)

***Aristida purpurea* T. Nuttall: Purple Threeawn**

COMMON NAMES: Beard Grass; Blue Threeawn; Bunch Grass; Democrat Grass; Muskit Grass; Nealley Three-awn; No-eatum, O'gĭp [O'gwĭp, Toi'yaogwĭp, Yo'nĭp] (Uto-Aztecan: Shoshoni)[140]; Perennial Three-awn; Poverty Grass (a name also applied to other species and to the genus *Aristida*); Purple Aristida; Purple Beard Grass; Purple Needle Grass; Purple Needle-grass; Purple Three Awn; Purple Three-awn; Purple 3-awn; Purple Three-awn Grass; Purple Three-awned Grass; Purple Threeawn; Red Threeawn; Reverchon Three-awn; Purple Triple-awn Grass; Purple Triple-awned Grass; Red 3 Awn; Red Three Awn; Red Three Awn Grass; Red 3-awn; Red Three-awn; Red Three-awn Grass; Red Threeawn; Red Threeawn Grass; Reverchon Threeawn; Spear-grass; Three Awn (a name also applied to other species and to the genus *Aristida*); Three-awn (a name also applied to other species and to the genus *Aristida*); Threeawn (a name also applied to other species and to the genus *Aristida*); Tres Barbas (a name also applied to other species and to the genus *Aristida*); Tres Barbas Purpurea; Western Beard Grass; Western Beard-grass; Wire Grass (a name also applied to other species and to the genus *Aristida*); Wiregrass. DESCRIPTION: Terrestrial annual or perennial graminoid (a bunchgrass (clumpgrass) with erect culms 4 to 40 inches in height and up 4 to 12 inches in width at the base; plants were observed and reported as being 8 to 12 inches in height and 4 to 6 inches in width at the base, plants were observed and reported as being 14 inches in height and 2 to 6 inches in width at the base); the foliage is light to dark green curing to gray or straw; the inflorescence is green, purplish or dark red-purple; the awns are purple; flowering generally takes place between early January and mid-August; however, flowering may occur throughout the year under favorable conditions (additional records, including varieties: one for early September, six for mid-September, two for late September, four for early October, three for late October, two for mid-November and two for late November). HABITAT: Within the range of this species it has been reported from mountains; rocky summits; gravelly-sandy, sandy and clayey-loamy mesas; plateaus; along canyon rims; rocky cliffs; chutes; along rocky and sandy canyons; rocky canyonsides; along bouldery-

rocky-cobbly, rocky, rocky-gravelly, gravelly-sandy and sandy canyon bottoms; scree; talus slopes; crevices in boulders and rocks; gravelly bluffs; buttes; rocky knolls; ledges; bouldery and rocky, gravelly-sandy-clayey and sandy ridges; ridgetops; silty ridgelines; rocky openings in forests; along meadows; foothills; rocky, gravelly, sandy, loamy and clayey hills; rocky, rocky-gravelly and gravelly hillsides; sandy bases of escarpments; bedrock, bouldery, bouldery-gravelly-loamy, rocky, rocky-cobbly, rocky-sandy, rocky-sandy-loamy, shaley, cindery, gravelly, gravelly-sandy, gravelly-sandy-loamy, gravelly-sandy-clayey, gravelly-clayey, sandy, loamy, clayey, clayey-loamy, silty-loamy and silty-clayey slopes; sandy alluvial fans; rocky, rocky-gravelly, gravelly and sandy bajadas; bedrock, bouldery, rocky and shaley outcrops; amongst boulders and rocks; sandy lava flows; sand hills; sand dunes; in blow sand; gravelly and silty banks; breaks; cobbly-sandy terraces; rocky-sandy and sandy steppes; rocky, sandy, sandy-clayey, clayey, clayey-loamy and silty-loamy prairies; bouldery-rocky, rocky, gravelly, gravelly-sandy and sandy plains; rocky, rocky-sandy, cindery, gravelly, gravelly-loamy, gravelly-clayey, sandy, loamy, clayey, clayey-loamy and silty-clayey flats; rocky, gravelly-sandy and sandy valley floors; valley bottoms; along railroad right-of-ways; two-tracks and roadbeds; along gravelly, gravelly-loamy, sandy, sandy-loamy and clayey roadsides; along and in rocky, gravelly, sandy and clayey-loamy arroyos; along sandy bottoms of arroyos; along and in sandy draws; gulches; gravelly-sandy bottoms of gulches; rocky gullies; rocky-gravelly ravines; springs; in rocks along streams; bouldery streambeds; along creeks; along and in creekbeds; riverbeds; along and in bouldery, bouldery-cobbly-sandy, rocky, rocky-sandy, gravelly, gravelly-sandy and sandy washes; along and in bedrock, rocky, gravelly-sandy and sandy drainages; bouldery-rocky, rocky and pebbly drainage ways; sandy lakebeds; swamps; depressions; (rocky, gravelly and sandy) banks of washes; (sandy) edges of rivers and washes; (gravelly) margins of washes; shorelines of lakes; mudflats; gravel bars; sandy beaches; rocky-clayey, gravelly and sandy benches; gravelly terraces; bottomlands; gravelly and sandy floodplains; mesquite bosques; along ditches; recently burned areas; riparian areas, and disturbed areas growing in moist (rarely reported) and dry rocky desert pavement; bouldery, bouldery-rocky, bouldery-rocky-cobbly, bouldery-cobbly-sandy, bouldery-cindery, bouldery-gravelly, rocky, rocky-cobbly, rocky-gravelly, rocky-sandy, shaley, shaley-sandy, cobbly-sandy, cindery, gravelly, gravelly-sandy, pebbly and sandy ground; bouldery-gravelly loam, rocky loam, rocky-sandy loam, rocky-clayey loam, cobbly-gravelly loam, gravelly loam, gravelly-sandy loam, gravelly-clayey loam, sandy loam, sandy-clayey loam, sandy-silty loam, clayey loam, silty loam, humusy loam and loam ground; rocky clay, rocky-sandy clay, gravelly clay, gravelly-sandy clay, sandy clay, silty clay and clay ground, and gravelly silty, sandy silty and silty ground, occurring from sea level to 9,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant may be grazed by Black-tailed Prairie Dogs (*Cynomys ludovicianus*) and White-tailed Jackrabbits (*Lepus townsendii*). *Aristida purpurea* is native to central and southern North America. *5, 6, 15, 33 (Page 244), 43 (081709), 44 (032611), 46 (Page 120), 48, 58, 63 (081709 - color presentation), **85** (100911 - color presentation), 105, 124 (032611), 140 (Page 197)*

Aristida purpurea T. Nuttall var. *longiseta* (E.G. von Steudel) G. Vasey: Fendler Threeawn

SYNONYMY: *Aristida longiseta* E.G. von Steudel. COMMON NAMES: Dog Town Grass; Dog-town Grass (a name also applied to other species); Dogtown Grass (Dogtown-grass is a name also applied to other species); Fendler Threeawn (a name also applied to var. *fendleriana*); Fendler's Threeawn (a name also applied to var. *fendleriana*); Large Purple Aristida (Iowa); Long-awn Aristida; Long-awn Needle Grass (New Mexico); Long-awned Aristida; Long-awned Needlegrass (New Mexico); Long-awned Three-awn; Long-awned Three-awn Grass; Poverty Grass (a name also applied to the species, to other species and to the genus *Aristida*, South Dakota); Purple Aristida (Iowa, a name also applied to the species); Red Three Awn; Red Three-awn; Red Threeawn; Three-awn Grass (a name also applied to the species, to other species and to the genus *Aristida*); Tres Barbas Rojo (Spanish); Wire Grass (a name also applied to the species, to other species and to the genus *Aristida*). DESCRIPTION: Terrestrial perennial tufted graminoid (a bunchgrass (clumpgrass) with erect culms 6 to 24 inches in height and 4 to 8 inches in width at the base); the foliage is green curing to tan with older growth remaining on the plant from the prior growing season giving it a grayish-green color; the inflorescence is purple, red or red-purple; flowering generally takes place between early May and late October (additional records: one for late November; flowering beginning as early as April has been reported); the awns are purple or red-purple. HABITAT: Within the range of this species it has been reported from mountains; rocky-gravelly-silty, gravelly-sandy, sandy and clayey-loamy mesas; plateaus; along sandy canyon rims; rocky cliffs; canyons; rocky canyon walls; along rocky-gravelly and sandy canyon bottoms; talus slopes; shaley and sandy bluffs; rocky, rocky-gravelly and sandy-clayey buttes; rocky knolls; rocky, rocky-sandy, shaley, gravelly-sandy, gravelly-sandy-clayey and sandy ridges; rocky ridgetops; silty ridgelines; rocky openings in forests; along rocky meadows; gravelly foothills; rocky, gravelly, sandy, clayey and loamy hills; hilltops; rocky, rocky-sandy and gravelly hillsides; rocky, rocky-gravelly, rocky-loamy, rocky-clayey-loamy, shaley, stony, stony-gravelly, gravelly, gravelly-sandy-loamy, gravelly-sandy-clayey, gravelly-clayey-loamy, sandy, sandy-loamy, loamy, clayey, clayey-loamy, silty-loamy and silty-clayey slopes; sandy bajadas; rocky, rocky-clayey and shaley outcrops; amongst boulders and rocks; lava flows; sand hills; sand dunes; breaks; sandy and clayey uplands; sandy steppes; rocky, gravelly, sandy, sandy-clayey, clayey, clayey-loamy, silty-loamy-clayey and silty-clayey prairies; rocky, stony, gravelly, gravelly-sandy, sandy and sandy-clayey plains; rocky, rocky-sandy, gravelly, sandy, sandy-clayey, loamy, clayey-loamy and silty-clayey flats; sandy basins; sandy valley floors; valley bottoms; along railroad right-of-ways; along gravelly, gravelly-sandy, gravelly-loamy, sandy, sandy-loamy and clayey roadsides; sandy and clayey-loamy arroyos; sandy bottoms of arroyos; within sandy, clayey and silty draws; bottoms of draws; gravelly-sandy bottoms of gulches; rocky gullies; within sandy ravines; along streams; streambeds; along creeks; sandy creekbeds; along rivers; riverbeds; along and in gravelly and sandy washes; along and in bedrock, rocky-sandy, gravelly-sandy, sandy and clayey drainages; drainage ways; blowouts; swales; (marshy, gravelly, sandy and silty) banks of streams, creekbeds, rivers, washes and drainages; (sandy) edges of rivers; (gravelly) margins of streams, washes, pools and lakes; gravelly benches; in river breaks; sandy terraces; bottomlands; sandy and clayey floodplains; lowlands;

along fencerows; clayey catchments; sandy shorelines of reservoirs; ditches; clayey-loamy riparian areas; recently burned areas, and disturbed areas growing in muddy and wet, moist and dry bouldery, bouldery-rocky, rocky, rocky-gravelly, rocky-sandy, shaley, shaley-sandy, stony, stony-gravelly, cindery, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-clayey loam, gravelly loam, gravelly-sandy loam, gravelly-clay loam, sandy loam, clayey loam, silty loam, humusy loam and loam ground; rocky clay, gravelly-sandy clay, sandy clay, silty-loamy clay, silty clay and clay ground, and rocky-gravelly silty, gravelly silty, sandy silty and silty ground, occurring from 700 to 9,000 feet in elevation in the forest, woodland, scrub, grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. Fendler Threeawn is a preferred grass of the Bison (*Bos bison*). *Aristida purpurea* var. *longiseta* is native to central and southern North America. *5, 6, 33 (recorded as *Aristida longiseta* Steud., Page 243), 43 (081809), 44 (040911), 46 (recorded as *Aristida longiseta* Steud., Page 120), 48 (species), 58 (recorded as *Aristida longiseta* Steud.), 63 (081809), 77, **85** (101011 - color presentation of dried material), 105 (recorded as *Aristida longiseta* Steud.), 124 (040911)*

Aristida ternipes A.J. Cavanilles: Spidergrass

COMMON NAMES: Aristida Grass (a name that could possibly be applied to any other species in the genus *Aristida*); Ba'aso (Uto-Aztecan: Mayo)[140]; Chak-suuk <tok-suuk> (Mayan: Maya)[140]; Guatoco (Uto-Aztecan: Guarijío)[140]; Hahay'iqalmongwa <hahaí'iqálmongwa> (Uto-Aztecan: Hopi)[140]; Otatillo (a name also applied to other species, Spanish: Mexico)[140]; Spider Grass; Spidergrass; Spider Three-awn; Spider Threeawn; Spider Three-awn Grass; Three Awn (a name also applied to other species and the genus *Aristida*); [Poverty, Six-weeks] Three Awn (English)[140]; Three-awn (a name also applied to other species and the genus *Aristida*); Three-awn Spidergrass; Threeawn (a name also applied to other species and the genus *Aristida*); Tl'oh ("Grass" a name applied to grasses, Athapascan: Western Apache)[140]; Tres Barbas Arqueado ("Arched Three Barbs", Spanish: Mexico)[140]; Wahá‡ ("Grass" a name applied to any grass, Uto-Aztecan: Northern Paiute)[140]; Waṣai ("Grass" a name applied to any grass, Uto-Aztecan: Tohono O'odham)[140]; Zacate (Spanish)[140]; Zacate Araña [de Tres Barbas] ("[Three-awn] Spider Grass" names also historically applied to other species, Spanish: Arizona, New Mexico, Sonora)[140]; Zacate Barba ("Barbed Grass", Spanish: Sonora)[140]; Zacate Barbón (Mexico: Sonora). DESCRIPTION: Terrestrial perennial tufted graminoid (a bunchgrass (clumpgrass) 10 to 79 inches in height; one plant was observed and described as being 52 inches in height and 4 inches in diameter at the base); flowering generally takes place between mid-March and mid-December. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; bouldery-cobbly and rocky mesas; plateaus; rock cliffs; rocky canyons; rocky canyon walls; along rocky canyon bottoms; rocky talus; crevices in rocks; rock ledges; rocky ridges; rocky ridgetops; meadows; foothills; rocky, rocky-gravelly, gravelly-sandy, gravelly-clayey-loamy and sandy hills; rocky hillsides; bedrock, bouldery, rocky, rocky-gravelly, rocky-gravelly-clayey, rocky-loamy, gravelly, gravelly-sandy-loamy, gravelly-loamy, sandy, sandy-loamy, sandy-clayey, sandy-clayey-loamy and loamy slopes; alluvial fans; gravelly and sandy bajadas; rocky outcrops; amongst boulders and rocks; cobbly and gravelly plains; bouldery-sandy, rocky-loamy, gravelly, gravelly-sandy, sandy and silty flats; valley floors; valley bottoms; coastal plains; in roadbeds; along bouldery-rocky and gravelly roadsides; along rocky and sandy arroyos; rocky bottoms of arroyos; along draws; ravines; along streams; streambeds; along bouldery creeks; rocky creekbeds; along rivers; riverbeds; along and in rocky and sandy washes; within drainages; banks of creeks; along edges of washes; sandy beaches; benches; rocky terraces; bottomlands; sandy floodplains; mesquite bosques; along fencelines; stock tanks [charcos, repressos]; ditches; sandy riparian areas, and disturbed areas growing in dry bouldery, bouldery-rocky, bouldery-cobbly, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, cobbly, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-gravelly loam, rocky-clayey loam, gravelly loam, gravelly-sandy loam, gravelly-clayey loam, sandy loam, sandy-clayey loam, humusy loam and loam ground; sandy clay ground, and sandy silty and silty ground, occurring from sea level to 6,800 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Aristida ternipes* is native to southwest-central and southern North America; Central America, and northern South America. *5, 6, 15, 16, 33 (Page 238), 43 (092709), 44 (033011), 46 (Page 119), 58, 63 (092709 - color presentation), 77, 85 (101011 - color presentation), 124 (033011 - no record of species; genus record), 140 (recorded as *Aristida ternipes* Cavanilles var. *ternipes*, Pages 196-198 & 298), **HR***

Aristida ternipes A.J. Cavanilles var. *ternipes*: Spidergrass

COMMON NAMES: Ba'aso (a name applied to the species, Uto-Aztecan: Mayo)[140]; Chak-suuk <tok-suuk> (a name applied to the species, Mayan: Maya)[140]; Guatoco (a name applied to the species, Uto-Aztecan: Guarijío)[140]; Hahay'iqalmongwa <hahaí'iqálmongwa> (a name applied to the species, Uto-Aztecan: Hopi)[140]; Otatillo (a name also applied to the species and other species, Spanish: Mexico)[140]; Spider Grass (a name also applied to the species); Spidergrass (a name also applied to the species); Three Awn (a name also applied to the species, other species and to the genus *Aristida*); Three-awn (a name also applied to the species, other species and to the genus *Aristida*); Threeawn (a name also applied to the species, other species and to the genus *Aristida*); Tl'oh ("Grass" a name applied to grasses, Athapascan: Western Apache)[140]; Tres Barbas Arqueado ("Arched Three Barbs" a name applied to the species, Spanish: Mexico)[140]; Typical Spider Grass; Typical Spider Three-awn; Typical Spider Three-awn Grass; Typical Spider Threeawn; Typical Spidergrass; Typical Three-awn Spidergrass; Wahá‡ ("Grass" a name applied to any grass, Uto-Aztecan: Northern Paiute)[140]; Waṣai ("Grass" a name applied to any grass, Uto-Aztecan: Tohono O'odham)[140]; Zacate (Spanish)[140]; Zacate Araña (a name also applied to the species and other species); Zacate Araña [de Tres Barbas] ("[Three-awn] Spider Grass" names also historically applied to the species and other species, Spanish: Arizona, New Mexico, Sonora)[140]; Zacate Barba ("Barbed Grass" a name applied to the species, Spanish: Sonora)[140]; Zacate Barbón (a name also applied to the species, Mexico: Sonora). DESCRIPTION: Terrestrial perennial tufted graminoid (a bunchgrass (clumpgrass) 16 to 79 inches in height, plants were observed that were 6½ feet in height and 8 inches in width at the base); flowering generally

takes place between mid-March and mid-December. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; rocky mesas; plateaus; rocky canyons; rocky canyon walls; along rocky canyon bottoms; rocky talus; crevices in rocks; rocky ridgetops; foothills; rocky, rocky-gravelly, gravelly-sandy and gravelly-clayey-loamy hills; rocky hillsides; bedrock, bouldery, rocky, rocky-gravelly, rocky-gravelly-clayey, gravelly and sandy slopes; gravelly and sandy bajadas; rocky outcrops; amongst boulders; cobbly plains; gravelly, gravelly-sandy and sandy flats; rocky valley floors; along bouldery-rocky and gravelly roadsides; rocky and sandy arroyos; rocky bottoms of arroyos; along draws; along streams; streambeds; along creeks; riverbeds; along and in sandy washes; within drainages; ciénegas; terraces; bottomlands; sandy floodplains; riparian areas, and disturbed areas growing in dry rocky desert pavement; bouldery, bouldery-rocky, bouldery-sandy, rocky, rocky-gravelly, cobbly, gravelly, gravelly-sandy and sandy ground; rocky-gravelly loam, rocky-clayey loam and gravelly-clayey loam ground; rocky-gravelly clay ground, and sandy silty ground, occurring from 200 to 6,300 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Aristida ternipes* var. *ternipes* is native to southwest-central and southern North America; Central America, and northern South America. *5, 6, 33 (species, Page 238), 43 (092709), 44 (041211 - no record of the variety; genus and species record), 46 (species, Page 119), 63 (092709), **85** (101311 - color presentation of dried material), 124 (041311 - no record of species or variety; genus record), 140 (Pages 197 & 298)*

Arundo donax C. Linnaeus: Giant Reed

COMMON NAMES: Arundo Grass (a name also applied to the genus *Arundo*); Caña (Spanish); Caña Común (Spanish); Caña de Castilla (Spanish); Cana Brava; Caña Hueca (Hispanic); Cana-do-brejo (Portuguese: Brazil); Cana-do-reino (Portuguese: Brazil); Cañaveral (Spanish); Canne de Provence (French); Canno-do-reino (Portuguese: Brazil); Canuto (Hispanic); Capim-plumoso (Portuguese: Brazil); Carricillo (Hispanic); Carrizo (a name also applied to other species, Spanish); Carrizo Cane; Carrizo de la Selva (Hispanic); Carrizo Grande; Carrizo Reed; Danube Reed; Danubian Reed; Donax; Donax Cane; Elephant Grass (a name also applied to other species); Giant Arundo Grass; Giant Cane (a name also applied to other species); Giant Cane Carrizo; Giant Carrizo; Giant Carrizo Reed; Giant Donax; Giant Donax Cane; Giant Reed (a name also applied to other species); Giant-reed; Giant River Reed; Giant Spanish Cane; Giant Spanish Reed; Grand Roseau (French); Gubaguih (Hispanic); Halal (Hispanic); Invasive Giant Reed; Italian Reed; Oboe Reed; Pakaab (Hispanic); Pfahlrohr (German); Provence Cane; Spaanse-riet; Spanish Cane; Spanish Reed; Spanish-reed; Tarro (Hispanic); Tekhalal (Hispanic); Variegated Donax; Weedy Giant Reed. DESCRIPTION: Terrestrial perennial graminoid, subshrub or shrub (a giant reed-like grass with erect culms 6 to 33 feet in height); the flowers are in cream or whitish plumes; flowering may take place throughout the year, but mostly between early spring and fall. HABITAT: Within the range of this species it has been reported from mountains; rocky canyons; rocky canyon bottoms; bluffs; rocky slopes; plains; valleys; coastal basins; along sandy roadsides; arroyos; seeps; along seepage streams; springs; along streams; in sandy soils along creeks; along and in rivers; along and in sandy riverbeds; along sandy washes; along drainages; waterholes; along lakes; along (sandy) banks of streams, creeks and rivers; edges of rivers; margins of ponds and lakes; sandy terraces; floodplains; along canal banks; along culverts; along and in ditches; ditch banks; sandy riparian areas, and disturbed areas growing in shallow water and wet, moist and dry (periodically flooded) rocky, gravelly and sandy ground and sandy clay and clay ground, occurring from sea level to 8,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant which poses a significant threat to our native biotic communities. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used in the making of splints, yellow dyes, musical instruments and ceremonial items. Giant Reed was intentionally introduced into the Los Angeles, California area in the early 1800's; its clonal root masses (to over 3 feet thick) may extend to several acres. Giant Reed Grass may be confused with the native Common Reed Grass, so proper identification must be assured prior to implementing control measures. *Arundo donax* is native to western, central, eastern and southern Asia and coastal islands in the Pacific and Indian Oceans. *5, 6, 18, 22 (color photographs), 26 (color photograph), 30, 33 (Page 93), 43 (071209), 44 (041311 - color photograph), 46 (Page 89), 63 (041311 - color presentation including habitat), 77, **85** (101311 - color presentation including habitat), 109, 115 (color presentation), 124 (041311 - no record of genus or species), 127*

Avena fatua C. Linnaeus: Wild Oat

COMMON NAMES: Aveia-brava (Portuguese: Brazil); Aveia-fátua (Portuguese: Brazil); Aveia-selvagem (Portuguese: Brazil); Avena Cimarrona (Spanish); Avena Loca (a name also applied to other species, Spanish); Avena Silvestre (Spanish); Avoine Folle (French); Common Wild Oat; Common Wild Oats; Common Wildoat; Common Wildoats; Drake; Fat Oat; Fat Wild Oat; Flaver; Flax Grass; Flax-grass; Flaxgrass; Flughafer (German); Folle Avoine (French); Havercorn (a name also applied to other species); Hever; Oat Grass (a name also applied to other species and to the genus *Avena*); Oatgrass (a name also applied to other species); Pin Grass (a name also applied to other species); Poor Oat; Potato Oat; Potato Oats; Spring Wild Oat; Spring Wild-oat; Tartarean Oat (a name also applied to other species); Wheat Oat; Wheat Oats; Wild Oat (a name also applied to other species); Wild Oats (a name also applied to other species and to the genus *Bromus* in New Mexico); Windhafer (German). DESCRIPTION: Terrestrial annual graminoid (erect culms 3 to 79 inches in height); the foliage is green; the flowers are green; flowering generally takes place between early February and late August (additional records: two for mid-January, one for early October, one for late October, one for mid-December and one for late December). HABITAT: Within the range of this species it has been reported from mountains; cliffs; rocky and rocky-sandy canyons; rocky canyon bottoms; pockets of soil in rocks; bluffs; ridgetops; openings in woodlands; meadows; hills; rocky, cobbly-sandy-loamy and clayey hillsides; rocky, rocky-loamy, rocky-clayey, sandy, sandy-loamy, loamy, loamy-clayey and clayey slopes; sandy bajadas; rocky outcrops; sandy plains; sandy, clayey and clayey-loamy flats; basins; valley floors; coastal flats; coastal hills; along railroad right-of-ways; along rocky,

rocky-gravelly-loamy, gravelly, gravelly-loamy and clayey-loamy roadsides; seeps; springs; along streams; sandy streambeds; along and in rocky-cobbly creeks; creekbeds; along rivers; along and in gravelly and sandy washes; drainages; freshwater marshes; depressions; swales; (rocky) banks of streams, rivers, riverbeds and washes; (rocky) edges of ponds and lakes; margins of washes; benches; terraces; bottomlands; floodplains; lowlands; stock tanks; canals; canal banks; along ditches; silty ditch banks; bouldery and sandy riparian areas; waste places and disturbed areas growing in wet, moist and dry bouldery, rocky, rocky-cobbly, rocky-sandy, gravelly and sandy ground; rocky loam, rocky-gravelly loam, cobbly-sandy loam, gravelly loam, sandy loam, clayey loam, silty loam and loam ground; bouldery clay, rocky clay, loamy clay and clay ground, and silty ground, occurring from sea level to 8,300 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant which poses a significant threat to our native biotic communities. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used for food. Seed can remain dormant in soil for as long as 10 years. *Avena fatua* is native to Europe; Asia, and northern Africa. *5, 6, 15, 16, 33 (Page 166), 43 (092709), 44 (032611 - color photograph), 46 (Page 100), 63 (092709 - color presentation), 68, 77, **85** (101311 - color presentation), 101 (color photograph), 124 (032611), 127*

***Bouteloua aristidoides* (K.S. Kunth) A.H. Grisebach: Needle Grama**

COMMON NAMES: Aceitilla (Spanish); Navajita; Needle Grama; Needle Grama Grass; Needle Gramma; Needlegrama; Pasto de Cabra (Spanish); Six Weeks Grama Grass; Six Weeks Needle Grama; Six-weeks Needle Grama; Sixweeks Needle Grama; Tochite (Spanish); Zacate Saitillo. DESCRIPTION: Terrestrial annual tufted graminoid (decumbent and/or geniculate culms 2 to 24 inches in height); the foliage is light green or purple curing to straw; the flowers are purplish; the anthers are yellow or yellow & red; flowering generally takes place between mid-July and late October (additional records: two for early January, one for late January, one for early February, one for early March, one for mid-March, five for early April, one for late April, one for early May, one for mid-November, two for late November and one for late December). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; sandy mesas; sandy mesas; cliffs; along rocky canyons; canyon bottoms; chasms; bluffs; ridges; meadows; rocky hills; rocky-gravelly hilltops; rocky hillsides; sandy bases of escarpments; rocky, rocky-gravelly, rocky-clayey-loamy, gravelly, gravelly-sandy, gravelly-sandy-loamy, gravelly-clayey, gravelly-clayey-loamy, sandy, sandy-loamy, sandy-clayey, sandy-silty and clayey-loamy slopes; gravelly bajadas; rocky coves; sand hills; sand dunes; sand hummocks; sand dunes; in blow sand; edges of dune fields; plains; rocky, gravelly, sandy and sandy-loamy flats, basins; clayey valley floors; loamy valley bottoms; coastal dunes; gravelly, gravelly-sandy, sandy and sandy-loamy roadsides; within arroyos; sandy bottoms of arroyos; stony-sandy draws, seeps; springs; along streams; streambeds; creekbeds; along rivers; sandy riverbeds; along and in rocky, gravelly, gravelly-sandy, sandy, clayey and silty-clayey washes; within drainages; ciénegas; depressions; (sandy-loamy) banks of washes; margins of washes; (rocky-sandy) shores of lakes; benches; gravelly deltas; sandy terraces; loamy bottomlands; sandy and silty floodplains; clayey lowlands; sandy mesquite bosques; riparian areas; waste places, and disturbed areas growing in dry rocky desert pavement; bouldery, rocky, rocky-gravelly, rocky-sandy, stony-sandy, gravelly, gravelly-sandy and sandy ground; rocky-clayey loam, gravelly-sandy loam, gravelly-clayey loam, sandy loam, clayey loam and loam ground; gravelly clay, sandy clay, silty clay and clay ground, and sandy silty and silty ground, occurring from sea level to 8,000 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: The Six-weeks Needle Grama is a favored food of the Rufous-winged Sparrow (*Aimophila carpalis*). *Bouteloua aristidoides* is native to southwest-central and southern North America. *5, 6, 15, 16, 30, 33 (Page 141), 43 (092809), 44 (032711), 46 (Page 128), 58, 63 (052809 - color presentation), 68, 77, **85** (101611 - color presentation), 105, 124 (032711 - no record of species; genus record), 140 (Pages 200 & 299)*

***Bouteloua barbata* M. Lagasca y Segura: Sixweeks Grama**

SYNONYMY: *Bouteloua barbata* M. Lagasca y Segura var. *barbata*. COMMON NAMES: Annual Six Weeks Grama; Low Grama; Low Grama Grass; Low Gramma; Low Gramma Grass; Navajita (Spanish); Navajita Anual (Spanish); Sand Grama; Six Weeks Grama; Six-weeks Grama; Six-weeks Grass; Sixweeks Grama; Zacate Liebrero (Spanish). DESCRIPTION: Terrestrial annual tufted graminoid (a bunchgrass (clumpgrass) with ascending and/or erect and spreading culms ½ to 18 inches in height); the foliage is light green or dark violet curing to straw; the spikelets (flowers) are purplish, red-green or reddish; flowering may take place throughout the year, but occurs mostly between late July and late November (additional records: one for mid-January, one for early February, two for mid-February, one for early March, one for mid-March, one for late March, two for late April, one for early July, two for mid-December and two for late December). HABITAT: Within the range of this species it has been reported from mountains; mountaintops; gravelly mountainsides; gravelly and sandy mesas; sandy bases of cliffs; rocky canyons; canyon bottoms; talus; sandy crevices in bedrock; buttes; ledges; rocky ridgetops; meadows; along foothills; bouldery, rocky, rocky-sandy, gravelly and sandy hills; rocky-gravelly hilltops; rocky hillsides; sandy bases of escarpments; rocky, rocky-gravelly, gravelly, gravelly-sandy-clayey, gravelly-clayey, sandy, sandy-loamy, sandy-clayey, clayey and clayey-loamy slopes; rocky and gravelly alluvial fans; sandy bajadas; rocky outcrops; amongst rocks; sandy lava flows; sand hills; sand dunes; sand hummocks; margins of dunes; blow-sand deposits; gravelly debris fans; prairies; sandy plains; rocky, rocky-sandy, gravelly, gravelly-sandy, gravelly-sandy-loamy, gravelly-loamy, sandy, sandy-loamy, clayey and silty flats; basins; sandy and sandy-clayey valley floors; valley bottoms; beach dunes; sandy coastal plains; shell mounds; along railroad right-of-ways; rocky-gravelly roadbeds; along rocky-gravelly, cobbly, gravelly, sandy and sandy-clayey-loamy roadsides; along and in sandy arroyos; bottoms of arroyos; draws; gullies; along streams; streambeds; along sandy creeks; sandy riverbeds; along and in rocky, gravelly, sandy and silty-clayey washes; along and in sandy drainages; along waterways; pebbly-sandy waterholes; oases; sandy and silty lakebeds; sandy playas; depressions; swales; along (gravelly and sandy) banks of rivers and washes; edges of washes and

lakebeds; (rocky-sandy) shores of lakes; mudflats; sand bars; sandy-clayey-loamy beaches; benches; gravelly terraces; bottomlands; sandy floodplains; mesquite bosques; around stock tanks (charcos/represos); silty ditches; sandy ditch banks; sandy riparian areas; gravelly waste places, and disturbed areas growing in dry desert pavement; bouldery, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, cobbly, gravelly, gravelly-sandy, pebbly-sandy and sandy ground; rocky loam, gravelly loam, gravelly-sandy loam, sandy loam, sandy-clayey loam and clayey loam ground; gravelly clay, gravelly-sandy clay, sandy clay, silty clay and clay ground, and sandy silty and silty ground, occurring from sea level to 8,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. Sixweeks Grama (annual) may be confused with the short-lived perennial Rothrock Grama (*Bouteloua rothrockii*). *Bouteloua barbata* is native to southwest-central and southern North America. *5, 6, 15, 16 (recorded as *Bouteloua barbata* Lag. var. *barbata*), 33 (Page 153), 43 (092909), 44 (032711), 46 (Page 127), 58, 63 (092809 - color presentation), 68, 77, **85** (101611 - color presentation), 105, 124 (032711), 140 (Page 299 - recorded as *Bouteloua barbata* Lagasca var. *barbata*)*

Bouteloua barbata var. *barbata* (see *Bouteloua barbata*)

Bouteloua barbata var. *rothrockii* (see *Bouteloua rothrockii*)

***Bouteloua curtipendula* (A. Michaux) J. Torrey: Sideoats Grama**

COMMON NAMES: Avenilla (Hispanic); Banderilla ("Little Flag", Spanish: Baja California, Chihuahua, Sonora); [Pasto] Banderilla ("Little Flag [Grass]", Spanish: Chihuahua, Sonora)[140]; Banderita (Hispanic); Dadpk Waṣai <da:pk washai, dadpk washai> ("Slippery Grass / Smooth Grass", Uto-Aztecan: Hiá Ceḍ O'odham, Tohono O'odham)[140]; Fall Grama Grass; Fall Gramma Grass; Grama (a name also applied to other species and the genus *Bouteloua*, Spanish: Oklahoma); Grama-azul (Portuguese: Brazil); Grama del Cerro (Hispanic); Grama Grass (a name also applied to other species and the genus *Bouteloua*, Nebraska); Gramilla ("Little Grass", Spanish: Mexico)[140]; Hairy Mesquite Grass (a name also applied to other species, New Mexico); Hairy Muskit (a name also applied to other species); Harushö (Uto-Aztecan: Hopi)[140], Isnáap Ic Is ("Whose Fruit Is On One Side" a name also applied to other species, Hokan: Seri)[140]; Mesquit Grass (a name also applied to other species); Mesquite Grass (a name also applied to other species [Nebraska] and the genus *Bouteloua*); Muskit (Nebraska, a name also applied to other species); Navaja Sa'i <sha'i> ("Grass" a word used for any grass, Uto-Aztecan: Mountain Pima)[140]; Navajita ("Little Knife" a name also applied to other species, Spanish: Baja California, Chihuahua, Sonora); Navajita Banderilla (Spanish: Baja California, Chihuahua, Sonora)[140]; Owiv ("Grass", Uto-Aztecan: Ute); Prairie Oats (Kansas)[140]; Qm-u-se'-a (Havasupai); Racemed Atheropogon; Racemed Boutelous; Side Oat Grama; Side Oats; Side Oats Grama (Nebraska); Side Oats Grama Grass; Side Oats Gramma Grass; Side Oats Grammagrass; Side-oat Grama; Sideoat Gramma; Side-oat Gramma; Side-oats; Side-oats Grama (a name also applied to the genus *Bouteloua* - Nebraska); Side-oats Grama Grass; Side-oats Grama-grass; Side-oats Gramina; Side-oats Gramma; Side-oats Gramma-grass; Side-oats Gramma Grass; Side-oats Grass; Sideoat Grama; Sideoat Gramma; Sideoats Grama (English)[140]; Sideoats Grama Grass; Sideoats Gramma-grass; Sideoats Grass; Ta Tăn Iŋ (Kiowa Tanoan: Tewa)[140]; Tall Grama (a name also applied to other species [Nebraska] and the genus *Bouteloua*); Tall Grama Grass; Tall Grama Oats (Iowa); Tall Grama-grass; Tall Gramma Grass; Tall Mesquite (a name also applied to other species); Tall Mesaquite Grass; Tap'eñita (Kiowa Tanoan: Tewa)[140]; Tł'oh ("Grass", a word used for grasses, Athapascan: Western Apache)[140]; Tł'oh Łichíí <y'oh lici> ("Red Grass", Athapascan: Navajo)[140]; Tł'oh Nástasí ("Grass That Bends Back Around", Athapascan: Navajo)[140]; Tłobindaiłkehntii ("Grass With Seeds Lying on Top of One Another", Athapascan: Chiricahua and Mescalero Apache)[140]; Uitsaku Juatarhu (Purépecha); Wahái ("Grass" a word used for grasses, Uto-Aztecan: Northern Paiute)[140]; Wiry Grama; Zacate de Navaja ("Knife Grass", Spanish: Sonora)[140]. DESCRIPTION: Terrestrial perennial (usually) tufted graminoid (a bunchgrass (clumpgrass) with decumbent, geniculate, ascending and/or erect culms 3 to 52 inches in height and up to 2 feet in width at the base; one plant was observed and described as being 12 to 16 inches in height and 16 inches in width at the base, one plant was observed and described as being 28 inches in height and 4 inches in width at the base); the foliage is bluish-green or purple-green curing to reddish-brown or straw; the flowers are bright purple; the anthers are orange, purple, red, yellow or dark yellow; flowering generally takes place between late April and mid-November (additional records: one for early April, one for early December); the mature fruits are red-brown. HABITAT: Within the range of this species it has been reported from mountains; mountaintops; bouldery, rocky, rocky-gravelly, gravelly, pebbly-sandy, sandy and clayey-loamy mesas; plateaus; cliffs; hanging gardens; sandy bases of cliffs; rocky and sandy canyon rims; along rocky and loamy canyons; stony canyon walls; in sand along canyon walls; along rocky and sandy canyon bottoms; rocky gorges; talus ridges; sandy crevices in rocks; rocky-gravelly and sandy bluffs; rocky, gravelly-clayey and clayey buttes; knolls; rocky and sandy ledges; along rocky, rocky-sandy, gravelly-loamy and sandy-silty-loamy ridges; rocky, gravelly-clayey, gravelly-silty-loamy ridgetops; clayey ridge slumps; openings in forests and woodlands; meadows; rocky and clayey-loamy foothills; rocky, rocky-gravelly and cindery (scoria) hills; sandy hilltops; rocky, shaley, stony and sandy hillsides; sandy bases of escarpments; along bedrock, bouldery, bouldery-rocky-sandy, rocky, rocky-gravelly, rocky-sandy, rocky-sandy-loamy, rocky-loamy, rocky-clayey-silty, shaley, shaley-silty, stony, stony-gravelly, gravelly, gravelly-sandy, gravelly-loamy, gravelly-clayey, sandy, sandy-loamy, sandy-clayey-loamy, sandy-silty, loamy, clayey, clayey-loamy, clayey and silty-loamy slopes; gravelly bajadas; rocky outcrops; amongst boulders, rocks and cobbles; rockbeds; sandy lava flows; sand hills; sand bluffs; sand dunes; sandy-clayey banks; breaks; stony-gravelly benches; benchlands; shaley barrens; sandy, clayey-loamy and silty-clayey prairies; sandy and sandy-clayey plains; rocky, rocky-gravelly, sandy, sandy-clayey, sandy-silty and clayey flats; sandy, clayey, clayey-loamy and silty-clayey uplands; sandy valley floors; sandy roadcuts; along gravelly and sandy roadsides; along and in bedrock, rocky and gravelly arroyos; sandy bottoms of arroyos; along and in

rocky, loamy, loamy-clayey and silty draws; bottoms of gullies; along ravines; bedrock bottoms of ravines; seeps; along springs; around streams; along streambeds; in silty-loamy soils along and in creeks; along rocky creekbeds; along rivers; riverbeds; along and in rocky, rocky-gravelly, gravelly and sandy washes; along and in rocky-clayey-silty, gravelly-sandy, sandy, gravelly-clayey, sandy, clayey and silty-loamy drainages; within drainage ways; ciénegas; marshes; silty-clayey depressions; in low swales with Desert Willow; along (gravelly-sandy, sandy, clayey and silty) banks of draws, creeks and rivers, gullies, streams, rivers and washes; along (rocky) edges of ravines, springs and washes; margins of rivers and pools; (clayey-loamy) shores of lakes; gravel bars; rocky-sandy benches; rock shelves; gravelly terraces; bottomlands; gravelly, sandy and clayey floodplains; mesquite bosques; along sandy fencelines; clayey catchments; stock tanks; rocky riparian areas, and disturbed areas growing in wet (rarely recorded); mucky-clayey (rarely recorded), and wet (rarely recorded), moist (rarely recorded) and dry rimrock; rocky desert pavement; bouldery, bouldery-rocky-sandy, bouldery-cobbly-sandy, rocky, rocky-gravelly, rocky-sandy, shaley, stony, stony-gravelly, cobbly, cindery (scoria), cindery-gravelly, gravelly, gravelly-sandy, pebbly-sandy and sandy ground; rocky loam, rocky-sandy loam, rocky-clayey loam, gravelly loam, gravelly-clayey loam, gravelly-silty loam, sandy loam, sandy-clayey loam, sandy-silty loam, clayey loam, silty loam, silty-clayey loam and loam ground; bouldery clay, gravelly clay, gravelly-sandy clay, sandy clay, loamy clay, silty clay and clay ground; rocky silty, rocky-clayey silty, shaley silty, sandy silty and silty ground, and chalky ground, occurring from 300 to 9,800 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial fiber or fodder crop; it was also noted as having been used as a decoration. Sideoats Grama may be useful in controlling erosion. Stems may occur singly or in small clusters from creeping rhizomes (var. *curtipendula*), or form into large clumps from a common root crown (var. *caespitosa*). In areas where it occurs naturally, consider including Sideoats Grama seed in reseeding mixtures. This plant is a larval food plant for the Orange Skipperling (*Copaeodes aurantiacus*). *Bouteloua curtipendula* is native to central and southern North America; Central America, and South America. *5, 6, 15, 16, 18, 30, 33 (Page 143, "One of the most important range grasses in the Southwest, highly palatable and a vigorous grower."), 43 (092909), 44 (041311), 46 (Page 129), 48, 58, 63 (092909 - color presentation), 77, 82, 85 (102211 - color presentation), 105 ("This is one of our most important range grasses. ... It cures well and maintains a fairly high feeding value throughout the year. ... Sideoats is a normal component of most Arizona grassland ranges, and these ranges are not in excellent condition without an abundance of the grass. It lengthens the grazing season and increases forage production, in addition to providing variety in the feed."), 106 (061407), 124 (041311), 127, 140 (Pages 199-200 & 299), **HR***

***Bouteloua rothrockii* G. Vasey: Rothrock's Grama**

SYNONYMY: *Bouteloua barbata* M. Lagasca y Segura var. *rothrockii* (G. Vasey) F.W. Gould. COMMON NAMES: Navajita Liebrero (Spanish); Rothrock Grama; Rothrock's Grama. DESCRIPTION: Terrestrial perennial tufted graminoid (a bunchgrass (clumpgrass) with decumbent, geniculate, ascending and/or erect culms 8 to 30 inches in height); the foliage is green curing to straw; the flowers may be brownish-red, pale green, green, orange or reddish; the anthers are pink or white; flowering generally takes place between late July and late September (additional records: one for early March, one for mid-May, one for late May, one for late October and one for mid-November). HABITAT: Within the range of this species it has been reported from mountains; rocky-gravelly mountainsides; gravelly and sandy mesas; along canyons; sandy canyon bottoms; rocky and rocky-gravelly and gravelly-loamy foothills; rocky and rocky-sandy hills; rocky, gravelly and gravelly-sandy-loamy hillsides; rocky, rocky-gravelly, gravelly, sandy, sandy-loamy, sandy-clayey and clayey slopes; rocky alluvial fans; gravelly and sandy bajadas; prairies; along rocky, cobbly and sandy plains; bouldery-sandy, gravelly, gravelly-loamy and sandy flats; basins; gravelly-loamy valley floors; valley bottoms; along gravelly and sandy roadsides; sandy draws; sandy bottoms of gulches; streambeds; sandy riverbeds; along washes; rocky drainages; within drainages; swales; edges of washes; along margins of ciénegas; benches; terraces; sandy floodplains; mesquite bosques; riparian areas, and disturbed areas growing in dry bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, cobbly, gravelly and sandy ground; rocky-clayey loam, gravelly loam, gravelly-sandy loam, gravelly-clayey loam, sandy loam and sandy-clayey loam ground, and sandy clay and clay ground, occurring from 300 to 5,700 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This short-lived perennial may be an attractive component of a restored native habitat, it has been described as being hardy and drought-resistant. Rothrock Grama (perennial) may be confused with the annual Sixweeks Grama (*Bouteloua barbata*). the Masked Bobwhite (*Colinus virginianus* subsp. *ridgwayi*) feeds on the seeds of the Rothrock Grama. *Bouteloua rothrockii* is native to southwest-central and southern North America. *5, 6, 15, 16 (recorded as *Bouteloua barbata* Lag. var. *rothrockii* (Vasey) Gould), 33 (Page 151), 43 (093009), 44 (112210 - no record of species; genus record), 46 (Page 128), 48, 58, 63 (093009 - color presentation), 77, 85 (102211 - color presentation of dried material), 105, 124 (102510 - no record of species; genus record), 140 (recorded as *Bouteloua barbata* Lagasca var. *rothrockii* (Vasey) Gould, Page 200 & 299), **HR***

Brachiaria arizonica (see *Urochloa arizonica*)

Brachiaria fasciculata (see *Urochloa fusca*)

***Bromus arizonicus* (C.L. Shear) G.L. Stebbins: Arizona Brome**

SYNONYMY: *Bromus carinatus* W.J. Hooker & G.W. Arnott var. *arizonicus* C.L. Shear. COMMON NAMES: Arizona Brome (a name also applied to other species); Arizona Brome Grass; Arizona Chess. DESCRIPTION: Terrestrial annual tufted graminoid (erect culms 4 to 40 inches in height); the flowers are burgundy; flowering generally takes place between early

February and early September (additional records: two for late October). HABITAT: Within the range of this species it has been reported from mountains; mountaintops; mesas; rocky canyons; sandy canyon bottoms; talus slopes; bluffs; ledges; ridges; openings in woodlands; sandy meadows; foothills; hills; rocky hillsides; rocky, gravelly and sandy-loamy slopes; bouldery outcrops; amongst boulders and rocks; sand dunes; sandy plains; gravelly, sandy and clayey flats; sandy-clayey-loamy valley bottoms; coastal bluffs; coastal dunes; sandy coastal flats; along gravelly and sandy roadsides; within arroyos; bottoms of arroyos; gulches; around springs; around seeping streams; in sand along streams; streambeds; along creeks; creekbeds; along rivers; sandy riverbeds; along and in gravelly, gravelly-sandy, gravelly-sandy-silty, gravelly-loamy and sandy washes; within drainages; marshy areas; along (rocky) banks of streams, rivers and washes; (rocky, gravelly-sandy and sandy) edges of washes; along shores of lakes; gravel and sand bars; sandy beaches; sandy benches; bottomlands; sandy floodplains; along ditches; ditch banks; gravelly-sandy and sandy riparian areas; waste places, and disturbed areas growing in moist and dry bouldery, bouldery-rocky-sandy, rocky, rocky-sandy, shaley, cobbly-sandy, gravelly, gravelly-sandy and sandy ground; gravelly loam, sandy loam, sandy-clayey loam, clayey loam and loamy ground; clay ground, and gravelly-sandy silty ground, occurring from sea level to 9,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Bromus arizonicus* is native to southwest-central and southern North America. *5, 6, 15, 16, 33 (Page 44), 43 (100109), 44 (041311), 46 (Page 77), 58, 63 (102311), 80 (The Ergot Fungus (*Claviceps* sp.) is listed as a Secondary Poisonous Range Plant. Species of the genus *Bromus* can be hosts of the Ergot Fungus. "Ergot contains poisonous alkaloids and other compounds that may cause chronic poisoning (gangrenous ergotism) in the extremities when consumed in small amounts, or convulsive poisoning when large amounts are eaten. Animals may be poisoned by feeding on mature, infected grain or hay. Livestock, especially cattle, and humans are susceptible. ... Pastures causing ergot poisoning should be mowed or the animals removed. Mildly poisoned animals will usually recover if removed from the infested pastures, kept quiet, and supplied with good feed and water. In Arizona, some losses may be expected on rangelands during wet years, but most losses have occurred from grazing pastures of Dallas Grass (*Paspalum dilatatum*)." See text for additional information.), **85** (102311 - color presentation), 124 (041311 - no record of species; genus record), 140 (Page 299)*

Bromus carinatus **W.J. Hooker & G.W. Arnott: California Brome**

COMMON NAMES: Arizona Brome (a name also applied to other species); Basiawari (Hispanic); Basicuáare (Hispanic); Bromo de California (Spanish); California Brome; California Brome Grass; California Brome-grass; California Bromegrass; California Keeled Brome; California Mountain Brome; Californian Brome; Camaloti (Hispanic); Grama (Hispanic); Great Western Brome; Keeled Brome; Large Flowered Brome; Large-flowered Brome; Masiyague (Hispanic); Mountain Brome; Mountain Bromegrass; Native California Brome; Pipillo (Hispanic); Pipilo (Hispanic); Sweet Brome; Tigrillo (Hispanic); Tupikua (Purépecha); Zacate (Hispanic); Zacate Bromo (Hispanic). DESCRIPTION: Terrestrial annual or perennial tufted graminoid (a bunchgrass (clumpgrass) with ascending and/or erect culms 1 to 6 feet in height and up to 12 inches in width at the base); the foliage may be reddish or yellow-green; the flowers may be dull green, green, purplish or purplish-red; the anthers are cream-yellow or pale yellow; flowering generally takes place between late March and early October (additional records: one for late February, one for early March, two for late October and one for late December). HABITAT: Within the range of this species it has been reported from mountains; bedrock-shaley-clayey and rocky mountaintops; mountainsides; cobbly peaks; mesas; rocky bases of cliffs; rock walls; chutes; along bouldery and gravelly-loamy canyons; along rocky and gravelly canyon bottoms; chasms; bases of limestone fins; scree slopes; rocky talus; crevices in rocks; along bluffs; rocky buttes; knolls; bouldery and stony ridges; along rocky and rocky-sandy-loamy ridgetops; along ridgelines; clayey clearings in forests and woodlands; rocky, stony, sandy-loamy, clayey-loamy and loamy meadows; foothills; rocky, loamy and chalky hills; rocky, cobbly-sandy-loamy, gravelly and sandy hillsides; bouldery, rocky, rocky-gravelly, rocky-sandy-loamy, rocky-clayey, shaley-sandy, shaley-clayey-loamy, stony, stony-gravelly, gravelly, gravelly-loamy, gravelly-clayey-loamy, sandy, sandy-loamy, sandy-clayey, sandy-clayey-loamy, loamy, clayey and clayey-loamy slopes; rocky-sandy-loamy alluvial fans; sandy bajadas; bouldery and rocky outcrops; on boulders; amongst rocks; lava flows; sand dunes; breaks; benches; pebbly and sandy plains; rocky, gravelly, sandy, loamy, clayey-loamy and silty-loamy flats; uplands; basins; gravelly-silty valley floors; coastal dunes; sandy coastal flats; along coasts; cut banks; along railroad right-of-ways; along gravelly, sandy, sandy-loamy and loamy roadsides; along and in rocky arroyos; sandy-loamy bottoms of arroyos; along bouldery-rocky, gravelly and sandy draws; slopes and bottoms of draws; gulches; gullies; rocky bottoms of gullies; within sandy-loamy ravines; along humusy seeps; springs; along streams; along bouldery and stony streambeds; in springy rocky soil along creeks; along and in gravelly and sandy creekbeds; along rivers; riverbeds; along and in rocky-sandy, rocky-silty, gravelly, gravelly-sandy, gravelly-sandy-silty and sandy washes; within rocky and gravelly drainages; along and in drainage ways; among and in pools; along ponds; rocky-clayey lakebeds; boggy areas; ciénegas; marshes; swamps; gravelly depressions; swales; along (rocky-silty, gravelly, gravelly-sandy and sandy) banks of arroyos, draws, streams, creeks, rivers, washes, pools and lakes; edges of springs, streams, creeks, washes, drainages, lakes and ciénegas; margins of seeps, streams, rivers, washes and lakes; shores of lakes; mudflats; along stony-cobbly-sandy, gravel and sand bars; rocky-sandy and sandy beaches; sandy benches; rocky strands; gravelly and sandy terraces; loamy bottomlands; sandy floodplains; mesquite bosques; along fencelines; along canals; along gravelly ditches; along reservoirs; loamy beaver meadows; along reservoirs; bouldery and gravelly-loamy riparian areas; waste places, and disturbed areas growing in spongy mossy; mucky-sandy, and wet, moist, damp and dry bouldery, bouldery-rocky, rocky, rocky-gravelly, rocky-sandy, shaley-sandy, stony, stony-cobbly-sandy, stony-gravelly, cobbly, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-sandy loam, shaley-clayey loam, cobbly-sandy loam, gravelly loam, gravelly-clayey loam, sandy loam, sandy-clayey loam, clayey loam, silty loam and loam ground; rocky clay, shaley clay, gravelly clay, sandy clay and clay ground; rocky silty, gravelly-silty, gravelly-sandy silty, sandy silty and silty ground; humusy ground; chalky ground, and rocky powdery and powdery ground, occurring from sea level to 11,400 feet in

elevation in the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. *Bromus carinatus* is native to west-central and southern North America and Central America. *5, 6, 15, 30, 33 (Page 45), 43 (100209), 44 (032711), 46 (Page 77), 58, 63 (100209 - color presentation), 77 (recorded as *Bromus carinatus* H.&A. [incl. *B. arizonicus* (Shear) Stebbins]. Arizona Brome), 80 (The Ergot Fungus (*Claviceps* sp.) is listed as a Secondary Poisonous Range Plant. Species of the genus *Bromus* can be hosts of the Ergot Fungus. "Ergot contains poisonous alkaloids and other compounds that may cause chronic poisoning (gangrenous ergotism) in the extremities when consumed in small amounts, or convulsive poisoning when large amounts are eaten. Animals may be poisoned by feeding on mature, infected grain or hay. Livestock, especially cattle, and humans are susceptible. ... Pastures causing ergot poisoning should be mowed or the animals removed. Mildly poisoned animals will usually recover if removed from the infested pastures, kept quiet, and supplied with good feed and water. In Arizona, some losses may be expected on rangelands during wet years, but most losses have occurred from grazing pastures of Dallas Grass (*Paspalum dilatatum*)." See text for additional information.), **85** (102511 - color presentation), 101 (color photograph), 124 (032711), 127, 140 (Pages 201 & 299)*

Bromus carinatus var. *arizonicus* (see *Bromus arizonicus*)

Bromus carinatus var. *carinatus* (see footnote 85 under *Bromus carinatus*)

***Bromus catharticus* M.H. Vahl: Rescuegrass**

SYNONYMY: *Bromus unioloides* K.S. Kunth; *Bromus willdenowii* K.S. Kunth. COMMON NAMES: Australian Oats; Brome Grass (New Mexico, a name also applied to other species and to the genus *Bromus*); Bromo Cebadiila (Spanish); Cebadiila (Spanish); Flat Spiked Brome Grass; Flat-spiked Brome Grass; Horn Grass; Johnson Grass (a name also applied to other species); Rescue Brome; Rescue Brome Grass; Rescue Bromegrass; Rescue Grass (a name also applied to other species); Rescue-grass; Rescuegras; Rescuegrass; Schrader's Brome (a name also applied to other species); Schrader's Brome Grass; Schrader's Bromegrass; Schrader's Bromus; Schrader's Grass; Schrader's-grass; Southern Chess; Wild Brome Grass. DESCRIPTION: Terrestrial annual or perennial tufted graminoid (ascending and/or erect culms 10 inches to 4 feet in height); the foliage is light green or green; the florets are green; flowering generally takes place between mid-March and mid-August (additional records: one for early January (in the Southern Hemisphere), two for mid-February, one for late February, one for early September, one for mid-September, two for early October, one for mid-October and one for late November). HABITAT: Within the range of this species it has been reported from mountains; mesas; plateaus; rock walls; canyon rims; rocky canyons; gravelly and sandy canyon bottoms; talus slopes; meadows; foothills; rocky hills; bases of hills; sandy-loamy, sandy-clayey, loamy and silty slopes; bajadas; sand hills; sandy-loamy prairies; sandy flats; sandy-loamy basins; valley floors; clayey valley bottoms; coastal dunes; railroad right-of-ways; along sandy roadsides; draws; along bottoms of draws; seeps; springs; along streams; streambeds; along rivers; riverbeds; along and in cobbly washes; sandy drainages; drainage ways; in rocks around ponds; freshwater marshes; along (loamy) banks of rivers and lakes; edges of springs, streams; rivers and marshes; along margins of springs, rivers, washes and ciénegas; shores of rivers and lakes; sandy beaches; sandy benches; bottomlands; sandy floodplains; mesquite bosques; along fencerows; margins of stock tanks; canals; along canal banks; ditches; along ditch banks; riparian areas; waste places, and disturbed areas growing in wet, moist and dry rocky, rocky-sandy, cobbly, gravelly and sandy ground; gravelly loam, sandy loam and loam ground; sandy clay and clay ground; silty ground, and chalky ground, occurring from sea level to 12,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as fodder. *Bromus catharticus* is native to South America. *5, 6, 15, 16 (recorded as *Bromus willdenowii* Kunth), 33 (Page 44), 43 (100309), 44 (032711), 46 (Page 77), 58, 63 (100309 - color presentation), 68, 77, 80 (The Ergot Fungus (*Claviceps* sp.) is listed as a Secondary Poisonous Range Plant. Species of the genus *Bromus* can be hosts of the Ergot Fungus. "Ergot contains poisonous alkaloids and other compounds that may cause chronic poisoning (gangrenous ergotism) in the extremities when consumed in small amounts, or convulsive poisoning when large amounts are eaten. Animals may be poisoned by feeding on mature, infected grain or hay. Livestock, especially cattle, and humans are susceptible. ... Pastures causing ergot poisoning should be mowed or the animals removed. Mildly poisoned animals will usually recover if removed from the infested pastures, kept quiet, and supplied with good feed and water. In Arizona, some losses may be expected on rangelands during wet years, but most losses have occurred from grazing pastures of Dallas Grass (*Paspalum dilatatum*)." See text for additional information. Rescuegrass, *Bromus willdenowii* (confused with *Bromus catharticus*) is also listed as a Rarely Poisonous and Suspected Poisonous Range Plant. "This introduced annual grass has been reported to develop toxic concentrations of nitrate."), **85** (102511 - color presentation), 101 (color photograph), 124 (032711), 127, 140 (Page 299)*

Bromus catharticus var. *catharticus* (see footnote 85 under *Bromus catharticus*)

***Bromus rubens* C. Linnaeus: Red Brome**

SYNONYMY: *Bromus madritensis* C. Linnaeus subsp. *rubens* (C. Linnaeus) Duvin; *Bromus matritensis* C. Linnaeus subsp. *rubens* (C. Linnaeus) Duvin ort. var.). COMMON NAMES: Bromo (a name also applied to the genus *Bromus*); Bromo Rojo (Spanish); Foxtail Brome; Foxtail Chess; Red Brome; Red Brome Foxtail Chess; Red Brome Grass; Red Brome-grass; Red Bromegrass; Red Foxtail Brome; Red Foxtail Chess; Red Foxtail Cheat-grass; Tufted Brome. DESCRIPTION: Terrestrial

annual tufted graminoid (decumbent, geniculate, ascending and/or erect culms 3 inches to 2 feet in height); the foliage is light green curing to a light straw yellow; the spikelets (flowers) may be purple, red-brown, reddish or reddish-purple; the awns are reddish; flowering generally takes place between late January and early June (additional records: one for late June, one for early July and one for late August); the seedheads are red, reddish-brown or purplish. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; sandy-silty mesas; cliffs; rocky-pebbly cliffsides; hanging gardens; bases of cliffs; rocky and stony canyons; rocky and clayey canyon bottoms; talus; pockets of sandy soil in bedrock, boulders and rocks; bluffs; buttes; rocky and rocky-stony ledges; rocky promontories; along rocky and silty-loamy ridges; ridgetops; sandy meadows; sandy edges of meadows; cinder cones; rocky foothills; bouldery, rocky, gravelly-sandy, sandy, loamy and silty-loamy hills; sandy-clayey and clayey hilltops; rocky and clayey hillsides; bedrock, bouldery, bouldery-rocky, rocky, rocky-sandy, rocky-clayey, rocky-clayey-loamy, rocky-loamy, cobbly-sandy-loamy, cindery, gravelly, gravelly-sandy, gravelly-clayey, sandy, loamy and silty-loamy slopes; rocky alluvial fans; rocky, gravelly and sandy bajadas; rocky outcrops; sandy bases of rock outcrops; amongst boulders and rocks; sand dunes; plains; rocky, rocky-sandy-clayey, cindery, gravelly, loamy, clayey and silty-loamy flats; cindery valley floors; valley bottoms; coastal bluffs; coastal flats; along railroad right-of-ways; along gravelly roadbeds; along rocky-clayey-silty, gravelly, gravelly-sandy and sandy-loamy roadsides; within rocky arroyos; draws; along rocky gullies; rocky and gravelly ravines; seeps; springs; around seeping streams; bouldery and rocky-sandy streambeds; along and in creeks; rocky creekbeds; along rivers; riverbeds; along and in rocky, stony-gravelly, gravelly, gravelly-sandy and sandy washes; within rocky and sandy drainages; rocky and sandy drainage ways; pondbeds; gravelly-clayey soils around lakes; sandy, sandy-silty and silty lakebeds; saltwater marshlands; depressions; swales; (gravelly-sandy, sandy and loamy) banks of streams, rivers and washes; along (sandy) edges of washes, lakes and freshwater and saltwater marshes; margins of washes; sandy beaches; sandy benches; rocky-silty, gravelly and sandy terraces; sandy, sandy-loamy and loamy bottomlands; rocky, sandy and loamy floodplains; mesquite bosques; stock tanks; around reservoirs; canal banks; bouldery, gravelly, gravelly-sandy and sandy riparian areas; sandy waste places; recently burned areas of scrub, and disturbed areas growing in wet, moist, damp and dry desert pavement; bouldery, bouldery-rocky, rocky, rocky-pebbly, rocky-sandy, shaley, stony, stony-gravelly, cindery, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-clayey loam, cobbly-sandy loam, sandy loam, clayey loam, silty loam and loam ground; rocky-sandy clay, rocky clay, gravelly clay, sandy clay and clay ground, and rocky silty, rocky-clayey silty, gravelly silty, sandy silty and silty ground, occurring from sea level to 8,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant which poses a significant threat to our native biotic communities. *Bromus rubens* is native to southern Europe; middle and western Asia, and northern Africa. *5, 6, 15, 16, 22 (color photograph), 33 (Page 50), 43 (100309 - no record for *Bromus madritensis* subsp. *rubens*), 44 (032711 - species records located under *Bromus madritensis* L. subsp. *rubens* (L.) Husn; genus record), 46 (Page 78), 58, 63 (100409 - color presentation), 68, 77, 80 (The Ergot Fungus (*Claviceps* sp.) is listed as a Secondary Poisonous Range Plant. Species of the genus *Bromus* can be hosts of the Ergot Fungus. "Ergot contains poisonous alkaloids and other compounds that may cause chronic poisoning (gangrenous ergotism) in the extremities when consumed in small amounts, or convulsive poisoning when large amounts are eaten. Animals may be poisoned by feeding on mature, infected grain or hay. Livestock, especially cattle, and humans are susceptible. ... Pastures causing ergot poisoning should be mowed or the animals removed. Mildly poisoned animals will usually recover if removed from the infested pastures, kept quiet, and supplied with good feed and water. In Arizona, some losses may be expected on rangelands during wet years, but most losses have occurred from grazing pastures of Dallas Grass (*Paspalum dilatatum*)." See text for additional information.), 85 (102611 - color presentation), 105, 124 (032711 - no record of species; genus record), 140 (Pages 201, 202, 214 & 299), **WTK** (August 4, 2005)*

Bromus madritensis subsp. *rubens* (see *Bromus rubens*)

Bromus mairitensis subsp. *rubens* (see *Bromus rubens*)

Bromus unioloides (see *Bromus catharticus*)

Bromus willdenowii (see *Bromus catharticus*)

Cenchrus ciliaris (see *Pennisetum ciliare*)

Cenchrus incertus (see *Cenchrus spinifex*)

Cenchrus pauciflorus (see *Cenchrus spinifex*)

***Cenchrus spinifex* A.J. Cavanilles: Coastal Sandbur**

SYNONYMY: *Cenchrus incertus* M.A. Curtis; *Cenchrus pauciflorus* G. Bentham. COMMON NAMES: Bur Grass (a name also applied to other species and the genus *Cenchrus*, Oklahoma); Bur-grass (a name also applied to other species and the genus *Cenchrus*, Oklahoma); Burgrass (a name also applied to other species and the genus *Cenchrus*, Oklahoma); Capim-amoroso-da-areia (Portuguese: Brazil); Capim-carrapicho-da-areia (Portuguese: Brazil); Coast Sand Bur; Coast Sandbur (Texas); Coast Sandbur Grass; Coast Sandburr; Coast Sandspur; Coastal Sand Bur; Coastal Sand-bur; Coastal Sandbur; Coastal Sandburr; Coastal Sandburr Grass; Coastal Sandspur; Cock-spur Burr; Common Grass Bur; Common Grass Burr; Common Grass-bur; Common Grass-burr; Common Grassbur; Common Grassburr; Common Sandbur (a name also applied to other species); Field

Sandbur (a name also applied to other species, Texas); Guizazo (Spanish); Huipapore; Mat Sandbur (a name also applied to other species); Sand Bur (a name also applied to other species and the genus *Cenchrus*); Sand-bur (a name also applied to other species and the genus *Cenchrus*); Sandbur (a name also applied to other species and the genus *Cenchrus*); Southern Sand-bur (a name also applied to other species); Southern Sandbur (a name also applied to other species); Spiny Bur Grass (a name also applied to other species) ; Spiny Burrgrass (a name also applied to other species). DESCRIPTION: Terrestrial annual or perennial (short-lived) tufted graminoid (spreading prostrate and/or geniculate culms 4 to 12 inches or occasionally to 40 inches in height or length); flowering generally takes place between late June and late October or possibly continuing until first frost (flowering records: one for early March, one for early April, two for late May, (one for late June, one for early July, one for mid-July, two for late July, three for early September, two for late September, one for early October, one for mid-October, two for late October), one for mid-November and one for mid-December); the spiny and hairy burs (1/2 inch in length) are reddish or yellowish. HABITAT: Within range reported from mountains; rocky canyons; canyon bottoms; rocky-sandy ridges; meadows; foothills; sandy hills; hillsides; gravelly-loamy, gravelly-clayey, sandy and clayey-loamy slopes; rocky-sandy-loamy alluvial fans; dunes; sandy flats; valley floors; coastal dunes; along gravelly-loamy, sandy and sandy-loamy roadsides; rocky ravines; along streams; streambeds; along creeks; along rivers; riverbeds; along and in stony, gravelly, gravelly-clayey and sandy washes; drainages; depressions; sink-holes; swales; (gravelly) banks of washes; (sandy-loamy) edges of bays and ponds; sandy beaches; sandy strands; sandy terraces; bottomlands; rocky-sandy and sandy floodplains; mesquite bosques; along ditches; riparian areas; waste places, and disturbed areas growing in damp and dry rocky, rocky-sandy, stony, gravelly, gravelly-sandy and sandy ground; rocky-sandy loam, gravelly loam, sandy loam, clayey loam and loam ground, and rocky clay and gravelly clay ground, occurring from sea level to 6,700 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: The barbed spines of the burs are painful to human beings and animals, sometimes causing inflammation and infection. *Cenchrus spinifex* may be confused with *Cenchrus longispinus* or *Cenchrus tribuloides*. *Cenchrus spinifex* is native to south-central and southern North America; Central America and coastal islands in the Caribbean Sea, and South America. *5, 6, 15 (recorded as *Cenchrus incertus* M.A. Curtis), 33 (recorded as *Cenchrus pauciflorus* Benth., Page 265), 43 (020911), 44 (020911 - no record for Common Names under *Cenchrus spinifex*; common names listed under *Cenchrus incertus*), 46 (recorded as *Cenchrus pauciflorus* Benth., Page 140), 58 (recorded as *Cenchrus incertus* M.A. Curtis), 63 (021011 - color presentation), 68 (recorded as *Cenchrus incertus* M.A. Curtis, *Cenchrus pauciflorus* Benth.), **85** (021011 - color presentation), 124 (021011)*

Chaetochloa leucopila (see *Setaria leucopila*)

Chloris elegans (see *Chloris virgata*)

***Chloris virgata* O. Swartz: Feather Fingergrass**

SYNONYMY: *Chloris elegans* K.S. Kunth. COMMON NAMES: Barbas de Indio (Hispanic); Cola de Zorra (Spanish); Plumerito (Hispanic); Feather Finger; Feather Finger Grass; Feather Finger-grass; Feather Fingergrass; Feather Windmill Grass; Feather Windmill-grass; Feather Windmillgrass; Feathered Chloris; Feathery Rhodes Grass; Feather-finger (Texas); Feather-top Chloris; Feather-top Rhodes Grass; Featherfinger (Texas); Feathertop Chloris; Feathertop Rhodes Grass; Feathertop Rhodesgrass; Finger Grass (a name also applied to other species and the genus *Chloris*); Five-finger Windmillgrass; Klossiegras (Afrikaans); Oldland Grass; Showy Chloris; Showy Windmillgrass; Silky Chloris; Silky Fingergrass; Sweet Grass (a name also applied to other species); Verdillo (Hispanic); Verdillo Plumerito (Spanish); Zacate de Cinco Dedos; Zacate de Cola de Zorra (Hispanic); Woolly-top Rhodes Grass; Zacate Lagunero (Spanish); Zacate Mota (Spanish); Zacate Pluma (Spanish). DESCRIPTION: Terrestrial annual tufted (usually) graminoid (a bunchgrass with decumbent, geniculate, ascending and/or erect culms ½ to 40 inches in height); the foliage is light green curing to light straw; the flowers are greenish; flowering generally takes place between mid-July and late October (additional flowering records: one for late January, one for early May, three for mid-May, one for mid-November, two for late November; flowering beginning as early as April has been reported). HABITAT: Within the range of this species it has been reported from mountains; rocky and clayey-loamy mesas; bases of cliffs; rocky canyons; gravelly canyon bottoms; ridges; meadows; rocky foothills; amongst hills; rocky hillsides; rocky, rocky-clayey-loamy, gravelly, gravelly-sandy-loamy, gravelly-loamy, sandy, sandy-loamy, loamy and clayey-loamy slopes; gravelly bajadas; amongst boulders, rocks and pebbles; sand dunes; sandy prairies; plains; gravelly, sandy-loamy, loamy and clayey-loamy flats; clayey valley floors; valley bottoms; along rocky-gravelly-clayey, gravelly, gravelly-sandy, gravelly-loamy and sandy roadsides; arroyos; sandy bottoms of arroyos; draws; bottoms of draws; seeps; along streams; rocky streambeds; along creeks; creekbeds; along and in rocky, gravelly, sandy and clayey washes; within drainages; within drainage ways; around ponds; ciénegas; freshwater marshes; silty depressions; swales; along banks of rivers; (sandy and sandy-clayey) edges of washes; margins of washes; (rocky-sandy) shores of lakes; clayey mudflats; gravel bars; sandy beaches; sandy benches; rocky shoals; terraces; loamy bottomlands; floodplains; mesquite bosques; along fencelines; clayey-loamy stock tanks (represos); around reservoirs; along ditches; ditch banks; bouldery-cobbly-sandy and sandy riparian areas; gravelly waste places, and disturbed areas growing in moist, damp and dry bouldery, bouldery-cobbly-sandy, rocky, rocky-sandy, gravelly, gravelly-sandy, pebbly and sandy ground; rocky-clayey loam, gravelly loam, gravelly-sandy loam, sandy loam, clayey loam, clayey-humusy loam and loam ground; rocky clay, rocky-gravelly clay, sandy clay and clay ground, and silty ground, occurring from sea level to 7,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Chloris virgata* is native to south-central and southern North America; Central America and coastal islands in the Caribbean Sea; northern, western and southern South America; southern Asia, and Africa and islands in

the West Indian Ocean. *5, 6, 15, 16, 30, 33 (Page 130), 43 (100509), 44 (110211), 46 (Page 126), 58, 63 (110211 - color presentation), 68, 77, **85** (110211 - color presentation including habitat), 105, 124 (110211)*

Critesion murinum subsp. *leporinum* (see *Hordeum murinum* subsp. *leporinum*)

***Cynodon dactylon* (C. Linnaeus) C.H. Persoon: Bermudagrass**

COMMON NAMES: 'A'ai Hihimdam Vaṣai (Uto-Aztecan: Hiá Ceḍ O'odham)[140]; 'A'ai Himdam Vashai [A'ai Hihimdam Waṣai] ("Grass that Spreads in All Directions", Uto-Aztecan: Akimel O'odham and Tohono O'odham)[140]; Acabacahuiztle (Hispanic); Acacahuitzli (Náhuatl); Acaxacahuitztli <acabacahuitztli> (Uto-Aztecan: Náhuatl)[140]; Bahama Grass (var. *dactylon*); Bahama-grass; Bermud Grass; Bermudgrass; Bermuda Couch Grass; Bermuda Devil Grass; Bermuda Grass (a name applied to var. *dactylon* and to the genus *Cynodon*); Bermuda Grass (English)[140]; Bermudagras (German, a name applied to var. *dactylon*); Bermudagrass (a name also applied to the genus *Cynodon*); Bramilla (Hispanic); Cane Grass; Canzuuc (Maya); Capim-bermuda (Portuguese, applied to var. *dactylon*); Chiendent Pied-de-poule (French); Coarse Kweek; Common Bermuda Grass; Common Bermuda-grass; Common Bermudagrass; Creeping Bermuda Grass; Creeping Cynodon; Creeping-cynodon; Cynodon Dactyle (French, applied to var. *dactylon*); Devil Grass; Devil's Grass (var. *dactylon*); Devilgrass; Dhub (India, applied to var. *dactylon*); Diente de Perro ("Dog's Tooth", Spanish)[140]; Doab Grass; Doab-grass; Dog-tooth Grass (a name also applied to the genus *Cynodon*); Dog'-tooth; Dog's Grass; Dog's Tooth; Dog's Tooth Grass; Dog's-tooth Grass; Doob (India, applied to var. *dactylon*); Doob Grass; Doob-grass; Doorba; Dub (northern India); Dub Grass; Dub-grass; Durba (Bengal); European Bermuda Grass; Gallito ("Little Rooster", Spanish: Mexico)[140]; Gallitos (Hispanic); Gewonekweek (Afrikaans); Giant Bermuda Grass (var. *aridus*); Giant Bermudagrass; Grama ("Grass", Spanish: Spain)[140]; Grama de la Costa (Spanish); Grama-seda; Gramilla (Hispanic); Grana (Hispanic); Grama Rastrera (Spanish, applied to var. *dactylon*); Grand Chiendent (French, applied to var. *dactylon*); Green Couch; Green Couch Grass; Guix-biguiñi (Zapotec); Hariali (Deccan); Hariali Grass (var. *dactylon*); Hundezahngras (German, applied to var. *dactylon*); Indian Couch Grass; Indian Couch-grass; Indian Doab; Indian Doob; Kan-suuk (Mayan: Maya)[140]; Ki: Weco Vaṣai (Uto-Aztecan: Hiá Ceḍ O'odham)[140]; Kii Wecho Vashai [Ki: Weco Waṣai] ("Grass Around Houses" used when first seen, Uto-Aztecan: Akimel O'odham and Tohono O'odham)[140]; Komal Himdam ("Spreads Out Flat Grass", Uto-Aztecan: Akimel O'odham)[140]; Kweekgras (Afrikaans, applied to var. *dactylon*); Lan-suuk (Maya); Manienie; Motie Molulu; Owiv ("Grass", Uto-Aztecan: Ute)[140]; Pasto Bermuda (Hispanic); Pasto Estrella (Hispanic); Pata de Gallo ("Rooster's Foot", Spanish: Sonora)[140]; Pata de Perdiz (Hispanic); Pata de Pollo (Hispanic); Quick Grass (var. *dactylon*); Scotch Grass; Scutch Grass; Tl'oh ("Grass" a word applied to any grass, Athapascan: Western Apache)[140]; Tsakam Toom (Hispanic); Vaiṣoi [Vásoi] ("Grass" a word applied to any grass, Uto-Aztecan: Northern Tepehuan)[140]; Wahá꞉ ("Grass" a word applied to any grass, Uto-Aztecan: Northern Paiute)[140]; White Quick Grass; Wire Grass (a name also applied to other species and to the genus *Aristida*); Wire-grass; Xusí (Yuman: Cocopa)[140]; Zacate (Hispanic); Zacate Bermuda (Spanish: Sonora)[140]; Zacate Borrego (Hispanic); Zacate Chino (Hispanic); Zacate Conejo ("Rabbit Grass", Spanish: Chihuahua)[140]; Zacate de Bermuda (Spanish, applied to var. *dactylon*); Zacata de Lana ("Wool Grass", Spanish: Mayo, Sonora)[140]; Zacate del Conejo (Hispanic); Zacate Inglés ("English Grass", Spanish: Sonora)[140]; Zacate Pilillo (Hispanic); Zaruue (Hispanic); Zarzuue (Mayan: Maya, Yucatán)[140]. DESCRIPTION: Terrestrial perennial graminoid (a sodgrass with usually stoloniferous, creeping decumbent and geniculate culms 2 to 24 inches in height); the foliage is green or yellow-green curing to straw after a frost; the color of the florets has been described as being purple; flowering generally takes place between mid-February and late November (additional records: one for early January and one for mid-December). HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; rocky canyons; bouldery-gravelly-sandy, rocky and sandy canyon bottoms; pockets of sandy soil in boulders; buttes; meadows; foothills; rocky hills; bouldery and rocky hillsides; rocky, gravelly, sandy and clayey slopes; rocky outcrops; sand hummocks; prairies; plains; gravelly, sandy and clayey flats; valley floors; clayey valley bottoms; along railroad right-of-ways; along gravelly, gravelly-clayey-loamy and sandy roadsides; along sandy arroyos; gravelly and sandy bottoms of arroyos; seeps; springs; about streams; seeping streams; along streambeds; along creeks; along sandy creekbeds; along rivers; riverbeds; along and in rocky and sandy washes; within drainages; within rocky drainage ways; tinajas; waterholes; in clayey soils around ponds; ciénegas; freshwater marshes; clayey marshlands; sandy depressions; along (sandy) banks of draws, streams, creeks, rivers and washes; (sandy) edges of rivers, ponds, lagoons, bogs and marshes; shores of lakes; gravel bars; sandy beaches; sandy benches; loamy bottomlands; floodplains; mesquite bosques; in and around clayey-loamy stock tanks; sandy-loamy edges of reservoirs; edges of canals; along canal banks; along ditch banks; bouldery and sandy riparian areas; waste places, and disturbed areas growing in muddy and wet, moist, damp and dry bouldery, bouldery-cobbly-sandy, bouldery-gravelly-sandy, bouldery-sandy, rocky, rocky-cobbly-sandy, gravelly, gravelly-sandy and sandy ground; rocky loam, gravelly loam, gravelly-clayey loam, sandy loam, clayey loam and loam ground; clay ground, and bouldery-gravelly-sandy silty, sandy silty and silty ground, occurring from sea level to 6,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant which poses a significant threat to our native biotic communities. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a veterinary aid. Bermuda Grass is sometimes confused with another exotic species, Large Crabgrass (*Digitaria sanguinalis*) a species of similar general appearance. Bermuda Grass goes dormant when nighttime temperatures drop below freezing or average daytime temperatures are below 50 degrees Fahrenheit. Vigorous growth is achieved when nighttime temperatures are above 60 degrees Fahrenheit and daytime temperatures are above 85 degrees Fahrenheit. *Cynodon dactylon* is native to Africa. *5, 6, 15, 16, 18, 22 (color photograph), 30, 33 (Page 129), 43 (100509), 44 (032711), 46 (Page 124), 58, 63 (053109 - color presentation), 68, 77, 80 (Bermudagrass is listed as a Poisonous Cropland and Garden Plant. "Cattle grazing on Bermudagrass pasture may develop

photosensitization, paralysis or a nervous syndrome."), 85 (110311 - color presentation), 101 (color photograph), 105, 109, 124 (032711), 127, 140 (Pages 202-203 & 299), **HR***

***Dasyochloa pulchella* (K.S. Kunth) C.L. von Wildenow ex P.A. Rydberg: Low Woollygrass**

SYNONYMY: *Erioneuron pulchellum* (K.S. Kunth) T. Tateoka; *Tridens pulchellus* (K.S. Kunth) A.S. Hitchcock; *Triodia pulchella* K.S. Kunth. COMMON NAMES: Desert Fluffgrass; False Fluff Grass; False Fluffgrass; Fluff Grass (a name also applied to other species); Fluff-grass (a name also applied to other species); Fluffgrass (a name also applied to other species); Low Fluffgrass; Low Triodia; Low Woolly Grass; Low Woolly-grass; Low Woollygrass; Low Woolygrass; Oerennuak Grass; Zacate Borreguero. DESCRIPTION: Terrestrial perennial (often appearing to be an annual and has also been described as being a short-lived perennial) tufted graminoid (a bunchgrass (clumpgrass) with decumbent, geniculate, ascending and/or erect culms ½ to 6 inches in height; plants were observed and recorded as being 2 to 4 inches in height and 2 to 4 inches in width, plants were observed and recorded as being 4 inches in height and 12 inches in width); the foliage is bluish-green curing to a gray-white; the flowers are green, silvery or white; flowering generally takes place between late March and late October (additional records: two for mid-February and one for early December). HABITAT: Within the range of this species it has been reported from mountains; rocky-sandy, gravelly, sandy-loamy and clayey mesas; rocky, gravelly and sandy canyons; gravelly-sandy canyon bottoms; gorges; rocky talus slopes; sandy soils in crevices in rocks and rock slabs; knolls; rocky and gravelly ridges; clayey ridgetops; ridgelines; meadows; gravelly foothills; rocky, gravelly and sandy hills; rocky, rocky-sandy and gravelly hillsides; sandy bases of escarpments; sandy edges of escarpments; bedrock, bouldery, rocky, rocky-gravelly, stony, cindery-clayey, gravelly, gravelly-sandy, gravelly-sandy-loamy, gravelly-sandy-clayey-loamy, gravelly-loamy, gravelly-clayey, sandy and loamy slopes; rocky alluvial fans; rocky-sandy, gravelly and sandy bajadas; rocky outcrops; amongst boulders and rocks; rocky-sandy coves; lava rincons; sand hills; sand dunes; breaks; gravelly steppes; sandy and clayey plains; rocky, cindery, gravelly, gravelly-sandy, sandy, sandy-loamy and clayey flats; valley floors; valley bottoms; along railroad right-of-ways; along bouldery-rocky, rocky, gravelly, gravelly-sandy-loamy, gravelly-loamy, sandy and sandy-loamy roadsides; arroyos; sandy bottoms of arroyos; gravelly draws; bottoms of gulches; rocky gullies; streambeds; along creeks; creekbeds; along and in rocky, rocky-sandy, gravelly, gravelly-sandy and sandy washes; along and in rocky and sandy drainages; playas; marshes; clayey depressions; along banks of washes; edges of washes; (rocky-sandy) shores of lakes; beaches; benches; gravelly and sandy terraces; rocky-sandy and loamy bottomlands; floodplains; rocky lowlands; sandy riparian areas, and disturbed areas growing in moist, damp or dry desert pavement; bouldery, bouldery-rocky, rocky, rocky-gravelly, rocky-sandy, shaley, stony, cobbly, cindery, gravelly, gravelly-sandy, pebbly and sandy ground; gravelly loam, gravelly-sandy loam, gravelly-sandy-clayey loam, sandy loam, clayey loam and loam ground; rocky clay, cindery clay, gravelly clay, gravelly-sandy clay, sandy clay and clay ground, and sandy silty ground, occurring from 100 to 7,000 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This low, densely tufted perennial may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. This plant is browsed by the Desert Bighorn Sheep (*Ovis canadensis mexicana*); however, it has been reported that this plant is generally avoided by grazing animals. *Dasyochloa pulchella* is native and endemic to southwest-central and southern North America. *5, 6, 15 (recorded as *Erioneuron pulchellum* (H.B.K.) Tateoka), 16 (recorded as *Erioneuron pulchellum* (H.B.K.) Tateoka), 33 (recorded as *Tridens pulchellus* (H.B.K.) Hitchc., Page 97), 43 (071309), 44 (032811 - records located under *Erioneuron pulchellum*, color photograph), 46 (recorded as *Tridens pulchellus* (H.B.K.) Hitchc., Page 90), 58 (recorded as *Erioneuron pulchellum* (H.B.K.) Tateoka), 63 (110311 - color presentation in habitat), 77 (recorded as *Erioneuron pulchellum* (H.B.K.) Tateoka), 85 (110311 - color presentation including habitat), 105 (recorded as *Tridens pulchellus* (H.B.K.) Hitchc.), 124 (032811 - no record of genus (record for *Erioneuron*) or species), 127, **WTK** (April 16,2008)*

***Digitaria californica* (G. Bentham) J.T. Henrard: Arizona Cottontop**

SYNONYMY: *Trichachne californica* (G. Bentham) M.A. Chase. COMMON NAMES: Arizona Cotton Grass; Arizona Cotton Top; Arizona Cotton-grass; Arizona Cotton-top; Arizona Cottongrass; Arizona Cottontop; California Cotton-grass; California Cotton-top; California Cottontop; California Crab Grass; California Crabgrass; Cotton Grass (a name also applied to other species); Cotton Top (Texas, a name also applied to other species); Cotton-top (a name also applied to other species); [Arizona, California] Cotton-top (English)[140]; Cottongrass (a name also applied to other species); Cottontop (a name also applied to other species); Plumero Blanco ("White Feather Duster", Spanish)[140]; Punta Blanca (Spanish); Tł'oh ("Grass" a word applied to any grass, Athapascan: Western Apache)[140]; Wahá♭ ("Grass" a word applied to any grass, Uto-Aztecan: Northern Paiute)[140]; Wa$ai ("Grass" a word applied to any grass, Uto-Aztecan: Tohono O'odham)[140]; Zacate Punta Blanca ("White Top Grass", Spanish: Chihuahua, Sonora)[140]. DESCRIPTION: Terrestrial perennial graminoid (a bunchgrass (clumpgrass) with geniculate, ascending and/or erect culms 1 to 4 feet in height); the foliage may be dark bluish-green, gray-green, green or yellow-green curing to gray or straw; spikelets (flowers) are purplish-pink, flowering generally takes place between early August and early December (additional records: one for early May and one for early July); the cottony seedheads are covered by silky hairs. HABITAT: Within the range of this species it has been reported from rocky mountains; mountaintops; sandy-loamy mesas; shaded rocky cliffs; bases of cliffs; rocky and gravelly-loamy canyons; rocky canyon walls; sandy canyon bottoms; bouldery and rocky talus slopes; crevices in rocks; rock buttes; knobs; ledges; rocky ridges; foothills; bouldery and rocky hills; rocky hillsides; bouldery escarpments; bouldery, bouldery-rocky, bouldery-rocky-sandy, rocky, rocky-gravelly, rocky-sandy-loamy, gravelly, gravelly-sandy, gravelly-clayey, gravelly-sandy-loamy, sandy, sandy-loamy, sandy-clayey and clayey-loamy slopes; alluvial fans; bajadas; bouldery outcrops; amongst boulders and rocks; silty plains; rocky and gravelly flats; hollows; valley floors; valley bottoms; roadbeds; along gravelly and sandy roadsides; arroyos; rocky draws; gulches; ravines; springs; along creeks; creekbeds;

riverbeds; along and in sandy and silty-clayey washes; within drainage ways; marshes; along (rocky and sandy) banks of arroyos, streams and washes; gravel bars; along benches; terraces; clayey bottomlands; sandy floodplains; ditches; sandy riparian areas, and disturbed areas growing in dry rocky desert pavement; bouldery, bouldery-rocky, bouldery-rocky-sandy, rocky, rocky-gravelly, rocky-sandy, shaley, stony, cobbly, gravelly, gravelly-sandy, pebbly-sandy and sandy ground; rocky-sandy loam, rocky-clayey loam, gravelly loam, gravelly-sandy loam, sandy loam, clayey loam and loam ground; gravelly clay, sandy clay, silty clay and clay ground, and sandy silty and silty ground, occurring from 200 to 7,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Digitaria californica* is native to southwest-central and southern North America; Central America, and western and southern South America. *5, 6, 15, 16, 33 (recorded as *Trichachne californica* (Benth.) Chase, Page 296), 43 (100609), 44 (110311), 46 (recorded as *Trichachne californica* (Benth.) Chase, Page 132), 48, 58, 63 (100609 - color presentation), 77, **85** (110311 - color presentation), 105 (recorded as *Trichachne californica* (Benth.) Chase), 124 (110311), 140 (Pages 199, 203-204 & 299)*

***Digitaria insularis* (C. Linnaeus) C.C. Mez ex E.L. Ekman: Sourgrass**

SYNONYMY: *Trichachne insularis* (C. Linnaeus) C.G. Nees von Esenbeck. COMMON NAMES: Barba de Indio (Spanish); Camalote; Cotton Grass (a name also applied to other species); Feather Grass; Plumerillo Café (Hispanic); Rabo de Zorra (Spanish); Sour Grass; Sourgrass; Tł'oh ("Grass" a word applied to any grass, Athapascan: Western Apache)[140]; Waṣai ("Grass" a word applied to any grass, Uto-Aztecan: Tohono O'odham)[140]; Zacate Mano Punta Café (Hispanic); Zacate Taiwan (Hispanic: Mexico, Yucatan). DESCRIPTION: Terrestrial perennial tufted graminoid (a bunchgrass (clumpgrass) with ascending and/or erect culms 2 to 6½ feet in height); the foliage is green; the inflorescence is pale green; based on few records located, flowering generally takes place between late May and early October (flowering records: one for mid-January, one for late May, one for late June, one for early August, one for early September, and one for early October; flowering ending as late as November has been reported). HABITAT: Within the range of this species it has been reported from mountains; cliffs; bases of cliffs; rocky canyons; canyon bottoms; clearings in forests; foothills; hills; rocky hilltops; rocky-clayey hillsides; rocky slopes; gravelly plains; bouldery-sandy and rocky flats; along clayey-loamy roadsides; arroyos; within draws; within rocky drainages; drainage ways; rocky and sandy floodplains; sandy riparian areas, and disturbed areas growing in moist and dry bouldery, bouldery-sandy, rocky, gravelly and sandy ground; sandy clay and clayey loam ground, and rocky clay ground, occurring from sea level to 7,300 feet in elevation in the forest, woodland, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Digitaria insularis* is native to south-central and southern North America; Central America and coastal islands in the Caribbean Sea, and South America. *5, 6, 30, 33 (recorded as *Trichachne insularis* (L.) Nees., Pages 296-297), 43 (100609), 44 (110311 - no record of species), 46 (recorded as *Trichachne insularis* (L.) Nees., Page 131), 58, 63 (100609), 77, **85** (110311 - color presentation of dried material), 124 (110311 - no record of species; genus record), 140 (Pages 203, 204 & 299)*

***Echinochloa crus-galli* (C. Linnaeus) A.M. Palisot de Beauvois: Barnyardgrass**

COMMON NAMES: Ankee Millet (Iowa); Arrocillo (Spanish); Barn Grass; Barn Yard Grass (a name also applied to other species); Barn-grass (a name also applied to other species); Barngrass (a name also applied to other species); Barnyard Grass (a name also applied to other species and the genus *Echinochloa*, Nebraska); Barnyard Millet (a name also applied to the genus *Echinochloa*); Barnyard-grass (a name also applied to other species and the genus *Echinochloa*, Nebraska); Barnyardgrass (a name also applied to other species); Chicken Panic; Chicken Panic Grass; Chicken Panicgrass; Chicken-panic Grass; Chicken-panic-grass; Cock's Foot (a name also applied to other species); Cock's-foot (a name also applied to other species); Cock-spur Barnyard Grass; Cocks Foot Grass (a name also applied to other species); Cocks-foot Grass (a name also applied to other species); Cock-spur Barnyard Grass; Cocksfoot Panicum; Cockspur (a name also applied to the genus *Echinochloa*); Cockspur Barnyard Grass; Cockspur Grass (a name also applied to the genus *Echinochloa*); Cockspur-grass (a name also applied to the genus *Echinochloa*); Common Barnyard Grass; Common Barnyard-grass; Common Barnyardgrass; Common Cockspur; Common Cockspur Grass; Crusgalli Barnyard Grass; Echinochloa Pied-de-coq (French); Gewöhnliche Hühnerhirse (German); Grama Morada (Hispanic); Hedgehog Grass; Hühnerhirse (German); Japanese Millet (a name also applied to other species); Large Barnyard Grass; Large Barnyard-grass; Large Barnyardgrass; Large Crowfoot Grass (New Mexico); Loose Panic Grass; Loose Panic-grass; Mexican Barnyard Grass; Pasto Alemán (Hispanic); Pasto Mijillo (Hispanic); Pata de Gallo (Spanish); Pie de Gallina (Spanish); Pied-de-coq (French); Sanwak (India); Water Grass (a name also applied to other species); Water-grass (a name also applied to other species); Watergrass (a name also applied to other species); Zacate de Agua (Spanish); Zacate de Corral (Hispanic). DESCRIPTION: Terrestrial annual graminoid (spreading, decumbent and/or erect culms 4 to 83 inches in height; one plant was described as being 4 feet in height an 40 inches in diameter at the base); the foliage may be gray-green or yellow-green; the leaves may have purple bands; flowering generally takes place between mid-May and early November; however, flowering year round has been reported (additional record: one for mid-December). HABITAT: Within the range of this species it has been reported from mountains; gravelly-sandy and sandy mesas; gravelly-sandy plateaus; bases of cliffs; rocky and gravelly-loamy canyons; rocky, rocky-sandy, sandy and loamy canyon bottoms; pockets of soil; bluffs; ridges; ridgetops; openings in woodlands; loamy meadows; escarpments; rocky, gravelly, sandy, sandy-clayey-loamy, loamy, clayey and clayey-loamy slopes; amongst cobbles; gravelly-sandy plains; gravelly, gravelly-loamy and sandy flats; uplands; hollows; valley floors; coastal plains; along gravelly and sandy-loamy roadbeds; along gravelly, gravelly-loamy, gravelly-clayey-loamy, sandy and sandy-loamy roadsides; arroyos; along draws; gulches; gullies; bottoms of gullies; ravines; sandy and clayey seeps; springs; along and in sandy streams; along and in rocky-sandy and sandy streambeds; along creeks; within rocky creekbeds; along and in

rivers; in cobbly-sandy and sandy riverbeds; along and in rocky and sandy washes; within drainages; poolbeds; along and in ponds; muddy pondbeds; along lakes; clayey lakebeds; bogs; ciénegas; clayey freshwater marshes; swamps; clayey-muddy depressions; within muddy sloughs; swales; along (muddy, gravelly-sandy, sandy-loamy and sandy) banks of springs, streams, creeks, rivers, washes, ponds and lakes; along (muddy, rocky and sandy) edges of streams, creeks, rivers, watercourses, ponds, lakes and sloughs; along (sandy and clayey) margins of creeks and ponds; along (sandy-loamy) shores of ponds and lakes; mudflats; gravel, gravelly-sand and sand bars; sandy beaches; sandy benches; along terraces; sandy bottomlands; sandy floodplains; lowlands; fencelines; dams; levees; in mud around stock tanks (charcos, represos); muddy edges and shores of reservoirs; along and in muddy canals; muddy canal banks; along sandy-clayey ditches; along clayey-loamy ditch banks; cobbly-sandy riparian areas; waste places, and disturbed areas growing in shallow water; muddy, and wet, moist, damp and dry bouldery, rocky, rocky-sandy, cobbly, cobbly-sandy, gravelly, gravelly-sandy and sandy ground; gravelly loam, gravelly-clayey loam, sandy loam, sandy-clayey loam, clay loam, silty loam, humus-clayey loam and loam ground, and sandy clay, loamy clay and clay ground, occurring from sea level to 9,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant that poses a significant threat to our native biotic communities. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used for food. *Echinochloa crus-galli* is native to Europe. *5, 6, 30, 33 (Pages 276-277), 43 (100809), 44 (041411), 46 (Page 138), 58, 63 (100809 - color presentation), 68, 80 (Barnyard Grass is listed as a Rarely Poisonous and Suspected Poisonous Range Plant "This annual grass has been reported to develop toxic levels of nitrate."), **85** (110611 - color presentation of dried material), 101 (color photograph), 124 (041411), 127*

Elymus triticoides (see *Leymus triticoides*)

***Eragrostis barrelieri* J.A. Daveau: Mediterranean Lovegrass**

COMMON NAMES: Barrelier Eragrostis; Barrelier Lovegrass; Mediterranean Love Grass; Mediterranean Love-grass; Mediterranean Lovegrass; Pitted Love Grass; Pitted Love-grass; Pitted Lovegrass. DESCRIPTION: Terrestrial annual tufted graminoid (prostrate and/or erect culms (decumbent at the base) 2 inches to 2 feet in height); the spikelets (flowers) may be grayish, greenish, lead-green or reddish-purple; the anthers are reddish-brown; flowering generally takes place between mid-March and late November (flowering records: one for mid-March, two for early April, one for late May, one for mid-June, one for late June, one for mid-July, two for late July, four for mid-August, one for late August, three for early September, one for late September, two for early October, one for late October, one for mid-November and one for late November). HABITAT: Within the range of this species it has been reported from mountains; sandy mesas; canyons; pockets of sandy soil; gravelly buttes; rocky, gravelly, sandy and clayey hills; rocky, rocky-gravelly and gravelly slopes; rock outcrops; clayey banks; prairies; sandy flats; sandy areas near railroad yards; sandy-silty roadways; along gravelly, gravelly-loamy, gravelly-clayey-loamy, sandy and silty-loamy roadsides; rocky gullies; along streams; along creeks; along rivers; sandy riverbeds; within washes; pebbly drainage ways; banks of rivers; edges of streams and playas; sand bars; sandy benches; bottomlands; sandy floodplains; within ditches; riparian areas; waste places, and disturbed areas growing in moist, damp and dry rocky, rocky-gravelly, gravelly, pebbly and sandy ground; gravelly loam, gravelly-clayey loam and silty loam ground; clay ground, and sandy silty ground, occurring from sea level to 7,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant. *Eragrostis barrelieri* is native to southern Europe; southern and western Asia, and northern and western Africa and coastal islands in the North Atlantic Ocean. *5, 6, 16, 33 (Page 82), 43 (101009), 44 (041411), 46 (Page 86), 63 (041411), 77, **85** (112311 - color presentation including habitat), 124 (041411)*

***Eragrostis cilianensis* (C. Allioni) F. Vignolo-Lutati ex E.E. Janchen: Stinkgrass**

SYNONYMY: *Eragrostis megastachya* (G.L. Koeler) J.H. Link. COMMON NAMES: Amoresco (Hispanic); Candy Grass (a name also applied to other species and the genus *Eragrostis*); Candy-grass (a name also applied to other species and the genus *Eragrostis*); Candygrass (a name also applied to other species and the genus *Eragrostis*); Éragrostide Fétide; Graminha (Portuguese: Brazil); Großes Liebesgras (German); Gray Love Grass; Lovegrass (a name also applied to other species and the genus *Eragrostis*); Stink Grass (a name also applied to other species and the genus *Eragrostis*); Stinkgrass (a name also applied to other species and the genus *Eragrostis*); Stinking Lovegrass; Strong-scented Lovegrass (a name also applied to other species); Strongscented Lovegrass (a name also applied to other species); Watergrass; Zacate Apestoso (Hispanic); Zacate Arestoso[140]; Zacate Borreguero (Hispanic); Zacate de Amor Hediondo (Hispanic); Zacate Estepario (Hispanic). DESCRIPTION: Terrestrial annual tufted graminoid (a bunchgrass with prostrate, decumbent, geniculate and/or erect culms 3 to 36 inches in height); the foliage is gray-green or light green; the spikelets (flowers) are greenish, white or whitish with green veins turning tawny with age, the anthers are yellow; flowering generally takes place between early July and late October (additional records: one for mid-March, one for late March, one for mid-May, one for late May, two for early June, one for mid-November, one for late November and one for mid-December). HABITAT: Within the range of this species it has been reported from mountains; sandy mesas; sandy bases of cliffs; rocky, gravelly and sandy canyons; gravelly-sandy and sandy canyon bottoms; bluffs; knolls; ledges; bedrock ridges; bases of ridges; sandy meadows; bouldery foothills; rocky and gravelly hills; rocky and gravelly hillsides; rocky, rocky-gravelly, rocky-clayey-loamy, gravelly, gravelly-sandy-loamy, gravelly-loamy, sandy-loamy, sandy-clayey, sandy-humusy, loamy, clayey and clayey-loamy slopes; sandy-loamy bottoms of slopes; rocky outcrops; amongst boulders and rocks; coves; sandy outwash; gravelly-clayey slides; gravelly-sandy plains; gravelly, sandy, sandy-loamy, sandy-silty and clayey-loamy flats; uplands; valley floors; valley bottoms; roadbeds; roadcuts; along gravelly, gravelly-loamy, sandy, sandy-silty and loamy roadsides; two-tracks; along sandy arroyos; bottoms of arroyos; loamy and loamy-clayey draws; gulches; gullies; gravelly-sandy

seeps; springs; along streams; along and in cobbly-sandy and loamy-clayey streambeds; along creeks; in gravelly-sandy and sandy creekbeds; along rivers; in gravelly-sandy, sandy and sandy-clayey riverbeds; along and in gravelly, sandy and silty-clayey washes; within drainage ways; clayey lakebeds; ciénegas; marshes; bedrock depressions; silty swales; along (rocky-sandy, gravelly, sandy and sandy-loamy) banks of streams, creeks, rivers, washes and drainages; (sandy) edges of streams, ponds, lakes and marshes; mud flats; sandy areas of drawdown; sand bars; sandy benches; gravelly-loamy terraces; loamy bottomlands; gravelly, sandy and clayey floodplains; sandy mesquite bosques; sandy fencerows; around and in stock tanks (charcos, represos); around and in reservoirs; banks of reservoirs; along sandy ditches; sandy riparian areas; waste places, and disturbed areas growing in clayey-loamy mucky and wet, moist, damp and dry bouldery, rocky, rocky-gravelly, stony, cobbly-sandy, gravelly, gravelly-sandy and sandy ground; rocky-clayey loam, gravelly loam, gravelly-sandy loam, sandy loam, clayey loam, clayey-humusy loam and loam ground; gravelly clay, sandy clay, loamy clay, silty clay and clay ground; sandy silty and silty ground, and sandy humusy ground, occurring from sea level to 8,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant. This plant may have a foul odor. *Eragrostis cilianensis* is native to middle, eastern and southern Europe; western, eastern and southern Asia, and Africa. *5, 6, 15, 16, 30, 33 (recorded as *Eragrostis megastachya* (Koel.) Link, Pages 82-83), 43 (101009), 44 (032811), 46 (Page 86), 58, 63 (101009 - color presentation of seed), 68, 77, 80 (This plant is listed as a Rarely Poisonous and Suspected Poisonous Range Plant. "This annual grass was reported to cause poisoning in horses when fed in large quantities over a long period of time."), **85** (112511 - color presentation), 101 (color photograph), 105 (recorded as *Eragrostis megastachya* (Koel.) Link), 124 (032811), 140 (Pages 207 & 300)*

Eragrostis echinochloidea O. Stapf: African Lovegrass

COMMON NAME: African Lovegrass; Bosluisgras (Afrikaans); Lovegrass (a name also applied to other species and the genus *Eragrostis*); Tick Grass; Tickgrass. DESCRIPTION: Terrestrial perennial tufted graminoid (a bunchgrass (clumpgrass) with decumbent, geniculate, ascending and/or erect culms 12 to 40 inches in height); the spikelets (flowers) are greenish to lead; the anthers are yellowish; based on few records located, flowering generally takes place between mid-February and late October (flowering records: one for mid-February, one for mid-April; two for early October, and one for late October). HABITAT: Within the range of this species it has been reported from mountains; canyon bottoms; crevices in rocks; foothills; hillsides; rocky slopes; banks; sandy plains; flats; along gravelly and sandy roadsides; sandy streambeds; riverbeds; along and in sandy washes; swales; (sandy) banks of washes and drainage ways; floodplains; mesquite bosques; sandy riparian areas, and disturbed areas growing in moist, damp and dry rocky, gravelly and sandy ground, occurring from 1,100 to 4,600 feet in elevation in the woodland, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant. *Eragrostis echinochloidea* is native to southern Africa. *5, 6, 15, 16, 33 (no record of species), 43 (010711 - *Eragrostis echinochoidea* Stapf), 44 (041411 - no record of species; genus record), 46 (Page 87, note beneath *Eragrostis lehmanniana*), 58, 63 (112611 - color presentation of seed), 77, **85** (112611 - color presentation of dried material), 124 (041411 - no record of species; genus record)*

Eragrostis intermedia A.S. Hitchcock: Plains Lovegrass

COMMON NAMES: Love-grass (a name also applied to other species and the genus *Eragrostis*); Love-grass (English)[140]; Plains Love Grass; Plains Love-grass; Plains Lovegrass; Tł'oh ("Grass" a name applied to grasses, Athapascan: Navajo, Western Apache)[140]; Waṣai ("Grass" a name applied to grasses, Uto-Aztecan: Tohono O'odham)[140]; Zacate Amor de Planicie (Hispanic); Zacate de Amor (Hispanic); Zacate Llanero ("Prairie Grass", Spanish: Sonora)[140]; Zacate Pradera (Hispanic); Zacate Volador ("Flying Grass", Spanish: Arizona, Sonora)[140]. DESCRIPTION: Terrestrial perennial tufted graminoid (a bunchgrass (clumpgrass) with decumbent, geniculate, ascending and/or erect culms 8 to 40 inches in height; plants in clumps 2 inches to 1 foot in width at the base were observed and reported); the foliage is gray-green, green or yellow-green curing to a light straw-yellow; the branches of the inflorescence is red-purple; the spikelets (flowers) are green or greenish-tan; flowering generally takes place between early July and late October (additional records: one for mid-March, one for late March, one for mid-April, three for mid-May and one for late November; flowering beginning as early as June has been reported). HABITAT: Within the range of this species it has been reported from mountains; mountaintops; bases of mountains; rocky, gravelly-sandy and sandy mesas; plateaus; bases of cliffs; canyons; canyon walls; along rocky and sandy canyon bottoms; talus slopes; crevices in rocks; clefts in granite domes; rocky bluffs; along rocky ridges; ridgetops; ridgelines; meadows; rocky and rocky-gravelly-loamy foothills; rocky hills; rocky hilltops; bouldery, rocky, gravelly-loamy and silty hillsides; rocky, rocky-gravelly, stony-clayey-loamy, gravelly, sandy, sandy-clayey, sandy-clayey-loamy, clayey and clayey-loamy slopes; bases of slopes; rocky outcrops; bases of rock outcrops; amongst boulders and rocks; sandy prairies; rocky, gravelly-sandy and sandy plains; clayey flats; sandy basins; dells; valley floors; roadbeds; along gravelly roadsides; two-tracks; sandy bottoms of arroyos; gulches; within sandy ravines (barrancas); springs; in cobbles and sand along streams; rocky and cobbly streambeds; along sandy creeks; riverbeds; along and in rocky, rocky-sandy and sandy washes; along and in sandy drainages; low spots; along (rocky-sandy, gravelly and sandy) banks of creeks, rivers and washes; edges of washes and lakes; along margins of streams; (rocky) shores of lakes and bays; benches; rock shelves; floodplains; along fencelines; sandy riparian areas, and disturbed areas growing in moist and dry bouldery, rocky, rocky-gravelly, rocky-sandy, stony, cobbly, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-gravelly loam, rocky-clayey loam, stony loam, stony-clayey loam, gravelly loam, gravelly-clayey loam, sandy loam, sandy-clayey loam, clayey loam and loam ground; rocky-clay, gravelly clay, sandy clay and clay ground, and silty ground, occurring from 100 to 8,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Eragrostis intermedia* is native to

south-central and southern North America and Central America. *5, 6, 15, 30, 33 (Pages 80-81), 43 (053110), 44 (041511 - no record of Common Names listed under species; genus record), 46 (Page 87), 48, 58, 63 (053110 - color presentation), 77, **85** (112611 - color presentation), 105, 124 (041511), 140 (Pages 206-207 & 300)*

***Eragrostis lehmanniana* C.G. Nees von Esenbeck: Lehmann Lovegrass**

COMMON NAMES: Lehman (error) Lovegrass; Lehmann Love Grass; Lehmann Lovegrass; Lehmann's Love Grass; Lehmann's Lovegrass; Lovegrass (a name also applied to other species and the genus *Eragrostis*); Zacate Africano; Zacate de Amor; Zacate de Amor Lehman (Spanish). DESCRIPTION: Terrestrial perennial tufted graminoid (a bunchgrass (clumpgrass) with decumbent, geniculate, ascending and/or erect culms 8 to 48 inches in height); the foliage is bright green or yellow-green curing to a dull yellow; the spikelets (flowers) are grayish-green, lead or straw colored with yellowish anthers; flowering generally takes place between late July and early November (flowering records: one for early March, one for mid-March, one for early May, one for mid-May, two for early June, two for early July, two for late July, one for early August, three for mid-August, three for late August, one for early September, two for mid-September, one for late September, three for early October, two for mid-October, two for late October and two for early November; flowering beginning in February and ending in May and again beginning in August and end ending in November has also been reported). HABITAT: Within the range of this species it has been reported from mountains; rocky mesas; rocky canyons; along rocky canyon bottoms; gravelly ridges; meadows; rocky foothills; rocky hills; rocky hillsides; rocky, gravelly, gravelly-loamy and sandy-loamy slopes; gravelly bajadas; rock outcrops; amongst boulders; dunes; gravelly plains; gravelly, sandy and clayey flats; clayey valley floors; roadbeds; along sandy and clayey roadsides; two-tracks; along arroyos; springs; along and in streambeds; along creeks; along and in creekbeds; along rivers; sandy riverbeds; along gravelly and sandy washes; drainages; depressions; along banks of rivers; shores of lakes; sandy beaches; cobbly-sandy benches; travertine clefts; terraces; loamy bottomlands; sandy floodplains; mesquite bosques; ditches; riparian areas, and disturbed areas growing in dry bouldery, bouldery-cobbly-sandy, rocky, rocky-cobbly-sandy, rocky-sandy, stony, cobbly-sandy, gravelly, gravelly-sandy and sandy ground; gravelly loam, sandy loam and clayey loam ground, and clay ground, occurring from 100 to 7,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant that poses a significant threat to our native biotic communities. *Eragrostis lehmanniana* is native to southern Africa. *5, 6, 15, 16, 22 (color photograph), 33 (Page 79), 43 (101009), 44 (112611), 46 (Page 87), 58, 63 (101009 - color presentation of seeds), 77, **85** (112611 - color presentation), 105, 124 (112611 - no record of species; genus record), 140 (Pages 206, 207 & 300)*

Eragrostis megastachya (see *Eragrostis cilianensis*)

***Eragrostis pectinacea* (A. Michaux) C.G. Nees von Esenbeck ex E.G. von Steudel: Tufted Lovegrass**

COMMON NAMES: Carolina Love Grass; Carolina Lovegrass; Comb Grass (Nebraska); Desert Love Grass; Desert Lovegrass; Éragrostide Pectinée; False Red Top; False Redtop; Ihta Zaa (Mixteco); Kšam <košom, kwšam> (this name may refer to *Eragrostis mexicana* and/or *Eragrostis pectinacea*, Yuman: Cocopa)[140]; Meadow Comb Grass; Pasto de Semillas de Pajarito (Hispanic); Pink Grass; Purple Eragrostis; Purple Love Grass; Purple Love-grass; Purple Lovegrass; Pursh's Eragrostis; Pursh's Love Grass; Pursh's Love-grass; Southern Eragrostis; Southern Love-grass; Spreading Lovegrass; Tufted Love Grass; Tufted Love-grass; Tufted Lovegrass; Western Love Grass; Western Lovegrass. DESCRIPTION: Terrestrial annual or perennial tufted graminoid (a bunchgrass (clumpgrass) with spreading decumbent, geniculate and/or erect culms 4 to 40 inches in height); the spikelets (flowers) may be green, lead-green, dark reddish-purple, grayish-green or yellowish-brown; the anthers are purplish; flowering generally takes place between early July and mid-November (additional records: one for mid-February, two for early March, two for mid-March, one for late March, one for mid-May, one for early June and one for late December). HABITAT: Within the range of this species it has been reported from mountains; rocky mesas; plateaus; gravelly bases of cliffs; rocky canyons; sandy canyon bottoms; gravelly-clayey slides; along talus slopes; crevices in rocks; foothills; rocky hills; hillsides; bouldery-rocky, rocky, rocky-gravelly, rocky-sandy, gravelly, gravelly-sandy, gravelly-sandy-loamy, sandy-loamy, sandy-clayey, loamy and clayey-loamy slopes; bajadas; rocky outcrops; amongst boulders; short grass prairies; sandy plains; sandy flats; basins; loamy valley floors; valley bottoms; coastal plains; along sandy railroad right-of-ways; gravelly roadbeds; along gravelly-sandy, sandy and clayey roadsides; in two-tracks; within arroyos; sandy-silty bottoms of arroyos; draws; gulches; sandy ravines; springs; along streams; along and in sandy streambeds; along gravelly-sandy creeks; creekbeds; gravelly soils along rivers; sandy riverbeds; along and in bouldery-sandy, gravelly and sandy washes; within sandy, sandy silty and silty drainage ways; dry ephemeral pools; poolbeds; clayey lakebeds; playas; ciénegas; marshes; sandy-silty and silty depressions; clayey swales; along (muddy, sandy and sandy-loamy) banks of arroyos, streams, creeks, rivers and washes; (sandy) edges of arroyos, ponds, playas, marshes, rivers and washes; margins of washes and ponds; along (silty) shores of rivers, pools and lakes; mudflats; cobbly-sand, gravel, gravelly-sand and sand bars; sandy beaches; sandy benches; gravelly terraces; clayey-loamy bottomlands; sandy floodplains; lowlands; mesquite bosques; in stock ponds; sandy edges of tanks and reservoirs; along and in ditches; gravelly and sandy riparian areas; waste places, and disturbed areas growing in muddy and wet, damp and dry bouldery, bouldery-rocky, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, cobbly, gravelly, gravelly-sandy and sandy ground; gravelly-sandy loam, sandy loam, clayey loam, humusy-clayey loam and loam ground; gravelly clay, sandy clay and clay ground, and sandy silty and silty ground, occurring from sea level to 8,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Eragrostis pectinacea* is native to northeast-central, south-central and southern North America; Central America and coastal islands in the Caribbean Sea, and South America. *5, 6, 15, 16, 30, 33 (Pages 87-88), 43 (101009), 44 (112711), 46 (Page 86), 58, 63 (112711), 77, **85**

(112711 - color presentation including habitat), 124 (112711), 140 (Page 300 - recorded as *Eragrostis pectinacea* (Michaux) Nees [*Eragrostis pectinacea* (Michaux) Nees var. *miserrima* (E. Fournier) J. Reeder])*

***Eriochloa acuminata* (J.S. Presl) K.S. Kunth: Tapertip Cupgrass**

COMMON NAMES: Cupgrass (a name also applied to other species and the genus *Eriochloa*); Southwestern Cup Grass; Southwestern Cup-grass; Southwestern Cupgrass; Tapertip Cup Grass; Taper Tipped Cup Grass; Taper-tip Cup Grass; Taper-tip Cup-grass; Taper-tipped Cup Grass; Taper-tipped Cup-grass; Tapertip Cup Grass; Tapertip Cupgrass; Tapertipped Cup Grass. DESCRIPTION: Terrestrial annual tufted graminoid (decumbent, ascending and/or erect culms 6 inches to 4 feet in height); the foliage may be bright green or yellow-green; based on few records located, flowering generally takes place between late August and mid-October (flowering records: three for late August and one for mid-October). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; rocky canyons; bedrock canyon bottoms; talus slopes; in pockets of soil on bedrock; sandy meadows; foothills; hills; rocky hillsides; rocky, rocky-gravelly, gravelly, sandy, rocky-loamy, gravelly-clayey, sandy-loamy, loamy and clayey slopes; bedrock outcrops; amongst boulders; plains; gravelly, sandy and loamy flats; valley floors; valley bottoms; along gravelly-loamy roadsides; arroyos; bottoms of arroyos; draws; gulches; seeps; along streams; streambeds; sandy riverbeds; along and in gravelly and sandy washes; rocky drainages; within rocky drainage ways; pools; depressions; swales; along banks of rivers and drainage ways; edges of ponds; benches; terraces; loamy bottomlands; sandy floodplains; mesquite bosques; along margins of stock tanks; along canals; along and in clayey ditches; sandy riparian areas, and disturbed areas growing in moist and dry rocky, rocky-gravelly, gravelly and sandy ground; rocky loam, gravelly-loam, sandy-loam, humus-clayey loam and loam ground, and gravelly clay, sandy-clay and clay ground, occurring from 100 to 9,300 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: Alternate spellings of *lemmonii* were presented: *lemmonii* and *lemmoni*. *Eriochloa acuminata* is native to south-central and southern North America. *5, 6, 33 (recoded as *Eriochloa lemmoni* Vasey & Scribn. var. *gracilis* (Fourn.) Gould., Pages 273-274), 43 (101109), 44 (041511), 46 (recoded as *Eriochloa gracilis* (Fourn.) Hitchc., Page 133), 58, 63 (021011), 68 (recoded as *Eriochloa gracilis* (Fourn.) Hitchc.), 77, **85** (112811 - color presentation), 101 (color photograph, recoded as *Eriochloa gracilis* (Fourn.) A.S. Hitchc.), 124 (041511 - no record of species; genus record)*

Erioneuron pulchellum (see *Dasyochloa pulchella*)

***Heteropogon contortus* (C. Linnaeus) A.M. Palisot de Beauvois ex J.J. Roemer & J.A. Schultes: Tanglehead**

SYNONYMY: *Andropogon contortus* C. Linnaeus. COMMON NAMES: Assegaaigras (Afrikaans); Barba Negra ("Black Beard", Spanish: Mexico)[140]; Bihag Waṣai ("Wrap-around Grass", Uto-Aztecan: Tohono O'odham)[140]; Biibhinol Vashai ("Wrap-around Grass", Uto-Aztecan: Akimel O'odham, Arizona)[140]; Black Spear Grass; Black Speargrass; Bunch Spear Grass; Bunched Speargrass; Carrizo (a name also applied to other grasses, Spanish: Sonora)[140]; Common Tangleweed; Contorted Tanglehead; Hierba Negros de los Prados ("Black Herb of the Prairies", Spanish: Mexico)[140]; Hierba Torcida (Spanish); Needle-grass (English: New Mexico)[140]; Pili Grass; Piligrass (Hawaii); Rabo de Asno ("Donkey's Tail", Spanish: Mexico)[140]; Retorcido Moreno ("Black Twisted", Spanish: Mexico)[140]; Spear Grass (a name also applied to other species); Speergras (German); Steekgras (Afrikaans); Tangel Head; Tangle Grass; Tangle Head; Tangle-head (English)[140]; Tangle-head Grass; Tangelhead; Tanglehead (a name also applied to the genus *Heteropogon*); Tanglehead Grass (a name also applied to the genus *Heteropogon*); Tł'oh ("Grass" a name applied to any grass, Athapascan: Western Apache, Navajo)[140]; Twisted Tanglehead; Ujchú (Uto-Aztecan: Guarijío)[140]; Wahá‡ ("Grass" any grass, Uto-Aztecan: Northern Paiute)[140]; Zacate Aceitillo ("Oily Grass", Spanish: Chihuahua, Sonora)[140]; Zacate Colorado ("Red Grass", Spanish: Arizona, Chihuahua, Sonora)[140]; Zacate Retorcido ("Twisted Grass", Spanish: Mexico)[140]. DESCRIPTION: Terrestrial perennial tufted graminoid (a bunchgrass (clumpgrass) with ascending and/or erect culms 8 inches to 5 feet in height); the foliage is bright green or yellow-green curing to orange-brown; the spikelets (flowers) may be brown or purple; based on few records located, flowering generally takes place between early January and late May and again between late July and early December (flowering records: one for early January, three for late January, one for late February, one for mid-March, one for early May, one for late May, one for late July, three for early August, five for late August, three for early September, five for mid-September, four for late September, three for early October, three for mid-October, five for early November, one for mid-November and one for early December). HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; rocky, gravelly and sandy mesas; cliffs; cliff faces; bases of cliffs; along and in rocky canyons; along canyon walls; along bouldery, rocky and gravelly canyon bottoms; rockslides; crevices in rocks; ledges; along rocky ridges; bouldery and rocky ridgetops; volcanic cones; gravelly and sandy foothills; rocky hills; rocky and gravelly-clayey hillsides; bedrock, rocky, gravelly, gravelly-sandy and sandy slopes; rocky outcrops; amongst boulders and rocks; lava flows; rocky and sandy plains; gravelly flats; valley floors; along sandy roadsides; along and in rocky and sandy arroyos; rocky-sandy bottoms of arroyos; along draws; gulches; within gullies; ravines; around seeping streams; streambeds; creekbeds; along and in rocky, rocky-sandy, cobbly, gravelly-sandy and sandy washes; within gravelly-sandy-loamy drainages; within rocky and sandy drainage ways; bedrock tinajas; around pools; (silty) banks of streams and rainwater basins; edges of washes; margins of waterways; sandy beaches; terraces; floodplains; riparian areas, and disturbed areas growing in dry bouldery, bouldery-sandy, rocky, rocky-sandy, cobbly, gravelly, gravelly-sandy and sandy ground; gravelly-sandy loam and loam ground; gravelly clay ground, and silty ground, occurring from sea level to 7,500 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat; however, the awns may bring about painful sores in livestock and pets and in some areas may be considered to be a noxious weed. It is able to become established in newly disturbed and poor soils. *Heteropogon contortus* is native to south-central and

southern North America; eastern Asia, and possibly to other tropic sub-tropic and warm-temperate regions of the world. *5, 6, 15, 16, 33 (Page 302), 43 (101209), 44 (120411 - color photograph), 46 (Page 144), 48, 58, 63 (120411 - color presentation), 77, 85 (120411 - color presentation including habitat), 105 (Reports that Tanglehead Grass "is one of the easiest grasses to establish under conditions of low rainfall."), 124 (120411 - no record of genus or species), 140 (Pages 207-208 & 300), **HR***

***Hordeum murinum* C. Linnaeus subsp. *leporinum* (J.H. Link) G. Arcangeli: Hare Barley**

SYNONYMY: *Critesion murinum* (C. Linnaeus) Á. Löve subsp. *leporinum* (J.H. Link) Á. Löve, *Hordeum leporinum* J.H. Link. COMMON NAMES: Cebadilla Silvestre; Charming Barley; Common Foxtail (a name also applied to other species); Hare Barley; Hare Wall Barley; Lepor Barley; Leporinum Barley; Mouse Barley (a name also applied to the species); Wild Barley (a name also applied to other species and the genus *Hordeum*). DESCRIPTION: Terrestrial annual graminoid (4 to 44 inches in height); flowering generally takes place between mid-March and early June. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; mesas; canyons; bluffs; ridgetops; openings in woodlands; foothills; hills; rocky and sandy slopes; sand dunes; sandy flats; valley floors; along roadsides; springs; along creeks; washes; depressions; edges of ponds; floodplains; ditches; ditch banks; riparian areas; waste places, and disturbed areas growing in wet and dry rocky, gravelly, gravelly-sandy and sandy ground and loam ground, occurring from sea level to 9,000 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant. The species, *Hordeum murinum*, was reported to have been utilized by native peoples of North America; it was noted as having been used for food and as a drug or medication (*H.m.* subsp. *glaucum*). *Hordeum murinum* C. Linnaeus subsp. *leporinum* is native to central, eastern and southern Europe; western and central Asia, and northern Africa and coastal islands in the North Atlantic Ocean. *5, 6, 15, 33 (recorded as *Hordeum leporinum* Link, Page 106), 43 (101309), 44 (041611), 46 (recorded as *Hordeum leporinum* Link, Page 97), 63 (041611 - color presentation of seed), 68 (recorded as *Hordeum leporinum* Link), **85** (041611 - color presentation of dried material), 101 (color photograph, recorded as *Hordeum leporinum* Link, "Awns of mature plants can cause serious injury to eyes, nose, and throat of grazing animals."), 124 (041611 - no record of species or subspecies; genus record), 127 (species), **HR***

Hordeum leporinum (see *Hordeum murinum* subsp. *leporinum*)

***Hordeum pusillum* T. Nuttall: Little Barley**

SYNONYMY: *Hordeum pusillum* T. Nuttall var. *pubens* A.S. Hitchock. COMMON NAMES: Barley Grass (a name also applied to the genus *Hordeum*); Dvärgkorn (Swedish); Little Barley; Little Wildbarley; Mouse Barley; Wild Barley (a name also applied to other species and the genus *Hordeum*). DESCRIPTION: Terrestrial tufted annual graminoid (geniculate, ascending and/or erect culms 4 to 24 inches in height); the foliage is gray-green turning yellow-green; the spikelets (flowers) are pale green; flowering generally takes place between mid-March and late July. HABITAT: Within the range of this species it has been reported from mountains; rocky and clayey-loamy mesas; plateaus; canyon rims; bases of cliffs; rocky canyons; canyon bottoms; rocky, rocky-gravelly-clayey and gravelly-sandy buttes; rocky ridges; rocky and rocky-gravelly-silty ridgetops; sandy and clayey meadows; rocky and sandy hills; rocky hillsides; rocky, stony, shaley, gravelly, sandy, sandy-loamy, clayey, clayey-loamy and silty-clayey slopes; rock beds; sandy alcoves; sandy steppes; sandy, loamy-clayey, clayey-loamy, silty and silty-loamy prairies; plains; gravelly, gravelly-clayey-loamy, sandy and clayey flats; rocky, sandy, clayey, silty and silty-loamy uplands; valley floors; valley bottoms; along railroad right-of-ways; silty-loamy roadbeds; roadcuts; along gravelly, sandy-loamy and sandy-clayey-loamy roadsides; within clayey draws; bottoms of draws; gulches; ravines; seeps; around springs; along streams; streambeds; along and in creeks; clayey-loamy creekbeds; in sand along rivers; sandy riverbeds; along and in clayey washes; clayey drainages; among and in pools; in rocks around ponds; clayey playas; ciénegas; clayey depressions; clayey swales; (shaley, sandy, loamy and loamy-clayey) banks of draws, creeks, rivers; edges of rivers, ponds and marshes; margins of streams and lakes; shores of lakes; sandy benches; clayey shelves; sandy terraces; clayey bottomlands; rocky-gravelly and clayey floodplains; along fencelines; clayey catchments; around stock tanks; bottoms of reservoirs; along and in ditches; sandy riparian areas; waste places, and disturbed areas growing in moist, damp and dry rocky, rocky-gravelly, shaley, stony, gravelly, gravelly-sandy and sandy ground; gravelly-clayey loam, sandy loam, sandy-clayey loam, clayey loam, silty loam and loam ground; rocky clay, rocky-gravelly clay, gravelly clay, sandy clay, loamy clay, silty clay and clay ground, and rocky-gravelly silty, gravelly silty and silty ground, occurring from sea level to 9,100 in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: Little Barley was grazed by American Bison (*Bos bison*), deer and Pronghorn (*Antilocapra americana*). *Hordeum pusillum* is native to west-central, southeast-central and southern North America and possibly islands in the North Atlantic Ocean. *5, 6, 15, 16, 33 (Page 107), 43 (101309), 44 (121011 - no records listed under Common Names; genus record), 46 (Page 97), 58, 63 (121011 - color presentation), 77, **85** (121011 - color presentation in habitat), 124 (121011), 140 (Pages 205 & 300)*

Hordeum pusillum var. *pubens* (see *Hordeum pusillum*)

Leptochloa filiformis (see *Leptochloa panicea* subsp. *brachiata*)

Leptochloa mucronata (see *Leptochloa panicea* subsp. *mucronata*)

***Leptochloa panicea* (A.J. Retzius) J. Ohwi subsp. *brachiata* (E.G. von Steudel) N. Snow: Mucronate Sprangletop**

SYNONYMY: *Leptochloa filiformis* (J.B. de Lamarck) A.M. Palisot de Beauvois. COMMON NAMES: Desparramo Rojo (Red Sprangle-top); Feather Grass; Feather-grass; Mucronate Sprangletop; Red Sprangle-top; Red Sprangletop; Salt Grass; Salt-grass; Slender Grass (a name also applied to the genus *Leptochloa*); Slender-grass (a name also applied to the genus *Leptochloa*); Zacate Salado (Salt Grass). DESCRIPTION: Terrestrial annual or perennial graminoid (decumbent and/or erect culms less than 4 inches to 5 feet in height; spreading at the base); the foliage is magenta, purplish or reddish; the spikelets (flowers) are tinged with purple or red; flowering generally takes place between late August and late September (additional records: one for mid-March, two for mid-October, two for early November, one for mid-November and one for mid-December; flowering beginning as early as May has been reported). HABITAT: Within the range of this species it has been reported from mountains; mountaintops; gravelly mesas; rocky canyons; canyon bottoms; rocky talus slopes; shallow pockets of soil in bedrock; buttes; rocky ridgetops; meadows; foothills; rocky hills; rocky hillsides; rocky, gravelly, gravelly-loamy and clayey slopes; bajadas; bouldery and rocky outcrops; silty lava flows; rocky and cobbly plains; flats; valley floors; along rocky and sandy roadsides; within sandy arroyos; bottoms of arroyos; within draws; springs; along streams; along cobbly-sandy streambeds; along creeks; bouldery-cobbly-sandy riverbeds; along and in gravelly, gravelly-sandy, sandy, sandy-loamy and silty washes; drainages; within clayey drainage ways; playas; (rocky) banks of rivers and washes; edges of ponds; gravel bars; loamy bottomlands; sandy floodplains; around stock tanks (represos); edges of canals; along and in ditches; along ditch banks; bouldery riparian areas, and disturbed areas growing in wet, damp and dry bouldery, bouldery-cobbly-sandy, rocky, cobbly, cobbly-sandy, gravelly, gravelly-sandy and sandy ground; gravelly loam, sandy loam and loam ground; gravelly clay and clay ground, and silty ground, occurring from sea level to 6,100 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Leptochloa panicea* subsp. *brachiata* is native to south-central and southern North America; Central America and islands in the Caribbean Sea, and central and southern South America. *5, 6, 15 (recorded as *Leptochloa filiformis* (Lam.) Beauv.), 16 (recorded as *Leptochloa filiformis* (Lam.) Beauv.), 33 (recorded as *Leptochloa filiformis* (Lam.) Beauv., Page 135), 43 (101509), 44 (121411 - no records listed under Common Names; genus records), 46 (recorded as *Leptochloa filiformis* (Lam.) Beauv., Page 123), 58 (recorded as *Leptochloa filiformis* (Lam.) Beauv.), 63 (121411), 68 (recorded as *Leptochloa filiformis* (Lam.) Beauv.), 77 (recorded as *Leptochloa filiformis* (Lam.) Beauv.), **85** (121411 - color presentation), 124 (121411), 140 (recorded as *Leptochloa panicea* (Retzius) Ohwi subsp. *brachiata* (Steudel) N. Snow [*Leptochloa filiformis* (Persoon) P. Beauvois; previously also known as *L. mucronata* (Michaux) Kunth or *L. panicea* subsp. *mucronata* (Michaux) Nowack (in part); subsp. *mucronata* now restricted to SE and central U.S.], Pages 209 & 300)*

Leptochloa panicea (A.J. Retzius) J. Ohwi subsp. *mucronata* (A. Michaux) R. Nowack: Mucronate Sprangletop

SYNONYMY: *Leptochloa mucronata* (A. Michaux) H.B. Kunth. COMMON NAMES: Desparramo Rojo; Feather Grass (a name also applied to other species); Feather-grass (a name also applied to other species); Mississippi Sprangletop; Mucronate Sprangletop (a name also applied to the species); Needle Spranletop (a name also applied to the species); Pointed Slender Grass (a name also applied to the species); Sharp-scale Leptochloa (a name also applied to the species and to other species); Sharp-scaled Leptochloa (a name also applied to the species); Slendergrass (a name also applied to the genus *Leptochloa*); Slender Grass (a name also applied to the genus *Leptochloa*). DESCRIPTION: Terrestrial annual or perennial graminoid (decumbent and/or erect culms less than 4 to 44 inches in height; spreading at the base); the inflorescence is green; flowering generally takes place between mid-March and mid-October (flowering records: one for mid-March, one for late April, one for early May, one for mid-July, three for mid-August, one for late August, two for early September, two for mid-September, two for early October, two for mid-October and one for mid-November). HABITAT: Within the range of this species it has been reported from mountains; rocky and gravelly canyons; canyon bottoms; chasms; ledges; rocky ridgetops; foothills; rocky and clayey hills; rocky hillsides; rocky, rocky-sandy, rocky-clayey, gravelly and gravelly-loamy slopes; rocky lava slopes; llanos; plains; gravelly-clayey and sandy-silty flats; valley bottoms; roadbeds; along gravelly roadsides; along arroyos; bottoms of arroyos; along streams; sandy streambeds; along creeks; in sandy soil along rivers; sandy riverbeds; along and in rocky, gravelly-sandy, gravelly-sandy-silty, sandy and silty washes; along drainages; playas; muddy-silty swampy areas; sandy-silty and silty depressions; banks of streams and rivers; (sandy) edges of ponds and playas; margins of arroyos and waterholes; benches; bottomlands; sandy floodplains; lowlands; along fencelines; around stock tanks (charcos, represos); along ditches; banks of ditches; gravelly riparian areas, and disturbed areas growing in muddy and wet, moist and dry rocky, rocky-sandy, gravelly, gravelly-sandy and sandy ground; gravelly loam ground; bouldery clay, rocky clay, gravelly clay and clay ground, and gravelly-sandy silty, sandy silty and silty ground, occurring from sea level to 5,600 feet in elevation in the forest, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an Exotic species. *Leptochloa panicea* subsp. *mucronata* is native to south-central (and southern?) North America. *5, 6, 33 (recorded as *Leptochloa mucronata pulchella* Scribn., brief note on page 135), 43 (101509), 44 (121511 - recorded as *Leptochloa mucronata*), 46 (no record), 63 (121511), **85** (121511), 124 (121511)*

Leptochloa viscida (F.L. Scribner) W.J. Beal: Sticky Sprangletop

COMMON NAMES: Kupo (a possible error in identification and reporting: Kupo should probably be applied to *Leptochloa dubia*, Yuman: Mohave); Sonoran Sprangletop; Sticky Sprangle Top; Sticky Sprangle-top; Sticky Sprangletop; Zacate Salado Pagajoso; Viscid Leptochloa; Viscid Sprangletop. DESCRIPTION: Terrestrial annual graminoid (prostrate, decumbent, geniculate and/or erect culms 1¼ to 24 inches in height); the spikelets (flowers) are green or magenta; the florets may be reddish; based on few flowering records found, flowering generally takes place between late August and late October

(flowering records: one for mid-January, one for August, one for early September, four for mid-September, one for late September and one for late October; flowering beginning as early as June has been reported). HABITAT: Within the range of this species it has been reported from mountains; mesas; canyon bottoms; rocky slopes; llanos; gravelly-sandy plains; flats; valley floors; valley bottoms; along roadsides; sandy arroyos; bottoms of arroyos; springs; rivulets; streams; along sandy streambeds; sandy riverbeds; in bouldery and sandy washes; along and in muddy and sandy drainages; within sandy drainage ways; muddy waterholes; poolbeds; around ponds; powdery playas; ciénegas; marshes; silty-muddy swampy areas; clayey depressions; muddy and clayey-loamy swales; (muddy and sandy) edges of riverbeds, pools, ponds, cienegas and playas; along (sandy) margins of washes, ponds; playas and drying swales; mudflats; loamy bottomlands; floodplains; clayey mesquite bosques; recharge basins; around and in stock tanks (charcos, represos); within ditches; riparian areas; waste places, and disturbed areas growing in shallow water; muddy, and wet, moist, damp and dry bouldery, rocky, gravelly-sandy and sandy ground; sandy loam, clayey loam and loam ground; clay ground; silty ground, and powdery ground, occurring from sea level to 5,300 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Leptochloa viscida* is native to southwest-central and southern North America. *5, 6, 33 (Page 137), 43 (080810 - *Leptochloa viscida* (Scribn.) Beal), 44 (111511), 46 (Page 123), 63 (121511), **85** (121511 - color presentation), 124 (121511 - no record of species; genus record), 140 (Page 208)*

***Leymus triticoides* (S.B. Buckley) R.K. Pilger: Beardless Wildrye**

SYNONYMY: *Elymus triticoides* S.B. Buckley. COMMON NAMES: Alkalai Rye; Alkalai Rye Grass; Alkalai Rye-grass; Alkalai Ryegrass; Alkalai Wild Rye; Alkalai Wild-rye; Alkalai Wildrye; Alkali Rye; Alkali Rye Grass; Alkali Rye-grass; Alkali Ryegrass; Alkali Wild Rye; Alkali Wild-rye; Alkali Wildrye; Beardless Lyme Grass; Beardless Wild Rye (a name also applied to other species); Beardless Wild-rye (a name also applied to other species); Beardless Wildrye (a name also applied to other species); Creeping Beardless Wild-rye; Creeping Beardless Wildrye; Creeping Wild Rye (a name also applied to other species); Creeping Wild Rye Grass; Creeping Wild Rye-grass; Creeping Wild Ryegrass; Creeping Wildrye (a name also applied to other species); Saline Creeping Wild Rye Grass; Saline Creeping Wild Ryegrass; Valley Wild Rye; Valley Wild-rye; Valley Wildrye; Wheatgrass Leymus. DESCRIPTION: Terrestrial perennial (strongly rhizomatous) graminoid (erect culms 16 to 50 inches in height); the foliage is green; flowering generally takes place between late April and mid-September (additional records: one for early October and one for late October). HABITAT: Within the range of this species it has been reported from mountains; mountaintops; bouldery mountainsides; plateaus; cliffs; hanging gardens; canyon rims; canyons; canyon bottoms; talus; rocky ledges; ridges; loamy and clayey meadows; bouldery and rocky hills; sandy-silty and clayey hillsides; rocky, clayey, silty-loamy and silty-clayey slopes; rocky outcrops; amongst rocks; alcoves; sandy-clayey-loamy flats; rocky-sandy and sandy uplands; valley floors; coastal dunes; coastal freshwater and saltwater marshes; clayey roadsides; within arroyos; draws; seeps; springs; in sandy soil along streams; along sandy and clayey streambeds; along creeks; along creekbeds; along rivers; sandy-loamy riverbeds; along sandy and clayey washes; within sandy drainages; ciénegas; freshwater and saltwater marshes; along sloughs; clayey swales; along (sandy, sandy-loamy and sandy-clayey) banks of creeks, rivers and washes; edges of streams, washes, ciénegas and freshwater marshes; margins of ponds, lakes and lakebeds; shores of ponds and lakes; sand bars; beaches; sandy benches; terraces; floodplains; within sandy and loamy ditches, and sandy and sandy-clayey riparian areas growing in wet, moist, damp and dry bouldery, rocky, rocky-sandy, stony, gravelly and sandy ground; sandy loam, sandy-clayey loam, silty loam and loam ground; sandy clay, silty clay and clay ground, and sandy-silty ground, occurring from sea level to 11,700 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, fodder and/or fiber crop. *Leymus triticoides* is native to west-central and southern (Baja Norte) North America. *5, 6, 33 (recorded as *Elymus triticoides* Buckl., Page 123), 43 (061010), 44 (121611), 46 (recorded as *Elymus triticoides* Buckl., Page 95), 58 (recorded as *Elymus triticoides* Buckl.), 63 (121611 - color presentation), **85** (121611 - color presentation), 124 (121611), 127*

***Lolium temulentum* C. Linnaeus (subsp. *temulentum* is the subspecies reported as occurring in Arizona): Darnel Ryegrass**

COMMON NAMES: Annual Bearded Rye-grass; Bearded Darnel (a name also applied to var. *temulentum*); Bearded Darnel Grass; Bearded Darnel-grass; Bearded Darnell; Bearded Ray Grass; Bearded Ryegrass; Beardless Darnel Rye Grass (var. *temulentum*); Beardless Darnel Ryegrass (var. *temulentum*); Bragge (var. *temulentum*); Cheat (var. *temulentum*, a name also applied to other species); Darnel (var. *temulentum*, a name also applied to the genus *Lolium*); Darnel Grass (var. *temulentum*, a name also applied to the genus *Lolium*); Darnel Rye Grass (var. *temulentum*); Darnel Ryegrass (a name also applied to var. *temulentum*); Darnell Rye-grass; Dragge (var. *temulentum*); Drake (var. *temulentum*); Drake Seed Darnel; Drank (var. *temulentum*); Dravick (var. *temulentum*); Drawke (var. *temulentum*); Droke (var. *temulentum*); Drunk (var. *temulentum*); Eaver (var. *temulentum*); Flax Darnel (var. *remotum*); Flax-darnel (var. *remotum*); Flaxfield Rye Grass (var. *remotum*); Flaxfield Rye Grass (var. *remotum*); Ivory (var. *temulentum*, Oklahoma); Ivraie (var. *temulentum*), Ivraie Du Lin (var. *remotum*), French); Ivraie Enivrante (var. *temulentum*, French); Ivray (var. *temulentum*); Ivraie Du Lin (var. *remotum*); Ivraie Enivrante (var. *temulentum*); Joio (Portuguese: Brazil); Lolch (var. *temulentum*, German); Lover's-steps (var. *temulentum*); Neele (var. *temulentum*); Nelle (var. *temulentum*); Poison Darnel (a name also applied to var. *temulentum*); Poison Ray Grass; Poison Rye Grass; Poison Ray-grass; Poison Rye-grass; Poison Ryegrass; Ray (var. *temulentum*); Poison-darnel (a name also applied to var. *temulentum*); Ray Grass (a name also applied to var. *temulentum* and to the genus *Lolium*); Ray-grass (a name also applied to var. *temulentum*); Riely (var. *temulentum*); Ssizânia (Portuguese: Brazil); Sturdy (var. *temulentum*); Sturdy Ryle (a name also applied to var. *temulentum*); Tare (thought to be the Biblical "tares", var. *temulentum*); Tares (thought to be the Biblical "tares", var.

temulentum); Taumellolch (German); Taummelkorn (German); Virginian Oat. DESCRIPTION: Terrestrial annual graminoid (erect culms 1 to 4 feet in height); based of few records of observation located, flowering generally takes place between mid-April and mid-July (flowering records: four for mid-April, two for early June, two for mid-June, two for late June and one for mid-July). HABITAT: Within the range of this species it has been reported from mountains; mesas; cliffs; canyons; hillsides; amongst boulders; valley floors; along roadsides; seeps; riverbeds; banks of streams; dams; along ditches; ditch banks; waste places, and disturbed areas growing in moist bouldery and sandy ground, occurring from sea level to 4,000 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant. This species, *Lolium temulentum*, was reported to have been utilized by native peoples of North America; it was noted as having been used for food. For subspecies *temulentum*, the use of "forma" and variety were also observed. *Lolium temulentum* is native to Europe; Asia, and northern Africa. *5, 6, 33 (Page 125), 43 (101609 - *Lolium temulentum*), 44 (121811), 46 (Page 97), 63 (121811 - color presentation of seed; Grass Manual on the Web reported: "Because primitive agricultural practices could not separate seeds of *Lolium temulentum* from those of wheat, infected [with an endophytic fungus, assumed to be the source of the toxic pyrrolizidine alkaloids loline, 6-methyl loline and lolinine ...] seeds often resulted in poisonous flour."), 80 (This species has been listed as a Rarely Poisonous and Suspected Poisonous Range Plant. This grass has "been suspected of being toxic to man and livestock, directly or through fungus contamination, but evidence is not conclusive."), **85** (121811 - color presentation), 124 (121811), 127*

Melinis repens (C.L. von Willdenow) G. Zizka: Rose Natal Grass

SYNONYMY: *Rhynchelytrum repens* (C.L. von Willdenow) C.E. Hubbard; *Rhynchelytrum roseum* (C.G. Nees von Esenbeck) O. Stapf & C.E. Hubbard ex J.W. Bews. COMMON NAMES: Creeping Molasses Grass; Espiga Colorada (Spanish); Natal Grass (a name also applied to other species); Natal Red Grass; Natal Red Top; Natal Red Top Grass; Natal Red-top; Natal Redtop; Natal Redtop Grass; Natal Ruby Grass; Pasto (Hispanic); Red Natal Grass; Red Natalgrass; Rose Natal Grass; Rose Natalgrass; Yerba de Natal (Spanish); Zacate Natal (Hispanic); Zacate Rosado (subsp. *repens*, Spanish: Mexico, Sonora). DESCRIPTION: Terrestrial annual or perennial tufted graminoid (trailing, spreading, prostrate, decumbent and/or geniculate culms 8 inches to 5 feet in height); the inflorescence has been described as being brownish-pink, pink, deep pink, darkish purple, purplish-pink, reddish, rose or white; the (spikelets) flowers are red or dark rose with long silky purplish-pink hairs; the anthers are orange or orange-brown; flowering generally takes place between late January and mid-December. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; rocky mesas; cliff faces; bases of cliffs; rocky canyons; rocky canyon walls; along rocky and gravelly canyon bottoms; crevices in boulders and rocks; rocky bluffs; ledges; rocky ridges; rocky ridgetops; meadows; foothills; hills; rocky hilltops; rocky hillsides; bouldery, rocky, rocky-gravelly, sandy and clayey slopes; rocky outcrops; amongst boulders and rocks; fumaroles; sand dunes; cobbly-sandy and clayey flats; basins; valley floors; coastal plains; coastal flats; railroad right-of-ways; along sandy roadsides; sandy arroyos; bottoms of arroyos; along streams; rocky streambeds; along creeks; creekbeds; along and in rocky, stony and sandy washes; drainages; drainage ways; swamps; depressions; sloughs; bouldery swales; banks of streams, rivers and drainage ways; terraces; bottomlands; sandy floodplains; lowlands; riparian areas, and disturbed areas growing in moist and dry bouldery, rocky, rocky-gravelly, stony, cobbly-sandy, gravelly, gravelly-sandy and sandy ground; rocky loam ground, and clay ground, occurring from sea level to 6,400 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant that poses a significant threat to our native biotic communities. *Melinis repens* is native to southern Asia; Africa, and coastal islands in the North Atlantic Ocean and Western Indian Ocean. *5, 6, 15 (recorded as *Rhynchelytrum repens* (Willd.) C.E. Hubb.), 18, 22 (color photograph), 30, 33 (recorded as *Rhynchelytrum roseum* (Nees) Stapf & Hubb., Pages 271-272), 43 (101609), 44 (121811 - listing of Common Names located under *Rhynchelytrum repens* (Willd.) C.E. Hubb.), 46 (recorded as *Rhynchelytrum roseum* (Nees) Stapf & Hubb., Page 138), 63 (121811 - color presentation), 77 (recorded as *Rhynchelytrum repens* (Willd.) C.E. Hubb.), 85 (121811 - color presentation including habitat), 124 (121811 - no record of genus or species), 140 (recorded as *Melinis repens* (Willdenow) Zizka subsp. *repens* [*Rhynchelytrum repens* (Willdenow) C.E. Hubbard], Page 300), **HR***

Muhlenbergia fragilis J.R. Swallen: Delicate Muhly

COMMON NAMES: Annual Muhly (a name also applied to other species); Delicate Muhley; Delicate Muhly; Fragile Muhley; Fragile Muhly. DESCRIPTION: Terrestrial annual tufted graminoid (spreading or erect culms 4 to 16 inches in height); the stems may be purple; the anthers are purplish; flowering generally takes place between mid-September and mid-October (flowering beginning as early as August has been reported); the caryopses (fruits) are reddish-brown. HABITAT: Within the range of this species it has been reported from mountains; rocky-clayey mesas; cliffs; bouldery and rocky canyons; canyon walls; along sandy canyon bottoms; gorges; rocky talus slopes; pockets of sandy soil in bedrock and sandstone; soil filled potholes in slickrock; crevices; bluffs; rocky buttes; rocky ledges; gravelly-loamy ridges; meadows; rocky foothills; rocky and rocky-gravelly hills; hilltops; hillsides; bedrock, bouldery-gravelly-loamy, rocky, rocky-gravelly, rocky-loamy, rocky-clayey, gravelly, gravelly-loamy, gravelly-sandy-loamy, sandy, sandy-loamy and clayey slopes; rocky outcrops; amongst boulders and rocks; lava flows; gravelly, gravelly-loamy and sandy flats; valley floors; roadcuts; along rocky and sandy roadsides; stony-sandy arroyos; sandy seeps; along streams; streambeds; along creeks; riverbeds; along and in bouldery-rocky-sandy, rocky and sandy washes; along and in pebbly and sandy drainages; bottoms of drainage ways; (rocky-gravelly) banks of arroyos; along edges of streambeds and washes; benches; terraces; bottomlands; floodplains; within ditches; sandy riparian areas, and disturbed areas growing in moist and dry bouldery, bouldery-rocky-sandy, rocky, rocky-gravelly, rocky-sandy, stony-sandy, gravelly, pebbly and sandy ground; bouldery-gravelly loam, rocky loam, gravelly loam, gravelly-sandy loam and sandy loam ground, and rocky clay

and clay ground reported as often found growing in moist ground, occurring form 1,100 to 7,300 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Muhlenbergia fragilis* is native to southwest-central and southern North America. *5, 6, 15, 33 (Page 198), 43 (041711), 44 (041711), 46 (Page 108), 58, 63 (041711 - color presentation), **85** (041711 - color presentation), 124 (041711 - no record of species; genus record), 140 (Page 300)*

***Muhlenbergia porteri* F.L. Scribner ex W.J. Beal: Bush Muhly**

COMMON NAMES: Bakú (Tarahumara in Chihuahua)[140]; Bush Grass (a name also applied to other species); Bush-grass (a name also applied to other species); Bush Muhly (a name also applied to other species); Hoe Grass (a name also applied to other species); Hoegrass; Liendrilla Amacollada (Hispanic); Mesquite Grass (a name also applied to other species); Mesquite Muhley; Mesquite Muhly; Mesquitegrass; Porter Muhlenbergia; Porter's Muhlenbergia; Porter Muhley; Porter Muhly; Porter's Muhley; Porter's Muhly; Telaraña (Hispanic); Zacate Aparejo (Spanish: Sonora)[140]. DESCRIPTION: Terrestrial perennial tufted graminoid (a bunchgrass with spreading, trailing prostrate, decumbent, geniculate, ascending and/or erect culms 10 to 44 inches in height/length and 18 inches to 10 feet in width; one plant was observed and described as being 20 inches in height and 40 inches in width, several plants were observed and described as being 28 inches in height and 6½ feet in width, several plants were observed and described as being 3 feet in height and 10 feet in width); the stems are dull green but, and along with the leaves, may be tinged with purple; the leaves are green, purplish-green or yellow-green curing to buff; the panicles (compound inflorescences) are usually purple; the spikelets (flowers) are green becoming purple when mature; the anthers are purple to yellow; flowering generally takes place between late February and late October (additional records: one for late November and one for early December); the caryopses (fruits) are yellowish-brown the aggregate of which covers the plants in a misty shroud. HABITAT: Within the range of this species it has been reported from mountains; rocky and stony-sandy mountainsides; mesas; rocky cliffs; bouldery and rocky canyons; rocky canyonsides; rocky-sandy and gravelly canyon bottoms; gorges; bouldery talus slopes; crevices in rocks; buttes; along sandy-silty and silty ledges; ridges; rocky ridgetops; rocky foothills; rocky and sandy hills; bouldery-sandy and rocky hillsides; rocky escarpments; along bouldery, bouldery-rocky, rocky, rocky-gravelly, rocky-loamy, gravelly, gravelly-loamy, sandy and sandy-loamy slopes; bajadas; rocky outcrops; gravelly bases of rock outcrops; amongst boulders and rocks; alcoves; clefts in rocky hillsides; sandy lava flows; lava fields; sand dunes; dune-like areas of fine blow-sand deposits; gravelly-sandy banks; gravelly plains; rocky, gravelly-sandy, sandy and sandy loamy flats; open sandy ground amongst Ephedra and Larrea; basins; sandy valley floors; valley bottoms; along rocky, rocky-gravelly, gravelly, gravelly-loamy and sandy roadsides; rocky arroyos; within draws; bottoms of draws; gulches; ravines; springs; bouldery streambeds; along rivers; along and in rocky, rocky-gravelly, rocky-sandy, gravelly, gravelly-sandy and sandy washes; along drainages; bouldery-cobbly and rocky drainage ways; around ponds; margins of washes; sandy-silty and silty benches; gravelly terraces; sandy floodplains; sandy mesquite bosques; around represos; riparian areas, and disturbed areas growing in damp and dry rocky desert pavement; bouldery, bouldery-rocky, bouldery-cobbly, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, stony-sandy, cindery, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-clayey loam, cobbly-sandy loam, gravelly loam, sandy loam, clayey loam and loam ground; gravelly clay, sandy clay and clay ground, and cobbly-sandy silty, sandy silty and silty ground often found growing in the protection of shrubs and trees, occurring from sea level to 7,500 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. In areas where it occurs naturally, consider including Bush Muhly seed in reseeding mixtures. According to the USDA Forest Service Fire Effects Information System, Bush Muhly germinates best when temperatures are at 86 degrees Fahrenheit (30 degrees Centigrade). When re-vegetating desert washes consider planting Bush Muhly along with Whitethorn Acacia (*Acacia constricta*), Catclaw Acacia (*Acacia greggii* var. *greggii*), Limberbush (*Jatropha cardiophylla*), Triangleleaf Bursage (*Ambrosia deltoidea*) and White Bursage (*Ambrosia dumosa*). Bush Muhly is browsed by the Desert Bighorn Sheep (*Ovis canadensis* subsp. *mexicana*). This plant is a host for the smut fungus *Ustilago muhlenbergiae*. *Muhlenbergia porteri* is native to southwest-central and southern North America. *5, 6, 15, 16, 30, 33 ("Bush Muhly originally existed in extensive stands on the open range lands of southern Arizona but now occurs for the most part in the protection of shrubs and subshrubs and is seldom locally abundant. It is highly palatable and well liked by livestock despite the wiry culms.", Pages 201-202), 43 (101709), 44 (121911), 46 (Page 111), 48, 58, 63 (121911 - color presentation including habitat), 77, 85 (121911 - color presentation including habitat), 105 ("This was formerly one of the most abundant and important grasses of southern Arizona, but is found now largely as individual plants under the protection of shrubs. ... Where possible this grass should be allowed to set a full crop of seed during the summer growing season at least every second or third year. Deferment of grazing during July and August every year is recommended on run-down ranges."), 124 (121911), 140 (Pages 211, 212 & 301), **HR***

***Panicum antidotale* A.J. Retzius: Blue Panicum**

COMMON NAMES: Blue Panic; Blue Panic Grass; Blue Panic-grass; Blue Panicgrass; Blue Panicum; Giant Panic (a name also applied to other species); Giant Panic Grass (a name also applied to other species); Giant Panicum (a name also applied to other species); Panic Bleu (French); Pánico Azul (Spanish); Panizo Azul (Spanish). DESCRIPTION: Terrestrial perennial graminoid (a bunchgrass (clumpgrass) with ascending and/or erect culms (becoming somewhat woody) 20 inches to 10 feet in height and up to 40 inches in width at the base; one plant was described as being 5 feet in height and 40 inches in width at the base); the foliage is bluish-green to pale green; the spikelets (flowers) are purplish or reddish; the anthers are yellow; based on few flowering records located, flowering generally takes place between late August and late September (flowering records: one for mid-January, one for early June, one for late August, two for early September and two for late September). HABITAT: Within the range of this species it has been reported from mountains; canyons; rocky slopes; dunes; blow-sand deposits; flats; valley floors; along gravelly roadsides; arroyos; along rivers; riverbeds; along sandy washes; lakebeds; depressions; along banks

of rivers, riverbeds and washes; edges of washes; margins of arroyos; sandy benches; sandy terraces; bottomlands; floodplains; fencerows; sandy, sandy-clayey and clayey riparian areas, and disturbed areas growing in dry rocky, gravelly and sandy ground; loam ground, and sandy clay and clay ground, occurring from sea level to 4,900 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant. *Panicum antidotale* is native to western and southern Asia. *5, 6, 22 (color photograph bottom of page 25), 33 (Page 292), 43 (101709), 44 (122311 - color photograph), 46 (Page 137), 58, 63 (122311 - color presentation of seed), 80 (Species of the genus *Panicum* are listed as Rarely Poisonous and Suspected Poisonous Range Plants. Species of this genus have been reported to cause loss in livestock due to photosensitization and nitrate poisoning. This plant is also listed as a Poisonous Cropland and Garden Plant, severe losses from pulmonary emphysema and edema have been reported in Texas from grazing fertilized and irrigated pastures of this introduced, perennial grass, but no losses have been reported from it in Arizona.), **85** (122311 - color presentation including habitat), 105, 124 (122311 - no record of species; genus record)*

Panicum arizonicum (see *Urochloa arizonica*)

***Panicum capillare* C. Linnaeus: Witchgrass**

SYNONYMY: *Panicum capillare* C. Linnaeus var. *brevifolium* G. Vasey ex P.A. Rydberg & C.L. Shear; *Panicum capillare* C. Linnaeus var. *occidentale* P.A. Rydberg. COMMON NAMES: Annual Witchgrass; Barbed Witch Grass (a name also applied to other species); Barbed Witch-grass (a name also applied to other species); Capillare Witch Grass; Capillare Witch-grass; Capillare Witcchgrass; Capillary Panic Grass; Capillary Panic-grass; Capillary Panicgrass; Capillary Witch-grass; Capillary Witchgrass; Capim Mimoso (Portuguese: Brazil); Capim-mimoso; Common Panic Grass (a name also applied to other species); Common Witch Grass; Common Witch-grass; Common Witchgrass; Cushion Witch Grass; Cushion Witchgrass; Fool Hay (a name also applied to other species); Fool-hay (a name also applied to other species); Hair-stalk Panic Grass; Hair-stalked Panic Grass; Hair-stalked Panic-grass; Hair-stalked Panicgrass; Old Panic Grass; Old Panicgrass; Old Witch Grass (a tumbleweed); Old-witch Panic-grass; Old-witch Panic-grass; Old Witch-grass; Old Witchgrass; Old-witch Grass; Old-witch Panic-grass; Old-witch-grass; Old-witch Panicgrass; Panic Capillaire (French); Panicgrass (a name also applied to the genus *Panicum*); Pânico-capilare (Portuguese: Brazil); Tickle Grass (a name also applied to other species and the genus *Panicum*); Tickle-grass (a name also applied to other species and the genus *Panicum*); Ticklegrass (a name also applied to other species); Tumble Grass (a name also applied to other species and the genus *Panicum*); Tumble Panic; Tumble Panic Grass; Tumble Panic-grass; Tumble Panicgrass; Tumble Weed (a name also applied to other species); Tumble Weed Grass; Tumble-weed (a name also applied to other species); Tumble-weed Grass; Tumbleweed (a name also applied to other species); Tumbleweed Grass; Western Witch Grass (a name also applied to other species); Western Witch-grass (a name also applied to other species); Witch Grass (a name also applied to other species and the genus *Panicum*); Witches Hair; Witch-grass (a name also applied to other species and the genus *Panicum*); Witchgrass (a name also applied to other species and the genus *Panicum*). DESCRIPTION: Terrestrial annual graminoid (decumbent and/or erect culms 6 to 60 inches in height; plants were observed and described as being 30 inches in height and width); the foliage is bluish, purplish or yellow-green; the spikeletes may be green, green-purple, purple, reddish-purple or whitish; flowering generally takes place between early June and late October (additional records: one for early May and one for mid-December). HABITAT: Within the range of this species it has been reported from mountains; rocky mountaintops; clayey mountainsides; moist cliffs; gravelly-loamy canyons; rocky and sandy canyon bottoms; chasms; crevices in rocks; shaley bluffs; rocky buttes; rocky ledges; ridges; ridgetops; openings in forests; along meadows; foothills; gravelly and sandy hills; clayey hillsides; rocky, rocky-gravelly, rocky-loamy, shaley-loamy, gravelly, gravelly-loamy, gravelly-clayey, sandy, sandy-loamy, sandy-clayey-loamy, loamy, clayey and clayey-loamy slopes; pediments; rocky outcrops; amongst boulders; lava flows; sand hills; uplands; prairies; sandy plains; muddy, rocky, gravelly, gravelly-sandy, sandy, sandy-clayey, sandy-clayey-loamy, clayey-loamy and silty flats; clayey valley floors; valley bottoms; along gravelly railroad right-of-ways; roadcuts; along cindery, gravelly, gravelly-sandy, sandy, loamy and clayey roadsides; bottoms of arroyos; within shaley-silty, sandy, loamy, loamy-clayey and silty draws; gulches; ravines; along sandy seeps; around and in springs; along streams; along rocky-sandy, gravelly, sandy and loamy-clayey streambeds; gravelly-loamy soils along and in creeks; along and in sandy creekbeds; along rivers; sandy and clayey riverbeds; along and in gravelly, gravelly-sandy and sandy washes; within gravelly-sandy and clayey drainages; rocky drainage ways; around and in pondbeds; clayey lakebeds; playas; along freshwater marshes; swamps; bowls; clayey depressions; along sloughs; along (muddy, bedrock, cobbly and sandy) banks of streams, streambeds, creeks, creekbeds and rivers; (alkaline) borders of hot springs; along (rocky and sandy) edges of springs, seeps, creeks, rivers, pools, lakes, marshes and mudflats; along margins of hot springs, streams, creeks and lakes; along (rocky, gravelly-clayey, sandy-loamy, clayey-loamy and clayey) shores of creeks, ponds and lakes; sandy-clayey areas of drawdown; mudflats; cobbly-gravel and sand bars; stony, gravelly-sandy and sandy beaches; sandy benches; along sandy-loamy terraces; sandy bottomlands; mucky, gravelly, gravelly-sandy, sandy and clayey floodplains; along meanders; lowlands; sandy fencelines; along rock dams; along and in loamy-clayey and clayey-loamy reservoirs; along and in sandy ditches; along clayey ditch banks; stony, cobbly, gravelly, gravelly-sandy, sandy, sandy-loamy and silty riparian areas; waste places, and disturbed areas growing in shallow water; mucky and muddy, and wet, moist, damp and dry bouldery, rocky, rocky-gravelly, rocky-sandy, stony, cobbly, cobbly-gravelly, cindery, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-gravelly loam, shaley loam, gravelly loam, sandy loam, sandy-clayey loam, clayey loam and loam ground; rocky clay, gravelly clay, sandy clay, loamy clay and clay ground, and shaley silty and sandy silty and silty ground, occurring from sea level to 9,400 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or

commercial food, fodder and/or fiber (used in making brooms) crop; it was also noted as having been used as a drug or medication. *Panicum capillare* is native to central and southern North America and coastal islands in the North Atlantic and North Pacific Oceans and sporadically in South America. *5, 6, 15, 33 (Pages 282-283), 43 (072309), 44 (041811), 46 (recorded as *Panicum capillare* L. var. *occidentale* Rydb., Page 136), 63 (122611 - color presentation), 68, 80 (Species of the genus *Panicum* are listed as Rarely Poisonous and Suspected Poisonous Range Plants. Species of this genus have been reported to cause loss in livestock due to photosensitization and nitrate poisoning.), **85** (122611 - color presentation of seed and dried material), 101 (color photograph), 124 (041811), 127*

Panicum capillare var. *brevifolium* (see *Panicum capillare*)

Panicum capillare var. *occidentale* (see *Panicum capillare*)

Panicum capillare var. *stramineum* (see *Panicum hirticaule* var. *stramineum*)

Panicum fasciculatum (see *Urochloa fusca*)

Panicum fasciculatum var. *reticulatum* (see *Urochloa fusca*)

***Panicum hirticaule* J.S. Presl var. *stramineum* (A.S. Hitchcock & M.A. Chase) A.A. Beetle: Sonoran Panicgrass**

SYNONYMY: *Panicum capillare* C. Linnaeus var. *stramineum* (A.S. Hitchcock & M.A. Chase) F.W. Gould; *Panicum stramineum* A.S. Hitchcock & M.A. Chase. COMMON NAMES: Capim Lanudo (Portuguese); Sonoran Panicgrass; Witchgrass (a name also applied to the species, to other species and to the genus *Panicum*). DESCRIPTION: Terrestrial annual graminoid (erect culms 6 inches to 3 feet in height); flowering generally takes place between August and October (flowering record: one for early October). HABITAT: Within the range of this variety it has been reported from mountains; mountainsides; hills; slopes; sandy plains; clayey flats; valley floors; along railroad right-of-ways; roadsides; rivers; along clayey washes; pondbeds; clayey depressions; margins of sloughs; bottomlands; mesquite bosques; ditches, and disturbed areas growing in moist and dry sandy ground and clay ground, occurring from sea level to 4,700 feet in elevation in the scrub, grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The species, *Panicum hirticaule*, was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. *Panicum hirticaule* var. *stramineum* is native to southwest-central and southern North America and South America. *5, 6, 30 (species), 33 (recorded as *Panicum capillare* L. var. *stramineum* (Hitchc. & Chase) Gould, Page 283), 43 (122711 - *Panicum hirticaule* var. *stramineum* (Hitchc. & Chase) Beetle), 44 (122711 - no record of variety; genus and species records), 46 (recorded as *Panicum stramineum* Hitchc. & Chase, Page 136), 58, 63 (122711), 80 (Species of the genus *Panicum* are listed as Rarely Poisonous and Suspected Poisonous Range Plants. Species of this genus have been reported to cause loss in livestock due to photosensitization and nitrate poisoning.), **85** (122711), 124 (122711 - no record of the variety; genus and species records), 127 (species)*

Panicum stramineum (see *Panicum hirticaule* var. *stramineum*)

Pappophorum apertum (see *Pappophorum vaginatum*)

Pappophorum mucronulatum (see *Pappophorum vaginatum*)

***Pappophorum vaginatum* S.B. Buckley: Whiplash Pappusgrass**

SYNONYMY: *Pappophorum apertum* W. Munro ex F. Lamson-Scribner; *Pappophorum mucronulatum* auct. non C.G. Nees von Esenbeck. COMMON NAMES: Mucronulate Pappusgrass; Pappusgrass; Pima Pappusgrass; Whiplash Pappus Grass; Whiplash Pappusgrass. DESCRIPTION: Terrestrial perennial tufted graminoid (a bunchgrass (clumpgrass) with decumbent, geniculate, ascending and/or erect culms 16 to 52 inches in height); the foliage is gray-green or light green; the inflorescence is usually whitish and may be tinged with purple; based on few flowering records available, flowering generally takes place between late March and late October (flowering records: two for late March, one for late April, one for early July, one for late August, three for early September, one for mid-September and one for late October; flowering ending as late as November has been reported). HABITAT: Within the range of this species it has been reported from mountains; mountaintops; mesas; bases of cliffs; rocky canyons; ridgetops; foothills; hills; rocky hillsides; rocky, sandy and clayey slopes; bajadas; rocky plains; gravelly and sandy-silty flats; basins; valley floors; valley bottoms; coastal dunes; sandy coastal flats; along railroad right-of-ways; along stony and sandy roadsides; along sandy gullies; along creeks; along and in gravelly washes; along drainage ways; depressions; banks of washes; along edges of washes; margins of washes; floodplains; dams; within sandy ditches, and disturbed areas growing in moist and dry rocky, stony, gravelly and sandy ground; clayey loam ground; clay ground, and sandy silty ground, occurring from sea level to 4,800 feet in elevation in the grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Pappophorum vaginatum* is native to southwest-central and southern North America and southern South America. *5, 6, 15, 16, 33 (recorded as *Pappophorum mucronulatum* Nees., Page 103), 43 (101809), 44 (123011 - no record of genus or species), 46 (recorded as *Pappophorum mucronulatum* Nees., Page 91),

48, 63 (123011 - color presentation of seed), 77, **85** (123011 - color presentation), 105 (recorded as *Pappophorum mucronulatum* Nees.), 124 (123011 - no record of genus or species)*

***Paspalum distichum* C. Linnaeus: Knotgrass**

COMMON NAMES: Capim-arame (Portuguese: Brazil); Couch Paspalum; Devil's Grass (a name also applied to other species); Devil's-grass (a name also applied to other species); Ditch Grass; Elliott's Paspalum; Eternity Grass; Finger-shaped Paspalum; Fort Thompson Grass; Ft. Thompson Grass; Ft. Thompsongrass; Ginger Grass; Grama Colorada (Spanish); Grama-braba (Portuguese: Brazil); Grama-da-praia (Portuguese: Brazil); Grama-doce (Portuguese: Brazil); Grama-rasteira-da-praia (Portuguese: Brazil); Gramilla Blanca (Spanish); Joint Grass (a name also applied to other species); Joint-grass (a name also applied to other species); Jointgrass (a name also applied to other species); Ginger Grass; Grama Colorada (Spanish); Grama-de-Joanópolis (Portuguese: Brazil); Gramilla Blanca (Spanish); Joint Grass; Joint Paspalum; Joint Paspalum Grass; Jointed Crown-grass; Jointed Crowngrass; Jointed Knotgrass; kishū-suzume-no-hie (Japanese Rōmaji); Knot Grass (a name also applied to other species); Knot-grass (a name also applied to other species); Knotgrass (a name also applied to other species); Knot Paspalum; Knot-root Paspalum; Knotroot Paspalum; Mercer Grass; Paspalum (a name also applied to the genus *Paspalum*); Moddeid (Arabic); Salt Jointgrass (a name also applied to other species); Seashore Paspalum (a name also applied to other species); Seaside Millet (a name also applied to other species); Shuang Sui Que Bai (transcribed Chinese); Summer Seep-grass; Thompson Grass; Thompsongrass; Turfgrass (a name also applied to other species); Water Couch (a name also applied to other species); Water Finger Grass; Water Finger-grass; Water-finger Grass. DESCRIPTION: Terrestrial (and semi-aquatic) perennial rhizomatous graminoid (erect culms with creeping stems/stolons 2 to 26 inches in height; one record reported stems reaching 10 to 12 feet in length); the foliage is blue-green or dark green with a bluish cast; the leaf sheaths may be purple; the spikelets are green or green and partially purple; the anthers are black or dark purple; the stigmas are black or dark purple; flowering generally takes place between mid-May and mid-November. HABITAT: Within the range of this species it has been reported from mountains; rocky canyons; canyon bottoms; meadows; foothills; gravelly hills; hillsides; rocky, sandy, sandy-loamy, loamy, clayey and clayey-loamy slopes; dunes; prairies; clayey-loamy flats; muddy basins; valley floors; coastal saltmarshes; coastal shorelines; gravelly roadsides; arroyos; bottoms of draws; seeps; around and in gravelly, gravelly-sandy, sandy, sandy-loamy and clayey springs and outflows; along and in streams; along and in gravelly, gravelly-sandy and sandy streambeds; along and in creeks; along and in rivers; sandy, sandy-loamy, silty-clayey and clayey riverbeds; sandy washes; along drainages; sandy waterholes; around and in pools; around and in ponds; around and in lakes; lakebeds; ciénegas; along and in freshwater and saltwater marshes; swampy areas; depressions; along (muddy and sandy) banks of streams and rivers; along (gravelly and sandy) edges of springs, streams, streambeds, creeks, rivers, washes, waterholes, pools, ponds, lakes, lagoons and sloughs; (sandy) margins of streams, creeks, ponds and lagoons; (sandy) shores of rivers, ponds and lakes; mudflats; sand bars; beaches; sandy benches; coves; terraces; sandy bottomlands; sandy floodplains; around stock tanks (represos); around reservoirs; along and in ditches; along ditch banks; sandy and sandy-loamy riparian areas, and disturbed areas growing in shallow water; mucky; muddy, and wet, moist and damp rocky, gravelly, gravelly-sandy and sandy ground; sandy loam, clayey loam and loam ground, and silty clay and clay ground, occurring from sea level to 6,400 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. Investigate to determine the possibly of using Knotgrass in the place of Bermudagrass as an irrigated lawn; it forms dense mats, and it may be useful as a soil binder. This grass is browsed by ducks and Whitetail Deer. *Paspalum distichum* is native to south-central and southern North America; Central America and coastal islands in the Caribbean Sea, and South America. *5, 6, 33 (Pages 292-294), 43 (101809), 44 (042111 - color photograph), 46 (Page 134), 58, 63 (010112 - color presentation), **85** (010112 - color presentation of seeds and dried material), 124 (010112), 140 (Page 301)*

***Pennisetum ciliare* (C. Linnaeus) J.H. Link: Buffelgrass**

SYNONYMY: *Cenchrus ciliaris* C. Linnaeus. COMMON NAMES: African Buffel Grass; African Buffel-grass; African Buffelgrass; African Foxtail; African Foxtail Grass; Alien Buffel Grass; Alien Buffelgrass; Anjangrass; Blue Buffalo Grass; Buffel (Spanish); Buffel Grass; Buffle Grass; Buffel-grass; Buffle-grass; Büffelgras (German); Buffelgrass; Bufflegrass; Bufle; Cadillo Buffel (Hispanic); Cenchrus Cilié (French); Common Buffel Grass; Common Buffel-grass; Common Buffelgrass; Common Bufflegrass; Dhaman (India); Hairy Buffelgrass; Huizapol (Hispanic); Introduced Buffel Grass; Introduced Pasture Buffel Grass; Invasive African Buffel Grass; Invasive Buffel-grass; Invasive Buffelgrass; Non-native Buffel Grass; Non-native Buffelgrass; Nonnative Buffel-grass; Nonnative Buffelgrass; Pasto Buffel (Spanish); Pasture Buffel Grass; Perennial Buffel Grass; Sabat (Arabic); Sandbur (a name also applied to other species); South African Buffel Grass; South African Buffelgrass; Weedy Buffel Grass; Zacate Buffel (Spanish: Mexico); Zacate Buffle (Hispanic). DESCRIPTION: Terrestrial perennial tufted graminoid (a bunchgrass (clumpgrass) with decumbent, geniculate, ascending and/or erect culms 4 inches to 5 feet in height); the leaves are green; the spikelets are reddish turning a golden-brown when dry; flowering may take place several times a year when sufficient moisture is available (flowering records: two for mid-February, one for early April, one for mid-April, one for early June, one for mid-August, one for late September, two for early October, four for mid-October, one for late October, one for late November and one for mid-December). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; gravelly mesas; bases of cliffs; along rocky and sandy canyons; canyon bottoms; rocky-gravelly-clayey bluffs; buttes; ridges; ridgetops; foothills; rocky hills; rocky hillsides; rocky and gravelly slopes; alluvial fans; bajadas; rocky and rocky-gravelly outcrops; cobbly and sandy plains; rocky-loamy, gravelly-sandy and sandy flats; sandy uplands; valley floors; along rocky and sandy roadsides; along and in rocky and sandy arroyos; bottoms of arroyos; within draws; ravines; springs; along creeks; cobbly creekbeds; rocky, rocky-cobbly-sandy and cobbly riverbeds; along and in gravelly-sandy washes; along drainages;

oases; marshes; within sandy depressions; (rocky-sandy) banks of washes; edges of arroyos and washes; (sandy) sides of rivers; sandy beaches; floodplains; lowlands; mesquite bosques; riparian areas, and disturbed areas growing in moist and dry rocky, rocky-cobbly-sandy, rocky-gravelly, rocky-sandy, stony, cobbly, gravelly, gravelly-sandy and sandy ground; rocky loam and loam ground; rocky-gravelly clay ground, and sandy-silty (loess) ground, occurring from sea level to 7,100 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant that poses a significant threat to our native biotic communities. *Pennisetum ciliare* is native to southeastern Europe and coastal islands in the Mediterranean Sea; western and southern Asia, and Africa. *5, 6, 16, 22 (color photograph), 30, 33 (Page 266), 43 (101909), 44 (010112 - Common Names listed under *Cenchrus ciliaris* L.), 46 (Supplement Page 1041), 63 (010112 - color presentation), 77, 85 (010112 - color presentation), 124 (010112 - no record of species; genus record), **WTK** (April 16, 2008)*

Pennisetum ruppelii (see *Pennisetum setaceum*)

***Pennisetum setaceum* (P. Forsskål) E. Chiovenda: Crimson Fountaingrass**

SYNONYMY: *Pennisetum ruppelii* E.G. von Steudel. COMMON NAMES: African Fountain Grass (a name also applied to other species); Annual Fountain Grass; Crimson Fountain Grass; Crimson Fountain-grass; Crimson Fountaingrass; Fjäderborstgräs (Swedish); Fountain Grass (a name also applied to the genus *Pennisetum*); Fountain-grass (a name also applied to the genus *Pennisetum*); Fountaingrass (a name also applied to the genus *Pennisetum*); Plumitas (Spanish); Pronkgras (Afrikaans); Purple Fountain Grass (a name also applied to other species); Red Fountain Grass; Red Fountain-grass; Red Fountaingrass; Tender Fountain Grass; Tender Fountain-grass; Tender Fountaingrass; Zacate de la Fuente. DESCRIPTION: Terrestrial perennial graminoid (a bunchgrass (clumpgrass) with ascending and/or erect culms 1 to 5 feet in height; one clump was noted as being 5 feet in height and width); the leaves are green; the inflorescences are purplish; flowering generally takes place from early March to mid-December (additional record: one for early February); the fruits are purplish. HABITAT: Within the range of this species it has been reported from mountains; bases of cliffs; canyons; canyon walls; rocky and rocky-sandy and sandy canyon bottoms; crevices in rocks; ridges; swards; rocky foothills; rocky hills; hilltops; rocky hillsides; bouldery, bouldery-sandy, rocky and loamy slopes; rocky-sandy-loamy alluvial fans; bajadas; amongst boulders and rocks, rocks cobbles and gravels; flats; coastal dunes; rocky coastal beaches; railroad right-of-ways; along rocky-clayey roadsides; draws; along streams; along and in creeks; riverbeds; along and in rocky and sandy washes; drainages; drainage ways; banks of drainages; along (pebbly-sandy and sandy) edges of creeks and lakes; margins of washes, pools and ponds; lake shores; sand bars; rocky strands; mesquite bosques; rocky edges of reservoirs; canals; culverts; ditches; riparian areas, and disturbed areas growing in wet, moist and dry bouldery, bouldery-sandy, rocky, rocky-cobbly-sandy, rocky-sandy, cobbly, cobbly-gravelly, gravelly, pebbly-sandy and sandy ground; rocky-sandy loam and loam ground, and rocky clay and clay ground, occurring from sea level to 7,200 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant that poses a significant threat to our native biotic communities. *Pennisetum setaceum* is native to western and southern Asia and northern, eastern and southern Africa. *5, 6, 16, 22 (color photograph), 26 (color photograph), 33 (recorded as *Pennisetum ruppelii* Steud., Page 266), 43 (101909), 44 (010512), 46 (Page 140), 63 (010512), 77, 85 (010512 - color presentation), 109, 124 (010512 - no record of species; genus record), **WTK** (August 4, 2005)*

***Phalaris caroliniana* T. Walter: Carolina Canarygrass**

COMMON NAMES: Alpist; Baabkam <papkam> (Akimel O'odham)[140]; California Timothy (a name also applied to other species); California Timothy Grass (a name also applied to other species); Canary Grass (a name also applied to the genus *Phalaris*); Canary-grass (a name also applied to the genus *Phalaris*); Canarygrass (a name also applied to the genus *Phalaris*); Carolina Canary Grass (a name also applied to the genus *Phalaris*); Carolina Canary-grass; Carolina Canarygrass; Fox-tail Grass; Gilbert's Relief Grass; May Grass (a name also applied to other species); May-grass (a name also applied to other species); Maygrass (a name also applied to other species); Ribbon Grass (a name also applied to other species); Southern Canary Grass; Southern Canary-grass; Southern Canarygrass; Southern Reed (a name also applied to other species); Southern Reed Canary Grass; Southern Reed Grass (a name also applied to other species); Stewart's Canary Grass; Stewart's Canary-grass; Wild Canary Grass (a name also applied to other species). DESCRIPTION: Terrestrial annual graminoid (with culms being decumbent and/or somewhat geniculate 10 inches to 5 feet in height); the foliage is shiny blue-green or green; based on few records located, flowering generally takes place between early April and mid-July (flowering records: one for early April, two for mid-April and one for mid-July; flowering beginning as early as February and ending as late as August has been reported). HABITAT: Within the range of this species it has been reported from mountains; plateaus; canyons; slopes; flats; valley floors; along roadsides; bottoms of draws; along seeps; springs; in sand along streams; sandy streambeds; creeks; along rivers; sandy and sandy-clayey riverbeds; along gravelly and sandy washes; within drainages; drainage ways; along watercourses; depressions; in pools; marshes; swampy areas; muddy swales; along (sandy-clayey) edges of streams, creeks, washes, ponds, playas and swamps; mudflats; shoals; benches; bottomlands; sandy-silty and silty floodplains; silty lowlands; around stock tanks; loamy canals; along and in ditches; ditch banks; riparian areas; waste areas, and disturbed areas growing in wet, moist, damp and dry gravelly and sandy ground; sandy loam and loam ground; sandy clay ground, and sandy silty and silty ground, occurring from 100 to 6,100 feet in elevation in the woodland, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. Canary grass has been reported to be grazed by American Bison (*Bos bison*); Desert Bighorn Sheep (*Ovis canadensis* subsp. *mexicana*); deer, and Pronghorn (*Antilocapra americana*). *Phalaris caroliniana* is native to south-central and southern (Baja Norte) North America.

*5, 6, 15, 33 (Page 263), 43 (102009), 44 (010712), 46 (Page 131), 58, 63 (010712 - color presentation), **85** (010712 - color presentation of dried material), 124 (010712), 127, 140 (Pages 205 & 301)*

***Polypogon monspeliensis* (C. Linnaeus) R.L. Desfontaines: Annual Rabbitsfoot Grass**

COMMON NAMES: Annual Beard Grass; Annual Beard-grass; Annual Beardgrass; Annual Rabbit's Foot Grass; Annual Rabbit-foot Grass; Annual Rabbit's-foot Grass; Annual Rabbits-foot Grass; Annual Rabbitfoot Grass; Annual Rabbitsfoot Grass; Ban Bai (Pima); Ban Bahi (Uto-Aztecan: Akimel O'odham)[140]; Beard Grass (a name also applied to other species and the genus *Polypogon*); Beard-grass (a name also applied to other species and the genus *Polypogon*); [Rabbitfoot] Beard-grass (English)[140]; Bearded Fox-tail Grass (a name also applied to other species); Ch'iił Ńdínísé <c'il dínesą́> (Athapascan: Navajo)[140]; [Zacate] Cola de Zorro ("Fox Tail [Grass]", Spanish: Sonora)[140]; Dhail Al Qut (Arabic); Dloziłgaii Bitsee' <ɬozilgai bice'> (Athapascan: Navajo)[140]; Hierba de Caso ("Event Herb", Spanish: Sonora)[140]; Montpellier Beard Grass; Montpellier Beard-grass; Montpellier Polypogon; Pata de Canejo ("Rabbit-foot Grass", Spanish: Sonora)[140]; Pombikanan (Uto-Aztecan: Tübatulabal)[140]; Rabbit-foot Grass (a name also applied to the genus *Polypogon*); Rabbit-foot Grass (English)[140]; [Annual] Rabbit('s)-foot Grass [Annual Rabbitfoot Grass] (English)[140]; Rabbit-foot Polypogon; Rabbit-foot-grass; Rabbitfoot Beard-grass; Rabbitfoot Beardgrass; Rabbitfoot Grass; Rabbitfoot Polypogon; Rabbitfoot-grass (a name also applied to the genus *Polypogon*); Rabbitfoot-grass (English)[140]; Rabbit's Foot Beardgrass; Rabbit's Foot Polypogon; Rabbit's-foot Polypogon; Rabbit'sfootgrass; Rabbitfootgrass; Rabbitsfoot Beardgrass; Rabbitsfoot Polypogon (English)[140]; Ṣa'i <sa'e> ("Grass", a word for grasses, Uto-Aztecan: Mountain Pima)[140]; Shelik Bahi <sheshelik baabhai pl.> (Uto-Aztecan: Akimel O'odham)[140]; Skäggräs (Swedish); Tawny Rabbit-foot Grass; Vaṣa'i ("Grass", a word for grasses, Uto-Aztecan: Mountain Pima)[140]; Waháɨ ("Grass" a word used for grasses, Uto-Aztecan: Northern Paiute)[140]; Waṣai ("Grass" a word used for grasses, Uto-Aztecan: Tohono O'odham)[140]; Xṭpa Nkʸšyuɬʸ (Yuman: Cocopa)[140]; Zacate Cola de Zorra (Spanish); 'Zee'iilwoii <ʔazeʔ i.l "oʔi> ("Runs Into the Mouth", Athapascan: Navajo)[140]. DESCRIPTION: Terrestrial and/or semi-aquatic annual tufted graminoid (decumbent, geniculate, ascending and or erect culms 2 to 40 inches in height); the flowers may be brown, pale green, green, white or white-green; flowering generally takes place between early March and early November (additional records: two for early February, one for late November and one for mid-December); the awns are yellow. HABITAT: Within the range of this species it has been reported from mountains; rocky and sandy mesas; plateaus; cliff faces; hanging gardens; escarpments; rocky canyons; along bouldery-gravelly-sandy, rocky, rocky-sandy, shaley and sandy canyon bottoms; talus; crevices in rocks; bluffs; rocky buttes; ridges; clayey-loamy ridgetops; sandy, loamy and clayey meadows; foothills; rocky and sandy hills; rocky hillsides; escarpments; rocky, rocky-sandy, cobbly-sandy-clayey, gravelly, gravelly-loamy, sandy, loamy, loamy and clayey slopes; bedrock, rocky and sandy outcrops; lava beds; amongst rocks; sand dunes; hummocks; clayey-loamy steppes; prairies; sandy and chalky plains; along muddy, rocky, gravelly-silty, sandy, loamy and silty flats; sandy uplands; sandy basins; boggy hollows; valley floors; valley bottoms; coastal marshes; tidal flats; sandy-clayey roadbeds; along gravelly, gravelly-sandy and sandy roadsides; within arroyos; within muddy and sandy-loamy draws; bottoms of draws; gulches; gullies; sandy bottoms of gullies; silty ravines; muddy, rocky and sandy seeps; along and in gravelly, clayey and loamy springs; along and in gravelly-sandy, sandy and sandy-clayey soils along streams; along rocky, rocky-sandy, shaley, sandy, loamy-clayey and silty-loamy streambeds; along and in creeks; along and in rocky, stony and sandy creekbeds; in clayey soils along rivers; in rocky, rocky-clayey, rocky-silty, gravelly-sandy, sandy and sandy-clayey riverbeds; along and in bouldery-sandy, rocky-silty, gravelly and sandy washes; along and in drainages; mucky drainage ways; poolbeds; ponds; vernal ponds; freshwater pozos; in lakes; silty lakebeds; playas; boggy areas; ciénegas; in cindery and clayey freshwater and saltwater marshes; sandy swamps; depressions; sink holes; within clayey-loamy swales; along (muddy, muddy-sandy-silty, cobbly-silty, sandy, sandy-loamy, sandy-clayey, clayey and silty) banks of streams, creeks, creekbeds, rivers, riverbeds, washes, ponds and lakes; (muddy, rocky, rocky-clayey, cobbly, gravelly-sandy, sandy and loamy-clayey) edges of springs, streams, creeks, rivers, washes, pools, ponds, pozos, lakes, lagoons, salt-marshes, swamps and sloughs; along margins of streams, creeks, pools, backwaters and freshwater marshes; along (gravelly, gravelly-sandy, gravelly-clayey, sandy, sandy-clayey and clayey) shores of creeks, rivers, ponds and lakes; mudflats; muddy-sand, rocky-sand, stony-sand, gravel, gravelly-sand, sand and sandy-clayey-sand bars; rocky and sandy beaches; sandy benches; terraces; cobbly, cobbly-loamy and loamy bottomlands; along rocky-cobbly, gravelly-sandy, sandy-loamy, sandy-silty and silty-clayey floodplains; lowlands; mesquite bosques; along fencelines; dams; around stock tanks; around reservoirs; along canals; along canal banks; along mucky-sandy, sandy-clayey and clayey ditches; along silty-clayey ditch banks; muddy, rocky-sandy, gravelly-sandy, gravelly-loamy and sandy riparian areas; waste places, and disturbed areas growing in shallow water; peat deposits; mucky; muddy, and wet, moist, damp and dry bouldery, bouldery-gravelly-sandy, bouldery-sandy, rocky, rocky-cobbly, rocky-sandy, shaley, stony, stony-sandy, cobbly, cindery, gravelly, gravelly-sandy and sandy ground; cobbly loam, gravelly loam, gravelly-sandy loam, sandy loam, clayey loam, silty loam and loam ground; rocky clay, rocky-stony clay, cobbly-sandy clay, sandy clay, loamy clay, silty clay and clay ground; rocky silty, cobbly silty, gravelly silty, sandy silty and silty ground, and chalky ground occurring from sea level to 8,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant that poses a significant threat to our native biotic communities. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used for food, as a drug or medication and as a soap to wash figurines before painting them. *Polypogon monspeliensis* is native to northern, eastern and southern Europe and coastal islands in the Mediterranean Sea; Asia and coastal islands in the North Pacific Ocean; northern Africa and coastal islands in the North Atlantic Ocean. *5, 6, 15, 16, 33 (Pages 182-183), 43 (102109), 44 (011012), 46 (Page 104), 58, 63 (011012 - color presentation), 68, 77, **85** (011012 - color presentation), 101 (color photograph), 124 (011012), 127, 140 (Pages 214-215 & 301)*

***Polypogon viridis* (A. Gouan) M.A. Breistroffer: Beardless Rabbitsfoot Grass**

SYNONYMY: *Agrostis semiverticillata* (P. Forsskål) C.F. Christensen. COMMON NAMES: Beardless Rabbit-foot Grass; Beardless Rabbitfoot Grass; Beardless Rabbitfootgrass; Beardless Rabbits-foot Grass; Beardless Rabbitsfoot Grass; Beardless Rabbitsfootgrass; Beardless Rabbit's Foot Grass; Beardless Rabbit's-foot Grass; Beardless Rabbit'sfootgrass; Cola de Ardilla (Hispanic); Cola de Zorra (Hispanic); Cola de Zorrillo (Hispanic); Green Bent Grass; Green Bent-grass; Green Bentgrass; Water Agrostis-like Beardgrass; Water Beard Grass; Water Beard-grass; Water Beardgrass; Water Bent; Water Bent Grass (a name also applied to other species); Water Bent-grass (a name also applied to other species); Water Bentgrass (a name also applied to other species); Water Polypogon; Water-bent; Waterbent; Whorled Bent Grass; Whorled Bent-grass; Whorled Bentgrass. DESCRIPTION: Terrestrial or semi-aquatic perennial graminoid (decumbent, geniculate and/or decumbent culms 4 to 36 inches in height); the foliage is bluish-green; the panicle (compound inflorescence) is pale green, green, purplish or reddish; flowering generally takes place between early May and late August (additional records: one for early January, one for early April, one for late September, two for early October and two for late October). HABITAT: Within the range of this species it has been reported from mountains; hanging gardens; bases of cliffs; along rocky and rocky-gravelly canyons; along canyon bottoms; chasms; crevices in rocks; loamy and clayey-loamy meadows; foothills; hills; hillsides; rocky, sandy, sandy-loamy, loamy, clayey and clayey-loamy slopes; amongst cobbles; coves; rock shelves; loamy, clayey and clayey-loamy flats; roadsides; arroyos; draws; gulches; sandy-clayey gullies; along sandy seeps; around and in gravelly, sandy-loamy and sandy-silty springs; stony and sandy ground along streams; along and in muddy, rocky and sandy streambeds; along and in bouldery and sandy creeks; along and in rocky, stony and gravelly creekbeds; in sandy, sandy-clayey and clayey soils along rivers; sandy riverbeds; in cobbly washes; along drainages; along and in sandy and sandy-loamy drainage ways; along watercourses; around ponds; in backwaters; boggy areas; marshy areas; (muddy-clayey and sandy) banks of springs, streams, creeks, rivers and ponds; along edges of streams, creeks and watercourses; along margins of streams and ponds; shores of lakes; mudflats; sandy beaches; sandy benches; sandy terraces; oxbows; bottomlands; sandy, sandy-clayey and clayey floodplains; dams; reservoirs; canal banks; along ditches; ditch banks; riparian areas and disturbed areas growing in shallow water; muddy, and wet, moist, damp and dry bouldery, rocky, rocky-gravelly, rocky-sandy, stony, cobbly, gravelly and sandy ground; gravelly loam, sandy loam and loam ground, and sandy clay and clay ground, occurring from sea level to 12,800 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant. *Polypogon viridis* is native to central, eastern and southern Europe and coastal islands in the Mediterranean Sea; western, central and southern Asia, and northern Africa and coastal islands in the North Atlantic Ocean. *5, 6, 15, 30, 33 (recorded as *Agrostis semiverticillata* (Forsk.) Christ., Pages 177-178), 43 (102209), 44 (011012 - listing of Common Names located under *Agrostis semiverticillata*), 46 (recorded as *Agrostis semiverticillata* (Forsk.) C. Chr., Page 103), 63 (011012 - color presentation), 80 (The Ergot Fungus (*Claviceps* sp.) is listed as a Secondary Poisonous Range Plant. Species of the genus *Agrostis* can be hosts of the Ergot Fungus. "Ergot contains poisonous alkaloids and other compounds that may cause chronic poisoning (gangrenous ergotism) in the extremities when consumed in small amounts, or convulsive poisoning when large amounts are eaten. Animals may be poisoned by feeding on mature, infected grain or hay. Livestock, especially cattle, and humans are susceptible. ... Pastures causing ergot poisoning should be mowed or the animals removed. Mildly poisoned animals will usually recover if removed from the infested pastures, kept quiet, and supplied with good feed and water. In Arizona, some losses may be expected on rangelands during wet years, but most losses have occurred from grazing pastures of Dallas Grass (*Paspalum dilatatum*)." See text for additional information.), **85** (011012 - color presentation), 124 (011012), 140 (Page 301)*

Rhynchelytrum repens (see *Melinis repens*)

Rhynchelytrum roseum (see *Melinis repens*)

***Schismus arabicus* C.G. Nees von Esenbeck: Arabian Schismus**

COMMON NAMES: Abu Mashi (a name also applied to *Schismus barbatus*); Abu-mashi (a name also applied to *Schismus barbatus*); Arabian Grass (a name also applied to the genus *Schismus*); Arabian Mediterranean Grass; Arabian Mediterranean-grass; Arabian Mediterraneangrass; Arabian Schismus; Arabian Split Grass; Arabiangrass (a name also applied to the genus *Schismus*); Araby Grass; Camel Grass (a name also applied to other species); Zacate Arabe. DESCRIPTION: Terrestrial annual tufted graminoid (prostrate, ascending and/or erect culms 1 inch to 1 foot in height); the foliage is green; based on few records located, flowering generally takes place between late January and late May (flowering records: two for late January, one for early February, one for mid-February, one for mid-March, one for late March, five for early April, two for mid-April, two for late April, three for early May, two for mid-May and two for late May). HABITAT: Within the range of this species it has been reported from mountains; gravelly mountaintops; mesas; bases of cliffs; rocky and sandy canyons; bouldery canyon bottoms; bouldery talus slopes; crevices in boulders; buttes; gravelly ridges; gravelly and sandy foothills; rocky, gravelly-shaley and sandy hills; rocky hilltops; gravelly, gravelly-sandy and sandy hillsides; rocky, rocky-gravelly-loamy, gravelly and sandy slopes; rocky-sandy and sandy bajadas; rock outcrops; sandy lava flows; sandy dunes; plains; gravelly, sandy and sandy-clayey flats; basins; basin bottoms; valley floors; railroad right-of-ways; along gravelly and sandy roadsides; rocky draws; sandy springs; along streams; along and in sandy streambeds; gravelly-sandy and sandy riverbeds; along and in bouldery, gravelly, gravelly-sandy, sandy and sandy-silty washes; drainages; sandy drainage ways; along banks of arroyos; along (rocky-sandy) edges of washes and drainage ways; sandy benches; sandy floodplains; mesquite bosques; stock tanks; ditches; along ditch tops; sandy riparian areas, and disturbed areas growing in dry gravelly desert pavement; bouldery, bouldery-rocky-gravelly, rocky, rocky-sandy, shaley, gravelly, gravelly-sandy and sandy ground; rocky-gravelly loam, gravelly-silty-clayey loam and loam ground; sandy clay ground, and sandy silty ground, occurring from sea level to 8,300 feet in elevation in the forest, woodland,

scrub, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant that poses a significant threat to our native biotic communities. *Schismus arabicus* is native to southeastern Europe; western Asia, and northern Africa. *5, 6, 15, 16, 22 (color photograph), 33 (Pages 173-174), 43 (102209), 44 (011112 - color photograph), 46 (Page 98), 63 (011112 - color presentation), 68, 77, **8**5 (011112 - color presentation including habitat), 124 (011112 - no record of genus or species)*

***Schismus barbatus* (P. Loefling ex C. Linnaeus) A. Thellung: Common Mediterranean Grass**

COMMON NAMES: Abu Mashi (a name also applied to *Schismus arabicus*); Abu-mashi (a name also applied to *Schismus arabicus*); Bearded Mediterranean Grass; Camel Grass (a name also applied to other species); Common Mediterranean Grass; Common Mediterranean Schismus; Common Mediterraneangrass; Kelch Grass; Kelch-grass; Mediterranean Grass (a name also applied to other species and the genus *Schismus*); Mediterranean Schismus; Mediterraneangrass (a name also applied to other species and the genus *Schismus*); Old Han Schismus; Zacate Mediterrane Comun. DESCRIPTION: Terrestrial annual tufted graminoid (prostrate, decumbent, geniculate, ascending and/or erect culms 1 to 14 inches in height); the foliage is green; the inflorescence is greenish-purple; the spikelets (flowers) may be purple tinged; flowering generally takes place between early January and early June (additional records: one for mid-October and one for late October, flowering beginning as early as November has been reported). HABITAT: Within the range of this species it has been reported from mountains; mountaintops; sandy and sandy-silty mesas; rocky cliffs; rocky and clayey canyons; sandy canyon bottoms; rocky talus; bluffs; rocky ridges; ridgetops; ridgelines; rocky, stony-gravelly, sandy-loamy and clayey hills; hilltops; rocky hillsides; along rocky, rocky-gravelly-loamy, rocky-loamy-clayey, gravelly, gravelly-sandy, gravelly-loamy, sandy, sandy-loamy, loamy and clayey slopes; rocky alluvial fans; gravelly-sandy bajadas; rocky outcrops; amongst boulders; sand dunes; blow-sand deposits; shelves; gravelly-sandy plains; gravelly, gravelly-sandy, gravelly-loamy, sandy and silty flats; sandy valley floors; around wharves; roadbeds; along gravelly and sandy roadsides; springs; in sandy soils along streams; along gravelly-sandy and sandy creekbeds; along rivers; along rocky, gravelly and clayey-loamy riverbeds; along and in rocky-sandy, rocky-silty, gravelly, gravelly-sandy and sandy washes; drainages; sandy and silty lakebeds; depressions; (sandy) banks of streams; borders of washes; (sandy) edges of streambeds and lakes; margins of washes; beaches; sandy benches; gravelly and sandy terraces; floodplains; canal banks; gravelly-sandy riparian areas, and disturbed areas growing in wet, moist and dry desert pavement; bouldery, rocky, rocky-gravelly, rocky-sandy, stony-gravelly, gravelly, gravelly-sandy and sandy ground; rocky-gravelly loam, gravelly loam, gravelly-sandy loam, sandy loam, clayey loam and loam ground; rocky-loamy clay and clay ground, and rocky silty, gravelly silty, sandy silty and silty ground, occurring from sea level to 8,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant that poses a significant threat to our native biotic communities. *Schismus barbatus* is native to southwestern Europe; western, central and southern Asia, and northern and southern Africa and coastal islands in the North Atlantic Ocean. *5, 6, 15, 16, 22 (color photograph), 33 (Pages 172-173), 43 (102209), 44 (011112 - color photograph), 46 (Page 98), 58, 63 (011112 - color presentation of seed), 68, 77, 85 (011112 - color presentation of dried material), 124 (011112 - no record of genus or species), **WTK** (April 16, 2008)*

***Setaria grisebachii* E.P. Fournier: Grisebach's Bristlegrass**

COMMON NAMES: Grisebach Bristlegrass; Grisebach's Bristle Grass; Grisebach's Bristlegrass; Cola de Zorra (Spanish). DESCRIPTION: Terrestrial annual tufted graminoid (decumbent, geniculate, ascending and/or erect culms 4 inches to 4 feet in height); the panicles (compound inflorescences) are purple; the flowers are yellow with purple spots; flowering generally takes place between late July and mid-October (flowering ending as late as November has been reported). HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; mesas; cliffs; rocky bases of cliffs; rocky, gravelly-loamy and sandy canyons; sandy canyon bottoms; gorges; talus slopes; crevices; rocky ledges; along meadows; foothills; rocky hills; rocky, rocky-silty and gravelly-clayey hillsides; rocky, rocky-stony, gravelly, gravelly-clayey, gravelly-silty, sandy, sandy-loamy, loamy, clayey and clayey-loamy slopes; rocky outcrops; amongst boulders and rocks; sandy lava flows; gravelly-silty and clayey-loamy flats; valley floors; along railroad right-of-ways; along sandy roadsides; along and in arroyos; draws; bottoms of draws; rocky gulches; gravelly-sandy seeps; springs; along streams; along and in rocky-gravelly and gravelly streambeds; creeks; along rocky creekbeds; along sandy rivers; along and in sandy and clayey washes; along and in bouldery drainage ways; ciénegas; within swales; banks of washes; sandy benches; rocky bottomlands; sandy floodplains; mesquite bosques; along ditches; sandy riparian areas; waste areas, and disturbed areas growing in moist, damp and dry rocky, rocky-stony, rocky-gravelly, stony, gravelly, gravelly-sandy and sandy ground; gravelly loam, sandy loam, clayey loam and loam ground; clay ground, and rocky silty, gravelly silty and sandy silty ground, occurring from 1,200 to 8,300 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Setaria grisebachii* is native to southwest-central and southern North America; Central America, and northwestern South America. *5, 6, 15, 33 (Page 269), 43 (102209), 44 (011112 - no record of species; genus record), 46 (Page 139), 58, 63 (011112 - color presentation), 77, **85** (011112 - color presentation of dried material), 124 (011112 - no record of species; genus record), 140 (Page 301)*

***Setaria leucopila* (F.L. Scribner & E.D. Merrill) K.M. Schumann: Streambed Bristlegrass**

SYNONYMY: *Chaetochloa leucopila* F.L. Scribner & E.D. Merrill. COMMON NAMES: Bristlegrass (a name also applied to other species and the genus *Setaria*); Plains Bristle Grass (a name also applied to other species); Plains Bristlegrass (a name also applied to other species); Stream-bed Bristle Grass; Streambed Bristle Grass; Streambed Bristlegrass; White-haired Bristlegrass; Yellow Bristlegrass; Yellow Foxtail; Zacate Tempranero (Spanish). DESCRIPTION: Terrestrial perennial tufted graminoid (a bunchgrass (clumpgrass) with decumbent, geniculate, ascending and/or erect culms 8 inches to 4 feet in height and

to 20 inches in width at the base); the foliage is green; the spike-like panicles (compound inflorescence) are pale green; based on few records located, flowering generally takes place between early July and early November (additional records: one for early March, three for mid-March, one for late April, two for mid-June and two for late December). HABITAT: Within the range of this species it has been reported from mountains; mesas; plateaus; cliffs; rock walls; bases of cliffs, monoliths and rock walls; canyons; sandy canyon bottoms; gorges; talus slopes; crevices in rocks; buttes; crests of rocky buttes; ridges; ridgetops; foothills; rocky, gravelly and gravelly-sandy hills; rocky and rocky-sandy hillsides; escarpments; sandy bases of escarpments; rocky, rocky-clayey-loamy, gravelly, gravelly-sandy and sandy-loamy slopes; bases of slopes; alluvial fans; bajadas; rocky outcrops; amongst boulders and rocks; rocky and sandy lava flows; sand dunes; sandy steppes; sandy plains; gravelly, gravelly-sandy, sandy, sandy-loamy and sandy-silty flats; basins; valley floors; valley bottoms; coastal sand dunes; coastal flats; coastal beaches; railroad right-of-ways; roadbeds; along rocky, gravelly and sandy-loamy roadsides; along and in rocky-gravelly arroyos; bottoms of arroyos; rocky and gravelly-sandy-loamy draws; gulches; within rocky ravines; seeps; in sand around streams; bouldery streambeds; along creeks; in rocky and gravelly creekbeds; in sand along rivers; riverbeds; along and in rocky, rocky-sandy, gravelly, gravelly-sandy and sandy washes; within sandy drainages; within drainage ways; along (sandy-loamy) banks of draws, streams, rivers and washes; edges of arroyos, springs, washes, pools and marshes; margins of rivers and washes; sand bars; rocky benches; terraces; sandy-loamy bottomlands; floodplains; lowlands; mesquite bosques; sandy mottes; along and in ditches; clayey-loamy water tanks; gravelly and sandy riparian areas, and disturbed areas growing in wet, moist and dry rocky desert pavement; bouldery, rocky, rocky-gravelly, rocky-sandy, gravelly, gravelly-sandy and sandy ground; rocky-clayey loam, gravelly-sandy loam, sandy loam, sandy-clayey loam and clayey loam ground; rocky clay and clay ground, and rocky silty and sandy silty ground often reported as growing at the base or under shrubby mesquites and other protected areas, occurring from sea level to 6,900 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Setaria leucopila* is native to southwest-central and southern North America. *5, 6, 33 (no record of species), 43 (061110), 44 (011212 - no record of species; genus record), 46 (included under *S. macrostachya* in the "first edition", Page 139, and Supplement Page 1041), 48, 63 (011212 - color presentation), 77, **85** (011212 - color presentation), 124 (011212), 140 (Page 301)*

Setaria macrostachya (see NOTES and related footnotes 33, 46, 85, 105 and 140 under *Setaria vulpiseta*)

***Setaria vulpiseta* (J.B. de Lamarck) J.J. Roemer & J.A. Schultes: Plains Bristlegrass**

COMMON NAMES: Assaak; Bristle-grass (a name also applied to other species and the genus *Setaria*); [Plains, Summer] Bristle-grass (a name applied to *S. macrostachya*, English)[140]; Bristlegrass (a name also applied to other species and the genus *Setaria*); Foxtail [Wild] Millet (a name applied to *S. macrostachya*, English)[140]; Hasac (a name applied to *S. macrostachya*, Hokan: Seri)[140]; Ne-kuuk-suuk (a name applied to *S. macrostachya*, Mayan: Maya)[140]; Plains Bristle-grass (a name also applied to other species); Plains Bristlegrass (a name also applied to other species); Summer Bristle-grass; Waṣai ("Grass" a word applied to any grass, Uto-Aztecan: Tohono O'odham)[140]; Xica Quiix ("Globular Things" a name applied to *S. macrostachya*, Hokan: Seri)[140]; Xikkaa Kiix; Zacate Tempranero [Temprano] ("Early Grass" a name applied to *S. macrostachya*, Spanish: Chihuahua, Sonora)[140]; Zacate Temprano (a name applied to *S. macrostachya*); Zéé'iilwoii ("One That Goes Into the Throat" a name applied to *S. macrostachya*, Athapascan: Navajo)[140]. DESCRIPTION: Terrestrial perennial tufted graminoid (a bunchgrass (clumpgrass) with decumbent, geniculate, ascending and/or erect culms 8 inches to 4 feet in height; one plant was observed and described as being 2 inches in width at the base, several plants were observed and described as being 8 to 16 inches in width at the base); the stems and leaves are pale to bright green sometimes with a bluish tinge curing to an orange-brown; the flowers may be orange and purple; flowering generally takes place between mid-April and mid-October (additional records: one for early March and one for mid-November). HABITAT: Within the range of this species it has been reported from mountains; mesas; cliffs; bases of cliffs; rocky canyons; rocky canyonsides; rocky canyon bottoms; canyonettes; rocky talus; crevices in rocks; amongst rocky buttes; crests of buttes; rocky ledges; ridges; openings in woodlands; foothills; rocky hills; hilltops; rocky hillsides; rocky, rocky-loamy, gravelly, gravelly-loamy, sandy and clayey slopes; bajadas; rocky outcrops; amongst boulders and rocks; sandy dunes; sandy mesquite hummocks; plains; gravelly flats; valley floors; valley bottoms; along gravelly roadsides; rocky arroyos; bottoms of arroyos; gravelly-sandy-loamy draws; streambeds; sandy creeks; sandy riverbeds; along and in gravelly washes; within drainages; drainage ways; depressions; ciénegas; (gravelly-sandy) banks of streambeds, creeks, rivers and washes; (rocky) edges of streambeds and washes; benches; sandy-loamy bottomlands; sandy floodplains; mesquite bosques; stock tanks; riparian areas, and disturbed areas growing in muddy and moist and dry bouldery, rocky, gravelly, gravelly-sandy and sandy ground; rocky loam, gravelly loam, gravelly-sandy loam, sandy loam and clayey loam ground; sandy clay and clay ground, and cobbly-sandy silty ground sometimes in the partial shade of shrubs and trees, occurring from sea level to 7,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: *Setaria vulpiseta*, the Plains Bristlegrass has been recorded in many texts as *Setaria macrostachya*; however, it has been reported that *Setaria macrostachya*, with the common name Large-spike Bristlegrass is an EXOTIC species that may also be found in Arizona. There appears to be some confusion as to what's what with this species with regard to its taxonomy. The native Plains Bristlegrass may be an attractive component of a restored native habitat, and the plant is reportedly a good soil binder. Plains Bristlegrass is an important forage grass with a high palatability; however, it is often selectively grazed over other range grasses and does not stand up well to heavy grazing. The seeds are eaten by doves, quails, sparrows and other songbirds. *Setaria vulpiseta* is native to south-central (again, some authors say that it is native and other authors say that it isn't) and southern North America; Central America and coastal islands in the Caribbean Sea, and South America. *5, 6, 15 (recorded as *Setaria macrostachya* H.B.K.), 16 (recorded as *Setaria macrostachya* H.B.K.), 33 (recorded as *Setaria macrostachya* H.B.K., Plains Bristlegrass, Page 270), 43 (102409), 44

(011212 - no record of species; genus record), 46 (recorded as *Setaria macrostachya* H.B.K., Plains Bristlegrass, Page 139 and Supplement, Page 1041), 48 (recorded as *Setaria macrostachya*), 58 (recorded as *Setaria macrostachya* H.B.K.), 63 (011212 - color presentation of seed), 77 (recorded as *Setaria macrostachya* H.B.K.), **85** (011312 - *Setaria macrostachya* Kunth and *Setaria vulpiseta* (Lam.) Roemer & J.A. Schultes, color presentation of dried material), 105 (recorded as *Setaria macrostachya* H.B.K.), 124 (011212 - no record of species; genus record), 140 (recorded *Setaria macrostachya* Kunth, Pages 215-216 & 301)*

***Sorghum halepense* (C. Linnaeus) C.H. Persoon: Johnsongrass**

COMMON NAMES: Alabama Guinea Grass; Alabama Guinea-grass; Aleppo Grass; Aleppo Millet Grass; Aleppo Milletgrass; Aleppo Sorgho; Aleppo Sorgo; Aleppo Sorghum; Aleppo-grass; Aleppohirse (German); Arabian Millet; Arabian Millet Grass (Utah); Australian Grass (a name also applied to other species); Cañota (Spanish); Chinese Sugarcane (a name also applied to other species); Common Johnson Grass; Common Johnson-grass; Common Johnsongrass; Cuba Grass; Doura; Egyptian Grass; Egyptian Millet (a name also applied to other species); Egyptian Rice-corn (a name also applied to other species); Evergreen Millet; False Guinea Grass; False Guinea-grass; False Guineagrass; Great Millet (a name also applied to other species); Green Valley Grass; Green Valley-grass; Green-valley Grass; Guinea Corn (a name also applied to other species); Guinea Grass; Halepa Grass; Halepa Sorghum; Herbe d'Alep (French); Herbe de Cuba; Hierba Johnson (Spanish); Imphee; Indian Millet (a name also applied to other species and the genus *Sorghum*); Johnson Grass (a name also applied to other species); Johnson-grass (a name also applied to other species); Johnsongras (Afrikaans); Johnsongrass (a name also applied to other species); Johnson Sorghum; Johnson's Sorghum; Maiden Cane (a name also applied to other species); Maiden-cane (a name also applied to other species); Meanie Grass; Mean's Grass; Means Grass; Means' Grass; Means-grass; Millet Seed; Morocco Millet; Ogräsdurra (Swedish); Racehorse Grass; Racehorse-grass; Saint Mary's Grass (a name also applied to other species); Shi Mao (transcribed Chinese); Sorgho d'Alep (French); Sorgo de Alepo; Sorgo de Aleppo (Spanish); St. Mary's Grass (a name also applied to other species); Syria Grass; Syria Millet; Syrian Grass; Syrian Millet; Wilde Mohrenhirse (German); Zacate Johnson (Spanish); Zacate Nilo (Spanish). DESCRIPTION: Terrestrial perennial graminoid (erect culms 20 inches to 8 feet in height, reportedly may reach 12 feet in flower); the foliage is green; the flowers may be cream-purple, greenish-purple, dark red-purple or purplish; flowering may take place year-round. HABITAT: Within the range of this species it has been reported from mountains; rocky canyons; sandy canyon bottoms; bluffs; meadows; foothills; hills; rocky hillsides; rocky, sandy, sandy-loamy, sandy-silty and clayey-loamy slopes; amongst boulders and rocks; sand hummocks; rocky mudflows; sandy steppes; prairies; plains; gravelly, sandy, loamy and clayey-loamy flats; valley floors; coastal prairies; along cindery railroad right-of-ways; along gravelly-sandy, gravelly-loamy and sandy roadsides; arroyos; bottoms of arroyos; gulches; springs; rocky-sandy soil along streams; along and in streambeds; along and in rocky and rocky-gravelly-sandy creeks; along creekbeds; in sandy soil along and in rivers; along and in rocky and sandy riverbeds; within rocky and sandy washes; drainages; ciénegas; freshwater marshes; depressions; (sandy) banks of creeks, rivers and washes; edges of streams; gravel and sand bars; cobbly-sandy and sandy benches; cobbly-sandy and sandy terraces; sandy, loamy and silty bottomlands; sandy and sandy-loamy floodplains; mesquite bosques; silty-clayey stock tanks; along canals; along canal banks; along and in sandy-loamy ditches; along clayey and clayey-loamy ditch banks; gravelly-sandy and sandy riparian areas; waste places, and disturbed areas growing in wet, moist, damp and dry bouldery, rocky, rocky-gravelly-sandy, rocky-sandy, cobbly, cobbly-sandy, cindery, gravelly, gravelly-sandy and sandy ground; sandy loam, clayey loam, silty-clayey loam and loam ground; silty clay and clay ground, and sandy-silty and silty ground, occurring from sea level to 7,500 feet elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant that poses a significant threat to our native biotic communities. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a fodder and as a toy or in games (Kiowa children used stems and leaves to make grass whistles). Johnsongrass was reportedly introduced into the United States around 1830. *Sorghum halepense* readily hybridizes with *Sorghum bicolor* (Sorghum) which is also an exotic. *Sorghum halepense* is native to western, middle and southern Asia and northern Africa. *5, 6, 15, 16, 22 (color photograph), 33 (Pages 310-313), 43 (102409), 44 (011312 - color photograph), 46 (Page 143), 58, 63 (011312 - color presentation including habitat), 68 ("Johnsongrass ordinarily is good feed, but sometimes the plant, particularly the leaves, contain hydrocyanic (prussic) acid, a cyanide type of poisoning. Any factor which interrupts normal growth may cause the release of HCN within plants. Rapid growth of new leaves, wilting due to drought, frost, freezing, cutting, or trampling are the most dangerous events." See text for additional information), 77, 80 (Johnsongrass is Listed as a Major Poisonous Range Plant. "Most losses from Johnsongrass are due to hydrocyanic-acid poisoning, but plants also accumulate dangerous levels of nitrate. Danger from HCN poisoning is greatest when soils are high in available nitrogen and low in phosphorus, when plants have been exposed to drouth or disease which results in slow or stunted growth, and when plants are making rapid regrowth or have been frosted. Leaves are more toxic than stems, and young plants are more toxic than mature ones.... Management to defer pastures during dangerous periods of growth, and feeding of animals before turning them on pastures containing Johnsongrass are the best preventive measures. " See text for additional information.), **85** (011312 - color presentation including habitat), 101 (color photograph), 105, 124 (042711), 127, 140 (Page 301)*

***Sporobolus contractus* A.S. Hitchcock: Spike Dropseed**

COMMON NAMES: Dropseed (a name also applied to other species, the genus *Sporobolus* and historically to the genus *Muhlenbergia*); Narrow Spike Dropseed; Narrow-spike Dropseed; Narrow-spiked Dropseed; Spike Drop Seed; Spike Drop-seed; Spike Dropseed; Spike Dropseed Grass; Spike-dropseed; Zacate Alcalino Espigado (Spanish); Zacatón de Arena (Spanish). DESCRIPTION: Terrestrial perennial tufted graminoid (a bunchgrass (clumpgrass) with ascending and/or erect culms 16 inches to 6½ feet in height and 4 to 12 inches in width at the base; plants were observed and reported as being 16 inches in

height and 8 inches in width at the base); the spikelets may be brownish, lead colored or whitish; the anthers are a light yellowish; flowering generally takes place be between early August and late October (additional records: one for mid-June and one for early July; flowering as early as June has been reported). HABITAT: Within the range of this species it has been reported from mountains; sandy mesas; plateaus; hanging gardens; bases of cliffs; rocky and gravelly canyons; along sandy and sandy-clayey canyon bottoms; talus slopes; bluffs; knolls; bases of ridges; sandy meadows; sandy foothills; sandy hills; rocky and sandy hillsides; rocky, rocky-clayey, rocky-clayey-loamy, cindery, gravelly, gravelly-sandy-loamy, gravelly-loamy, sandy, sandy-loamy, sandy-clayey, sandy-clayey-loamy and clayey-loamy slopes; alluvial fans; bajadas; rocky outcrops; coves; sand hills; sand dunes; mesquite hummocks; rock shelves; sandy plains; gravelly, gravelly-loamy, sandy, sandy-loamy, sandy-clayey and clayey flats; sandy basins; oak glens; sandy valley floors; sandy valley bottoms; railroad right-of-ways; along cindery-gravelly, gravelly-loamy, sandy and sandy-loamy roadsides; sandy arroyos; clayey bottoms of arroyos; bottoms of gulches; bouldery ravines; seeps; springs; bouldery streambeds; sandy soils along creeks; creekbeds; in sandy soils along rivers; sandy riverbeds; along and in gravelly, gravelly-clayey, sandy and silty-clayey washes; drainages; drainage ways; depressions; pot holes; cindery swales; (sandy) banks of creeks and rivers; (gravelly-sandy and sandy) edges of washes and drainage ways; (silty and silty-clayey) margins of seeps and washes; sand bars; sandy beaches; sandy benches; bouldery-gravelly-sandy, gravelly and sandy terraces; floodplains; mesquite bosques; along fencelines; in ditches; sandy ditch banks; sandy riparian areas, and disturbed areas growing in moist, damp and dry bouldery, bouldery-gravelly-sandy, rocky, cindery, cindery-gravelly, gravelly, gravelly-sandy and sandy ground; rocky-clayey loam, gravelly loam, gravelly-sandy loam, gravelly-clayey loam, sandy loam, sandy-clayey loam and clayey loam ground; rocky-sandy clay, rocky clay, gravelly clay, sandy clay, sandy-silty clay, silty clay and clay ground, and gravelly-clayey silty, clayey silty and silty ground, occurring from sea level to 9,400 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food and/or fiber crop. Spike Dropseed is useful in proving cover for wildlife, as a forage grass, in controlling erosion and in the re-vegetation of disturbed areas. *Sporobolus contractus* is native to southwest-central and southern North America. *5, 6, 15, 16, 33 (Pages 225-226), 43 (102409), 44 (011412), 46 (Page 114), 48, 58, 63 (011412 - color presentation of seeds), 77, **85** (011412 - color presentation including habitat), 124 (011412 - no record of species; genus record), 127, 140 (Pages 218 & 301)*

Sporobolus airoides var. *wrightii* (see *Sporobolus wrightii*)

***Sporobolus cryptandrus* (J. Torrey) A. Gray: Sand Dropseed**

COMMON NAMES: Covered Spike Drop-seed; Covered-spike Drop-seed; Covered-spike Dropseed; Cryptandrous Dropseed; Dropseed (a name also applied to other species and the genus *Sporobolus*); Drop Seed Grass (a name also applied to other species); Drop-seed Grass (a name also applied to other species and the genus *Sporobolus*); Hidden-spike Dropseed; Large-panicle Vilfa; Larfe-panicled Vilfa; Lesser Dropseed; Prairie Grass; Prairie-grass; Sand Drop-seed; Sand Dropseed; Sand Rush Grass; Sand Rush-grass; Sand Rushgrass; Sporobole à Fleurs Cacnées (French, alternate spelling Sporobole à Fleures Cachées also observed); Vai Tava'i (Yaqui, also called this grass “Vaso” which is the Yaqui generic name for grass); Zacate de Arena (Spanish); Zacate Encubierto (Spanish). DESCRIPTION: Terrestrial perennial tufted graminoid (a bunchgrass (clumpgrass) with decumbent (rarely), ascending and/or erect culms 1 to 4 feet (one record of 6½ feet) in height and up to 1 to 12 inches in width at the base; plants were observed and reported as being 40 inches in height and 4 to 6 inches in width at the base); the foliage may be bluish-green, light green, dark green or purple curing to light straw-yellow; the spikelets may be brownish, purplish, bright red-maroon or yellow; the anthers may be purplish to yellowish or white; flowering generally takes place between late April and late October (additional records: one for late January and one for early April; flowering ending as late as November has been reported); the fruits are light brown to reddish-orange. HABITAT: Within the range of this species it has been reported from mountains; gravelly mountaintops; bouldery, rocky, gravelly-sandy, sandy and sandy-loamy mesas; sandy plateaus; rocky and sandy rims of canyons; cliffs; gravelly and sandy bases of cliffs; rocky and gravelly-loamy canyons; along bouldery-cobbly-sandy, gravelly, gravelly-sandy and sandy canyon bottoms; gorges; bouldery talus slopes; sandy crevices in boulders and rocks; pockets of sandy soil in rocks; bluffs; gravelly sides of bluffs; along tops of bluffs; buttes; sandy knolls; rocky ledges; along rocky, gravelly-loamy and sandy ridges; ridgetops; openings in woodlands; glades; sandy, sandy-loamy and clayey meadows; tops of cinder cones; sandy foothills; shaley, gravelly, gravelly-sandy and sandy hills; rocky and sandy hillsides; escarpments; along bedrock, bouldery, bouldery-cobbly-clayey, rocky, rocky-gravelly, rocky-sandy, rocky-sandy-loamy, rocky-loamy, shaley, cobbly, gravelly, gravelly-sandy-loamy, gravelly-clayey, gravelly-clayey-loamy, sandy, sandy-loamy, sandy-clayey, loamy, clayey, clayey-loamy, silty-clayey and silty-clayey slopes; alluvial fans; bajadas; rocky outcrops; amongst boulders and rocks; sheltered nooks of rim rock; sandy lava flows; sand hills; sand dunes; sand hummocks; steppes; sandy and sandy-loamy prairies; pebbly, gravelly-sandy, sandy and sandy-clayey plains; bouldery, rocky, rocky-sandy, gravelly, sandy, sandy-loamy, sandy-clayey, sandy-silty, loamy, clayey, clayey-loamy, silty-loamy and silty-clayey flats; sandy and clayey uplands; sandy basins; basin floors; sandy bowls; gravelly-sandy and sandy-loamy valley floors; valley bottoms; coastal dunes; sandy coastal plains; sandy coastal flats; along gravelly railroad right-of-ways; sandy roadways; sandy and clayey roadcuts; along rocky-sandy, cindery, gravelly, gravelly-sandy, gravelly-loamy, sandy, sandy-loamy, sandy-clayey, sandy-silty and clayey roadsides; sandy and clayey arroyos; sandy bottoms of arroyos; within sandy draws; bottoms of draws; sandy ravines; sandy, sandy-clayey and clayey seeps; sandy, sandy-clayey and clayey springs; gravelly-loamy soils along streams; along and in sandy, sandy-silty-clayey and clayey streambeds; along creeks; rocky and sandy creekbeds; along rivers; along and in sandy, sandy-clayey and clayey riverbeds; along and in rocky, rocky-sandy, gravelly, gravelly-sandy, sandy, sandy-loamy, clayey and silty-clayey washes; within

rocky-clayey-silty and sandy drainages; drainage ways; clayey playas; blowouts; gravelly-sandy, sandy and silty-clayey depressions; sandy and clayey swales; along (muddy, sandy and sandy-loamy) banks of arroyos, springs, streams, creeks, rivers, washes and lakes; (rocky, gravelly and sandy) edges of draws, gullies; streams, drainage ways, pools and depressions; margins of streams, creeks, rivers, pools and lakes; (gravelly-sandy and sandy) shores of rivers and lakes; areas of drawdown; mudflats; sand and silty-sand bars; gravelly and sandy beaches; gravelly and sandy benches; stony-loamy, cobbly-gravelly, cobbly-sandy, sandy, sandy-loamy, silty and silty-clayey terraces; sandy, sandy-clayey, loamy and clayey bottomlands; gravelly-sandy, sandy and clayey floodplains; lowlands; mesquite bosques; along sandy fencerows; around stock tanks (charcos); gravelly banks and sandy shores of reservoirs; along and in sandy, sandy-clayey, loamy and clayey ditches; ditch banks; rocky, gravelly, gravelly-sandy and sandy riparian areas; sandy and loamy waste places, and disturbed areas growing in muddy and wet, moist, damp and dry rimrock; bouldery, bouldery-cobbly-sandy, rocky, rocky-gravelly, rocky-sandy, shaley, stony-gravelly, cobbly, cobbly-sandy, cindery, gravelly, gravelly-sandy, pebbly and sandy ground; rocky loam, stony loam, gravelly loam, gravelly-sandy loam, gravelly-clayey loam, sandy loam, sandy-clayey loam, sandy-silty loam, silty loam, silty-clayey loam and loam ground; bouldery-cobbly clay, cobbly-sandy clay, gravelly clay, gravelly-sandy clay, sandy-clay, sandy-silty clay, silty clay and clay ground, and rocky-clayey silty, gravelly silty, sandy silty and silty ground, occurring from sea level to 10,300 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, established plants are drought resistant. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food and/or fiber crop. When using this plant in landscaping and re-vegetation projects use plants and/or seed collected from as local a population as possible. Rocky Mountain Bighorn Sheep (*Ovis canadensis*) browse this plant, Scaled Quail (*Callipepla squamata*), Black-tailed Jackrabbits (*Lepus californicus*), Black-tailed Prairie Dogs (*Cynomys ludovicianus*) feed on this plant, small mammals and birds also utilize this plant. *Sporobolus cryptandrus* is native to central and southern North America and southern South America (report for Argentina found in the Germplasm Resources Information Network). *5, 6, 15, 16, 33 (very similar to *Sporobolus flexuosus* and difficult to distinguish without having mature panicles, Pages 226-227), 43 (102409 - *Sporobolus cryptandrus* A. Gray), 44 (011412), 46 (Page 114), 48, 58, 63 (011412 - color presentation including habitat), 77, **85** (011612 - color presentation including habitat), 105, 124 (011412), 127, 140 (Page 301)*

Sporobolus wrightii W. Munro ex F.L. Scribner: Big Sacaton

SYNONYMY: *Sporobolus airoides* (J. Torrey) J. Torrey var. *wrightii* (W. Munro ex F.L. Scribner) F.W. Gould. COMMON NAMES: Alkali Sacaton; Big Alkalai Sacaton; Big Alkali Sacaton (a name also applied to *Sporobolus airoides*); Big Sacaton; Big Sacaton Grass; Dropseed (a name applied to *Sporobolus airoides*, other species, the genus *Sporobolus* and historically to the genus *Muhlenbergia*); Dropseed (English)[140]; Giant Alkali Sacaton; Giant Sacaton; Giant Sacaton Grass; Noḍ <nawt, not> (a name applied to *Sporobolus airoides*, Uto-Aztecan: Akimel O'odham and Tohono O'odham)[140]; Nöönö <nɜ́:nɜ́> (Uto-Aztecan: Hopi)[140]; Sacaton (a name also applied to other species and the genus *Sporobolus*); [Big Alkali] Sacaton (English)[140]; Sacaton Grass (a name also applied to the genus *Sporobolus*); Tłaltso ("Big Grass", Athapascan: Chiricahua and Mescalero Apache)[140]; Tl'oh Dahikalii (Navajo); Tł'oh Ts'ósí <y'oh c'o's> ("Slender Grass", Athapascan: Navajo)[140]; Wright Dropseed; Wright Sacaton; Wright's Dropseed; Wright's Sacaton; Zacatón <sacatón> (a name also applied to *Sporobolus airoides*, Spanish)[140]. DESCRIPTION: Terrestrial perennial tufted graminoid (a bunchgrass (clumpgrass) with ascending and/or erect culms 36 to 100 inches in height and 20 inches to 3 feet in width at the base); the foliage is pale green with a gray cast; the spikelets are greenish, purplish or whitish; the anthers are purplish to yellowish; based on few records located, flowering generally takes place between early August and late September (additional records: one for mid-April, one for late April, three for mid-June, (two for early August, four for mid-August, four for late August, five for early September, three for mid-September, one for late September) and one for mid-October; flowering beginning as early as March and ending as late as November has been reported); the fruits are blackish or reddish-brown. HABITAT: Within the range of this species it has been reported from mountains; gravelly-sandy mesas; plateaus; canyons; canyon bottoms; bases of cliffs; rock ledges; meadows; hills; rocky hillsides; escarpments; rocky, stony-loamy, gravelly and sandy-loamy slopes; amongst rocks; plains; clayey flats; basins; basin bottoms; sandy-clayey valley floors; tidal flats; along railroad right-of-ways; along gravelly-loamy and sandy-loamy roadsides; along arroyos; rocky-sandy bottoms of arroyos; along creeks; along rivers; along riverbeds; along and in gravelly and sandy washes; within drainages; bolson depressions; playas; cienegas; marshes; depressions; banks of rivers; (rocky) edges of washes; around margins of ponds; benches; terraces; bottomlands; sandy floodplains; lowlands; mesquite bosques; in clayey-loamy soils around stock tanks; along sandy ditches; riparian areas, and disturbed areas growing in moist and dry rocky, rocky-sandy, shaley, gravelly, gravelly-sandy and sandy ground; rocky loam, stony loam, gravelly loam, sandy loam, sandy-clayey loam, clayey loam and silty-clayey loam ground; sandy clay ground, and gravelly silty ground, occurring from sea level to 7,000 feet in elevation in the woodland, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, and useful in slowing runoff, enhancing infiltration and controlling erosion. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food and/or fiber crop. An estimated 95% of the original stands of Big Sacaton have been lost or degraded due to channelization, erosion and overgrazing. Attempts should be made to restore this grassland. This plant provides cover for wildlife including the Collard Peccary (*Peccari tajacu*), Botteri's Sparrow (*Aimophila botterii*) and other birds, Diamondback Rattlesnakes (*Crotalus atrox*) and rodents. *Sporobolus wrightii* is native to southwest-central and southern North America. *5, 6, 15, 16, 33 (recorded as *Sporobolus airoides* (Torr.) Torr. var. *wrightii* (Munro) Gould, Pages 230-231), 43 (102409), 44 (011612), 46 (Page 114), 44 (042811), 48, 58, 63 (011612 - color presentation including habitat), 77, **85** (011612 - color presentation including habitat), 105, 124 (011612 - no record of species; genus record), 127, 140 (recorded as *Sporobolus*

airoides (J. Torrey) J. Torrey [*S. wrightii* Munro ex Scribner, *S. airoides* Torrey var. *wrightii* (Munro ex Scribner) Gould], Pages 216, 217, 218 & 301)*

Trichachne californica (see *Digitaria californica*)

Trichachne insularis (see *Digitaria insularis*)

Tridens pulchellus (see *Dasyochloa pulchella*)

Triodia pulchella (see *Dasyochloa pulchella*)

***Trisetum interruptum* S.B. Buckley: Prairie False Oat**

COMMON NAMES: Prairie False Oat; Prairie Trisetum; Slender Oat Grass; Slender Oat-grass. DESCRIPTION: Terrestrial annual or perennial tufted graminoid (ascending and/or erect culms 2 inches to 2 feet in height); the panicles (compound inflorescences) are green or tan; based on very few flowering records located, flowering generally takes place between late March and mid-August (flowering records: one for late March, two for mid-April, one for early May and one for mid-August). HABITAT: Within the range of this species it has been reported from mountains; canyons; crevices in rocks; pockets of soil in bedrock; ledges; along ridges; foothills; rocky hills; hillsides; escarpments; rocky slopes; amongst rocks; lava flows; rocky shelves; plains; gravelly flats; railroad right-of-ways; along roadsides; within arroyos; springs; along rivers; along and in gravelly and sandy washes; around ponds; banks of rivers; (rocky and gravelly) edges of washes; margins of lakes; channel bars; benches; floodplains, and riparian areas growing in moist, damp and dry rocky, gravelly and sandy ground, occurring from 1,300 to 5,300 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: Prairie Trisetum is very similar in general appearance to Common Mediterranean Grass (*Schismus barbatus*) and may also be weedy. *Trisetum interruptum* is native to south-central and southern North America. *5, 6, 15, 16, 33 (Page 171), 43 (102609), 44 (011712 - no record of species; genus record), 46 (Page 99), 58, 63 (011712), 77, **85** (011712 - color presentation), 124 (011712), 140 (Page 301)*

***Urochloa arizonica* (F.L. Scribner & E.D. Merrill) O. Morrone & F.O. Zuloaga: Arizona Signalgrass**

SYNONYMY: *Brachiaria arizonica* (F.L. Scribner & E.D. Merrill) S.T. Blake; *Panicum arizonicum* F.L. Scribner & E.D. Merrill. COMMON NAMES: Arizona Panicgrass; Arizona Panicum; Arizona Signal Grass; Arizona Signal-grass; Arizona Signalgrass; Piojillo de Arizona. DESCRIPTION: Terrestrial annual tufted graminoid (decumbent, geniculate and/or erect culms 6 to 26 inches in height); the flowers are purple; flowering generally takes place between late July and early November (flowering beginning as early as June has been reported). HABITAT: Within the range of this species it has been reported from mountains; mesas; rocky canyons; canyon bottoms; chasms; rocky talus; meadows; foothills; rocky hills; hilltops; rocky and rocky-clayey hillsides; bouldery, rocky, rocky-gravelly, rocky-sandy, stony, gravelly, gravelly-loamy, sandy, sandy-clayey loam, loamy and clayey slopes; alluvial fans; gravelly bajadas; sand dunes; rocky banks; rock outcrops; amongst boulders; bases of rocks; sand dunes; sandy flats; coastal dunes; coastal plains; along roadsides; arroyos; bottoms of arroyos; sandy draws; along rocky ravines; seeps; rivulets; along and in gravelly-sandy streambeds; along and in rocky, gravelly and sandy washes; drainages; within clayey drainage ways; (rocky-sandy and sandy) banks of washes; shores of lakes; benches; terraces; sandy floodplains; mesquite bosques; margins of stock tanks; ditches; riparian areas, and disturbed areas growing in dry bouldery, bouldery-gravelly, rocky, rocky-gravelly, rocky-sandy, stony, gravelly and sandy ground; gravelly loam, gravelly-clayey loam, sandy-clayey loam and loam ground, and rocky clay, sandy clay and clay ground, occurring from sea level to 6,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Urochloa arizonica* is native to southwest-central and southern North America. *5, 6, 15 (recorded as *Brachiaria arizonica* (Scribn. & Merr.) S.T. Blake), 16 (recorded as *Panicum arizonicum* Scribn. & Merr.), 33 (*Panicum arizonicum* Scribn. & Merr., Page 281), 43 (102609), 44 (011712), 46 (recorded as *Panicum arizonicum* Scribn. & Merr., Page 135), 58 (recorded as *Brachiaria arizonica* (Scribn. & Merr.) S.T. Blake), 63 (011712), 68, 77 (recorded as *Brachiaria arizonica* (Scribn. & Merr.) S.T. Blake), **85** (011711 - color presentation), 124 (011712 - no record of species or genus), 140 (recorded as *Brachiaria arizonica* (Scribner & Merrill) S.T. Blake, Page 299)*

Urochloa fasciculata (see *Urochloa fusca*)

***Urochloa fusca* (O. Swartz) B.F. Hansen & R.P. Wunderlin: Browntop Signalgrass**

SYNONYMY: *Brachiaria fasciculata* (O. Swartz) L.R. Parodi; *Panicum fasciculatum* O. Swartz, *Panicum fasciculatum* O. Swartz var. *reticulatum* (J. Torrey) W.J. Beal; *Urochloa fasciculata* (O. Swartz) R.D. Webster, nom. illeg. COMMON NAMES: Brown Top Millet; Brown-top Millet; Brown-top Panicum; Brown-top Signal Grass; Browntop Panicum; Browntop Signalgrass; Fieldgrass. DESCRIPTION: Terrestrial annual or perennial graminoid (decumbent, spreading and/or erect culms 12 to 40 inches in height); the spikelets (flowers) may be blackish, golden-tinged, greenish, red or yellowish-brown; flowering generally takes place between mid-August and mid-October (additional records: two for mid-May, one for mid-July, one for late July, one for early November and one for mid-December). HABITAT: Within the range of this species it has been reported from mountains; rocky and rocky-clayey mountainsides; rocky canyons; openings in woodlands; rocky hills; hilltops; rocky slopes; along rocky outcrops; banks; llanos; cobbly plains; clayey flats; valley floors; coasts; roadbeds; along rocky and

clayey roadsides; riverbeds; along sandy washes; along drainages; drainage ways; pondbeds; depressions; edges of arroyos; terraces; floodplains; mesquite bosques; along ditches; riparian areas; waste places, and disturbed areas growing in wet, moist and dry rocky, cobbly and sandy ground; rocky-sandy loam and clayey loam ground, and rocky clay and clay ground, occurring from sea level to 4,800 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Urochloa fusca* is native to south-central and southern North America; Central America and coastal islands in the Caribbean Sea, and South America. *5, 6, 33 (recorded as *Panicum fasciculatum* Swartz var. *reticulatum* (Torr.) Beal, Pages 280-281), 43 (102609), 44 (011712 - no record of species), 46 (recorded as *Panicum fasciculatum* Swartz var. *reticulatum* (Torr.) Beal, Page 135), 63 (011712 - color presentation), 68, **85** (011712 - color presentation), 124 (011712 - species recorded under *Urochloa fasciculata* (Sw.) R. Webster)*

Typhaceae: The Cat-tail Family

Typha angustata (see *Typha domingensis*)

Typha angustifolia (see Notes under *Typha domingensis*)

***Typha domingensis* C.H. Persoon: Southern Cattail**

SYNONYMY: *Typha angustata* J.B. Bory & L.A. Chaubard. COMMON NAMES: Cat-tail (a name also applied to other species; the genus *Typha*, and to the Typhaceae), Cattail (a name also applied to other species, the genus *Typha* and to the family Typhaceae); Dominican Cat-tail; Dominican Cattail; Lesser Reedmace; Narrow-leaf Cattail (a name also applied to other species); Narrow Leaf Cumbungi; Narrow-leaf Cumbungi; Narrow Leafed Cumbungi; Narrow-leafed Cumbungi; Narrow Leaved Cumbungi; Narrow-leaved Cumbungi; Piripepe (Spanish); Pirivevýi (Spanish); Santo Domingo Cattail; Southern Cat-tail; Southern Cattail; Southern Narrow-leaved Cat-tail; Southern Narrow-leaved Cattail; Southern Cat-tail; Southern Cattail; Southern Reed-mace; Southern Reedmace; Totora (Spanish); Tropical Cattail; Tule (a name also applied to other species, Spanish); Uḍvak <oodvak, otoxak> (Uto-Aztecan: Akimel O'odham)[140]; Woody Cattail. DESCRIPTION: Semi-aquatic perennial forb/herb (erect shoots 3 to 13 feet in height); the leaves may be dark green or light yellowish-green; the pistillate flowers are light brown, tawny-brown or brown becoming buff or grayish; the staminate flowers are golden-yellow or yellow-green; flowering generally takes place between early March and late November (flowering records: one for early March, one for early April, one for late April, two for early May, three for mid-May, two for late May, four for early June, four for mid-June, one for late June, two for early July, two for mid-July, three for late July, two for early August, one for late August, one for early September, one for late September, one for early October, one for late October and one for late November). HABITAT: Within the range of this species it has been reported from mountains; rocky mesas; canyons; rocky canyon bottoms; gorges; rocky hills; bouldery and rocky hillsides; muddy, rocky and clayey slopes; prairies; clayey flats; valley floors; draws; ravines; seeps; around and in gravelly and gravelly-sandy springs; along and in streams; along and in rocky-sandy and sandy streambeds, along and in creeks; cobbly creekbeds; along rivers; sandy and sandy-silty riverbeds; within rocky washes; along and in clayey drainages; waterholes (pozos); pools; around ponds; around lakes; lakebeds; lagoons (esteros); around bogs; boggy areas; ciénegas; along freshwater marshes; swamps; depressions; sinkholes; sloughs; (gravelly-sandy) banks of streams, rivers and washes; (silty) edges of creeks, rivers, pools; along shores of lakes; sand bars; sandy benches; bottomlands; sandy floodplains; lowlands; reservoirs; along canals; along ditches; muddy-sandy and gravelly-sandy riparian areas; waste places, and disturbed areas growing in shallow water; muddy, and wet, moist and damp bouldery, rocky, rocky-sandy, cobbly, gravelly, gravelly-sandy and sandy ground; clayey loam ground; clay ground, and sandy-clayey silty and sandy silty ground, occurring from sea level to 6,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, and may be aggressively invasive in wetlands. Arizona specimens were historically referred to as *Typha angustifolia*. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food and/or fiber crop. *Typha domingensis* is native to the subtropics; tropics, and warm-temperate regions of south-central and southern North America; Central America and coastal islands in the Caribbean Sea; South America; Eurasia, and Africa, and Australia and islands in the South Pacific Ocean. *5, 6, 15, 16, 28 (color photograph), 43 (042911), 44 (042911 - color photograph), 46 (Page 64), 58, 63 (011912 - color presentation), 68, 77, 85 (011912 - color presentation including habitat), 124 (042911), 127, 140 (Pages 34, 254 & 306), **HR***

Zannichelliaceae: The Horned-pondweed Family

***Zannichellia palustris* C. Linnaeus: Horned Pondweed**

COMMON NAMES: Common Poolmat; False Pond-weed (a name also applied to other species); False Pondweed (a name also applied to other species); Horned Pond Weed; Horned Pondweed (a name also applied to the genus *Zannichellia*); Horned Pond-weed; Horned-pondweed (a name also applied to the genus *Zannichellia*); Horned Poolmat; Potamogeton Capillaceum Capitulis ad alas Trifidus (1622, C. Bauhin); Water-grass (a name also applied to other species, Nebraska); Zanichellia (South Dakota); Zannichellia Palustris Major Foliis Gramineis Acutis (Micheli); Zennichellia (a name also applied to the genus *Zannichellia*, Iowa). DESCRIPTION: Aquatic perennial forb/herb (stems to 20 inches in length); the foliage is green & brownish-purple or green-gray; the flowers are a clear white; flowering generally takes place between early April and mid-

September (additional records: one for mid-November and one for late November). HABITAT: Within the range of this species it has been reported from canyon bottoms; rocky and sandy-loamy slopes; rocky flats; draws; seeps; springs; along and in streams; streambeds; along and in creeks; creekbeds; along and in rivers; clayey-loamy washes; drainages; potholes; pools; ponds; muddy pondbeds; lakes; eddies; estuaries; inlets; boggy areas; ciénegas; marshes; swamps; (clayey-loamy) banks of streams, rivers and ponds; along edges of streams, creeks, rivers, lakes and marshes; along margins of rivers and ponds; along shores of lakes; sandy beaches; clayey-loamy floodplains; stock tanks; edges and margins of reservoirs; along and in canals; along and in ditches; troughs, and riparian areas growing on or in water, and/or rooted in mucky; muddy, and wet rocky, gravelly and sandy ground; sandy loam and clay loam ground, and cobbly-sandy silty ground, occurring from sea level to10,200 feet in elevation in the forest, woodland, grassland, desertscrub and wetland ecological formations. NOTES: Ducks reportedly feed on the stems and leaves. *Zannichellia palustris* is native to northwestern, northern, central and southern North America; Central America and coastal islands in the Caribbean Sea; South America; Australia; Europe; Asia, and Africa. *5, 6, 43 (102909), 44 (043011 - color photograph), 46 (Page 67), 58, 63 (011912 - color presentation), **85** (011912 - color presentation of dried material), 124 (043011)*

CLASS MAGNOLIOPSIDA: The DICOTS

Acanthaceae: The Acanthus Family

***Ruellia nudiflora* (G. Engelmann & A. Gray) I. Urban var. *nudiflora*: Violet Wild Petunia**

SYNONYMY: *Ruellia nudiflora* (G. Engelmann & A. Gray) I. Urban var. *glabrata* E.C. Leonard. COMMON NAMES: Common Wild Petunia, Longneck Ruellia, Oregano de China, Ruellia (a name also applied to the genus *Ruellia*), Violet Ruellia, Violet Wild Petunia, Wild Petunia (a name also applied to the genus *Ruellia*). DESCRIPTION: Terrestrial perennial evergreen forb/herb or subshrub (erect stems 12 to 40 inches in height); the foliage is dark green; the flowers may be blue, deep blue-purple, lavender, purple or violet; flowering generally takes place between late May and mid-October. HABITAT: Within the range of this species it has been reported from mountains; mesas; along rocky canyons; rocky canyon bottoms; foothills; rocky hillsides; rocky slopes; alluvial fans; bajadas; amongst rocks; flats; valley floors; valley bottoms; roadsides; arroyos; sandy draws; along gullies; along streams; along and in rocky and sandy washes; drainages; ciénegas; swales; banks of arroyos and washes; floodplains; openings in mesquite bosques; margins of stock tanks (charcos); within ditches; along ditch banks; riparian areas, and disturbed areas growing in dry rocky and sandy ground; loam ground, and clay ground often reported from shaded areas and amongst rocks, occurring from sea level to 4,300 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Ruellia nudiflora* var. *nudiflora* is native to southwest-central and southern North America. *5, 6, 16 (species), 43 (103109), 44 (043011 - no record of genus, species or variety), 46 (Pages 799-800), 63 (043011 - color presentation), 77 (species, color photograph #3), **85** (043011), 115 (color presentation of the species), 124 (043011 - no record of species or variety; genus record), 140 (species, Page 281)*

Ruellia nudiflora var. *glabrata* (see *Ruellia nudiflora* var. *nudiflora*)

Amaranthaceae: The Amaranth Family

***Amaranthus fimbriatus* (J. Torrey) G. Bentham ex S. Watson: Fringed Amaranth**

SYNONYMY: *Amaranthus fimbriatus* (J. Torrey) G. Bentham ex S. Watson var. *fimbriatus*. COMMON NAMES: Agwáva <agwávic> (Yuman: Maricopa)[140]; Agwáve (Yuman: Havasupai)[140]; Akwa'av <akwavdh> (Yuman: Mohave)[140]; Akwav (Yuman: Yuma)[140]; Amaranth (a name also applied to other species and the genus *Amaranthus*); Amaranth (English)[140]; Ats (Uto-Aztecan: Shoshoni); Basorí <wasorí, waso-ri> (Uto-Aztecan: Tarahumara)[140]; Bledo (Spanish: Sinaloa)[140]; Blite; Chuuhuggia <chu-hy-ki-ia, tchohokia> ("Night Carrying", Uto-Aztecan: Akimel O'odham)[140]; Cuhkkia <cuhugia> (Uto-Aztecan: Hiá Ceḍ O'odham)[140]; Cuhugia <cuhkkia, chuhugia, teuhukia> (Uto-Aztecan: Tohono O'odham)[140]; Fringe Amaranth; Fringed Amaranth; Fringed Amaranthus; Fringed Pigweed; Góchi Bichan (Athapascan: Western Apache)[140]; Guey Cimarron (Mayo); Hué (Uto-Aztecan: Mayo)[140]; Hue-hué (Uto-Aztecan: Guarijío)[140]; K^{w}a:p <ko.p> (Yuman: Cocopa)[140]; Ndaji ("Black Eye", Athapascan: Chiricahua and Mescalero Apache)[140]; Pigweed (a name also applied to other species and the genus *Amaranthus*); [Fringed] Pigweed (English)[140]; Poosiw <pó:siowu> (Uto-Aztecan: Hopi)[140]; Quelite (Spanish)[140]; Quelite Cimarron (Mayo); Quelite de las Aguas ("Watery Greens", Spanish: Arizona, Sonora)[140]; Quelitillo; Red Root (a name also applied to other species, English)[140]; Siim (Seri); Su (Kiowa Tanoan: Tewa)[140]; Tł'ohdeeí'idí (Athapascan: Navajo)[140]; Toothed Amaranth; Tucugusa (Uto-Aztecan: Nevome)[140]; Tukya (Uto-Aztecan: Mountain Pima)[140]; Tukya <tungi'ia> (Uto-Aztecan: Onavas Pima)[140]; Wé'e <wée'e> (Uto-Aztecan: Yaqui)[140]; Wee'e (Yaqui); Xpši: <hdhpši> (immature plants or greens, Yuman: Cocopa)[140]; Ziim Caitic (Hokan: Seri)[140]. DESCRIPTION: Terrestrial annual forb/herb (erect stems 6 to 64 inches in height); the stems may be pale green, green, pink, pink-red or red; the foliage may be green or purple, pinkish-purple, pink-red or reddish; the

flowers (in spikes) may be green, pink, pinkish-white or white; flowering generally takes place between early March and late November (additional records: two record for mid-December and two for late December), the fruits are pinkish-purple. HABITAT: Within the range of this species it has been reported from mountains; mesas; cliffs; rocky canyons; rocky and gravelly-sandy canyon bottoms; ridgetops; foothills; bouldery, bouldery-gravelly and rocky hills; hilltops; bouldery and rocky hillsides; bouldery-rocky, rocky, gravelly, gravelly-sandy, gravelly-loamy, sandy and clayey-loamy slopes; rocky alluvial fans; gravelly bajadas; bouldery and rocky outcrops; amongst boulders; sandy-silty lava flows; sand hills; sand dunes; sand hummocks; blow-sand deposits; sandy banks; sandy plains; gravelly and sandy flats; valley floors; coastal dunes; sandy coastal banks; coastal plains; coastal flats; along railroad right-of-ways; along gravelly and sandy roadsides; within rocky arroyos; bottoms of arroyos; draws; seeps; springs; riverbeds; along and in bouldery, bouldery-rocky, bouldery-gravelly, rocky, rocky-sandy, gravelly, gravelly-sandy, sandy and sandy-clayey washes; waterholes; silty lakebeds; playas; marshes; along banks of rivers and washes; (sandy-clayey) edges of washes, lagoons and swales; margins of esteros; mudflats; cobbly and sandy beaches; sandy floodplains; sandy mesquite bosques; stock tanks (charcos), riparian areas, and disturbed areas growing in dry bouldery, bouldery-rocky, bouldery-gravelly, bouldery-sandy, rocky, rocky-sandy, cobbly, gravelly, gravelly-sandy and sandy ground; gravelly loam ground; sandy clay ground, and sandy silty and silty ground, occurring from sea level to 5,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. *Amaranthus fimbriatus* is native to southwest-central and southern North America. *5, 6, 15, 16, 43 (110109), 44 (012712), 46 (Page 266), 63 (012712), 68, 77 (recorded as *Amaranthus fimbriatus* (Torr.) Benth. ex S. Watson var. *fimbriatus*), **85** (043011 - color presentation), 115 (color presentation), 124 (012712 - no record of species; genus record), 127, 140 (Pages 34-36 & 281)*

Amaranthus fimbriatus var. *fimbriatus*: (see *Amaranthus fimbriatus*)

***Amaranthus palmeri* S. Watson: Carelessweed**

COMMON NAMES: Agwáva <agwávic> (Yuman: Maricopa)[140]; Agwáve (Yuman: Havasupai)[140]; Akwav (Yuman: Yuma)[140]; Akwavdh (Yuman: Mohave)[140]; Amarante de Palmer (French); Ats (Uto-Aztecan: Shoshoni)[140]; Basori <wasorí, waso-ri> (Uto-Aztecan: Tarahumara)[140]; Bledo (Spanish: Sinaloa)[140]; [Palmer's] Carless [-weed] (English)[140]; Careless Weed (a name also applied to other species and the genus *Amaranthus*); Careless-weed (a name also applied to other species and the genus *Amaranthus*); Carelessweed (a name also applied to other species and the genus *Amaranthus*); Chuuhuggia <chu-hy-ki-ia, tchohokia> ("Night Carrying", Uto-Aztecan: Akimel O'odham)[140]; Cuhkkia <cuhugia> (Uto-Aztecan: Hiá Ceḍ O'odham)[140]; Cuhugia <cuhkkia, chuhugia, teuhukia> (Uto-Aztecan: Tohono O'odham)[140]; Dioecious Pigweed; Hué (Uto-Aztecan: Mayo)[140]; Huehué (Uto-Aztecan: Guarijío)[140]; Góchi Bichan, It'ąą Dit'ógé <it'ą ditote> (Athapascan: Western Apache)[140]; K^{w}a:p <ko.p> (Yuman: Cocopa)[140]; Keríba (Uto-Aztecan: Guarijío)[140]; Ndaji ("Black Eye", Athapascan: Chiricahua and Mescalero Apache)[140]; Palmer Amaranth (English)[140]; Palmer Amaranth Pigweed; Palmer Amaranthus; Palmer Careless Weed; Palmer Fuchsschwanz (German); Palmer Pig Weed; Palmer Pig-weed; Palmer Pigweed; Palmer's Amaranth; Palmer's Amaranthus; Palmer's Amaranth Pigweed; Palmer's Careless Weed; Palmer's Careless-weed; Palmer's Pig Weed; Palmer' Pigweed (a name also applied to other species); Palmer's Pig-weed; Palmer's Pigweed; Pigweed (a name also applied to other species and the genus *Amaranthus*); Pigweed (English)[140]; Poosiw <pó:siowu> (Uto-Aztecan: Hopi)[140]; Qo'u [Qó'^{u}] (Uto-Aztecan: Southern Paiute)[140]; Quelite (Spanish)[140]; Quelite Cimarron (Mayo); Quelite de las Aguas ("Watery Greens", Spanish)[140]; Red Root (English)[140]; Red-root; Red-root Pigweed; Rough Pig Weed; Shiipa (Keres: Acoma)[140]; Su (Kiowa Tanoan: Tewa)[140]; Tł'ohdeeí'idí <y'oh de.sk'idi> (Athapascan: Navajo)[140]; Tł'ohdeeí Hoshí (Athapascan: Navajo)[140]; Tsetayi (Keres: Laguna); Tucugusa (Uto-Aztecan: Nevome)[140]; Tukya (Uto-Aztecan: Mountain Pima)[140]; Tungi'ia (Uto-Aztecan: Onavas Pima)[140]; Wé'e <wée'e> (Uto-Aztecan: Yaqui)[140;] Xpši: <hdhpši> (immature plants or greens, Yuman: Cocopa)[140]. DESCRIPTION: Terrestrial annual forb/herb (erect stems 8 to 80 inches in height, sometimes to 15 feet in height); the stems may be green or red; the leaves are green, the flowers (in spikes) are hyaline cream with green midribs, green, pink or white-green; flowering generally takes place between early June and late December (additional records: one for early February, two for mid-March, two for early May and one for mid-May). HABITAT: Within the range of this species it has been reported from mountains; sandy mesas; rocky and gravelly-loamy canyons; rocky and sandy canyon bottoms; talus slopes; gravelly ridgetops; meadows; foothills; rocky hills; rocky hillsides; rocky, gravelly, gravelly-loamy, sandy, sandy-loamy, sandy-clayey, sandy-loamy-silty and sandy-silty-loamy slopes, alluvial fans; bajadas; sand dunes; sandy plains; gravelly, gravelly-sandy, sandy and loamy flats; basins; valley floors; along railroad right-of-ways; along gravelly-loamy, sandy and sandy-silty roadsides; along rocky, stony and sandy arroyos; gravelly and sandy bottoms of arroyos; draws; springs; sandy streams; streambeds; creeks; creekbeds; along and in rocky-cobbly-sandy and sandy riverbeds; along and in gravelly, gravelly-sandy, gravelly-sandy-silty and sandy washes; gravelly-sandy-loamy drainage ways; water holes; playas; ciénegas; swampy areas; silty swales; (sandy and silty) banks of streams, creeks, rivers and washes; (sandy) edges of washes and marshes; margins of washes; (sandy-loamy) shores of ponds; mudflats; beaches; gravelly-sand and sand bars; sandy benches; sandy terraces; bottomlands; along sandy and sandy-silty floodplains; sandy mesquite bosques; along fencelines; around stock tanks (represos); around reservoirs; along sandy and silty ditches; gravelly-sandy-silty, sandy and sandy-silty riparian areas; waste places, and disturbed areas growing in moist and dry rocky, rocky-cobbly-sandy, stony, gravelly, gravelly-sandy and sandy ground; gravelly loam, gravelly-sandy loam, sandy loam, sandy-clayey loam, sandy-silty loam, humus-clayey loam and loam ground; sandy clay and clay ground, and gravelly-sandy silty, sandy silty, sandy-loamy silty and silty ground, occurring from sea level to 8,900 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America and could be

investigated to determine its value as a home garden or commercial food crop. Mourning Doves (*Zenaida macroura*), Whitewing Doves (*Zenaida asiatica*), Killdeer (*Charadrius vociferus*) and Quail as well as other birds and mammals, including rabbits and kangaroo rats, feed on the seeds. *Amaranthus palmeri* is native to southwest-central and southern North America. *5, 6, 15, 16, 43 (110109), 44 (033011), 46 (Page 266), 58, 63 (012812 - color presentation of seeds), 68 ("The plant is relished by livestock in all stages of growth, and is sometimes cut for hay or put into silos.... Palmer amaranth contains nitrate varying from a trace to over 9 percent. As in monolepis, the nitrate is not poisonous, but can be changed quickly into the toxic nitrite by enzymatic action."), 77, 80 (This species is listed as a Major Poisonous Range Plant. "The poisonous principle is nitrate. Most plants contain small amounts of nitrate, but carelessweed, under favorable growth conditions will store up high concentrations. ... Carelessweed is relished by livestock, particularly during the earlier stages of growth. It usually is most dangerous immediately following significant environmental changes, but poisonings have occurred at all growth stages under a variety of conditions. The nitrate content of carelessweed has been found to be significantly higher in plant samples collected in the morning as compared to afternoon samples. Some plots of ground will produce carelessweed of higher nitrate content than others. ... Known areas of carelessweed should be avoided by livestock during the early stages of growth and following periods of sudden temperature changes as occur in the fall or mid-summer at the higher elevations in Arizona. Carelessweed may remain dangerous as a component of hay or ensilage." See text for additional information.), **85** (012812 - color presentation including habitat), 101 (color photograph), 115 (color presentation), 124 (033011 - no record of species; genus record), 127, 140 (Pages 35, 36-37 & 281)*

Anacardiaceae: The Sumac Family

Rhus lancea (see *Searsia lancea*)

***Searsia lancea* (C. Linnaeus f.) F.A. Barkley: African Sumac**

SYNONYMY: *Rhus lancea* C. Linnaeus f. COMMON NAMES: African Sumac; Bastard Willow; Hlokoshiyne (isiZulu); Karee (Afrikaans); Karree (Afrikaans and English); Mokalaabata (North Sotho); Sauce Africano; South African Sumac; Umhlakotshane (amaXhosa); Western Karee; Willow Rhus. DESCRIPTION: Terrestrial perennial evergreen tree (5 to 33 feet in height with a crown up to 30 feet in width); the older bark is dark gray with orange beneath; the twigs are reddish; the leaves are dark green above with a pale green underside; the inconspicuous flowers are greenish, greenish-yellow, whitish, whitish-green or yellow; based on few flowering records examined, flowering generally takes place between early December to late July (flowering records: one for early January, two for late January, one for early February, one for late February, one for mid-March, one for mid-May, one for late July, one for early December and two for mid-December). HABITAT: Within the range of this species it has been reported from along and in mountains; canyons; canyon bottoms; ridges; ridgetops; hills; sandy slopes; bajadas; valley floors; along rivers; along and in washes; within drainages; edges of creeks; along fencelines; along ditches; riparian areas and disturbed areas growing in moist and dry sandy ground and sandy loam ground, occurring from sea level to 3,000 feet in elevation in the scrub, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant that poses a significant threat to our native biotic communities. This species was not located in the BONAP Database. *Rhus lancea* is native to southern Africa. *16 (recorded as *Rhus lancea* L.f.), 18 (recorded as *Rhus lancea*), 22 (color photograph), 26 (recorded as *Rhus lancea*, color photograph), 43 (050111), 44 (012912- Common Names listed under *Searsia lancea*), 63 (012912), 77 (recorded as *Rhus lancea* L.), 85 (012912 - color presentation), 106 (122208), 109, 124 (012912 - no record of species; genus record), **WTK** (April 16, 2008)*

Apiaceae (Umbelliferae): The Carrot Family

***Bowlesia incana* H. Ruiz Lopez & J.A. Pavon: Hoary Bowlesia**

COMMON NAMES: American Bowlesia; Bowlesia (a name also applied to the genus *Bowlesia*); Hairy Bowlesia; Hairy Bowlesia (English)[140]; Hoary Bowlesia; Miner's Lettuce (a name usually applied to another species, English: Arizona)[140]. DESCRIPTION: Terrestrial annual forb/herb (creeping prostrate, decumbent and/or erect stems to 2 inches in height and 2 to 38 inches in length); the foliage is pale green or green; the inconspicuous flowers are green-whitish, greenish-white, pink, purple, white, white-green or yellowish-green; flowering generally takes place between late January and late May (additional records: one for mid-June and one for early July). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; mesas; plateaus; bases of cliffs; rocky canyons; rocky canyon bottoms; crevices in rocks; buttes; rocky ledges; rocky ridgetops; meadows; foothills; bouldery hills; clayey hilltops; bouldery hillsides; bouldery, rocky, gravelly, gravelly-sandy, sandy-loamy and clayey slopes; gravelly bajadas; rocky outcrops; amongst boulders and rocks; lava fields; shady banks; plains; rocky and gravelly flats; basins; valley floors; along roadsides; sandy arroyos; draws; along gullies; ravines; seeps; along streams; streambeds; along creeks; around creekbeds; along rivers; riverbeds; along and in rocky-sandy, gravelly, gravelly-sandy, sandy and sandy-clayey washes; within rocky-clayey drainages; along and in drainage ways; swampy areas; swales; along (rocky and gravelly-sandy) banks of arroyos, creeks, rivers and washes; borders of washes; sandy benches; loamy bottomlands; floodplains; lowlands; bottoms of stock tanks; along canals; ditches; ditch banks; rocky and sandy riparian areas; waste places, and disturbed areas growing in wet, moist, damp and dry bouldery, rocky, rocky-sandy, gravelly, gravelly-sandy and sandy ground; gravelly-clayey loam, sandy loam, humusy loam and loam ground; rocky clay, sandy clay and clay ground, and gravelly-sandy silty

ground often in the shade of boulders, rocks, trees, shrubs and other vegetation, occurring from sea level to 6,100 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formation. NOTES: The Collard Peccary (*Peccari tajacu*) and a Tiger Moth, *Grammia geneura*, feed on the seeds. *Bowlesia incana* is native to southwest-central and southern North America, and South America. *5, 6, 15, 16, 43 (110209), 44 (012912 - color photograph), 46 (Page 609), 58, 63 (012912 - color presentation), 68, 77, **85** (012912 - color presentation), 106 (110209), 115 (color presentation), 124 (012912 - no record of species or genus), 140 (Pages 40-41, 43 & 282)*

***Spermolepis echinata* (T. Nuttall ex A.P. de Candolle) A.A. Heller: Bristly Scaleseed**

COMMON NAMES: Beggar's Lice [Beggars'-lice] (a name also applied to other species, English)[140]; Beggars'-lice (a name also applied to other species); Bristly Spermolepis; Bristly Scale Seed; Bristly Scale-seed (English: New Mexico, Texas)[140]; Bristly Scaleseed; Bristly Spermolepis; Bristly-fruit Scaleseed; Bristly-fruit Spermolepis; Bristly-fruited Spermolepis; Hooked Spermolepis; Scale Seed (a name also applied to the genus *Spermolepis*); Scale-seed (a name also applied to the genus *Spermolepis*); Scaleseed (a name also applied to the genus *Spermolepis*); Spiny Scaleseed; Wild Carrot. DESCRIPTION: Terrestrial annual forb/herb (low growing and spreading stems 2 to 16 inches in height); the minute flowers may be cream, greenish-white, white or yellow-white; flowering generally takes place between mid-February and early June (additional record: one for mid-July). HABITAT: Within the range of this species it has been reported from mountains; bases of mountains; mesas; rocky and sandy canyons; along canyon bottoms; rocky ridgetops; foothills; rocky hills; hillsides; rocky, rocky-gravelly-loamy, gravelly, gravelly-sandy, gravelly-loamy, sandy and sandy-loamy slopes; rocky-sandy alluvial fans; gravelly bajadas; amongst rocks; gravelly and sandy flats; valley floors; valley bottoms; gravelly railroad right-of-ways; rocky, stony, gravelly and sandy roadsides; rocky arroyos; sandy and silty-loamy draws; bottoms of draws; seeps; springs; moist clayey soils along streams; along creeks; along rivers; riverbeds; along and in gravelly and sandy washes; gravelly-sandy drainage ways; banks of arroyos; channel bars; benches; sandy floodplains; reservoirs; gravelly-sandy riparian areas, and disturbed areas growing in wet, moist, damp and dry rocky, rocky-sandy, stony, gravelly, gravelly-sandy and sandy ground and rocky-gravelly loam, gravelly loam, sandy loam and silty loam ground, occurring from 100 to 8,000 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: A moth, *Grammia geneura*, reportedly feeds on this plant. *Spermolepis echinata* is native to south-central and southern North America. *5, 6, 15, 16, 43 (050211 - no record of species; possibly, incorrectly, recorded as *Spermolepis echinatus* (Nutt.) A. Heller), 44 (050211), 46 (Page 610), 58, 63 (013112), 77, **85** (013112 - color presentation), 124 (050211), 140 (Pages 43-44 & 282)*

Aristolochiaceae: The Birthwort Family

***Aristolochia watsonii* E.O. Wooton & P.C. Standley: Watson's Dutchman's Pipe**

COMMON NAMES: Arizona Snakeroot; Birthwort (a name also applied to the genus *Aristolochia* and the Aristolochiaceae); Dutchman's Pipe (a name also applied to the genus *Aristolochia*); Dutchman's Pipevine (a name also applied to the genus *Aristolochia*); Guasena Jubiaria (Uto-Aztecan: Mayo)[140]; Hatáast an Ihiit ("What Gets Between Your Teeth", Hokan: Seri)[140]; Hierba <yerba> de[l] Indio ("Indian Herb", Spanish: Arizona, Baja California, Sonora)[140]; Huaco <guaco> (a name also applied to other species, Spanish)[140]; Indian Root; Indian-root (English: Arizona)[140]; Indianroot; Pipevine (a name also applied to the genus *Aristolochia* and the Aristolochiaceae); Pipevine Flower; Raiz del Indio; [Arizona] Snake-root (English)[140]; Snakeroot (a name also applied to the genus *Aristolochia*); Southwestern Pipevine; Watson's Dutchman's Pipe (English)[140]; Watson Indian Root; Yerbalind (Uto-Aztecan: Mountain Pima)[140]. DESCRIPTION: Terrestrial perennial cold-deciduous forb/herb or vine (prostrate and/or procumbent stems 4 inches to 20 inches in length, stems reaching 5 feet in length have also been reported); the upper surface of the leaves may be blackish, dark brown-purple, dark green, maroon-brown, purple or purple-green with a pale dull green underside; the flowers may be blackish, brown with a yellow spotted throat, brownish, green and brown, green with maroon rim and dots in throat, green with purple spots, brownish-purple, purple, purple-brown, purple-green, purple-green-brown, reddish-brown or yellow-green-dark maroon with brown-purple spots; flowering generally takes place between early March and early October (additional records: one for mid-February, one for late November, one for mid-December and one for late December). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; mesas; cliffs; cliff faces; bases of cliffs; rocky canyons; canyon walls; canyon bottoms; crevices in boulders and rocks; pockets of sandy soil on ridges; rocky foothills; rocky hills; rocky, rocky-gravelly and gravelly hillsides; bases of hillsides; rocky, gravelly-loamy, sandy, sandy-loamy and loamy slopes; bajadas; rocky outcrops; amongst boulders and rocks; plains; gravelly, sandy, sandy-loamy and sandy-silty flats; loamy basins; shady hollows; valley floors; valley bottoms; along sandy roadsides; along and in gravelly, gravelly-sandy and sandy arroyos; bottoms of arroyos; gulches; sandy bottoms of ravines; along streams; streambeds; along creeks; creekbeds; along rivers; gravelly-sandy riverbeds; along and in rocky, gravelly and sandy washes; along drainages; along bouldery drainage ways; ciénegas; swamps; along (bedrock, gravelly and sandy) banks of creeks and washes; borders of washes; along edges of washes; benches; terraces; bottomlands; floodplains; mesquite bosques; bases of levees; around stock tanks; canals; gravelly riparian areas, and disturbed areas growing in moist and dry bouldery, rocky, rocky-gravelly, gravelly, gravelly-sandy and sandy ground, gravelly loam, gravelly-sandy loam, sandy loam, sandy-clayey loam, silty loam and loam ground; clay ground, and sandy silty ground often reported as growing in shaded to heavily shaded areas and less often in full sun,, occurring from 100 to 5,500 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, consider using the Pipevine Flower as a ground cover in heavily shaded areas, note that the flowers might have a fetid or musty odor. The Pipevine Flower is a larval

food plant of the Pipevine Swallowtail Butterfly (*Battus philenor*) and the flowers are pollinated by members of the Ceratopogónidae (The Biting Midge, Punkie and No-see-um Family). *Aristolochia watsonii* is native to southwest-central and southern North America. *5, 6, 15, 16, 43 (110609), 44 (050211 - no record of species; genus record), 46 (alternate spelling *Aristolochia watsoni*, Page 227), 58, 63 (020112), 77 (color photograph #59), 85 (020212 - color presentation), 106 (071708 - information relating to the Pipevine Swallowtail Butterfly), 115 (color presentation), 124 (050211 - no record of species; genus record), 140 (Pages 50-52 & 282), **MBJ**/**WTK** (July 2008)*

Asclepiadaceae: The Milkweed Family

***Funastrum cynanchoides* (J. Decaisne) F.R. Schlechter: Fringed Twinevine**

COMMON NAMES: Arroyo Twine Vine (for subsp. *cynanchoides*); Arroyo Twinevine (for subsp. *cynanchoides*); Climbing Milk Weed (for subsp. *cynanchoides*); Climbing Milkweed (a name also applied to other species); Climbing Milkweed (English)[140]; Climbing Townula (for subsp. *heterophyllum*); Fringed Climbing Milkweed; Fringed Climbing-milkweed); Fringed Milkvine; Fringed Twine-vine; Fringed Twine-weed [vine] (for subsp. *cynanchoides*, English: Arizona, New Mexico)[140]; Fringed Twinevine; Güichire (for subsp. *cynanchoides*, Spanish)[140]; Güirote Lechoso ("Milky 'Vine'" for subsp. *cynanchoides*, Spanish: Sinaloa, Sonora)[140]; Hartweg Climbing Milkweed (for subsp. *heterophyllum*); Hartweg Climbing-milkweed (for subsp. *heterophyllum*); Hartweg Fringed Milkvine (for subsp. *heterophyllum*); Hartweg Milk-vine (for subsp. *heterophyllum*); Hartweg Milkvine (for subsp. *heterophyllum*); Hartweg Twine-vine (for subsp. *heterophyllum*); Hartweg Twinevine (for subsp. *heterophyllum*); Hartweg Twining Milkweed (for subsp. *heterophyllum*); Hartweg Vine-milkweed (for subsp. *heterophyllum*); Hartweg's Climbing-milkweed (for subsp. *heterophyllum*); Hartweg's Fringed Milkvine (for subsp. *heterophyllum*); Hartweg's Milk-vine (for subsp. *heterophyllum*); Hartweg's Milkvine (for subsp. *heterophyllum*); Hartweg's Twine-vine (for subsp. *heterophyllum*); Hexe (for subsp. *cynanchoides*, Hokan: Seri)[140]; Hierba Lechosa ("Milky Herb" for subspp. *cynanchoides* and *heterophyllum*, and a name that is also applied to other species, Spanish: Sonora)[140]; Huichuri <huichoori> (for subsp. *cynanchoides*, Uto-Aztecan: Mayo)[140]; Mata Nene ("Baby Killer" for subsp. *cynanchoides*, Spanish: Sonora)[140]; Platanito ("Little Banana" [literally "flat one"] for subsp. *cynanchoides*, Spanish: Sonora)[140]; Purple Climbing-milkweed (for subsp. *heterophyllum*); Sandia de la Pasion ("Watermelon of the Crucifixion" for subsp. *cynanchoides*, Spanish: Sonora)[140]; Southern Twine-vine; Southern Twinevine; Vi:bam <vi'ibgam> (for subsp. *cynanchoides*, Uto-Aztecan: Hiá Ceḍ O'odham)[140]; Vibam (for subsp. *cynanchoides*, Uto-Aztecan: Mountain Pima)[140]; Viibam ("Milk It Has" for subsp. *cynanchoides*, Uto-Aztecan: Akimel O'odham)[140]; Wibam <wi'ibgam> (for subsp. *cynanchoides*, Uto-Aztecan: Tohono O'odham). DESCRIPTION: Terrestrial perennial forb/herb or vine (clambering, climbing, sprawling, trailing and/or twining stems 20 inches to 20 feet in length); the leaves are dark green; the flowers (umbels of 5 to 30 flowers) may be brownish-white, cream, cream-purple, cream-white, cream-white & purple, dull cream-white & maroon, pale green & white, green, green & maroon & white; greenish-white, greenish-white & purple, lilac-mauve, magenta-cream, maroon, maroon-cream, pink, pinkish-white, purple, purple & cream, purple-white, purplish, purplish-tan & white, purplish-white, dull purplish & white, dull purplish-red & whitish, violet-pink, white, white & brown, white & maroon, white & purple, white & purple-maroon, white & dull purple, whitish or off white-brownish-purple; flowering generally takes place between mid-March and late November (additional records: one for early February, mid-February and two for mid-December). HABITAT: Within the range of this species it has been reported from mountains; bouldery-cobbly mesas; clambering over shrubs at the along bases of cliffs; rocky and sandy canyons; rocky canyon walls; along rocky and gravelly-sandy canyon bottoms; talus; crevices; clayey ridgetops; rocky foothills; rocky and sandy hills; rocky hillsides; bouldery, rocky, gravelly and sandy slopes; bajadas; bouldery and rocky outcrops; amongst boulders; lava flows; sand dunes; banks; gravelly plains; bouldery-cobbly, cindery and sandy flats; bouldery basins; sandy valley floors; valley bottoms; coastal sand dunes; along railroad right-of-ways, along sandy roadsides; along and in rocky and sandy arroyos; sandy-clayey bottoms of arroyos; within draws; seeps; springs; along streams; bouldery and sandy streambeds; along gravelly-sandy creeks; creekbeds; along rivers; rocky-cobbly-sandy riverbeds; along and in bouldery, rocky, gravelly, gravelly-sandy, gravelly-sandy-silty, sandy and sandy-silty washes; gravelly drainages; within drainage ways; waterholes (tinajas); swampy areas; depressions; along (rocky, gravelly-sandy and sandy) banks of arroyos, streams, rivers, washes and drainages; (gravelly-silty) edges of draws; along (gravelly) margins of arroyos and washes; (sandy) shores of rivers; gravel and sand bars; sandy beaches; benches; sandy terraces; bottomlands; sandy floodplains; lowlands; mesquite bosques; fencelines; canal banks; along ditches; clayey-loamy ditch banks; fencelines; riparian areas, and disturbed areas growing in dry bouldery, bouldery-cobbly, rocky, rocky-cobbly-sandy, rocky-sandy, cindery, gravelly, gravelly-sandy and sandy ground; rocky-gravelly-clayey loam, gravelly loam, clay loam and loam ground; sandy clay, silty clay and clay ground, and gravelly silty, gravelly-sandy silty, sandy silty and silty ground, occurring from sea level to 6,900 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, the flowers may be fragrant. Bees, moths and other insects have been observed visiting the flowers. *Funastrum cynanchoides* is native to south-central and southern North America. *5, 6, 28 (recorded as *Sarcostemma cynanchoides*, color photograph), 43 (110709 - *Funastrum cynanchoides* F.R. Schlechter), 44 (020412 - no record of subspecies; species and genus records, with Common Names listed under var. *hartwegii* only), 46 (recorded as *Funastrum cynanchoides* (Decne) Schlechter, Page 664 and *Funastrum heterophyllum* (Engelm.) Standl., Page 664), 63 (020412), 68, **85** (020412 - color presentation), 86 (recorded as *Sarcostemma cynanchoides*, color photograph), 115 (color presentation), 124 (020412 - no record of species; genus and ssp. *cynanchoides* records), 140 (recorded as *Funastrum cynanchoides* (Decaisne) Schlechter [*Sarcostemma cynanchoides* Decaisne], Pages 48-49 & 283)*

***Funastrum cynanchoides* (J. Decaisne) F.R. Schlechter subsp. *cynanchoides*: Fringed Twinevine**

SYNONYMY: *Sarcostemma cynanchoides* J. Decaisne. COMMON NAMES: Arroyo Twine Vine; Arroyo Twinevine; Climbing Milk Weed; Climbing Milkweed (a name also applied to other species); Climbing Milkweed (English)[140]; Fringed Climbing Milkweed (a name also applied to the species); Fringed Twine-vine (a name also applied to the species); Fringed Twine-weed [vine] (Arizona, New Mexico)[140]; Fringed Twinevine (a name also applied to the species); Güichire (Spanish)[140]; Güirote Lechoso ("Milky 'Vine'", Spanish: Sinaloa, Sonora)[140]; Hexe (Hokan: Seri)[140]; Hierba Lechosa ("Milky Herb" a name also applied to other species, Spanish: Sonora)[140]; Huichuri <huichoori> (Uto-Aztecan: Mayo)[140]; Mata Nene ("Baby Killer", Spanish: Sonora)[140]; Platanito ("Little Banana" [literally "flat one"], Spanish: Sonora)[140]; Sandia de la Pasion ("Watermelon of the Crucifixion", Spanish: Sonora)[140]; Vi:bam <vi'ibgam> (Uto-Aztecan: Hiá Ceḍ O'odham)[140]; Vibam (Uto-Aztecan: Mountain Pima)[140]; Viibam ("Milk It Has", Uto-Aztecan: Akimel O'odham)[140]; Wibam <wi'ibgam> (Uto-Aztecan: Tohono O'odham)[140]. DESCRIPTION: Terrestrial perennial forb/herb or vine (clambering, climbing, sprawling, trailing and/or twining stems 40 inches to 20 feet in length); the leaves are dark green; the flowers may be brownish-white, cream, cream-white, pale green & white, green, green & maroon & white; greenish-white, maroon, pink, purplish, purplish-white, white, white & green, white & lilac, white & pink, whitish or off white-brownish-purple; flowering generally takes place between mid-March and early November (additional records: one for early February and one for mid-December). HABITAT: Within the range of this species it has been reported from mountains; mesas; rocky and sandy canyons; rocky canyon walls; canyon bottoms; talus; crevices; rocky foothills; hills; hillsides; rocky and sandy slopes; bajadas; bouldery and rocky outcrops; amongst boulders; gravelly plains; sandy flats; along sandy roadsides; along arroyos; seeps; springs; along streams; bouldery and sandy streambeds; gravelly-sandy creeks; rocky-cobbly-sandy riverbeds; along and in bouldery, gravelly-sandy and sandy washes; drainages; within drainage ways; swamps; depressions; along banks of rivers and washes; (gravelly-silty) edges of draws; (sandy) shores of rivers; sandy beaches; benches; sandy terraces; sandy floodplains; mesquite bosques; along ditches; clayey-loamy ditch banks; fencelines; riparian areas, and disturbed areas growing in dry bouldery, rocky, rocky-cobbly-sandy, gravelly-sandy and sandy ground; gravelly loam, clayey loam and loam ground; silty clay ground, and gravelly silty and silty ground, occurring from sea level to 6,900 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, the flowers may be fragrant. Bees, moths and other insects have been observed visiting the flowers. *Funastrum cynanchoides* subsp. *cynanchoides* is native to south-central and southern North America. *5, 6, 16 (recorded as *Sarcostemma cynanchoides* Decne. var. *cynanchoides*), 28 (color photograph), 43 (110709), 44 (020412 - no record of subspecies; species and genus records, with Common Names listed under var. *hartwegii* only), 46 (Page 664), 58 (recorded as *Sarcostemma cynanchoides* Decne. ssp. *cynanchoides*), 63 (020412 - color presentation), 68, 77 (recorded as *Sarcostemma cynanchoides* Decne. ssp. *cynanchoides*, color photograph labeled *Sarcostemma cynanchoides* #6), **85** (020412 - color presentation), 86 (color photograph), 115 (color presentation of species), 124 (050211), 140 (recorded as *Funastrum cynanchoides* (Decaisne) Schlechter [*Sarcostemma cynanchoides* Decaisne], Pages 48-49 & 283)*

***Funastrum cynanchoides* (J. Decaisne) F.R. Schlechter subsp. *heterophyllum* (G. Engelmann ex J. Torrey) J.T. Kartesz: Hartweg's Twinevine**

SYNONYMY: *Funastrum heterophyllum* (G. Engelmann) P.C. Standley; *Sarcostemma cynanchoides* J. Decaisne subsp. *hartwegii* (A.M. Vail) R.W. Holm; *Sarcostemma cynanchoides* J. Decaisne var. *hartwegii* (A.M. Vail) L.H. Shinners. COMMON NAMES: Climbing Milkweed (a name also applied to other species); Climbing Townula; Guirote Lechoso (Spanish); Hartweg Climbing Milkweed; Hartweg Climbing-milkweed; Hartweg Fringed Milkvine; Hartweg Milk-vine; Hartweg Milkvine; Hartweg Twine-vine; Hartweg Twinevine; Hartweg Twining Milkweed; Hartweg Vine-milkweed; Hartweg's Climbing-milkweed; Hartweg's Fringed Milkvine; Hartweg's Milk-vine; Hartweg's Milkvine; Hartweg's Twine-vine; Hartweg's Twinevine; Hartweg's Twining Milkweed; Hartweg's Vine-milkweed; Hexe (Seri); Purple Climbing-milkweed (a name also applied to the species). DESCRIPTION: Terrestrial perennial forb/herb or vine (clambering, climbing, sprawling, trailing and/or twining stems 20 inches to 20 feet in length); the leaves (3 to 4 times long as broad) are dark green; the flowers may be dull cream-white & maroon, cream-purple, cream-white & purple, greenish-white, greenish-white & purple, lilac-mauve, magenta-cream, maroon-cream, pinkish-white, purple, purple & cream, purplish, dull purplish & white, dull purplish-red & whitish, purplish-tan & white, violet-pink, white, white & brown, white & maroon, white & dull purple, white &purple or white & purple-maroon; flowering generally takes place between mid-March and early November (additional records: one for early February, one for mid-February, one for late November and one for mid-December). HABITAT: Within the range of this species it has been reported from mountains; bouldery-cobbly mesas; canyons; along rocky and gravelly-sandy canyon bottoms; ridges; clayey ridgetops; foothills; rocky and sandy hills; rocky hillsides; bouldery, rocky and gravelly slopes; bajadas; rocky outcrops; amongst rocks; lava flows; sand dunes; banks; bouldery-cobbly, cindery and sandy flats; bouldery basins; sandy valley floors; valley bottoms; coastal sand dunes; along sandy roadsides; along and in rocky and sandy arroyos; springs; along streams; along creeks; creekbeds; along rivers; riverbeds; along and in rocky, gravelly, gravelly-sandy, gravelly-sandy-silty, sandy and sandy-silty washes; drainages; drainage ways; waterholes (tinajas); playas; swampy areas; (rocky, gravelly-sandy and sandy) banks of arroyos, streams, rivers, washes and drainages; along (gravelly) margins of arroyos and washes; gravel and sand bars; sandy benches; terraces; bottomlands; sandy floodplains; mesquite bosques; fencelines; canal banks; along ditches; sandy riparian areas, and disturbed areas growing in dry bouldery, bouldery-cobbly, rocky, rocky-sandy, cindery, gravelly, gravelly-sandy and sandy ground; rocky-gravelly-clayey loam and gravelly loam ground; clay ground, and gravelly-sandy silty and sandy silty ground, occurring from sea level to 5,000 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Funastrum cynanchoides* subsp. *heterophyllum* is native to southwest-central and southern North America. *5, 6, 15 (recorded as *Sarcostemma cynanchoides*

Decne. var. *hartwegii* (Vail) Shinners), 16 (recorded as *Sarcostemma cynanchoides* Decne. var. *hartwegii* (Vail) Shinners), 43 (110709 - *Funastrum cynanchoides* Schltr. subsp. *heterophyllum* (Engelm. ex J. Torr.) Kartesz), 44 (020412), 46 (recorded as *Funastrum heterophyllum* (Engelm.) Standl., Page 664), 58 (recorded as *Sarcostemma cynanchoides* Decne. ssp. *hartwegii* (Vail) R. Holm), 63 (020412 - color presentation), 68, 77 (recorded as *Sarcostemma cynanchoides* Decne. ssp. *hartwegii* (Vail) Holm), 85 (020412 - color presentation), 115 (color presentation of species), 124 (020412 - no record of subspecies or species; genus record), 140 (Page 49), **WTK** (April 16, 2008)*

Funastrum heterophyllum (see *Funastrum cynanchoides* subsp. *heterophyllum*)

Sarcostemma cynanchoides (see *Funastrum cynanchoides* subsp. *cynanchoides*)

Sarcostemma cynanchoides subsp. *cynanchoides* (see footnotes 16 and 85 under *Funastrum cynanchoides* subsp. *cynanchoides*)

Sarcostemma cynanchoides subsp. *hartwegii* (see *Funastrum cynanchoides* subsp. *heterophyllum*)

Sarcostemma cynanchoides var. *cynanchoides* (see *Funastrum cynanchoides* subsp. *cynanchoides*)

Sarcostemma cynanchoides var. *hartwegii* (see *Funastrum cynanchoides* subsp. *heterophyllum*)

Asteraceae (Compositae): The Aster Family

***Acourtia nana* (A. Gray) J.L. Reveal & R.M. King: Dwarf Desertpeony**

SYNONYMY: *Perezia nana* A. Gray. COMMON NAMES: Ban Auppa-ga (Gila River Pima); Desert Holly (a name also applied to other species); Desert-holly; Dwarf Desertpeony. DESCRIPTION: Terrestrial perennial forb/herb (divaricately branching stems 2 to 12 inches in height; plants were observed and described as being 4 to 5 inches in height and 3 to 6 inches in width); the holly-like leaves are pale grayish-green or olive-green; the flower heads may be cream, pale lavender-pink, lavender, lavender-pink, maroon and white, pale pink-lavender, pink, pink-purple, purple, white or white-pink; flowering generally takes place between late March and early July (additional records: one for late January, one for late February, two for late July, one for early August, one for mid-August, one for late August, two for early September, three for late September, one for mid-October, one for mid-November and two for mid-December). HABITAT: Within the range of this species it has been reported from rocky mountains; sandy mesas; gravelly-loamy canyons; talus slopes; bedrock ridges; ridgetops; rocky foothills; rocky and gravelly hills; rocky and gravelly hillsides; bouldery, rocky, stony, gravelly, gravelly-sandy and sandy slopes; bajadas; amongst boulders and rocks; gravelly breaks; gravelly plains; rocky, gravelly, gravelly-sandy, sandy, sandy-loamy and clayey flats; basins; basin bottoms; rocky valley floors; valley bottoms; gravelly-loamy roadsides; arroyos; bottoms of arroyos; rocky gullies; gravelly-loamy creekbeds; riverbeds; within gravelly, gravelly-sandy and sandy-clayey washes; drainage ways; playas; sandy-loamy, sandy-clayey-loamy and clayey-loamy swales; (clayey-loamy) banks of washes; benches; gravelly and sandy terraces; floodplains; mesquite mosques; riparian areas, and disturbed areas growing in dry desert pavement; bouldery, rocky, rocky-sandy, stony, gravelly, gravelly-sandy, pebbly and sandy ground; gravelly loam, sandy loam, sandy-clayey loam, clayey loam, silty loam and loam ground; sandy clay and clay ground, and silty ground often in the shade of trees and shrubs, occurring from 1,200 to 7,100 feet (one record for 8,500 feet) in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. Consider using Desert Holly as a ground cover under larger shrubs and trees. The flowers give off a fragrance similar to that of violets or lilacs. *Acourtia nana* is native to southwest-central and southern North America. *5, 6, 15, 16, 28 (color photograph 285), 43 (110809), 44 (020512 - no record of species; genus record), 46 (recorded as *Perezia nana* Gray, Page 957), 58, 63 (020512 - color presentation), 77, 85 (020512 - color presentation), 115 (color presentation), 124 (020512 - no record of species or genus), **HR***

***Acourtia wrightii* (A. Gray) J.L. Reveal & R.M. King: Brownfoot**

SYNONYMY: *Perezia wrightii* A. Gray. COMMON NAMES: Brownfoot; Desert Holly (a name also applied to other species); Perezia; Pink Perezia; Pink Perezzia; Wright's Desertpeony. DESCRIPTION: Terrestrial perennial forb/herb (1 to 5 feet in height; one plant was observed and described as being 1 foot in height with a crown 1 foot in width); the holly-like leaves are dark green; the flower heads may be lavender, dark lavender, pink, pink-brown, pink-lavender, pink-purple, light purple, purple, white, white & pink, whitish-maroon or white & purple; flowering generally takes place between early February and early July and sometimes in autumn between early September and early November (additional records: one for mid-August, one for late November and one for early December). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; plateaus; rock cliffs; bases of cliffs; rocky canyons; rocky canyon bottoms; talus slopes; along crevices in boulders and rocks; buttes; along ledges; ridges; ridgetops; crater walls; foothills; rocky, stony-gravelly and sandy hills; rocky and rocky-gravelly-loamy hillsides; bouldery-rocky, rocky, rocky-gravelly, shaley, shaley-gravelly, gravelly, gravelly-clayey and sandy slopes; sandy alluvial fans; gravelly and sandy bajadas; along bedrock and rocky outcrops; amongst boulders and rocks; around bases of boulders; in shaded alcoves; rocky plains; rocky and silty flats; railroad right-of-ways; rocky and gravelly-sandy-clayey-loamy roadsides; along rocky arroyos; rocky draws; gullies; ravines; seeps; rocky springs; along creeks; along rocky,

gravelly and sandy washes; along drainage ways; (rocky) banks of ravines, streams and washes; borders of washes; edges of washes; mudflats; beaches; floodplains; mesquite bosques; riparian areas, and disturbed areas growing in dry desert pavement; bouldery, bouldery-rocky, rocky, rocky-gravelly, rocky-sandy, shaley, shaley-gravelly, stony-gravelly, gravelly and sandy ground; rocky-gravelly loam, rocky silty loam, gravelly-sandy-clayey loam, sandy loam, silty-clayey loam and silty loam ground; gravelly clay ground, and silty ground, occurring from 700 to 7,300 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, the flowers are reported to be fragrant. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. *Acourtia wrightii* is native to southwest-central and southern North America. *5, 6, 15, 16, 28 (color photograph 677), 43 (110809), 44 (050411 - no record of species; genus record), 46 (recorded as *Perezia wrightii* Gray, Page 957), 58, 63 (020512 - color presentation), 77, 85 (020612 - color presentation), 115 (color presentation), 124 (050411 - no record of species or genus), 127, 140 (Page 283), **HR***

Ambrosia ambrosioides (A.J. Cavanilles) W.W. Payne: Ambrosia Leaf Bur Ragweed

SYNONYMY: *Franseria ambrosioides* A.J. Cavanilles. COMMON NAMES: Ambrosia Bursage; Ambrosia Leaf Bur Ragweed; Ambrosia Leaf Burr Ragweed; Ambrosia-leaf Burr Ragweed; Ambrosia-leaf Burr-ragweed; Ambrosia-leaf Bursage; Ambrosia-leaved Burbush; Big Bursage; Big Bur-sage; Burr Sage (a name also applied to the genus *Ambrosia*); Bur-sage (a name also applied to other species and the genus *Ambrosia*); Bursage (a name also applied to other species and the genus *Ambrosia*); Canyon Ambrosia; Canyon Ragweed; Canyon Ragweed Ambrosia; Chicura (Spanish); Giant Bursage; Leaf Burr Ragweed; Nu Nu Ju Its (Tohono O'odham); Tinkl (Seri). DESCRIPTION: Terrestrial perennial cold- and drought-deciduous subshrub or shrub (erect stems 1 to 7 feet in height, one plant was described as being 3 feet in height and 6 feet in width); the branches are reddish-brown with white hairs; the leaves are dull gray-green or green; the flower heads are yellowish or yellowish-green; flowering generally takes place between mid-February and early May (additional records: two for mid-January, one for late May, one for early June, one for mid-June, one for early July and one for mid-September), the fruits are burrs. HABITAT: Within the range of this species it has been reported from rocky mountains; rocky mountainsides; mesas; bases of cliffs; rocky canyons; canyon walls; rocky, gravelly and gravelly-sandy canyon bottoms; ridges; crevices in rocks; pockets of sandy soil in rocks; foothills; rocky hills; hilltops; rocky hillsides; rocky and sandy slopes; bajadas; rocky outcrops; amongst boulders; terraces; barrens; plains; flats; basins; silty valley floors; along coasts; coastal plains; along rocky-sandy roadsides; rocky, gravelly and sandy arroyos; rocky and gravelly bottoms of arroyos; along seeping streams; along streams; rocky and sandy streambeds; along creeks; creekbeds; along rivers; riverbeds; along and in rocky, gravelly, gravelly-sandy, gravelly-silty and sandy washes; along and in sandy drainages; along and in cobbly and sandy drainage ways; around waterholes; (rocky and sandy) banks of creeks and lakes; borders of washes; (sandy) edges of washes; (sandy) margins of arroyos; benches; bottomlands; floodplains; riparian areas, and disturbed areas growing in muddy (rarely reported) and dry bouldery, rocky, rocky-sandy, cobbly, gravelly, gravelly-sandy and sandy ground; rocky loam and sandy-clayey loam ground, and gravelly silty and silty ground, occurring from sea level to 5,700 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat; however, its pollen may bring about an allergic reaction in some people. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. *Ambrosia ambrosioides* is native to southwest-central and southern North America. *5, 6, 13 (Pages 303-304), 15, 28 (color photographs 806 A&B), 43 (111009 - *Ambrosia ambrosioides* (Delpino) W.W. Payne), 44 (050411), 46 (recorded as *Franseria ambrosioides* Cav., Page 895), 63 (020812), 77 (color photograph #67), 85 (020912 - color presentation including habitat), 91 (Pages 75-77), 115 (color presentation), 124 (050411 - no record of species; genus record), 127, 140 (Page 283), **WTK** (April 16, 2008)*

Ambrosia confertiflora A.P. de Candolle: Weakleaf Bur Ragweed

SYNONYMY: *Franseria confertiflora* (A.P. de Candolle) P.A. Rydberg. COMMON NAMES: Altamisa de Playa; Altamisa [del Campo] (Spanish: Mexico)[140]; Bur Ragweed (a name also applied to other species and the genus *Ambrosia*); Bur-sage (a name also applied to other species and the genus *Ambrosia*); Bur-weed (a name also applied to other species); Bursage [Field, Weak-leaf Burr] Ragweed (English: New Mexico)[140]; Ch'ił Diwozh <c'il dahwosi [dohwosi]> (Athapascan: Navajo)[140]; Chi'ichivo (Yaqui); Chíchibo (Uto-Aztecan: Mayo)[140]; Estafiate (a name also applied to other species, Spanish: Mountain Pima)[140]; Estafijate (Mexico: Sonora); Field Ragweed; Istafiate (Mexico: northern Sinaloa); Mexican Ragweed; Mo'o Taḍ <mo'otaḍk, mo'otadk, mo'ostalk, mo'otari> ("To Stick Its Head Out", Uto-Aztecan: Tohono O'odham)[140]; Mo'o Taḍk Je:j ("Mother of Broom Rape", Uto-Aztecan: Akimel O'odham)[140]; Mo'ostadk (Uto-Aztecan: Hiá Ceḍ O'odham)[140]; Mo'otatk Juich (Gila River Pima); Musha (Uto-Aztecan: Mountain Pima)[140]; Ñuñuwĭ Je:j ("Mother of Vultures", Uto-Aztecan: Tohono O'odham)[140]; Pawya <pawíya> (Uto-Aztecan: Hopi)[140]; Paxáaza (Hokan: Seri)[140]; Ragweed (a name also applied to other species and the genus *Ambrosia*); Slender Ragweed; Slim-leaf [weak-leaf] Bursage (English)[140]; Slim-leaf Ragweed; Slimleaf Bursage; Slimleaf Ragweed; Tatṣagi <taḍshagi, tatshagi> (Uto-Aztecan - Tohono O'odham)[140]; Tu'rosip (Uto-Aztecan: Shoshoni)[140]; Waejoka (Kiowa Tanoan: Tewa)[140]; Weakleaf Burbush; Weak-leaf Bur-ragweed; Weak-leaf Burr Ragweed; Weak-leaf Burr-ragweed; Weak-leaf Bur-sage; Weak-leaf Bursage; Weak-leaved Bur-sage; Weak-leaved Bursage; Weak-leaved Burweed; Weakleaf Bur Ragweed; Weakleaf Burr Ragweed; Weakleaf Bursage; Yerba del Sapo ("Toad Herb", Spanish: New Mexico)[140]. DESCRIPTION: Terrestrial perennial forb/herb (procumbent (rarely observed) and/or erect stems 4 inches to 6 feet in height and up to 7 feet in width); the leaves may be gray, gray-green or whitish; the florets may be greenish, greenish-yellow, tan-yellow, white, yellow, yellow-brown or yellow-green; flowering generally takes place between late April and mid-December (additional records: one for early January, one for mid-March, one for late March and one for early April). HABITAT: Within the range of

this species it has been reported from mountains; rocky mountainsides; rocky mesas; bases of cliffs; rocky canyons; along rocky and sandy canyon bottoms; crevices in rock faces; knolls; ridges; rocky ridgetops; sandy meadows; foothills; rocky and rocky-gravelly-loamy hills; hilltops; rocky hillsides; rocky, rocky-loamy, rocky-clayey, gravelly, gravelly-loamy, gravelly-clayey, sandy, sandy-loamy and sandy-clayey slopes; bajadas; piedmonts; shaley-sandy outcrops; terraces; prairies; sandy-silty plains; gravelly, gravelly-sandy, sandy and clayey flats; rocky-silty, gravelly-sandy and sandy valley floors; valley bottoms; coastal plains; coastal beaches; along railroad right-of-ways; along clayey roadsides; along sandy arroyos; bottoms of arroyos; ravines; seeps; springs; along streams; streambeds; along rivers; sandy riverbeds; along and in gravelly, gravelly-sandy, gravelly-sandy-silty and sandy washes; along rocky drainages; within rocky drainage ways; around ponds; around lakes; (drying) lakebeds; playas; ciénegas; depressions; silty swales; along banks of creeks, rivers and washes; borders of washes; (gravelly-sandy) edges of washes and playas; margins of pools; beaches; rocky benches; terraces; bottomlands; floodplains; rocky mesquite bosques; fencerows; around stock tanks (represos); around reservoirs; canal banks; ditches; riparian areas; waste places, and disturbed areas growing in muddy (rarely reported) and moist and dry boulders, rocky, shaley-sandy, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-gravelly loam, gravelly loam, sandy loam and sandy-clayey loam ground; rocky clay, gravelly clay and clay ground, and rocky silty, gravelly silty, gravelly-sandy silty, sandy silty and silty ground, occurring from sea level to 8,800 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: The flowers are reported to be fragrant. *Ambrosia confertiflora* is native to south-central and southern North America. *5, 6, 15, 16, 43 (061309), 44 (033011), 46 (recorded as *Franseria confertiflora* (DC.) Rydb., Page 895), 58, 63 (020912), 68, 77, **85** (020912 - color presentation), 115 (color presentation), 124 (033011), 140 (Pages 53-54, 56 & 283)*

Ambrosia deltoidea (J. Torrey) W.W. Payne: Triangle Bur Ragweed

SYNONYMY: *Franseria deltoidea* J. Torrey. COMMON NAMES: Ambosia (a name also applied to other species and the genus *Ambrosia*, Spanish); Burrobush (a name also applied to other species); Bur-sage (a name also applied to other species and the genus *Ambrosia*); Bursage (a name also applied to other species and the genus *Ambrosia*); Chamizo Forrajero (Spanish); Chicurilla (a name also applied to other species, Spanish); Estafiate (a name also applied to other species, Spanish); Rabbit Bush; Kokomak Segoi (Pima); Shegoi (Pima); Todshag (Papago); Triangle Bur Ragweed; Triangle Burr Ragweed; Triangle Bursage; Triangle-leaf Bursage; Triangle-leaved Bursage; Triangle-leaf Burr Ragweed. DESCRIPTION: Terrestrial perennial evergreen (or drought-deciduous) subshrub or shrub (erect stems 1 to 4 feet in height; one plant was observed and described as being 2 feet in height and width); the leaves are gray, gray-green or green (turning gray with age); the flower heads may be greenish, greenish-yellow, purple, white or yellow; flowering generally takes place between early January and early May (additional records: three for late May; flowering ending as late as July has been reported). HABITAT: Within the range of this species it has been reported from mountains; rocky mesas; cliffs; bases of cliffs; rocky canyons; canyon bottoms; buttes; ridges; crater floors; rocky foothills; rocky hills; rocky hillsides; bases of hills; rocky, rocky, gravelly and gravelly-clayey slopes; bases of slopes; sandy bajadas; lava flows; dunes; sandy plains; rocky, stony-chalky, gravelly and sandy flats; basins; rocky valley floors; along rocky-sandy roadsides; shallow arroyos; ravines; runnels; riverbeds; along and in stony-gravelly, gravelly, gravelly-sandy and sandy washes; within drainages; (rocky and sandy) banks of creeks and washes; edges of dry lakes (playas); margins of washes; gravelly terraces; bottomlands; floodplains; riparian areas, and disturbed areas growing in moist and dry desert pavement; rocky, rocky-gravelly, rocky-sandy, stony-gravelly, gravelly, gravelly-sandy and sandy ground; gravelly-sandy loam and loam ground; rocky clay, gravelly clay and sandy clay ground, and stony chalky ground, occurring from sea level to 4,000 feet in elevation in the grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat and may be useful in the restoration of disturbed habitat. It may live to be about 50 years of age. The Triangleleaf Bursage serves as a nurse plant for Saguaro (*Carnegiea gigantea*), Ocotillo (*Fouquieria splendens*), Foothill Paloverde (*Parkinsonia microphylla*) and other woody plants. The Triangleleaf Bursage is one of the first plants to colonize disturbed areas. *Ambrosia deltoidea* is native to southwest-central and southern North America. *5, 6, 13 (Pages 305-306), 15, 16, 28 (color photograph 807), 43 (070910), 44 (033011), 46 (recorded as *Franseria deltoidea* Torr., Page 896), 63 (021012 - color presentation), 77 (color photograph #68), 85 (021112 - color presentation including habitat), 91 (Pages 82-85, 115 (color presentation), 124 (033011 - no record of species; genus record), **WTK** (April 16, 2008)*

Ambrosia monogyra (see *Hymenoclea monogyra*)

Anthemis cotula C. Linnaeus: Stinking Chamomile

COMMON NAMES: Bakerblom (Danish); Bakerbraa (Danish); Balderbrae (verbal corruption); Balderbraw; Balders; Bald-eyebrow; Bald-eye-brow; Ballensbro; Büdöskey Ar (Hungarian); Camomila Spuria; Camomila-de-cachorro (Portuguese: Brazil); Camomile Puante (French); Camomilla Fetida (Italian); Camomilla Mezzana (Italian); Camomille Puante (French); Chamomila Foetidum; Chamomille des Chiens (French); Chigger Weed (a name also applied to other species); Chigger-weed (a name also applied to other species); Chiggerweed (a name also applied to other species); Chiggy-weed; Common Dog Fennel; Common Dog-fennel; Common Dogfennel; Common May-weed; Common Mayweed; Cotula; Cotula Bastarda (Portuguese); Cotula Fetida (Italian); Dilweed (a name also applied to other species); Dillweed (a name also applied to other species); Dilly (a name also applied to other species); Dillidilweed; Dillydillweed; Dog-banner; Dog-binder; Dog Camomile (a name also applied to other species); Dog Camovyne (a name also applied to other species); Dog's Camomile (a name also applied to other species); Dog-chamomile (a name also applied to other species); Dog's-camomile; Dog's Chamomile (a name also applied to other species); Dog Daisy (a name also applied to other species); Dog-daisy (a name also applied to other species); Dog Fennel (a name also applied to other species and the genus *Anthemis*); Dog Finkle; Dog-fennel (a name also applied to other species and

the genus *Anthemis*); Dog-finkle; Dogfennel (a name also applied to other species and the genus *Anthemis*); Dog's Fennel (a name also applied to the genus *Anthemis*); Eb Kapor (Hungarian); Fennel; Fetid Camomile; Fetid Chamomile; Fetid Marigold; Fetid Mayweed; Fetid-mayweed; Field Weed; Field Wort; Field-weed (a name also applied to other species); Fieldwort (a name also applied to other species); Flowan; Foetid Camomile; Foetid Chamomile; Foetid Marigold; Gaasedild (Danish); Gänsekopf (German); Gassedill (Norwegian); Gasseguld (Norwegian); Heilege Dille (German); Hog Fennel (a name also applied to other species); Hog-fennel (a name also applied to other species); Hog's Fennel (a name also applied to other species); Hog's-fennel (a name also applied to other species); Horse Daisy; Horse-daisy; Hundekameelblomst (Danish); Hundeurt (Danish); Hundkamiller (Swedish); Hundsbloom (German); Hundsdill (German); Hundskamille (German); Hundsromey (German); Hviteteja; Iron-wort (a name also applied to other species); Ironwort (a name also applied to other species); Jay-weed; Jayweed; Kamomillkulla (Swedish); Kanna Perse Hein (Estonian); Kannapersed (Estonian); Koedild (Danish); Krötendill (German); Kuhdill (German); Llygad Yr Ych (Welsh); Macéla-fétida (Portuguese: Brazil); Macella Fetida (Portuguese); Madder (misapplied); Maden-weed; Maise; Maithen; Maithes (a name also applied to other species); Manzanilla; Manzanilla Cimarrona; Manzanilla Fetida (Spanish); Manzanilla Hedionda (Spanish); Marg; Maroutte; Mather; Mathes (a name also applied to other species); May Flower; May Weed (a name also applied to other species and the genus *Anthemis*); May Wort; May-weed (a name also applied to other species and the genus *Anthemis*); Mayweed (a name also applied to other species and the genus *Anthemis*); Mayweed Camomile; Mayweed Chamomile; Morgan; Murg; Oil de Vache (French); Paddebloem (Dutch); Path-weed; Pig-sty Daisy (Ipswich, Massachusetts); Pig-sty-daisy (Ipswich, Massachusetts); Pigsty-daisy (Ipswich, Massachusetts); Pissweed; Poison Daisy; Poison-daisy; Psi Rumien (Polish); Psy Men (Bohemian); Rumieniec Smierdzacy (Polish); Sigu-kammelis ("Horse Chamomile", Lettonia); Siurguld (Norwegian); Solutucha [Trava] (Russian); Stinkweed; Stinkende Hundskamille (German); Stinkende Kamille (Dutch, German); Stinking Camomile; Stinking Chamomile; Stinking Daisy; Stinking Mayweed; Stinkkamillen (German); Stinkweed (a name also applied to other species); Streichblume (German); Sunnischi (Lettonia [Republic of Latvia]); Surkullor (eastern United States - Swedish Upland); Surtuppor; White Stinkweed; Wild Camomoile (a name also applied to other species); Wild Cammomile; Wild Chamomile (a name also applied to other species). DESCRIPTION: Terrestrial annual forb/herb (erect stems 2 inches to 3 feet in height); the stems are green, sometimes tinged with red; the disk florets are yellow, the ray florets are white; flowering generally takes place between early April and early September (additional records: one for late September, one for early October, two for early November and one for late November). HABITAT: Within the range of this species it has been reported from mountains; plateaus; canyons; bouldery-gravelly-sandy, canyon bottoms; clearings; rocky meadows; foothills; rolling hills; rocky-loamy and clayey hillsides; rocky, rocky-loamy, sandy, sandy-clayey, loamy, clayey and silty-loamy slopes; gravelly and sandy flats; basins; valley floors; valley bottoms; coastal dunes; along gravelly, gravelly-loamy and sandy roadsides; streambeds; riverbeds; stony arroyos; in sandy washes; near and in vernal pools; clayey marshes; saltmarshes; banks of streams; edges of ponds; gravelly benches; terraces; sandy-loamy bottomlands; floodplains; along fences; dams; within clayey ditches; riparian areas; waste places, and disturbed areas growing in wet, moist and dry bouldery-gravelly-sandy, rocky, rocky-cobbly, stony, gravelly and sandy ground; rocky loam, gravelly loam, sandy loam, silty loam and loam ground; sandy clay and clay ground, and silty ground, occurring from sea level to 8,300 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a as a drug or medication. *Anthemis cotula* is native to central, eastern, northern and southern Europe and coastal islands in the North Atlantic Ocean and Mediterranean Sea; western and southern Asia, and northern Africa. *5, 6, 43 (111109), 44 (050611), 46 (Page 936), 63 (021312 - color presentation) 80 (This plant is listed as a Rarely Poisonous and Suspected Poisonous Range Plant. "In the western hemisphere, poultry are the only livestock to be poisoned by this annual forb."), **85** (021312 - color presentation), 101 (color photograph), 124 (050511), 127*

Aplopappus tenuisectus (see footnote 46 under *Isocoma tenuisecta*)

Arida arizonica (see footnote 85 under *Machaeranthera arida*)

***Artemisia ludoviciana* T. Nuttall: White Sagebrush**

COMMON NAMES: Absinthe; Ajenjo [del País] ("[Country] Absinth", Spanish: New Mexico, Mexico)[140]; Altamisa de la Casa ("House Ambrosia", Spanish: Mexico)[140]; Ambf (Otomí); Artemisia (a name also applied to the genus *Artemisia*); Altamiza (Hispanic); Azumate de Puebla (Hispanic); Chamiso Cenizo (Spanish: Mexico)[140]; Ch'ilzhóó <ce' ézíh, ce' ezíh > ("Rock Sage", Athapascan: Navajo)[140]; Chíchibo (Uto-Aztecan: Mayo)[140]; Cola de Zorrillo (Hispanic); Cud-weed; Cudweed (a name also applied to the genus *Artemisia*); Cudweed Mugwort; Cudweed Sagebrush; Cudweed Sagewort; Cudweed Wormwood; Dark-leaf Mugwort; Dark-leaved Mugwort; Darkleaf Mugwort; Epazote de Castilla; Estafiate <astafiate, estafeate, istafiate> (Spanish: Chihuahua, Coahuila, San Luis Potosi, Sonora)[140]; Estomiate (Hispanic); Gray Sagewort; Green Sagewort; Grey Sagewort; Hierba Maestra (Hispanic); Incieso Verde (Hispanic); Istafiate (Hispanic); Iztauhyatl (Náhuatl); J'mipzi (Oto-Manguean: Mazahua)[140]; Kamaistra (Popoloca); Kos̄idab [Koósiddúp, Kosedap, Kusedáp] (Uto-Aztecan: Mono)[140]; Kos̄idava (Uto-Aztecan: Northern Paiute)[140]; Lobed Cud-weed (Iowa); Lobed Cudweed (Iowa); Louisiana Cudweed Sagewort; Louisiana Sage; Louisiana Sagebrush; Louisiana Sagewort; Louisiana Wormwood; Man-sage (English: Montana, translated from Cheyenne name)[140]; Mexican White Sagebrush; Mexican Wormwood (subsp. *mexicana*); Mountain Sagewort; Mugwort (a name also applied to the genus *Artemisia*, Kansas); Mugwort Wormwood; Musa, Sanankdam (Uto-Aztecan: Mountain Pima)[140]; Native Wormwood; Páakušh (Uto-Aztecan: Luiseño, Juaneño dialect)[140]; Popohoppeh (Uto-Aztecan: Shoshoni)[140]; Prairie Sage; Prairie-sage; Romerillo ("Little Rosemary", Spanish: Mexico)[140]; Ros' Sabl' I (Rarámuri); Ŕosáberi (Uto-Aztecan: Tarahumara)[140]; Sage

(a name also applied to the genus *Artemisia*, Minnesota); [Black, Prairie, White] Sage [brush] (English)[140]; Sage Brush (a name also applied to the genus *Artemisia*); Sagebrush (a name also applied to the genus *Artemisia*); Sagewort (a name also applied to the genus *Artemisia*); Silver Mugwort; [Mexican] Silver Sage-brush (English: Coahuila)[140]; Silver [Mexican] Worm-wood (English)[140]; Tavotqa <tavótka> (Uto-Aztecan: Hopi)[140]; Tsejintci ("Strong-smelly Sage", Athapascan: Chiricahua and Mescalero Apache)[140]; Weißer Beifuß (a name also applied to other species, German); Western Mugwort; [Mexican] Western Mugwort (English)[140]; Western Sage; Western-sage; White Sage; White Sagebrush; White Sagewort; White Wormwood (Iowa); White-sage; Wild Sage (Meriwether Lewis); Woolly Sage; Worm-seed; Wormseed; Wormwood (a name also applied to the genus *Artemisia*, Kansas, Nebraska, Old World). DESCRIPTION: Terrestrial perennial forb/herb or subshrub (decumbent to erect stems 8 inches to 5 feet in height and may form colonies up to 50 feet in diameter); the foliage is gray, gray-green, silver-green, white or whitish-gray; the flowers may be cream, cream-yellow, greenish, greenish-yellow, white, white-green or yellow, on some plants both the disk and ray flowers are yellow; flowering generally takes place between late May and mid-December (additional records: one for early February, one for mid-March, one for late March, one for early April, one for mid-April and two for late April). HABITAT: Within the range of this species it has been reported from mountains; mountaintops; rocky mountainsides; rocky mesas; plateaus; rock cliffs; cliff faces; bases of cliffs; rocky canyons; along rocky and sandy canyon bottoms; gorges; talus slopes; sandy bottoms of crevices; sandy bases of bluffs; buttes; rocky knolls; ledges; rocky and rocky-clayey ridges; ridgetops; rocky and loamy meadows; foothills; hills; rocky hillsides; bouldery, bouldery-gravelly-sandy, bouldery-sandy, rocky, rocky-gravelly, rocky-gravelly-loamy, rocky-loamy, rocky-clayey, shaley-sandy, stony-sandy-clayey, cobbly-loamy, gravelly, gravelly-loamy, sandy-loamy, loamy and silty-clayey slopes; alluvial fans; sandy bajadas; bouldery and rocky outcrops; amongst boulders, rocks and cobbles; bases of boulders and rocks; around ice caves; lava beds; sand dunes; bouldery-sandy debris fans; sandy banks; hilly sandy-loess prairies; plains; gravelly and sandy flats; valley floors; valley bottoms; along railroad right-of-ways; along rocky and sandy roadsides; along sandy arroyos; along bottoms of arroyos; sandy draws; gulches; rocky gullies; ravines; seeps; springs; along streams; streambeds; along creeks; along stony and sandy creekbeds; along rivers; riverbeds; along and in bouldery-rocky-sandy, rocky, cobbly, cobbly-loamy, gravelly, gravelly-loamy and sandy washes; within rocky-sandy, stony-loamy, cobbly-loamy and loamy drainages; along watercourses; bogs; ciénegas; marshes; depressions; (cobbly and silty) banks of gullies, ravines, streams, creeks and rivers; (rocky) edges of washes and ponds; along margins of river banks; (sandy) shores of lakes; sandy beaches; benches; terraces; rocky-sandy and cobbly-loamy bottomlands; floodplains; lowlands; fencerows; along ditches; rocky, rocky-sandy, cobbly and sandy riparian areas, and disturbed areas growing in wet, moist, damp and dry bouldery, bouldery-rocky-sandy, bouldery-gravelly-sandy, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, shaley-cobbly-sandy, shaley-sandy, stony, cobbly, gravelly and sandy ground; rocky loam, rocky-gravelly loam, rocky-clayey loam, stony loam, cobbly loam, gravelly loam, sandy loam, sandy-clayey loam, clayey loam and loam ground; rocky clay, stony-sandy clay, silty clay and clay ground, and silty ground, occurring from 1,200 to 11,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food and/or fiber crop; it was also noted as having been used as a drug or medication, incense and as a ceremonial item and charm. Prairie Sage is browsed by Pronghorm (*Antilocapra americana*); Elk (*Cervus elaphus*); Mule Deer (*Odocoileus hemionus*), and White-tailed Deer (*Odocoileus virginianus*); the Sage-grouse (*Centrocercus minimus*) uses the plant for feed and cover; grasshoppers feed on this plant, and i t is the host plant for the Fruit Fly *Eutreta simplex*. The foliage is reportedly aromatic. *Artemisia ludoviciana* is native to central and southern North America. *5, 6, 30, 43 (081110), 44 (050711 - color photograph), 46 (Page 940), 58, 63 (081110 - color presentation), 77 (subsp. *albula* (E.O. Wooton) K. Keck; subsp. *sulcata* (P.A. Rydberg) K. Keck), **85** (050711 - color presentation including habitat), 124 (050711), 127, 140 (Pages 56-57 & 283)*

Aster spinosus (see *Chloracantha spinosa*)

Aster tagetinus (see *Machaeranthera tagetina*)

Baccharis glutinosa (see *Baccharis salicifolia*)

***Baccharis salicifolia* (H. Ruiz Lopez & J.A. Pavon) C.H. Persoon: Mule-fat**

SYNONYMY: *Baccharis glutinosa* C.H. Persoon. COMMON NAMES: Azumiate (Hispanic); Ba'asham <baashoma> (Uto-Aztecan: Mountain Pima)[140]; Bacho'ma <bachomo> (Uto-Aztecan: Mayo)[140]; Bachomo (Hispanic); Baldag Shi (Hispanic); Bašam (Uto-Aztecan: Onavas Pima)[140]; Batamote (Spanish: Mexico, Sonora); Batamote [Guatamotie] (Spanish: Baja California, California, Sinaloa, Sonora)[140]; Black Willow (a name also applied to other species, Santa Barbara County, California); Broom Baccharis; Caaöj (Hokan: Seri)[140]; Čaguši <čagu'ši> (Uto-Aztecan: Tarahumara)[140]; Chamiso (Hispanic); Chamiso del Rio (Hispanic); Chilca; Cucamoarisha (Cora); Cuerepillo (Hispanic); Dsea Miis Ro (Hispanic); Dsea Miis Tee (Hispanic); False Water Willow; False Water-motie; False Water-wally; False Willow (a name also applied to other species); Gila Water-motie; Gila Water-wally; Gila Water Willow; Gila Willow; Groundsel Tree (a name also applied to the genus *Baccharis*); Groundsel Tree (English)[140]; Guachomó <uachama> (Uto-Aztecan: mountain Guarijío)[140]; Guagualuasi (Uto-Aztecan: mountain Guarijío)[140]); Guamate; Guatamote (Hispanic); Guatemote (Spanish); Guatarote (Hispanic); Hamaséiva (Yuman: Havasupai)[140]; Hamḍavil (Yuman: Walapai)[140]; Hanta Veél (Yuman: Mohave and Yuma)[140]; Hierba del Carbonero ("Charcoal Maker's Herb", Spanish: Valley of Mexico)[140]; Hierba del Pasmo (Spanish); Huamate; Jara ("Arrow", Spanish: Guanajuato, Texas)[140]; Jara Amarilla (Hispanic); Jara Mexicana (Hispanic); Jaral (Spanish: Guanajuato, Tamaulipas)[140]; Jarilla [Jarillo del Río] (Little

[River] Arrow", Spanish: Chihuahua, Durango, Sinaloa, Sonora)[140]; K'ídzítso Bi'tsiin Łigai <k'iłcoi bicin łagai> (Athapascan: Navajo)[140]; KáaW (Seri); Mb'axu (Oto-Manguean: Mazahua)[140]; Mule Fat; Mule-fat; Mule's Fat (English: Arizona, New Mexico)[140]; Mule's-fat; Mulefat; Mulefat Baccharis; Mulesfat; Ñehol ("Servant", Uto-Aztecan: Tohono O'odham); Ñehol ("Servant", Uto-Aztecan: Tohono O'odham)[140]; Oágam ("Brains or Marrow", Uto-Aztecan: Akimel O'odham)[140]; Paq'ily <paki> (Uto-Aztecan: Cahuilla)[140]; Pogosɨvɨ (Uto-Aztecan: Kawaiisu)[140]; Romerello; Rosin Brush; Seep Willow (a name also applied to other species); Seep Willow Baccharis; Seep-willow (a name also applied to other species); Seep-willow (English)[140]; Seep-willow Baccharis; Seepwillow (a name also applied to other species); Seepwillow Baccharis; Shu' (Chumash: Barbareño and Ineseño Chumash)[140]; Sticky Baccharis; Sticky False-willow; Sticky Seep-willow; Ṣu:ṣk Kuasĭ <šu:šk, susk, kuagsig> (Uto-Aztecan: Hiá Ceḍ O'odham, Sonora)[140]; Ṣuṣk Ku'agi <šu:šk kuagsig> (Uto-Aztecan: Tohono O'odham)[140]; <tłeł> (Athapascan: Western Apache)[140]; Tóeejí Béé'ditó <tó'iɜ^{v}i keƛ'o> (Athapascan: Navajo)[140]; Togzten (Hispanic); Tu Ta' Vi (Hispanic); Uachamo (Uto-Aztecan: Mayo, Sonora)[140]; Vara Dulce ("Sweet Bush", Spanish: Chihuahua)[140]; Wa'lurúbisi <wa'erúgesi> (Uto-Aztecan: Guarijío)[140]; Water Motie; Water-motie; Water-motor (California); Water Wally; Water Willow (a name also applied to other species); [False, Gila] Water Willow [Water-motie, Water-Wally] (English)[140]; Water-wally; Watermotie; Waterwally; Waterwillow; Willow Groundsel-tree; Willow Leafed Baccharis; Willow-leaf Baccharis; Willow-leaf False-willow; Willow-leafed Baccharis; Willow-leaved Baccharis; Wita' (Chumash: Ventureño Chumash)[140]; Xa'tam Mual (Yuman: Paipai)[140]; Xantavaíl$_{y}$ (Yuman: Maricopa)[140]; Yerba del Pasmo ("Herb for Pasmo" a name also applied to other species, Spanish: Chihuahua)[140]. DESCRIPTION: Terrestrial perennial deciduous shrub (clustered ascending and/or erect stems 1 to 15 feet in height; plants were observed and described as being 10 feet in height forming clones 6 to 13 feet in width); the bark is gray; the stems may be green to tan; the leaves may be gray, green or dark green; the disc florets (no ray florets) may be cream, cream-maroon, cream-maroon-purple, cream-white, grayish-white, off white, white, white-magenta, whitish-yellow or yellow; flowering generally takes place between mid-January and mid-November (additional record: one for late December). HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; rocky and sandy mesas; bouldery-rocky, rocky and rocky-sandy canyons; sandy canyon bottoms; along rocky, sandy and sandy-silty canyon bottoms; chasms; talus; bases of cliffs; foothills; hills; rocky hillsides; rocky, gravelly, sandy, sandy-loamy, sandy-clayey-loamy clayey-loamy, loamy and clayey slopes; bajadas; amongst rocks; alcoves; sand dunes; plains; rocky-sandy, sandy and clayey flats; valley floors (bolsons); coastal dunes; along railroad right-of-ways; along gravelly-sandy, sandy and sandy-loamy roadsides; along and in rocky and sandy arroyos; clayey bottoms of arroyos; draws; gullies; ravines (barrancas); seeps; gravelly and sandy springs; seeping springs; silty soils along streams; in bouldery-rocky, rocky and sandy streambeds; along and in bouldery creeks; along and in sandy creekbeds; along rivers; along and in rocky, gravelly, sandy and silty riverbeds; along and in bouldery-sandy, rocky, cobbly, gravelly, gravelly-sandy, sandy and silty washes; along and in bouldery-rocky and rocky-clayey drainages; along and in sandy drainage ways; along watercourses; bases of waterfalls; rock tanks; around and in ponds; lakebeds; playas; ciénegas; freshwater and saltwater marshes; swampy areas; depressions; along (sandy) banks of arroyos, springs, streams, streambeds, creeks, rivers, washes and pools; borders of washes; along (sandy, sandy-silty and clayey) edges of springs, streams, creeks, rivers, washes, ponds, lakes, playas and saltmarshes; along (clayey-loamy) margins of streams, washes and lakes; (rocky-sandy and sandy) shores of rivers and lakes; mudflats; gravel and sand bars; sandbanks; shell-mantled beach ridges; rocky and sandy beaches; sandy benches; bouldery-gravelly-sandy terraces; gravelly and sandy bottomlands; sandy floodplains; lowlands; along dikes; along dam outlets; margins of stock tanks (charcos); reservoirs; along canals; along ditches; muddy, rocky-gravelly-sandy, rocky-sandy and sandy riparian areas, and disturbed areas growing in shallow water and wet, moist, damp and dry ground in bouldery, bouldery-rocky, bouldery-gravelly-sandy, bouldery-sandy, rocky, rocky-gravelly-sandy, rocky-sandy, shaley, cobbly, cobbly-loamy, gravelly, gravelly-sandy and sandy ground; sandy loam, sandy-clayey loam, clayey loam and loam ground; rocky clay, silty clay and clay ground, and sandy silty and silty ground, occurring from sea level to 7,900 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food and/or fiber crop; it was also noted as having been used as tools, as a drug or medication and as a commodity used in personal hygiene (the leaves were used in a hair wash solution to prevent baldness). Seep Willow is useful in controlling watercourse erosion and slowing stream flow. Bees and butterflies have been observed visiting the flowers. *Baccharis salicifolia* is native to southwest-central and southern North America; Central America, and South America. *5, 6, 13 (recorded as *Baccharis glutinosa* Pers., Page 335), 15 (recorded as *Baccharis glutinosa* Pers.), 16, 28 (recorded as *Baccharis glutinosa*, color photograph 264), 30, 43 (111209), 44 (051111), 46 (recorded as *Baccharis glutinosa* Pers., Page 884), 48 (recorded as *Baccharis glutinosa*), 58 (recorded as *Baccharis glutinosa* Pers.), 63 (021512 - color presentation), 68, 77, **85** (021612 - color presentation), 115 (color presentation), 124 (051111), 127, 134, 140 (Pages 57-59, 60 & 283)*

Baccharis sarothroides A. Gray: Desertbroom

COMMON NAMES: A:n <'a:ñ> (Uto-Aztecan: Tohono O'odham)[140]; Amargo; Batamote <guatamote, huatemote> (Spanish: Mexico)[140]; Broom Baccharis; Broom Seep Willow; Broom Seep-willow; Caasot Caocl (Seri); Casol Caacöl (Hokan: Seri)[140]; Desert Broom; Desert Broom False Willow; Desert Broom False-willow; Desert-broom (English: Arizona, New Mexico)[140]; Desert-broom False Willow; Desert-broom False-willow; Desertbroom; Desertbroom Baccharis; Escoba; Escoba Amarga ("Bitter Broom", Spanish: Baja California)[140]; Grease-wood (a name also applied to other species); Grease-wood (English)[140]; Greasewood (a name also applied to other species); Groundsel (a name also applied to other species and the genus *Baccharis*); Hierba del Pasmo ("Herb for Pasmo", Spanish: Baja California)[140]; ʔI:x^{w}ír (Yuman: Cocopa)[140]; Mexican Broom; Romerillo ("Little Rosemary", Spanish: Sonora)[140]; Rosin Brush; Rosin Bush (a name also applied to other species); Rosin-brush

(a name also applied to other species); Rosinbrush (a name also applied to other species); Shooshk Vakch ("Wet Shoes", Pima); Shuushk Vakchk ("Wet Sandals/Shoes", Uto-Aztecan: Akimel O'odham)[140]; Soosk Vaks ("Wet Shoes", questionably Maricopa); Ṣuṣk Kuagĭ <su:sk, ṣuṣk kuagig> (Uto-Aztecan: Hiá Ceḍ O'odham, Sonora)[140]; Ṣuṣk Wakc <ṣuuṣk wakchk, šu:šk uwakita> (Uto-Aztecan: Tohono O'odham)[140]; Wet Shoes. DESCRIPTION: Terrestrial perennial deciduous shrub (erect stems 3 to 13 feet in height; one plant was observed and described as being 40 inches in height and 40 inches in width, one plant was observed and described as being 7 feet in height and 8 feet in width); the foliage is green or yellow-green; the flower heads (dioecious) may be cream, golden, rust, white or yellow; flowering generally takes place between mid-September and late February (additional records: one for mid-March, two for late March, two for mid-April, one for late April, one for mid-July, one for early August and one for late August). HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; mesas; rocky canyons; canyon bottoms; chasms; ridges; foothills; silty-clayey hills; rocky hillsides; bouldery-gravelly, rocky, gravelly-loamy and loamy slopes; bajadas; debris fans; terraces; sandy plains; rocky and gravelly flats; rocky valley floors; coastal plains; along rocky, rocky-gravelly-sandy-clayey-loamy, rocky-gravelly-sandy-silty-clayey-loamy, gravelly-loamy and sandy roadsides; along sandy arroyos; along sandy and clayey bottoms of arroyos; draws; gulches; gullies; springs; along streams; streambeds; along gravelly-sandy creeks; gravelly and sandy creekbeds; along rivers; along bouldery-cobbly-sandy, rocky-sandy, gravelly and sandy riverbeds; along and in cobbly, gravelly and sandy washes; along drainages; along drainage ways; waterholes; playas; ciénegas; oases; along (gravelly and sandy) banks of arroyos, rivers and washes; borders of washes; edges of washes; sandy beaches; sandy benches; terraces; bottomlands; floodplains; lowlands; mesquite bosques; along canals; along ditches; muddy and sandy riparian areas, and disturbed areas growing in muddy and damp and dry bouldery-cobbly-sandy, bouldery-gravelly, rocky, rocky-sandy, cobbly, gravelly, gravelly-sandy and sandy ground; rocky-gravelly-sandy-clayey loam, rocky-gravelly-sandy-silty-clayey loam, gravelly loam and loam ground; silty clay and clay ground, and sandy silty ground, occurring from sea level to 6,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, consider planting only male plants to eliminate seed production. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial beverage and/or fiber crop; it was also noted as having been used in the making of weapons and as a drug or medication. The pollen produced by male plants of this species may cause an allergic reaction in some individuals. *Baccharis sarothroides* is native to southwest-central and southern North America. *5, 6, 13 (Pages 338, 339-340), 15, 16, 18, 26 (color photograph), 28 (color photograph 265), 43 (111209), 44 (033111), 46 (Page 883), 48, 58, 63 (021712), 77, **85** (021712 - color presentation including habitat), 115 (color presentation), 124 (033111 - no record of species; genus record), 127, 140 (Pages 59-60, 79, 87 & 283), ADS (Tuesday, January 10, 2012, "Broom nothing to sneeze at," page A1), **WTK** (April 16, 2008)*

Baeria chrysostoma (see *Lasthenia californica* subsp. *californica*)

Baeria chrysostoma var. *gracilis* (see *Lasthenia californica* subsp. *californica*)

***Bahia absinthifolia* G. Bentham: Hairyseed Bahia**

COMMON NAMES: Bahia (a name also applied to the genus *Bahia*); Hairyseed Bahia. DESCRIPTION: Terrestrial perennial forb/herb (erect stems 4 inches to 2 feet in height; plants were observed and described as being 12 to 18 inches in height and width); the herbage may be gray, gray-green, light green, silvery-gray-green or white woolly; the disk florets may be orange, orange-yellow or yellow; the ray florets are yellow; flowering generally takes place between mid-March and mid-November). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; sandy mesas; sandy-loamy plateaus; cliff faces; rocky canyons; talus; shaley ridges; rocky ridgetops; foothills; clayey hills; rocky hillsides; bouldery escarpments; bedrock, rocky, rocky-gravelly, rocky-loamy, gravelly, clayey and silty-clayey slopes; alluvial fans; gravelly and sandy bajadas; gravelly pediment fans; rocky outcrops; amongst creosote bushes; sand dunes; sandy banks; plains; gravelly and sandy flats; basins; rocky and sandy valley floors; along rocky and sandy roadsides; within arroyos; clayey bottoms of arroyos; draws; gullies; within gravelly and sandy washes; swales; banks of ravines; terraces; floodplains; lowlands; riparian areas, and disturbed areas growing in dry rocky desert pavement; bouldery, rocky, rocky-gravelly, shaley, gravelly and sandy ground; rocky loam and sandy loam ground; silty clay and clay ground, and sandy silty ground, occurring from 1,800 to 8,800 feet, in elevation in the woodland, scrub, grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Bahia absinthifolia* is native to southwest-central and southern North America. *5, 6, 16, 28 (color photograph 395), 43 (111309), 44 (051111 - no listing under Common Names), 46 (Page 925), 63 (021712 - color presentation), 77 (color photograph #16), **85** (021712 - color presentation including habitat), 115 (color presentation), 124 (051111 - no record of species; genus record), 140 (recorded as *Bahia absinthifolia* var. *dealbata* (A. Gray) A. Gray, Page 283)*

***Baileya multiradiata* W.H. Harvey & A. Gray ex A. Gray: Desert Marigold**

SYNONYMY: *Baileya multiradiata* W.H. Harvey & A. Gray ex A. Gray var. *thurberi* (P.A. Rydberg) M.T. Kittell. COMMON NAMES: Baileya del Desierto; Cloth-of-gold; Desert Baileya; Desert Marigold (a name also applied to the genus *Baileya*); Desert-marigold (a name also applied to the genus *Baileya*); Hierba Amarilla (Spanish); Many-flowered Desert Marigold; Many-flowered Desert-marigold; Many-ray Desert-marigold; Many-rayed Desert-marigold; Paper Daisy (a name also applied to other species); Paper Flower Desert-marigold; Paper-flower Desert-marigold; Paperdaisy; Showy Desert Marigold; Showy Desert-marigold; Wild Desert-marigold; Wild Marigold (a name also applied to other species). DESCRIPTION: Terrestrial annual, biennial or perennial forb/herb (ascending and/or erect stems 6 to 40 inches in height); the foliage may be

gray-green, gray-white-green, grayish and woolly or silvery-green; the flower heads (1½ to 2 inches in width) may be lemon-yellow, orange, light yellow or yellow; flowering generally takes place between mid-January and late December but may continue year round under favorable conditions. HABITAT: Within the range of this species it has been reported from mountains; rocky and sandy mesas; rocky plateaus; rocky and sandy canyons; sandy pockets of soil in rocks; rocky bluffs; buttes; bedrock and sandy ridges; foothills; rocky, gravelly and gravelly-sandy hills; rocky, rocky-gravelly, sandy-clayey and clayey hillsides; rocky hilltops; rocky, stony-gravelly-sandy, cindery, gravelly, gravelly-sandy, gravelly-loamy, sandy, sandy-loamy and sandy-clayey slopes; rocky-sandy alluvial fans; bajadas; amongst rocks; sand hills; sand dunes; sandy embankments; bench tops; terraces; prairies; gravelly and sandy plains; gravelly, sandy and sandy-loamy flats; rocky bowls; valley floors; along gravelly, gravelly-sandy, sandy and sandy-loamy roadsides; within stony-gravelly-sandy arroyos; bottoms of arroyos; stony and gravelly draws; along streams; sandy streambeds; sandy creekbeds; along rivers; rocky riverbeds; within rocky, rocky-sandy, gravelly, gravelly-sandy and sandy washes; depressions; swales; (sandy) banks of rivers and washes; borders of washes; (gravelly) edges of washes; benches; gravelly terraces; sandy and loamy bottomlands; floodplains; ditch banks; riparian areas, and disturbed areas growing in damp and dry rocky, rocky-gravelly, rocky-sandy, stony, stony-gravelly-sandy, cindery, gravelly, gravelly-sandy and sandy ground; gravelly loam, gravelly-clayey loam, sandy loam and loam ground, and gravelly clay, sandy clay and clay ground, occurring from sea level to 7,400 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial fiber crop; it was also noted as being a commodity used in personal hygiene. The larva of the the Desert Marigold Moth (*Schinia minima*) uses the flower head in its development. Consider seeding Desert Marigold with native Lupines (*Lupinus* spp.) and Globemallows (*Sphaeralcea* spp.) for a late winter and early spring desert wildflower display. *Baileya multiradiata* is native to southwest-central and southern North America. *5, 6, 15, 16, 18, 28 (color photograph 397), 43 (111309), 44 (051111), 46 ("It is said that horses crop the heads, but fatal poisoning of sheep and goats eating this plant on overgrazed ranges has been reported.", Page 915), 48, 58, 63 (021712 - color presentation including habitat), 68 ("Desert Baileya, either fresh or dried, is poisonous to sheep and goats, but not to horses or cattle. The plant is not palatable to sheep, but the showy flower heads are relished, however, the flowering and fruiting heads are nearly twice as poisonous as the green leaves. Goats evidently do not graze the plant under range conditions, but have been poisoned in experimental feeding. Sheep losses from Desert Baileya have occurred in Arizona when green forage is scarce."), 77 (color photograph #17), 80 (This plant is listed as a Secondary Poisonous Range Plant. "The toxic principle is an unknown water-soluble compound. Plants are toxic to sheep on the range in both the green and dry state. ... Goats have been poisoned by experimental feeding but apparently do not eat the plant on the range. Both cattle and horses graze the plant on the range but no losses have been observed. Losses generally occur only when other feed is short or animals are trailed through dense stands." See text for additional information.), **85** (021812 - "*Baileya multiradiata* is reportedly toxic to livestock, especially to sheep and goats, where losses as high as 25% have been reported on overgrazed rangeland in Texas (D. W. Hill et al. 1979, 1980). Cattle and horses seem to be unaffected, or at least poisoning of these animals has gone unreported. The chemical agent responsible is believed to be hymenoxon, a sesquiterpene lactone originally found in the genus *Hymenoxys*, where it is also toxic.", color presentation), 86 (color photograph), 115 (color presentation), 124 (051111 - no record of genus or species), 127, **WTK** (April 16, 2008)*

Baileya multiradiata var *multiradiata* (see footnote 85 under *Baileya multiradiata*)

Baileya multiradiata var. *thurberi* (see *Baileya multiradiata*)

***Bebbia juncea* (G. Bentham) E.L. Greene: Sweetbush**

COMMON NAMES: Chuckwalla Delight; Chuckwalla's Delight; Junco; Rush Bebbia; Rush Sweet Bush; Rush Sweet-bush; Rush Sweetbush; Sweetbush (a name also applied to the genus *Bebbia*). DESCRIPTION: Terrestrial perennial subshrub or shrub (16 inches to 5 feet in height); the older stems are brown; the younger stems and leaves are green; the flowers (½ inch in width - disk flowers only, no ray flowers) may be cream, gold, golden-yellow, orange, orange-yellow, yellow or yellow-orange; flowering may take place throughout the year. HABITAT: Within the range of this species it has been reported from mountains; mountain summits; rocky mountainsides; rocky-sandy and sandy mesas; plateaus; cliffs; rocky cliff faces; rocky canyons; rocky canyon walls; rocky and rocky-sandy canyon bottoms; rocky bluffs; buttes; sandy-loamy ridges; foothills; bouldery and rocky hills; rocky hillsides; bouldery, bouldery-gravelly, rocky, rocky-gravelly, rocky-loamy, shaley, gravelly and sandy slopes; bouldery-stony-gravelly-sandy alluvial fans; bajadas; amongst boulders and rocks; plains; gravelly and sandy flats; sandy valley floors; beach dunes; coastal terraces; coastlines; along gravelly roadsides; within rocky-gravelly arroyos; sandy bottoms of arroyos; rocky and sandy draws; within rocky gulches; bottoms of gulches; rocky gullies; silty springs; along streams; along creeks; sandy creekbeds; along rivers; sandy riverbeds; along and in rocky, rocky-sandy, gravelly, gravelly-sandy and sandy washes; drainages; sandy drainage ways; (bouldery gravelly-sandy) banks of rivers and washes; edges of streams, rivers, washes and ponds; margins of arroyos; (bouldery and sandy) shores of rivers and lakes; rocky, rocky-sandy, gravelly and sandy beaches; sandy terraces; sandy-loamy floodplains; canals; canal banks; rocky riparian areas, and disturbed areas growing in dry desert pavement; bouldery, bouldery-stony-gravelly-sandy, bouldery-gravelly, rocky, rocky-sandy, shaley, cobbly, gravelly, gravelly-sandy and sandy ground; rocky loam, sandy loam, clayey loam and silty loam ground, and silty ground, occurring from sea level to 6,000 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: The flowers are reportedly sweet-scented. *Bebbia juncea* is native to southwest-central and southern North America. *5, 6, 13, 16, 43

(061409), 44 (051111 - color photograph), 46 (Page 912), 63 (111309 - color presentation), **85** (111309 - color presentation), 115 (color presentation), 124 (051111 - no record of genus or species), 140 (Page 85)*

***Centaurea melitensis* C. Linnaeus: Maltese Star-thistle**

COMMON NAMES: Cardo (Spanish); Centáurea-estrela-de-malta (Portuguese: Brazil); Cockspur Thistle; Coix de Malte (French); Malta Centaurea; Malta Star Thistle; Malta Star-thistle; Malta Starthistle; Malta Thistle; Maltese Centaury; Maltese Cockspur; Maltese Star Thistle; Maltese Star-thistle; Maltese Starthistle; Maltese Thistle; Malteser Flockenblume (German); Napa Star Thistle; Napa Star-thistle; Napa Starthistle; Napa Thistle; Saucy Jack; Spotted Knapweed (a name also applied to other species); Star-thistle (a name also applied to the genus *Centaurea*); Tocalote; Tocolote. DESCRIPTION: Terrestrial annual or biennial forb/herb (erect stems 4 to 40 inches in height); the foliage is blue-green or dull green; the flower heads are yellow; flowering generally takes place between early March and late July (additional records: one for mid-August, one for late August, one for early September and one for early October). HABITAT: Within the range of this species it has been reported from mountains; mesas; clayey cliffs; canyons; sandy and clayey canyon bottoms; rocky edges of bluffs; sandy-loamy ridges; clayey ridgetops; openings in forests and woodlands; meadows; hills; rocky and rocky-sandy hillsides; rocky, rocky-loamy-clayey, rocky-clayey, sandy-silty, loamy and clayey slopes; bajadas; sand hills; gravelly banks; plains; flats; valley floors; coastal marshes; railroad right-of-ways; along gravelly-sandy-loamy, gravelly-sandy-clayey-loamy, gravelly-clayey loam, sandy-loamy and clayey roadsides; along arroyos; draws; gulches; springs; along creeks; along rivers; riverbeds; along and in gravelly and sandy washes; salt marshes; depressions; banks of streams and lakes; along edges of washes and lagoons; sand bars; silty benches; sandy terraces; floodplains; dikes; along sandy edges of stock tanks (charcos and represos); ditches; along ditch banks; recently burned areas; riparian areas; waste places, and disturbed areas growing in muddy and wet, moist and dry rocky, rocky-sandy, shaley, gravelly, gravelly-sandy and sandy ground; gravelly loam, gravelly-sandy loam, gravelly-sandy-clayey loam, sandy loam, clayey loam, silty loam and loam ground; rocky-loamy clay and clay ground, and sandy silty and silty ground, occurring from sea level to 7,700 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant that poses a significant threat to native habitat. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. *Centaurea melitensis* is native to northern Africa and southern Europe and coastal islands in the North Atlantic Ocean and Mediterranean Sea. *5, 6, 15, 16, 22 (color photograph), 41 (color photograph), 43 (111409), 44 (051311 - color photograph), 46 (Page 955), 63 (051311), 68, 77, **85** (022012 - color presentation), 101 (note under *Centaurea solstitialis*), 115 (color presentation), 124 (051311 - no record of species; genus record), 127*

***Chaenactis stevioides* W.J. Hooker & G.A. Arnott: Esteve's Pincushion**

SYNONYMY: *Chaenactis stevioides* W.J. Hooker & G.A. Arnott var. *thornberi* W.P. Stockwell. COMMON NAMES: Broad Flower Pincushion; Broad-flower Pincushion; Broad Flowered Chaenactis; Broad-flowered Chaenactis; Broad-flowered Pincushion; Broad-leaved Chaenactis; Desert Pincushion (a name also applied to other species); Dusty Maiden (a name also applied to other species and the genus *Chaenactis*); Dustymaiden (a name also applied to other species and the genus *Chaenactis*); Esteve Dusty Maiden; Esteve Dusty-maiden; Esteve Dustymaiden; Esteve False Yarrow; Esteve Pincushion; Esteve-pincushion; Esteve's Dusty Maiden; Esteve's Dusty-maiden; Esteve's Dustymaiden; Esteve's Pincushion; False Yarrow (a name also applied to other species and the genus *Chaenactis*); Pincushion Flower (a name also applied to other species and the genus *Chaenactis*); Steve's (inaccurate) Dusty Maiden; Steve's (inaccurate: see Esteve's) Dusty-maiden; Steve's (inaccurate: see Esteve's) Dustymaiden; Steve's (inaccurate: see Esteve's) Pincushion; Stevia Chaenactus; Stevia Desert Chaenactus; Stevia Desert Pincushion; Stevia Dusty Maiden; Stevia Dusty-maiden; Stevia Dustymaiden; Stevia Pincushion; Stevia Pincushion Flower; Stevia Pincushion-flower; Stevia-pincushion. DESCRIPTION: Terrestrial annual forb/herb (erect stems 2 to 18 inches in height); the leaves are grayish-green; the flower heads may be cream, cream-white, pink, yellow, dull white, white, white-cream, whitish-yellow or pale yellow (rarely); flowering generally takes place between early February and mid-July (additional records: one for early January, one for mid-January and one for late November). HABITAT: Within the range of this species it has been reported from mountains; shaley mountaintops; mountainsides; mesas; plateaus; canyon rims; chalky cliffs; bouldery canyons; sandy canyon bottoms; clayey bluffs; buttes; rocky and clayey knolls; ledges; ridges; bedrock and shaley-clayey ridgetops; foothills; bouldery, rocky, rocky-clayey, gravelly, sandy and sandy-clayey hills; rocky hillsides; bedrock, bouldery, bouldery-gravelly, rocky, rocky-gravelly-loamy, rocky-sandy, rocky-sandy-loamy, rocky-clayey, shaley, cobbly-gravelly-sandy, cindery, gravelly, gravelly-sandy, sandy, sandy-loamy and sandy-clayey slopes; bouldery and sandy alluvial fans; gravelly, gravelly-sandy and silty bajadas; amongst boulders; lava fields; sand dunes; sand hummocks; wind-blown sand-ramps; blow-sand deposits; sand fields; pebbly-silty outwash areas; gravelly banks; sandy plains; gravelly, gravelly-sandy, sandy, clayey and silty flats; rocky-sandy-silty basins; sandy and silty valley floors; along gravelly-sandy, gravelly-clayey, gravelly-sandy-clayey-loamy, sandy, clayey and silty roadsides; rocky, rocky-gravelly, gravelly and sandy arroyos; springs; along streams; gravelly streambeds; in sand along creeks; riverbeds; along and in rocky, rocky-sandy, gravelly, gravelly-sandy, sandy and silty-clayey washes; drainages; drainage ways; sandy lakebeds; playas; marshes; silty swales; (gravelly-sandy and sandy) banks of washes; (sandy and sandy-silty) edges of ponds and lakes; mudflats; gravelly-sand bars; beaches; shaley benches; along terraces; sandy bottomlands; sandy floodplains; along canals; ditches; sandy-clayey banks of reservoirs; riparian areas, and disturbed areas growing in dry desert pavement; bouldery, bouldery-gravelly, rocky, rocky-gravelly, rocky-sandy, shaley, stony-sandy, cobbly-gravelly-sandy, cindery, gravelly, gravelly-sandy and sandy ground; rocky-gravelly loam, rocky-sandy loam, gravelly-sandy loam, gravelly-sandy-clayey loam and sandy loam ground; rocky clay, shaley clay, gravelly clay, sandy clay, silty clay and clay ground; rocky-sandy silty, gravelly-sandy silty, pebbly-silty, sandy silty and silty ground, and chalky ground, occurring from below sea level (-

100 feet) to 9,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication and the juice was used as a glue to mend ceremonial items. *Chaenactis stevioides* is native to southwest-central and southern North America. *5, 6, 15, 16, 28 (color photograph 269), 43 (111709), 44 (051411), 46 (Page 923), 58, 63 (111709 - color presentation), 77, **85** (051611 - color presentation), 86 (color photograph), 115 (color presentation), 124 (051411 - no record of genus or species), 127, 140 (Page 284)*

Chaenactis stevioides var. *stevioides* (see footnote 85 under *Chaenactis stevioides*)

Chaenactis stevioides var. *thornberi* (see *Chaenactis stevioides*)

***Chloracantha spinosa* (G. Bentham) G.L. Nesom: Spiny Chloracantha**

SYNONYMY: *Aster spinosus* G. Bentham. COMMON NAMES: Aster (a name also applied to other species and the Asteraceae); Buena Mujer (Spanish); Devil-weed Aster; Devilweed Aster; Mexican Devil-weed; Mexican Devilweed; Nowoh (Yaqui); Scoba (New Mexico); Skeleton Weed; Skeleton-weed; Spiny Aster; Spiny Chloracantha; Spiny Devil-weed; Spiny Devilweed; Spiny Goldenbush; Spiny-aster. DESCRIPTION: Terrestrial perennial forb/herb, subshrub or shrub (20 inches to 9 feet in height; the upper leaves are scale-like; one plant was described as being 3 to 4 feet in height and width); the branches are pale green or green; the disk florets may be orange-yellow, pale yellow or yellow; the ray florets may be cream, white or white tinged with violet; flowering generally takes place between late April and late January. HABITAT: Within the range of this species it has been reported from mountains; canyons; along canyon bottoms; rocky and rocky-clayey hillsides; alcoves; sandy debris fans; sand dunes; plains; sandy flats; valley floors; coastal plains; tidal mudflats; along railroad right-of-ways; sandy roadsides; stony arroyos; seeps; sandy springs; in sandy soils along streams; along creeks; along rivers; bouldery riverbeds; along sandy washes; drainages; along sandy drainage ways; poolbeds; in lakes; in backwaters; salt marshes; depressions; sloughs; along (sandy) banks of rivers and washes; (in shallow water at the) edges of streams and marshes; along (sandy) shores of lakes; mudflats; rocky-sandy and sandy beaches; benches; sandy terraces; sandy bottomlands; along sandy floodplains; lowlands; stock tanks (represos); along canals; along clayey banks of canals; along and in clayey-silty ditches; along clayey banks of ditches; sandy riparian areas, and disturbed areas growing in shallow water and wet, moist and dry bouldery, rocky, rocky-sandy, gravelly and sandy ground; rocky clay and clay ground, and clayey silty ground, occurring from sea level to 6,100 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be useful in controlling erosion. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop (used for gum and as a starvation food). *Chloracantha spinosa* is native to south-central and southern North America and Central America. *5, 6, 43 (111809), 44 (051711), 46 (*Aster spinosus* Benth., Page 873), 63 (022312 - color presentation), 68, 80 (Species of Aster are considered to be Rarely Poisonous and Suspected Poisonous Range Plants. “These annual and perennial forbs may act as secondary or facultative selenium absorbers, converters, and indicators and may become toxic to livestock.”), **85** (022312 - color presentation), 91 (recorded as *Aster spinosus* Benth., Page 98), 124 (051711), 127*

***Cirsium neomexicanum* A. Gray: New Mexico Thistle**

COMMON NAMES: ‘Azee’ Ditł’ooí <ʔaze’titl’oih> (Athapascan: Navajo)[140]; ‘Azee’ Hókánii <ʔazéʔ hukani> (“Round Medicine”, Athapascan: Navajo)[140]; ‘Azee’ Yishdloh (Athapascan: Navajo); Cardillo (“Little Thistle”, Spanish: New Mexico)[140]; Cardo (Spanish)[140]; Cardo Santo (Spanish: Mexico, Sonora); Čiiyavɨ (a name applied to other species in the genus *Cirsium*, Uto-Aztecan: Kawaiisu)[140]; Cuna (Uto-Aztecan: Cupeño)[140]; Cunala (Uto-Aztecan: Luiseño)[140]; Desert Thistle; Gewel <gewihol> (Uto-Aztecan: Hiá Ceḍ O’odham)[140]; Gewul (Uto-Aztecan: Tohono O’odham)[140]; Hosh Ikaz, Kǫ’ Dahosh <goda hosh> (Athapascan: Western Apache)[140]; Intermountain Thistle; Lavender Thistle; Mexican Thistle; New Mexico desert-thistle; New Mexico Thistle; Pa’bogo [Pa’bogwo] (Uto-Aztecan)[140]; Thistle (a name also applied to other species and the genus *Cirsium*); [New Mexico, Yellow] Thistle (English)[140]; Tłobindadatłidje (Athapascan: Chiricahua and Mescalero Apache)[140]; Tsíñ’ga (Uto-Aztecan: Shoshoni)[140]; Tsininga <tcíninga, ciniŋa> (Uto-Aztecan: Hopi)[140]; Yellow Thistle. DESCRIPTION: Terrestrial biennial or perennial forb/herb (erect stems 16 inches to 9½ feet in height); the leaves may be gray, gray-green, dark green or silvery; the flower heads (produced in the second and subsequent years) may be creamy-white, pale lavender, lavender, lavender-pink, pale pink, pink, pinkish-lavender, pink-purple, pink-violet, light purple, purple, rose, rose-purple, violet-purple, white, whitish-cream or white tinged with pink; flowering generally takes place between mid-February and late August (additional record: one for early January; flowering in September has also been reported). HABITAT: Within the range of this species it has been reported from mountains; bouldery mountaintops; rocky mountainsides; sandy mesas; rocky rims; cliff faces; hanging gardens; rocky and sandy-loamy canyons; canyonsides; bouldery-rocky-cobbly and rocky canyon bottoms; talus slopes; crevices in rocks; shallow pockets of soil in rocks; rocky ledges; rocky and shaley-clayey ridges; rocky-gravelly-sandy ridgetops; balsam glades; meadows; foothills; rocky and gravelly-clayey hills; rocky-gravelly-clayey hilltops; rocky, gravelly and silty hillsides; bouldery, rocky, rocky-gravelly, rocky-gravelly-clayey, rocky-silty, rocky-silty-clayey, shaley, stony, gravelly and clayey slopes; bajadas; rocky and gravelly-rocky outcrops; amongst boulders and rocks; sandy bases of rocks; sandy lava flows; sandflats; banks; sandy terraces; plains; along esplanades; rocky, sandy and clayey flats; uplands; valley floors; along rocky, gravelly, gravelly-sandy, gravelly-loamy, sandy, sandy-silty and clayey roadsides; gravelly-sandy-clayey arroyos; gulches; seeps; around springs; along streams; gravelly streambeds; along creeks; along rivers; riverbeds; within rocky, gravelly, gravelly-sandy and sandy washes;

within cobbly drainages; within rocky and sandy drainage ways; silty depressions; along (rocky, stony-gravelly and sandy) banks of streams and rivers; borders of washes; benches; sandy and loamy bottomlands; floodplains; margins of stock ponds; along canals; riparian areas, and disturbed areas growing in moist and dry cryptogamic soil; rimrock pavement; bouldery, bouldery-rocky-cobbly, rocky, rocky-gravelly, rocky-gravelly-sandy, shaley, stony, stony-gravelly, cobbly, gravelly, gravelly-sandy and sandy ground; rocky-clayey loam, gravelly loam, sandy loam and loam ground; rocky-gravelly clay, rocky-silty clay, shaley clay, gravelly clay, gravelly-sandy clay, sandy clay and clay ground, and rocky-silty, sandy-silty and silty ground, occurring from 300 to 9,400 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formation. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop; it was also noted as having been used as a drug or medication. This plant provides food for many types of insects including being a host plant for the Painted Lady Butterfly, *Vanessa cardui*. Hummingbirds have been observed visiting the flowers. Thistles (*Cirsium* spp.) provide pollen and nectar for bees, and goldfinches and other birds feed on the seeds. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop (the peeled stems were used for food); it was also noted as having been used as a drug or medication. This plant was reported to have been utilized by native peoples of North America; the stems were peeled and used for food. *Cirsium neomexicanum* is native to southwest-central and southern North America. *5, 6, 15, 16, 28 (color photograph), 43 (111809), 44 (051711 - color photograph), 46 (Page 952), 58, 63 (051711 - color presentation), 77, **85** (022412 - color presentation), 115 (color presentation), 124 (051711 - no record of species; genus record), 127, 134, 140 (Pages 63-64 & 284)*

Diaperia verna (see *Evax verna* var. *verna*)

***Dimorphotheca sinuata* A.P. de Candolle: Glandular Cape Marigold**

COMMON NAMES: African Daisy (a name also applied to other species); African-orange Daisy; Cape Marigold (a name also applied to other species and the genus *Dimorphotheca*); Cape-marigold (a name also applied to the genus *Dimorphotheca*); Glandular Cape Marigold; Glandular Cape-marigold; Margarida (Portuguese: Brazil); Namakwalandse Gosblum; Namaqualand Daisy; Namaqualand-daisy; Solvisare (Swedish); Star of the Veldt; Star-of-the-veldt; Sun-marigold (Sun Marigold is a name applied to other species). DESCRIPTION: Terrestrial annual forb/herb (2 to 12 inches in height); the disk florets are dark (nearly black) or black; the ray florets may be cream, orange, orange-yellow, pumpkin-gold or yellow; flowering generally takes place between early February and late May (additional records: one for early September; flowering beginning as early as December has been reported). HABITAT: Within the range of this species it has been reported from mountains; sandy mesas; canyons; rocky canyon bottoms; ridges; ridgetops; sandy openings in woodlands; rocky hillsides; escarpments; rocky-clayey, gravelly and sandy slopes; sandy alluvial fans; gravelly bajadas; plains; gravelly and sandy flats; valley floors; along sandy roadsides; creekbeds; riverbeds; along rocky and sandy washes; sinks, and disturbed areas growing in moist and dry rocky, gravelly and sandy ground and rocky clay ground, occurring from sea level to 4,100 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant. *Dimorphotheca sinuata* is native to southern Africa. *5, 6, 18, 43 (112009), 44 (051911), 46 (no record of genus or species), 63 (022812 - color presentation), 77 (recorded as *Dimorphotheca sinuata* DC. [*D. aurantiaca* Hort., non DC.]), **85** (022812 - color presentation), 115 (color presentation), 124 (051911 - no record species or genus)*

***Encelia farinosa* A. Gray ex J. Torrey: Brittlebush**

SYNONYMY: *Encelia farinosa* A. Gray ex J. Torrey var. *farinosa* A. Gray ex J. Torrey; *Encelia farinosa* A. Gray ex J. Torrey var. *phenicodonta* (S.F. Blake) I.M. Johnston; *Encelia farinosa* A. Gray ex J. Torrey var. *radians* T.S. Brandegee ex S.F. Blake. COMMON NAMES: Brittle Bush (a name also applied to the genus *Encelia*); Brittle-bush (a name also applied to the genus *Encelia*, Arizona); [White] Brittle-bush (English: Arizona, Sonora)[140]; Brittlebush (a name also applied to the genus *Encelia*); Brittlebush Encelia; Brown-center Brittlebush (var. *phenicodonta*); Button Brittlebush; California Desert Brittlebush; Choyoguo ("Tar Bush", Uto-Aztecan: Mayo, Sonora)[140]; Common Brittle Bush; Common Brittle-bush; Common Brittlebush; Cotx ("Acrid Smell", Hokan: Seri)[140]; Desert Brittle Bush; Desert Brittle-bush; Desert Brittlebush; Farinose Brittlebush; Farinose Encelia; Farinose Goldenhills; Goldenhills (English: Arizona)[140]; Hierba Cenisa, Hierba Ceniza ("Ashy Herb", Spanish: Sonora)[140]; Hierba de Gusano; Hierba de las Ánimas ("Soul Herb", Spanish: Sonora)[140]; Hierba del Bazo <vaso> (Enlarged Spleen Herb", Spanish: Sonora)[140]; Hierba del Gusano (Spanish: Sonora); Hierba del Vaso; Incienso ("Incense", Spanish: Arizona, Baja California, California and New Mexico)[140]; Incienso Brittle Bush; Incienso Brittle-bush; Incienso Brittlebush; Pa'akal (Uto-Aztecan: Cahuilla)[140]; Palo Blanco ("White bush", Spanish: Sonora)[140]; Rama Blanca ("White Branch", Spanish: Sonora)[140]; Tahavis (Uto-Aztecan: Mountain Pima)[140]; Tohaves (Uto-Aztecan: Hiá Ceḍ O'odham)[140]; Tohavs (Uto-Aztecan: Akimel O'odham)[140]; Tohawes (Uto-Aztecan: Tohono O'odham)[140]; White Brittle Bush; White Brittle-bush (Arizona); White Brittlebush; Yerba de la Vaca ("Cow Herb", Spanish: Paipai)[140]; Wóláchíí' Bitsiįį' Bił Nát'oh <wóláčí?bici?iči bił nát'oh> (Athapascan: Navajo)[140]. DESCRIPTION: Terrestrial perennial evergreen (leaves will be shed under extreme drought conditions) subshrub or shrub (stems 1 to 6 feet in height, the relatively few branches located beneath a covering of leaves gives this plant a rounded appearance; one plant was observed and described as being 2 feet in height and width); the foliage may be dark green, pale gray-green, silvery-gray, silvery-gray-green, silvery-green, silvery or whitish; the disk florets are brown, brown-maroon, brown-purple, maroon-brown, orange-yellow, purple, dark purple or yellow; the ray florets may be yellow or yellow-orange (the flowers appear 6 to 12 inches above or beyond the end of the foliage); flowering generally takes place between early November and mid-June (additional records: three for early July, four for late August, one for early September, two for mid-

October; the primary flowering period generally occurs February through May). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; rocky and gravelly mesas; cliffs; bases of cliffs; rocky and shaley canyons; rocky canyon walls; rocky, rocky-sandy, gravelly and sandy canyon bottoms; talus slopes; bluffs; buttes; rocky ledges; along ridges; rocky ridgetops; sandy meadows; foothills; rocky and sandy hills; hilltops; bouldery, rocky, stony and cobbly hillsides; bedrock, bouldery-gravelly, rocky, rocky-sandy, rocky-loamy, stony, gravelly, gravelly-clayey, sandy, loamy and clayey slopes; bouldery-stony-gravelly-sandy, rocky and rocky-sandy-loamy alluvial fans; gravelly-sandy bajadas; gravelly pediments; bouldery and rocky outcrops; amongst boulders and rocks; lava flows; sand dunes; banks; cobbly, sandy and clayey plains; rocky-sandy, gravelly, gravelly-sandy and sandy flats; uplands; rocky and gravelly-sandy valley floors; coastal dunes; sandy coastal plains; coastal beaches; sandy railroad right-of-ways; along rocky, sandy and clayey roadsides; rocky and sandy arroyos; sandy-silty bottoms of arroyos; around springs; along creeks; creekbeds; along rivers; sandy riverbeds; along and in rocky, stony, gravelly, gravelly-sandy and sandy washes; within sandy drainages; drainage ways; along swales; borders of washes; edges of arroyos and washes; shores of rivers; sand bars; sandy beaches; gravelly benches; gravelly, rocky shelves; gravelly-sandy and sandy terraces; rocky-sandy floodplains; mesquite bosques; canal banks; riparian areas, and disturbed areas growing in moist and dry gravelly desert pavement; bouldery, bouldery-stony-gravelly-sandy, bouldery-gravelly, rocky, rocky-sandy, shaley, stony, cobbly, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-sandy loam and loam ground; gravelly clay, sandy clay and clay ground (where it reportedly does poorly), and sandy silty ground, occurring from sea level to 4,800 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, and has an estimated life span of 32 years. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food (candy), and/or paint (varnish) crop; it was also noted as having been used as fuel, as a tool and waterproofing agent and as a drug or medication. According to the Fire Effects Information System, Brittlebush competes strongly with Buffelgrass (*Pennisetum ciliare*); however, it may be top-killed or completely killed by fire, wind dispersed seed produced by plants located off site may quickly aid in the reestablishment of this plant on burned areas. It is an early colonizer of disturbed areas. Plants with yellow ray flowers and dark purple disk flowers have historically been referred to as variety *phenicodonta*, it has been observed growing with the typical plant (which has yellow disk flowers). The Brittle Bush is browsed by Desert Bighorn Sheep (*Ovis canadensis* subsp. *mexicana*) and Desert Mule Deer (*Odocoileus hemionus* subsp. *crooki*), and birds and rodents feed on the seeds. *Encelia farinosa* is native to southwest-central and southern North America. *5, 6, 13 (Pages 293-294, color photograph: Plate V., Page 407), 16, 18, 26 (color photograph), 28 (color photograph 403), 43 (112009), 44 (022912 - color photograph), 46 (Page 904), 48, 58, 63 (022912 - color presentation including habitat), 77 (recorded as *Encelia farinosa* A. Gray var. *farinosa*), **85** (022912 - color presentation), 86 (color photograph), 91 (Pages 188-192), 115 (color presentation), 124 (051911 - no record of species or genus), 127, 140 (Pages 67-68 & 284), **WTK** (August 4, 2005)*

Encelia farinosa var. *farinosa* (see *Encelia farinosa*)

Encelia farinosa var. *phenicodonta* (see *Encelia farinosa*)

Encelia farinosa var. *radians* (see *Encelia farinosa*)

***Ericameria laricifolia* (A. Gray) L.H. Shinners: Turpentine Bush**

SYNONYMY: *Haplopappus laricifolius* A. Gray. COMMON NAMES: Ericameria (a name also applied to the genus *Ericameria*); Gold-brush (English)[140]; Hierba del Pasmo (Herb for Pasmo", a name also applied to other species, Spanish)[140]; Larch-leaf [Narrow-leaved] Golden-weed (English)[140]; Larch-leaf Goldenweed; Narrow-leaved Golden-weed; Roundleaf Rabbitbrush; Turpentine Brush (a name also applied to other species); Turpentine Brush [Bush] (English)[140]; Turpentine Bush (a name also applied to other species); Turpentine Golden-bush; Turpentine Goldenbush; Turpentine-brush (a name also applied to other species); Turpentine-brush Ericameria; Turpentine-bush (a name also applied to other species); Turpentine-bush Ericameria; Turpentinebush; Xal ShaB U (Yuman: Paipai)[140]. DESCRIPTION: Terrestrial perennial subshrub or shrub (ascending to erect stems 10 to 50 inches in height; one plant was observed and described as being 1 foot in height and 2 to 3 feet in width, one plant was observed and described as being 16 inches in height and 40 inches in width, one plant was observed and described as being 40 inches in height and 40 inches in width); the young stems are green; the leaves may be gray, gray-green, gray-silver, green or yellow-green; the disk florets may be orange-yellow or yellow, the ray florets may be orange-yellow or yellow; flowering generally takes place between mid-August to late January (additional records: one for mid-February, one for late March, one for late April, two for early May, one for mid-May, four for late May, one for early July and one for late July); the fruits are white. HABITAT: Within the range of this species it has been reported from mountains; bouldery-gravelly mountainsides; mesas; plateaus; rock walls; bouldery bases of cliffs and walls; bouldery and rocky canyons; along bouldery and rocky-clayey canyon bottoms; rocky talus; crevices in rocks; rocky knolls; rocky ledges; rocky and gravelly ridges; stony ridgetops; ridgelines; clearings in woodlands; bouldery foothills; rocky hills; rocky and silty hillsides; bases of hills; bedrock, rocky, rocky-gravelly, gravelly, gravelly-loamy-silty sandy-loamy, loamy-clayey and clayey-loamy slopes; bouldery and rocky outcrops; amongst boulders and rocks; bases of boulders; bouldery coves; plains; gravelly and sandy flats; rocky basins; valley floors; along gravelly, gravelly-sandy, sandy and loamy roadsides; along arroyos; draws; gulches; rocky gullies; seeps; along streams; along streambeds; along creekbeds; bouldery-cobbly-sandy riverbeds; along and in bedrock, bouldery and sandy washes; drainage ways; borders of washes; (gravelly-sandy) edges of washes; margins of arroyos; gravelly terraces; floodplains; riparian areas, and disturbed areas growing in dry rocky desert pavement; bouldery, bouldery-cobbly-sandy, bouldery-gravelly,

rocky, rocky-gravelly, rocky-sandy, cobbly, gravelly, gravelly-sandy and sandy ground; rocky-gravelly-sandy loam, gravelly-silty loam, clayey loam and loam ground; rocky clay and gravelly clay ground, and gravelly-loamy silty and silty ground, occurring from 1,000 to 8,000 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The flowers are visited by many types of insects. *Ericameria laricifolia* is native to southwest-central and southern North America. *5, 6, 13 (recorded as *Haplopappus laricifolius* A. Gray, Pages 330-331), 15, 16, 28 (color photograph 481), 43 (112109), 44 (022912), 46 (recorded as *Aplopappus laricifolius* Gray, Page 861), 58, 63 (022912 - color presentation including habitat), 77, 85 (022912 - color presentation), 115 (color presentation), 124 (022912 - no record of species; genus record), 140 (Pages 68-70, 87 & 284), **HR***

Erigeron divergens J. Torrey & A. Gray: Spreading Fleabane

SYNONYMY: *Erigeron divergens* J. Torrey & A. Gray var. *typicus* A.J. Cronquist. COMMON NAMES: Ats'os Níí'iinit <ʔacose níʔin'iɬ> (Athapascan: Navajo)[140]; 'Azee' [Ch'il] Łibá <aze'[c'il] labahi, labaʔigi> (Athapascan: Navajo)[140]; 'Azee' Ná'oołtádii <azee'ná'ołtxátiih> (Athapascan: Navajo)[140]; <c'os be'yi'c'ol, béyi.c'ol> ("Vein Spurter", Athapascan: Navajo)[140]; Chį́įh 'Azee' <c'ís ʔazéʔ> (Athapascan: Navajo)[140]; Desert Fleabane (a name also applied to other species); Dibetsétah Ch'il <dibecetah ch'il> (Athapascan: Navajo)[140]; Diffuse Daisy; Divergent Fleabane; Fleabane (a name also applied to other species and the genera *Conyza* and *Erigeron*); [Desert, Spreading] Fleabane (English)[140]; Fleabane Daisy (a name also applied to other species and the genus *Erigeron*); Green Rabbit Bush; Hierba Pulguera ("Herb for Fleas", Spanish: Mexico)[140]; K'aalógiidą́ą́ (Athapascan: Navajo)[140]; Layered Daisy; Na'ashjé'iidą́ą́' (Athapascan: Navajo)[140]; Spreading Daisy (English: Utah)[140]; Spreading Daisy Fleabane; Spreading Daisy-fleabane; Spreading Fleabane; Spreading Fleabane Daisy; Spreading Fleabane-daisy; Wóláchíí Dą́ą́ <wolaciʔ da> (Athapascan: Navajo)[140]. DESCRIPTION: Terrestrial biennial forb/herb (ascending and/or erect stems 2¾ to 28 inches in height; plants were observed and described as being 8 inches in height and 6 inches in width, plants were observed and described as being 12 inches in height and 16 inches in width); the stems may be reddish at base; the leaves are a dull gray-green or green; the disk florets may be orange-yellow or yellow; the ray florets may be blue, blue-lavender, blue-purple, pale lavender, lavender, lavender-blue, lavender-pink, lavender-purple, pale pink, pink, pinkish, pinkish-white, light purple, pale violet, white or white tinged with lavender or purple; flowering may take place throughout the year with flowering records for mid-January through late December. HABITAT: Within the range of this species it has been reported from mountains; rocky, gravelly-loamy and sandy mountaintops; rocky crags; mountainsides; rocky-gravelly and sandy mesas; rocky and sandy plateaus; rocky and sandy rims; rocky cliffs; bases of cliffs; rocky, gravelly, gravelly-loamy and sandy canyons; rocky canyon walls; along rocky, stony, sandy and sandy-silty canyon bottoms; talus slopes; sandy pockets of soil in rock; bluffs; shaley buttes; bases of hogbacks; rocky and sandy knolls; rocky ledges; bouldery and rocky ridges; rocky and gravelly ridgetops; sandy clearings in forests and woodlands; rocky, rocky-sandy, stony, gravelly, sandy and clayey meadows; margins of meadows; cinder cones; bases of cinder cones; rocky foothills; bouldery, bouldery-rocky and rocky hills; rocky hilltops; rocky, rocky-sandy and sandy hillsides; escarpments; bouldery, bouldery-rocky-gravelly, rocky, rocky-loamy, rocky-clayey, shaley, stony, cobbly, cobbly-sandy-clayey, gravelly, gravelly-sandy, gravelly-sandy-loamy, gravelly-loamy, gravelly-clayey, gravelly-silty-loamy, sandy, sandy-loamy, sandy-clayey, sandy-clayey-loamy, loamy, clayey, clayey-loamy, silty and silty-loamy slopes; bajadas; bedrock, bouldery, rocky and shaley outcrops; amongst boulders and rocks; lava flows; sand hills; sandy dunes; rocky-sandy ashflows; banks; sandy benchlands; steppes; stony, gravelly, gravelly-loamy, sandy, sandy-loamy, loamy, silty and silty-loamy prairies; rocky and sandy plains; muddy, bouldery-rocky-gravelly, bouldery-gravelly-sandy, rocky, gravelly, gravelly-sandy, gravelly-clayey-loamy, sandy, sandy-loamy, sandy-clayey, sandy-clayey-loamy, loamy, clayey, clayey-loamy and silty-loamy flats; rocky and clayey basins; glens; rocky and sandy valley floors; along railroad right-of-ways; along roadcuts; along rocky, gravelly, gravelly-clayey-loamy, sandy, sandy-clayey-loamy and clayey roadsides; along sandy arroyos; bottoms of arroyos; bouldery and rocky-sandy draws; bottoms of draws; gulches; stony and sandy ravines; within seeps; springs; along rivulets in silted beaver ponds; along streams; along rocky-gravelly, rocky-sandy and gravelly-loamy streambeds; in sand along creeks; along cobbly-loamy, gravelly-sandy and sandy creekbeds; gravelly and sandy soil along rivers; along sandy riverbeds; along and in bedrock, gravelly, gravelly-sandy, sandy and silty washes; along and in rocky and clayey drainages; along and in rocky, rocky-silty-clayey, sandy, silty-clayey and clayey drainage ways; within watercourses; along waterways; boggy areas; ciénegas; marshes; depressions; sinks; swales; (muddy and gravelly-sandy) banks of streams, creeks, rivers and ponds; borders of washes; (sandy-silty) edges of rivers, vernal pools and playas; margins of streams, creeks, rivers and lakes; along shores of lakes; mudflats; gravel, gravelly-sand and sand bars; beaches; sandy and silty-loamy benches; clayey shelves; sandy terraces; sandy bottomlands; sandy, sandy-silty, clayey and silty floodplains; clayey lowlands; mesquite bosques; sandy fencerows; along levees; edges of stock tanks; along sandy shores and rocky embankments of reservoirs; along and in sandy ditches; gravelly, gravelly-sandy and sandy riparian areas; sandy waste places; recently burned areas of forests, and disturbed areas growing in muddy and wet, moist, damp and dry cryptogamic soil; rimrock pavement and bouldery, bouldery-rocky, bouldery-rocky-gravelly, bouldery-gravelly-sandy, rocky, rocky-gravelly, rocky-sandy, shaley, shaley-sandy, stony, cobbly, cindery, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-gravelly loam, rocky-sandy loam, rocky-clayey loam, cobbly loam, gravelly loam, gravelly-sandy loam, gravelly-clayey loam, gravelly-silty loam, sandy loam, sandy-clayey loam, clayey loam, silty loam and loam ground; rocky clay, rocky-silty clay, cobbly-sandy clay, gravelly clay, sandy clay, silty clay, powdery clay and clay ground, and rocky silty, sandy silty and silty ground, occurring from 300 to 12,700 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication and the plants were used in the home as a good luck charm. The flowers may be visited by butterflies. *Erigeron divergens* is native to west-central and southern North America. *5, 6, 15, 16, 43 (112209), 44 (030212), 46 (Page 880), 48

(genus), 58, 63 (030212 - color presentation including habitat), 77, **85** (030312 - color presentation including habitat), 86 (color photograph), 115 (color presentation), 124 (030212), 127, 140 (Pages 70-71 & 284)*

Erigeron divergens var. *typicus* (see *Erigeron divergens*)

Evax multicaulis (see *Evax verna* var. *verna*)

***Evax verna* C.S. Rafinesque (var. *verna* is the variety reported as occurring in Arizona): Spring Pygmycudweed**

SYNONYMY: (for *E.v.* var. *verna*: *Diaperia verna* (C.S. Rafinesque) J.D. Morefield; *Evax multicaulis* A.P. de Candolle). COMMON NAMES: Cotton-rose; Evax (a name also applied to the genus *Evax*); Manystem Evax; Rabbit Tobacco; Roundhead Rabbit-tobacco; Spring Pygmy-cudweed; Spring Pygmycudweed. DESCRIPTION: Terrestrial annual forb/herb (prostrate stems 1 to 10 inches in height); the herbage is light gray, light grayish, grayish, greenish or white woolly; the flower heads are white; flowering generally takes place between mid-March and late May. HABITAT: Within the range of this species it has been reported from mountains; mountainsides; mesas; rocky canyons; ridgetops; hills; hilltops; rocky slopes; bajadas; prairies; clayey-loamy plains; rocky, gravelly and loamy flats; valley floors; along clayey roadsides; within sandy arroyos; sandy-silty bottoms of arroyos; streambeds; creekbeds; along rivers; riverbeds; along and in gravelly, gravelly-sandy and sandy washes; depressions; swales; edges of washes; margins of ciénegas; channel bars; benches; gravelly-sandy bottomlands; floodplains; lowlands; mesquite bosques; around stock tanks; ditches; riparian areas, and disturbed areas growing in dry rocky, gravelly, gravelly-sandy and sandy ground; clayey loam and loam ground; clay ground, and sandy silty ground, occurring from 400 to 5,600 feet in elevation in the forest, grassland, desertscrub and wetland ecological formations. NOTE: *Evax verna* is native to south-central and southern North America. *5, 6, 43 (112609), 44 (052311 - no records listed under Common Names of genus or species), 46 (recorded as *Evax multicaulis* DC., Page 885), 63 (030112), **85** (030112 - color presentation), 124 (052311 - no record of genus or species), 140 (recorded as *Diaperia verna* (Rafinesque) Moerfield [*Evax verna* Rafinesque], Page 284)*

***Evax verna* C.S. Rafinesque var. *verna*: Spring Pygmycudweed**

SYNONYMY: *Diaperia verna* (C.S. Rafinesque) J.D. Morefield, *Evax multicaulis* A.P. de Candolle. COMMON NAMES: Cotton-rose (a name also applied to the species); Evax (a name also applied to the species and the genus *Evax*); Manystem Evax (a name also applied to the species); Rabbit Tobacco (a name also applied to the species); Roundhead Rabbit-tobacco (a name also applied to the species); Spring Pygmy-cudweed (a name also applied to the species); Spring Pygmycudweed (a name also applied to the species). DESCRIPTION: Terrestrial annual forb/herb (clumpy prostrate and spreading from 1 to 10 inches in height); the herbage is light gray, light grayish, grayish, greenish or white woolly; the flowers are white; flowering generally takes place between mid-March and late May. HABITAT: Within the range of this species it has been reported from mountains; mountainsides; mesas; canyons; ridgetops; hills; hilltops; rocky slopes; bajadas; clayey-loamy plains; rocky, gravelly and loamy flats; valley floors; along clayey roadsides; within sandy arroyos; along rivers; riverbeds; along and in gravelly, gravelly-sandy and sandy washes; depressions; swales; edges of washes; margins of ciénegas; benches; channel bars; gravelly-sandy bottomlands; floodplains; mesquite bosques; around stock tanks; riparian areas and disturbed areas growing in dry rocky, gravelly, gravelly-sandy and sandy ground; clayey loam and loam ground, and clay ground, occurring from 400 to 4,900 feet in elevation in the forest, grassland, desertscrub and wetland ecological formations. NOTE: *Evax verna* var. *verna* is native to south-central and southern North America. *5, 6, 15 (recorded as *Evax multicaulis* DC.), 16 (recorded as *Evax multicaulis* DC.), 43 (112609), 44 (052311 - no records listed under Common Names of genus, species or variety), 46 (recorded as *Evax multicaulis* DC., Page 885), 58 (recorded as *Evax multicaulis* DC.), 63 (112709), 77 (recorded as *Evax multicaulis* DC.), **85** (052311 - color presentation), 124 (052311 - no record of genus, species or variety)*

Filago californica (see *Logfia californica*)

Franseria ambrosioides (see Ambrosia ambrosioides)

Franseria confertiflora (see *Ambrosia confertiflora*)

Franseria deltoidea (see *Ambrosia deltoidea*)

Gnaphalium canescens (see *Pseudognaphalium canescens* subsp. *canescens*)

Gnaphalium wrightii (see *Pseudognaphalium canescens* subsp. *canescens*)

***Gutierrezia microcephala* (A.P. de Candolle) A. Gray: Threadleaf Snakeweed**

COMMON NAMES: Broomweed (a name also applied to other species and the genus *Gutierrezia*); Hair-worm Snakeweed; Little-head Snakeweed; Matchweed (a name also applied to other species); Perennial Snakeweed; Resinweed; Small-head Matchbrush; Small-head Snakeweed; Small-headed Matchweed; Smallhead Snakeweed; Snakeweed (a name also applied to other species and the genus *Gutierrezia*); Sticky Snakeweed (a name also applied to other species); Thread Leaf Snake Weed; Thread Snakeweed; Thread-leaf Snake-weed; Thread-leaf Snakeweed; Thread-leaved Snakeweed; Threadleaf Snakeweed;

Turpentineweed (a name also applied to other species). DESCRIPTION: Terrestrial perennial subshrub or shrub (erect stems 2 inches to 4½ feet in height); the lower portion of the stem may be brown with the upper portion of the stem being green or yellow; the leaves are dark gray-green; the disk florets may be gold or yellow; the ray florets are yellow; flowering generally takes place between mid-June and late November, plants may cease flowering during a summer drought (additional records: two for early January, one for late January, one for late February, one for late March, one for early April, one for mid-April and three for late December). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; sandy and sandy-silty mesas; plateaus; rocky rims of canyons and craters; rocky spurs; rocky bases of cliffs; along rocky and gravelly-loamy canyons; rocky canyon walls; along rocky canyon bottoms; rocky gorges; knolls; rocky ridges; sandy ridgetops; clearings in forests; glades; meadows; foothills; bouldery, rocky, sandy and silty hills; gravelly-silty hilltops; rocky hillsides; bedrock, bouldery-cobbly-gravelly, rocky, shaley, cobbly, cindery, gravelly, gravelly-loamy, sandy and clayey-loamy slopes; sandy bajadas; rocky outcrops; amongst boulders; alcoves; rocky lava flows; sand hills; sand dunes; stony and sandy plains; gravelly, sandy and silty-loamy flats; basins; rocky valley floors; gravelly-sandy valley bottoms; along rocky railroad right-of-ways; along rocky, gravelly, gravelly-loamy and sandy roadsides; along arroyos; bottoms of arroyos; within gravelly draws; gullies; seeps; springs; along streams; gravelly-loamy streambeds; creekbeds; along rivers; along rocky, gravelly-sandy and sandy washes; silty lakebeds; ciénegas; along (gravelly and sandy) banks of streams, creeks, rivers and washes; (sandy) edges of washes and marshes; mudflats; beaches; benches; cobbly terraces; floodplains; mesquite bosques; ditches; sandy riparian areas, and disturbed areas growing in wet (rarely reported) and dry rocky desert pavement; bouldery, bouldery-rocky, bouldery-cobbly-gravelly, rocky, shaley, stony, cobbly, cindery, gravelly, gravelly-sandy and sandy ground; gravelly loam, sandy loam, clayey loam and silty loam ground; rocky clay, shaley clay, gravelly clay, sandy clay and clay ground, and gravelly silty, sandy silty and silty ground, occurring from 1,200 to 8,700 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication, as cooking tools and as decorations on prayer sticks. Threadleaf Snakeweed may live to be 10 to 18 years of age; however, the average lifespan is less than ten years. Threadleaf Snakeweed invades disturbed areas and may serve as an indicator of overgrazed rangelands reducing both native plant diversity and forage values, populations may best be reduced by increasing native grass competition. *Gutierrezia microcephala* is native to southwest-central and southern North America. *5, 6, 13 (Page 317), 15, 16, 28 (note under *Gutierrezia sarothrae*), 43 (112909), 44 (052411 - color photograph), 46 (Snake-weeds "are more or less poisonous to sheep and goats when eaten in quantity, but are unpalatable and are seldom grazed. It is said that *G. microcephala* absorbs selenium in large quantity on certain soils.", Page 853), 58, 63 (030512 - color presentation), 68, 77, 80 (This species is listed as a Major Poisonous Range Plant. "The poisonous principal is apparently a saponin. It is most toxic at earlier stages of growth during early leaf development and when growing on sandy soils. ... Livestock apparently eat small amounts of the relatively unpalatable snakeweed without serious consequences. Therefore, range improvement to provide alternate, desirable feed and to reduce snakeweed infestations through grass competition will control most losses." See text for additional information.), **85** (030512 - color presentation), 86 (note under *Gutierrezia sarothrae*), 124 (052411 - no record of species; genus record), 127, 140 (pages 73, 74 & 284)*

Gutierrezia sarothrae (F.T. Pursh) N.L. Britton & H.H. Rusby: Broom Snakeweed

COMMON NAMES: Broom Matchbrush; Broom Matchweed; Broom Snakeweed (a name also applied to other species); Broom [Broomweed, Brownweed, Threadleaf] Snakeweed (English)[140]; Broombrush; Broomsnakeweed; Broomweed (a name also applied to other species and the genus *Gutierrezia*); Broomweed Snakeweed; Brownleaf Snakeweed; Cayaye; Ch'il Diilyésii [Yázhí] <č'il dilyési, c'il dihesi [yazi], tc'iltiiyéesiih> (Athapascan: Navajo)[140]; Ch'ilą́ągo (Athapascan: Western Apache)[140]; Collálle <coyaje, coyaye> (Spanish: New Mexico)[140]; Common Matchweed; Escoba de la Víbora ("Snake's Brush", Spanish: New Mexico)[140]; Gohwa:yo (Yuman: Walapai)[140]; Green Greasewood; Hierba de la Vibora; Hierba de San Nicolás ("Saint Nicholas's Herb", Spanish: Nuevo León)[140]; Jaribomenáguat (Uto-Aztecan: Sonora)[140]; Kia'hapoko (Language Isolate: Zuni)[140]; Kindlingweed (a name also applied to other species); Kojaji (Kiowa Tanoan: Tewa)[140]; Kû'kikoioûmp (Uto-Aztecan: Shoshoni)[140]; Kwitaweyampeh (Uto-Aztecan: Shoshoni)[140]; [Pas] Maa'övi <pamnavi> (Uto-Aztecan: Hopi)[140]; Match Brush; Match-brush; Match [Sheep, Turpentine-bush, yellow-top] -Weed (English)[140]; Matchbrush; Matchweed (a name also applied to other species); Perennial Broomweed; Perennial Snakeweed; Pohniyavɨ (Uto-Aztecan: Kawaiisu)[140]; Rabbit-weed; Rabbitweed; Resinweed (a name also applied to other species); Rosita ("Little Rose", Spanish: San Louise Potosí); Round-head Broomweed; Sheepweed; Shpûmp (Uto-Aztecan: Ute)[140]; Siw Taḍsagi (Uto-Aztecan: Hiá Ceḍ O'odham)[140]; Siw U'us (Uto-Aztecan: Tohono O'odham)[140]; Siwĭ Tatṣagĭ <siwstaḍ, tatṣ-ṣagi, tad.xxagĬ> (Uto-Aztecan: Tohono O'odham)[140]; Snake Broom; Snake-broom; Snakebroom; Sqúmpï (Uto-Aztecan: Southern Paiute)[140]; Stinkweed (a name also applied to other species); Snakeweed (a name also applied to other species); Threadleaf Snakeweed; Tł'iish Bichagosh'oh (Athapascan: Western Apache)[140]; Tsatsakwma'övi <tcatcákmá:'ɜvi> (Uto-Aztecan: Hopi)[140]; Turpentineweed; Yellow Top (a name also applied to other species); Yellowtop (a name also applied to other species); Yellow-weed; Yerba de la Víbora ("Snake's Herb" a name also applied to other species, Spanish: Mexico)[140]; Yerba de San Nicholas. DESCRIPTION: Terrestrial perennial forb/herb, subshrub or shrub (sprawling or erect stems 4 to 40 inches in height with a rounded crown; plants were observed and described as being 6 inches in height and 4 inches in width, plants were observed and described as being 6 to 8 inches in height and 4 to 8 inches in width, plants were observed and described as being 12 inches in height and width); the stems are brown, grayish, green, straw-colored or tan; the leaves are a dark gray-green, green or yellow green; the disk flowers are cream-white (rarely reported) or yellow; the ray flowers are cream-white (rarely reported) or yellow; flowering generally takes place between mid-April and early February with the flowering period lasting from 2 to 3 weeks to 2 months depending upon available soil moisture (additional records: one for early

March and one for mid-March). HABITAT: Within the range of this species it has been reported from rocky mountains; bouldery-rocky-sandy peaks; mountainsides; rocky, rocky-gravelly, gravelly and sandy mesas; sandy plateaus; cliffs; along rocky rims of canyons; along rocky and sandy canyons; canyon walls; rocky, stony, sandy and sandy-silty canyon bottoms; talus slopes; crevices in rocks; shaley, gravelly and sandy bluffs; bases of bluffs; clayey buttes; hogbacks; rocky, stony, sandy and chalky knolls; rocky and sandy ledges; rocky and rocky-sandy ridges; rocky and gravelly ridgetops; clearings in forests and woodlands; sandy meadows; foothills; rocky, gravelly, sandy and clayey hills; gravelly hilltops; rocky, rocky-gravelly-sandy, rocky-gravelly-clayey, stony-clayey, gravelly, sandy and clayey hillsides; rocky-clayey bases of hills; escarpments; bouldery, bouldery-cobbly-clayey, bouldery-sandy, bouldery-loamy, rocky, rocky-gravelly, rocky-gravelly-sandy, rocky-sandy, rocky-loamy, rocky-clayey, shaley, shaley-loamy, shaley-clayey, stony, stony-gravelly, stony-cobbly, cobbly-loamy, cobbly-silty-loamy, cindery, gravelly, gravelly-sandy, gravelly-loamy, gravelly-clayey, gravelly-clayey-loamy, sandy, sandy-loamy, sandy-clayey, sandy-clayey-loamy, sandy-silty, loamy, clayey, clayey-loamy and silty-loamy slopes; rocky-sandy bases of slopes; bajadas; rocky and shaley-sandy outcrops; amongst boulders and rocks; sandy lava flows; sand hills; sand dunes; gravelly and sandy-clayey banks; stony-gravelly benches; shaley breaks; terraces; steppes; sandy, clayey and silty-loamy prairies; bouldery-gravelly, rocky, stony, cobbly-sandy, pebbly, sandy, sandy-clayey and chalky plains; rocky, rocky-cobbly-clayey, rocky-gravelly, stony-cobbly, gravelly, gravelly-loamy, gravelly-clayey, sandy, sandy-clayey, clayey, clayey-loamy and chalky flats; sandy basins; hollows; rocky and sandy valley floors; sandy valley bottoms; along rocky, gravelly, gravelly-loamy, gravelly-clayey, sandy, sandy-loamy and silty roadsides; along and in rocky-gravelly arroyos; bottoms of arroyos; rocky, rocky-silty and sandy draws; bottoms of draws; gulches; within grassy gullies; bottoms of gullies; sandy ravines; bottoms of ravines; seeps; springs; along streams; along and in bouldery-rocky, stony, clayey and silty-loamy streambeds; along and in creeks; along muddy and rocky-sandy, stony, cobbly-gravelly, sandy and sandy-clayey creekbeds; along rivers; sandy riverbeds; along and in rocky, rocky-sandy, shaley, cobbly, gravelly and sandy washes; along and in rocky-clayey-silty, sandy and clayey drainages; sandy-loamy lakebeds; playas; sandy bowls; clayey, clayey-loamy and silty-clayey depressions; swales; (rocky, sandy and clayey-silty) banks of streams, creeks, rivers, washes and lakes; along (clayey) edges of arroyos, rivers, washes and playas; (muddy) margins of arroyos, streams, streambeds, creeks, rivers and ponds; along (rocky-sandy and sandy-clayey) shores of creeks and lakes; cobbly-gravel, gravel and sand bars; benches; sandy shelves; gravelly, sandy and sandy-silty terraces; rocky, cobbly-loamy, sandy and sandy-loamy bottomlands; cobbly, gravelly, gravelly-sandy, sandy and sandy-loamy floodplains; mesquite bosques; fencerows; around stock ponds; around mucky-clayey and clayey reservoirs; along rocky and sandy shores of reservoirs; along sandy ditches; ditch banks; rocky-sandy, gravelly-sandy, sandy and sandy-clayey riparian areas; waste places, and disturbed areas growing in muddy (rarely recorded) and mucky (rarely recorded) and wet (rarely recorded), moist (rarely recorded), damp (rarely recorded) and dry bouldery, bouldery-rocky, bouldery-rocky-sandy, bouldery-gravelly, bouldery-sandy, rocky, rocky-gravelly, rocky-gravelly-sandy, rocky-sandy, shaley, shaley-sandy, stony, stony-cobbly, stony-gravelly, cobbly, cobbly-gravelly, cobbly-sandy, cindery, gravelly, gravelly-sandy, pebbly and sandy ground; bouldery loam, rocky loam, shaley loam, cobbly loam, cobbly-sandy loam, cobbly-silty loam, gravelly loam, gravelly-clayey loam, sandy loam, sandy-clayey loam, clayey loam, silty loam and loam ground; bouldery clay, bouldery-cobbly clay, rocky clay, rocky-cobbly clay, rocky-gravelly clay, shaley clay, stony clay, stony-loamy clay, cindery clay, gravelly-clayey, sandy clay, loamy clay, silty clay and clay ground; bouldery-rocky silty, rocky silty, rocky-clayey silty, sandy silty, clayey silty and silty ground, and chalky ground, occurring from sea level to 10,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial fiber (stems used to make brushes and brooms) and/or dye (yellow) crop; it was also noted as having been used as a fodder, as a drug or medication, for decorations, as ceremonial items and as a commodity used in personal hygiene. Broom Snakeweed is browsed by Rocky Mountain Bighorn Sheep (*Ovis canadensis*); American Bison (*Bos bison*); Mule Deer (*Odocoileus hemionus*) including Desert Mule Deer (*Odocoileus hemionus* subsp. *crooki*); Black-tailed Jack Rabbit (*Lepus californicus*), and Pronghorn (*Antilocapra americana*); the seed is eaten by many small birds and mammals including the Northern Grasshopper Mouse (*Onychomys leucogaster*), Banner-tailed Kangaroo Rat (*Dipodomys spectabilis*), Ord's Kangaroo Rat (*Dipodomys ordii*), Lesser Prairie Chicken (*Tympanuchus pallidicinctus*) and Scaled Quail (*Callipepla squamata*), and the plant provides cover for many small birds and mammals. *Gutierrezia sarothrae* is native to central and southern North America. *5, 6, 13 (Pages 314-316), 15, 28 (color photograph 409), 43 (062610), 44 (112710), 46 (Snake-weeds "are more or less poisonous to sheep and goats when eaten in quantity, but are unpalatable and are seldom grazed.", Page 853), 58, 63 (062610 - color presentation), 68, 80 (This species is listed as a Major Poisonous Range Plant. "The poisonous principal is apparently a saponin. It is most toxic at earlier stages of growth during early leaf development and when growing on sandy soils. Broom Snakeweed is also a secondary or facultative selenium absorber. ... Livestock apparently eat small amounts of the relatively unpalatable snakeweed without serious consequences. Therefore, range improvement to provide alternate, desirable feed and to reduce snakeweed infestations through grass competition will control most losses." See text for additional information.), **85** (112810 - color presentation), 86 (color photograph), 101 (color photograph), 115 (color presentation), 124 (111110 - no record of species; genus record), 127, 140 (Pages 72-74 & 284)*

Haplopappus laricifolius (see *Ericameria laricifolia*)

Haplopappus tenuisectus (see *Isocoma tenuisecta*)

***Hedosyne ambrosiifolia* (A. Gray) J.L. Strother: Ragged Marsh-elder**

SYNONYMY: *Iva ambrosiifolia* (A. Gray) A. Gray. COMMON NAMES: Marsh Elder (a name also applied to the genus *Iva*); Ragged Marsh-elder; Ragged Marshelder; Rag Sumpweed (Sumpweed is a name also applied to the genus *Iva*). DESCRIPTION: Terrestrial annual forb/herb or subshrub (erect stems 32 inches to 5 feet in height); the flower heads are yellow; flowering generally takes place between early August and late October (additional record: flowering beginning as early as May and ending as late as November and/or December has been reported). HABITAT: Within the range of this species it has been reported from mountains; bouldery bases of cliffs; canyons; canyon bottoms; along ridges; rocky ridgetops; gravelly hills; bouldery escarpments; bedrock and rocky slopes; alluvial fans; rocky outcrops; amongst boulders; rocky flats; valley floors; sandy roadsides; arroyos; gulches; springs; along streams; riverbeds; along and in sandy washes; ciénegas; terraces; mesquite bosques; floodplains; riparian areas, and disturbed areas growing in dry bouldery, rocky, gravelly and sandy ground, occurring from 1,000 to 6,600 feet in elevation in the grassland, desertscrub and wetland ecological formations. NOTE: *Hedosyne ambrosiifolia* is native to southwest-central and southern North America. *5, 6, 15 (recorded as *Iva ambrosiaefolia* (Gray) Gray), 43 (113009), 44 (052511 - no record of species or genus; record of the genus *Iva*), 46 (recorded as *Iva ambrosiaefolia* Gray, Page 892), 63 (030612), 77 (recorded as *Iva ambrosiaefolia* A. Gray), **85** (030612 - color presentation), 124 (052511 - no record of species or genus; record of the genus *Iva*)*

Helenium thurberi A. Gray: Thurber's Sneezeweed

COMMON NAMES: Thurber Sneezeweed; Thurber's Sneezeweed. DESCRIPTION: Terrestrial annual forb/herb (erect stems 16 to 40 inches in height); the foliage is yellow-green; the disk florets may be brown, reddish-brown or yellow-orange; there are no ray florets; flowering generally takes place between early April and late October (additional record: flowering beginning as early as March has been reported). HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; rocky and stony canyons; along rocky canyon bottoms; hillsides; rocky slopes; valley floors; gravelly arroyos; bottoms of arroyos; sandy draws; silty bottoms of draws; ravines; seeps; along streams; within sandy streambeds; along creeks; creekbeds; riverbeds; along rocky-sandy and sandy washes; drainages; around ponds; marshy places; along (sandy) banks of rivers; (sandy) edges of streams and creeks; (sandy) margins of creeks; floodplains; culverts; silty canal banks; within ditches, and riparian areas growing in wet, moist, damp and dry rocky, rocky-sandy, stony, gravelly and sandy ground; clay ground, and silty ground, occurring from sea level to 5,900 feet in elevation in the woodland, grassland, desertscrub and wetland ecological formation. NOTE: *Helenium thurberi* is native to southwest-central and southern North America. *5, 6, 15, 43 (113009), 44 (052611 - no record of species; genus record), 46 (Page 929), 58, 63 (030612), **85** (030612 - color presentation), 124 (052611 - no record of species; genus record)*

Helianthus annuus C. Linnaeus: Common Sunflower

COMMON NAMES: Alizeti (Swahili); Annual Sunflower (a name also applied to other species); Chimalati (Mexico); Comb Flower (a name also applied to other species); Comb-flower (a name also applied to other species); Common Annual Sunflower; Common Garden Sunflower; Common Sunflower (a name also applied to other species); Common Western Sunflower; Common Wild Sunflower; Flor de Sol (Spanish); Garden Sunflower; Girasol (a name also applied to other species, Spanish); Girassol (Portuguese); Gold (a name also applied to other species); Golden (a name also applied to other species); Grand Soleil (French); Haebaragi (transcribed Korean); Himaawari (Japanese Rōmaji); Hopi Sunflower; Isoauringonkukka; Kansas Sunflower (a name also applied to other species); Kirik-tara-kata ("Yellow Eyes", Pawnee); Larea Ball; Larea-bell; Larrabell; Le Tournesol (French); Mira Sol (a name also applied to other species, New Mexico); Mirasol ("Looks at the Sun", Spanish); Omatts'aba (Zuni); Soleil; Sonnenblume (German); Solros (Swedish); Sunflower (a name also applied to other species, the genus *Helianthus* and to the Asteraceae); Tournesol (French); Wah'cha-zizi ("Yellow Flower", Dakota); Wallflower (misapplied); Western Sunflower (a name also applied to other species); Wild Artichoke (a name also applied to other species); Wild Sun-flower (a name also applied to other species); Wild Sunflower (a name also applied to other species); Zha-zi ("Yellow Weed", Omaha-Ponca). DESCRIPTION: Terrestrial annual forb/herb (erect stems 1 to13 feet in height); the leaves are green; the disk florets may be black, brown, dark brown, brownish, maroon, purple, dark purple, dark purple-brown, reddish, reddish-brown, reddish-purple, rust-brown or yellow; the ray florets may be golden, orange-yellow, yellow or yellow with red-brown tips; the anthers are brownish to black; flowering generally takes place between early February and early November (additional records: one for mid-January, one for late November and two for late December). HABITAT: Within the range of this species it has been reported from mountains; mountaintops; silty-loamy mesas; plateaus; cliffs; rocky walls; canyons; rocky and sandy canyon bottoms; talus slopes; bluffs; rocky, gravelly-sandy, gravelly-clayey, sandy-clayey and clayey buttes; clayey knolls; rocky ridges; gravelly-clayey ridgetops; rocky, sandy and loamy meadows; clayey foothills; rocky, stony and sandy hills; hilltops; bouldery, rocky and clayey hillsides; rocky-gravelly, shaley-silty, stony-gravelly, cobbly-sandy-clayey, gravelly, gravelly-loamy, gravelly-sandy, gravelly-loamy, gravelly-clayey, sandy, sandy-loamy, clayey, clayey-loamy, silty-loamy and silty-clayey slopes; bajadas; pediments; rocky outcrops; amongst rocks; sandy hummocks; sand bluffs; sand dunes; banks; steppes; rocky, sandy, clayey-loamy, silty-clayey and silty-clayey-loamy prairies; sandy, sandy-clayey and chalky plains; muddy, gravelly, gravelly-silty, sandy and clayey flats; clayey, clayey-loamy, silty-clayey and silty-clayey-loamy uplands; sandy valley floors; along gravelly railroad right-of-ways; shaley roadcuts; along muddy-clayey, rocky-gravelly, shaley, cindery, gravelly, gravelly-loamy, sandy, sandy-loamy, loamy-clayey and clayey roadsides; within sandy arroyos; bottoms of arroyos; within sandy, loamy and loamy-clayey draws; clayey bottoms of draws; within gullies; bottoms of gullies; ravines; seeps; springs; along streams; gravelly-clayey and clayey streambeds; along and in creeks; muddy, sandy and clayey creekbeds; along rivers; gravelly-sandy riverbeds; bouldery and bouldery-cobbly-sandy, stony, gravelly and sandy riverbeds; along and in rocky, rocky-sandy, sandy, clayey and silty washes; within rocky-clayey-silty, gravelly, sandy, clayey and silty-loamy drainages; along and in rocky drainage ways;

watersheds; vernal pools; around ponds; around lakes; ciénegas; freshwater and saltwater marshes; blowout areas; sandy depressions; clay pans; swales; along (gravelly and sandy) banks of streams, creeks, creekbeds, rivers and lakes; along (silty) edges of streams, rivers, ponds and lakes; around and along (silty) margins of ponds and lakes; along and in (sandy, sandy-loamy, gravelly-clayey, clayey and clayey-loamy) shores of creeks, rivers, ponds, lakes and backwaters; stony-sand, cobbly-stony-gravel and gravel bars; stony-gravelly and loamy benches; gravelly-sandy and sandy bottomlands; mucky and clayey floodplains; gravelly lowlands; along sandy fencelines; around sandy-clayey stock tanks; along mucky-clayey-loamy margins and shores of reservoirs; canals; canal banks; along and in gravelly, sandy, sandy-loamy and silty ditches; along ditch banks; sandy and clayey riparian areas; waste places, and disturbed areas growing in mucky; muddy, and wet, moist, damp and dry bouldery, bouldery-cobbly-sandy, rocky, rocky-gravelly, rocky-sandy, shaley, stony, stony-gravelly, stony-sandy, cobbly-stony-gravelly, cindery, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-clayey loam, gravelly loam, sandy loam, sandy-clayey loam, clayey loam, silty loam and loam ground; rocky clay, cobbly-sandy clay, gravelly clay, sandy clay, loamy clay, silty clay and clay ground; rocky-clayey silty, shaley silty, gravelly-sandy silty, gravelly silty, sandy silty and silty ground, and chalky ground, occurring from sea level to 9,900 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, candy, cooking agent, fodder, fiber, and/or dye (red) crop; it was also noted as having been used for lighting, as a tool, as musical instruments, as a drug or medication, as ceremonial items, decorations and as a commodity used for personal hygiene. The flower heads follows the sun through the day. *Helianthus annuus* is native to northwest-central, south-central and southern North America. *5, 6, 15, 18, 28 (color photograph), 43 (061709), 44 (052611), 46 (Page 903), 48, 58, 63 (030612 - color presentation including habitat), 68, 77, 80 (The Common Sunflower is listed as a Rarely Poisonous and Suspected Poisonous Range Plant. "This common, annual forb has been reported to accumulate toxic levels of nitrate."), **85** (030712 - color presentation), 86 (color photograph), 101 (color photograph), 115 (color presentation), 124 (052611), 127*

***Helianthus petiolaris* T. Nuttall: Prairie Sunflower**

COMMON NAMES: Deceptive Sunflower (for subsp. *fallax*); Girasol (a name also applied to other species, Spanish); Kansas Sunflower (a name also applied to other species); Lesser Sunflower; Narrowleaf Sunflower; Petioled Sunflower (for subsp. *petiolaris*); Pikkuauringonkukka; Plains Sunflower; Prairie Sun-flower; Prairie Sunflower; Sand Sunflower (North Dakota); Sandhill Sunflower (Kansas); Sunflower (a name also applied to other species, the genus *Helianthus* and to the Asteraceae); Western Sunflower (a name also applied to other species, Iowa); Wild Sunflower (a name also applied to other species). DESCRIPTION: Terrestrial annual forb/herb (erect stems 6 inches to 6½ feet in height; plants were reported that were 12 inches in height with a crown 6 inches in width); the foliage is bluish-green, green or greenish; the disk florets are brown, dark brown, red, reddish-brown or yellow (rarely); the ray florets are gold, golden-yellow, lemon-yellow, orange or yellow; the anthers are purplish to reddish; flowering generally takes place between early May and early November (additional records: one for mid-March, one for late March and one for late December). HABITAT: Within the range of this species it has been reported from mountains; mesas; plateaus; bases of cliffs; canyons; sandy canyon bottoms; sandy bluffs; gravelly meadows; cindery craters; hills; bases of escarpments; rocky, gravelly-clayey, sandy, sandy-clayey and clayey slopes; bouldery outcrops; amongst shale rocks; sandy lava flows; sand hills; sand dunes; sandy hummocks; sand flats; sandy steppes; sandy prairies; sandy plains; sandy, sandy-loamy and clayey flats; uplands; sandy valley floors; along rocky-clayey, cindery-gravelly, gravelly, gravelly-clayey-loamy, sandy, sandy-loamy, clayey-loamy and silty roadsides; along and in sandy arroyos; rocky draws; gulches; within ravines; along streams; sandy streambeds; along creeks; creekbeds; along rivers; sandy riverbeds; along and in gravelly-sandy, sandy, sandy-clayey and sandy-silty washes; sandy-loamy playas; swales; banks of washes; (sandy) edges of washes; clayey and silty benches; terraces; sandy bottomlands; along floodplains; mesquite bosques; within ditches; riparian areas; waste places, and disturbed areas growing in moist and dry bouldery, bouldery-sandy, rocky, shaley, cindery, cindery-gravelly, gravelly, gravelly-sandy, pebbly and sandy ground; rocky-sandy loam, shaley-clayey loam, gravelly loam, gravelly-clayey loam, sandy loam, sandy-clayey loam and clayey loam ground; rocky clay, gravelly clay, sandy clay and clay ground, and sandy silty and silty ground, occurring from 300 to 9,700 feet in elevation in the forest, woodland, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food and fodder crop; it was also noted as having been used as a drug or medication, for ceremonial items, decorations and as an indicator of the seasons (the amount of flowers related to the amount of rainfall and quality of the harvest). *Helianthus petiolaris* is native to northwest-central, south-central and southern North America. *5, 6, 28 (color photograph 413), 43 (061709), 44 (052711), 46 (Page 903), 58, 63 (030712 - color presentation), 68, 77, **85** (030712 - color presentation), 86 (note under *Helianthus annuus*), 124 (052711), 127*

***Hymenoclea monogyra* J. Torrey & A. Gray: Singlewhorl Burrobrush**

SYNONYMY: *Ambrosia monogyra* (J. Torrey & A. Gray) J.L. Strother & B.G. Baldwin. COMMON NAMES: Arrow-wood (English)[140]; Burro Brush (a name also applied to other species and the genus *Ambrosia*); [Single-whorl] Burro-brush [bush] (English)[140]; Burrobrush (a name also applied to other species and the genus *Ambrosia*); Burrobush (a name also applied to other species); Cheese-bush (a name also applied to other species); Cheese-bush (English)[140]; Cheeseweed Burrobrush; Hécota <jécota, jejego> (Spanish: Guarijío, Mayo, Onavas Pima)[140]; Hierba del Pasmo ("Herb for Treating Pasmo", Spanish: Sonora)[140]; 'I:vadhod (Uto-Aztecan: Hiá Ceḍ O'odham); I'ivdag <i'ivdad> (Uto-Aztecan: Onavas Pima)[140], Iivdad (Pima Bajo); Iivdat (Gila Pima); Iivdhat (Uto-Aztecan: Akimel O'odham)[140]; 'I:wadhoḍ <'i:watoḍ, i:watodh, iivadhoḍ> (Uto-Aztecan:

Tohono O'odham)[140]; Jeco (Uto-Aztecan: Guarijío, Mayo)[140]; Jécota (Spanish); Jejego (Spanish); Leafy Burrobrush; Leafy Burrobush; O'gach (Yuman: Walapai)[140]; Mono Burrobrush; Païab (Uto-Aztecan: Southern Paiute)[140]; Romerillo (a name also applied to other species, Spanish); Romerillo [Dulce] ("[Sweet] Little Rosemary", Spanish: Baja California, Sinaloa, Sonora)[140]; Single-whorl Burro-brush; Single-whorl Burrow-brush; Single-whorl Burro-bush; Single-whorl Cheesebush; Singlewhorl Burrobrush; Singlewhorl Burrobush; Singlewhorl Cheesebush; Slender Burro Brush; Slender Burrow-brush; Slender Burrowbrush; <tłeł> (Athapascan: Western Apache)[140]; White Burrobush (a name also applied to other species); Winged Ragweed (English)[140]. DESCRIPTION: Terrestrial perennial deciduous subshrub or shrub (erect stems 1 to 13 feet in height; plants were observed and described as being 71 inches in height and 79 inches in width); the foliage may be gray-green, green or olive-green; the flower heads may be cream, light green, greenish-white, white, yellow or yellow-cream; flowering generally takes place between early March and early June and again between early September and mid-December (additional records: two for mid-January, one for mid-March, one for early April, one for mid-May and two for late July; flowering in August has also been reported). HABITAT: Within the range of this species it has been reported from mountains; clayey mesas; bases of cliffs; rocky canyons; along rocky and sandy canyon bottoms; rocky-sandy buttes; foothills; bases of foothills; rocky hills; rocky hillsides; bouldery-gravelly, rocky, rocky-clayey and sandy slopes; sand dunes; plains; rocky and gravelly flats; basins; valley floors; valley bottoms; gravelly banks; sandy flats; valley floors; coastal sand dunes; coastal plains; along rocky, gravelly-sandy, gravelly-loamy, sandy-loamy and clayey roadsides; along and in rocky, gravelly and sandy arroyos; rocky, gravelly and sandy bottoms of arroyos; gulches; within sandy ravines; springs; along streams; along and in streambeds, along creeks; along and in gravelly-sandy and sandy creekbeds; along rivers; along and in cobbly-sandy, gravelly and sandy riverbeds; along and in rocky, rocky-sandy, cobbly, gravelly, gravelly-sandy, sandy and sandy-clayey washes; along and in gravelly drainages; along watercourses; ciénegas; along (gravelly and gravelly-sandy) banks of rivers and washes; borders of washes; along edges of arroyos and rivers; margins of rivers and washes; (sandy) sides of rivers; gravel bars; gravelly-sandy benches; sandy terraces; bottomlands; sandy floodplains; mesquite bosques; within ditches; rocky edges of ditches; along canals; sandy riparian areas, and disturbed areas growing in damp and dry bouldery-gravelly, rocky, rocky-sandy, cobbly, cobbly-sandy, gravelly, gravelly-sandy and sandy ground; gravelly loam and sandy loam ground, and rocky clay, sandy clay and clay ground, occurring from sea level to 6,100 feet elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, and is useful in controlling erosion. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. Burrowbrush is a host plant of the Burrobrush Leaf Beetle, *Leptinotarsa lineolata*; rodents, including the Merriam's Kangaroo Rat (*Dipodomys merriami*), feed on the buds and sprouts. *Hymenoclea monogyra* is native to southwest-central and southern North America. *5, 6, 13 (Pages 301-302), 15, 43 (062009), 44 (030912 - recorded as *Ambrosia monogyra*), 46 (Page 894), 48 (genus), 58, 63 (030812 - color presentation), **85** (030912 - color presentation), 91 (Page 236), 124 (030812 - no record of species or genus; record of the genus *Ambrosia* L.), 127, 140 (recorded as *Ambrosia monogyra* (Torrey & A. Gray) Strother & B.G. Baldwin, Pages 55-56, 68,87 & 283), **WTK** (April 16, 2008)*

Hymenothrix wislizeni A. Gray: Trans-Pecos Thimblehead

COMMON NAMES: Burro-brush (English)[140]; Golden Ragweed; Thimblehead (a name also applied to the genus *Hymenothrix*); [Trans-Pecos] Thimblehead (English: Arizona, California, Texas)[140]; Trans-Pecos Thimblehead; TransPecos Thimblehead; Wislizen's Burro-brush (English)[140]; Wislizenus Beeflower; Yellow Thimblehead. DESCRIPTION: Terrestrial annual or biennial forb/herb (erect stems 8 inches to 5 feet in height); the foliage is green; the disc florets may be creamish to bright yellow; the ray florets may be green-yellow or yellow; the anthers are yellowish; flowering generally takes place between early June and early December (additional record: one for late March). HABITAT: Within the range of this species it has been reported from mountains; mesas; clefts in cliffs; rocky canyons; crevices in lava; buttes; meadows; foothills; rocky and stony-gravelly hills; rocky and gravelly hillsides; escarpments; bouldery-rocky-sandy, rocky, rocky-stony, rocky-clayey-loamy, sandy, sandy-loamy and sandy-clayey slopes; alluvial fans; bajadas; amongst boulders; rocky lava beds; plains; gravelly, sandy and clayey flats; valley floors; valley bottoms; along gravelly, gravelly-sandy-clayey-loamy, gravelly-silty, sandy and sandy-clayey-loamy roadsides; along and in sandy arroyos; along sandy bottoms of arroyos; springs; sandy streambeds; along creeks; along rivers; sandy riverbeds; along and in rocky, gravelly, gravelly-sandy, sandy and clayey washes; drainages; (gravelly-sandy and sandy) banks of washes; (sandy) edges of washes; terraces; floodplains; mesquite bosques; around stock tanks, and disturbed areas growing in dry bouldery, bouldery-rocky-sandy, rocky, rocky-stony, rocky-sandy, stony-gravelly, gravelly, gravelly-sandy and sandy ground; rocky-clayey loam, gravelly-sandy-clayey loam, sandy loam, sandy-clayey loam and loam ground; gravelly clay, sandy clay and clay ground, and gravelly silty ground, occurring from 1,300 to 7,600 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: Javelina (*Peccari tajacu*) may browse this plant. Leaf-cutting Ants (*Acromrymex* spp.) and Lesser Goldfinch (*Carduelis psaltria*), House Finch (*Carpodacus mexicanus*) and other birds feed on the seed. *Hymenothrix wislizeni* is native to southwest-central and southern North America. *5, 6, 15, 16, 43 (062009), 44 (052811 - no species record; genus record), 46 (Page 920), 58, 63 (030912), 77, **85** (030912 - color presentation), 115 (color presentation), 124 (052811 - no record of species or genus), 140 (Pages 76-78 & 285), **WTK** (April 16, 2008)*

Isocoma coronopifolia (A. Gray) E.L. Greene: Common Goldenbush

COMMON NAMES: Burroweed (a name also applied to other species); Common Goldenbush; Common Goldenweed; Common Jimmyweed; Goldenaster; Goldenbush (a name also applied to other species); Goldenweed (a name also applied to other species); Hierba del Burro (a name also applied to other species, Spanish). DESCRIPTION: Terrestrial perennial subshrub (erect stems 8 inches to 2 feet in height); the flower heads are gold-yellow; based on few flowering records located, flowering

generally takes place between early July and mid-October (flowering records: two for early July, one for late July, three for late September and two for mid-October; flowering beginning as early as May and June has been reported). HABITAT: Within the range of this species it has been reported from mountains; mesas; canyons; rocky-sandy canyon walls; foothills; rocky and sandy slopes; gravelly bajadas; plains; gravelly-sandy flats; basins; along roadsides; draws; within sandy-clayey washes; (sandy) edges of marshy areas; floodplains; ditch banks, and disturbed areas growing in dry rocky, rocky-sandy, gravelly, gravelly-sandy and sandy ground; gravelly-clayey loam ground; sandy clay ground, and sandy silty ground, occurring from sea level to 5,600 feet in elevation in the woodland, grassland, desertscrub and wetland ecological formations. NOTE: *Isocoma coronopifolia* is native to southwest-central and southern North America. *5, 6, 43 (120209 - *Isocoma coronopifolia* Greene), 44 (052811 - no record of species; genus record), 46 (no record of species), 63 (052811 - this species is not recognized as being present in Arizona), **85** (030912), 124 (052811 - no record of species or genus), 140 (Page 285)*

***Isocoma tenuisecta* E.L. Greene: Burroweed**

SYNONYMY: *Haplopappus tenuisectus* (E.L. Greene) S.F. Blake. COMMON NAMES: Bitter-weed (English)[140]; Burro Weed; Burro-weed (a name also applied to other species); Burro-weed (English)[140]; Burrow Golden-bush; Golden-bush (English)[140]; Goldenweed; Burroweed (a name also applied to other species); Goldenweed (a name also applied to other species); Hierba del Burrow (a name also applied to other species); Shrine Golden-weed (English)[140]; Shrine Jimmy-weed (English)[140]; Shrine Jimmyweed; Tatṣagĭ <taḍshagi, tatshagi> (Uto-Aztecan: Tohono O'odham, Arizona)[140]; Turpentine Bush (a name also applied to other species); Turpentine-bush (English)[140]. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (erect stems 6 to 40 inches in height and 12 to 40 inches in width); the bark is gray or whitish; the leaves may be gray, green, silvery or yellow-green; the flower heads may be cream, tawny-yellow or yellow; flowering generally takes place between late July and mid-November (additional records: three for late June, one for early July, three for early December and two for late December). HABITAT: Within the range of this species it has been reported from rocky mountains; mountainsides; mesas; canyons; along canyon bottoms; ridges; rocky-loamy foothills; rocky hills; rocky and gravelly hillsides; rocky, gravelly, sandy and sandy-clayey slopes; bajadas; rocky outcrops; amongst rocks; rocky-clayey plains; gravelly, gravelly-clayey, sandy and clayey flats; valley floors; along gravelly roadsides; sandy arroyos; draws; gulches; sandy bottoms of ravines; around streams; along and in sandy and sandy-silty washes; drainages; within clayey drainage ways; clayey playas; (rocky, gravelly-sandy and sandy) banks of arroyos and washes; borders of washes; sides of washes; mudflats; alluvial terraces; gravelly floodplains; mesquite bosques; ditch banks; gravelly-sandy and sandy riparian areas; waste places, and disturbed areas growing in dry rocky, gravelly, gravelly-sandy and sandy ground; rocky loam and gravelly-sandy loam ground; rocky clay, gravelly clay, sandy clay and clay ground, and sandy silty ground, occurring from 2,000 to 7,300 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat and may live to be from 7 to 20 years of age. The fruits are gathered by a Leaf-cutting Ant (*Acromrymex* sp.). *Isocoma tenuisecta* is native to southwest-central and southern North America. *5, 6, 13 (recorded as *Haplopappus tenuisectus* (Greene) Blake Pages 327-328) 15, 16, 28 (note under *Isocoma wrightii*), 43 (062009), 44 (031012 - no record of species; genus record), 46 (recorded as *Aplopappus tenuisectus* (Greene) Blake, Page 862), 58, 63 (031012), 68, 77, 80 (This species is listed as a Major Poisonous Range Plant. "The poisonous principle of burroweed is the alcohol, tremetol. All parts of the plant are poisonous, although the dried flowers are most often eaten. ... Burroweed produces the affliction called "trembles." Poisoned animals tremble violently when exercised and usually lie down in the normal position. Upon arising, the trembling recurs. Appetite is markedly depressed, and the severely poisoned animal eventually stays down until it dies. Acetonemia, characterized by the odor of acetone in the urine and on the breath, is also a product of burroweed poisoning. ... Burroweed is generally low in palatability, but is eaten in quite large amounts when better forage is not available. Special precautions must be taken with new animals brought into burroweed-infested areas as they are more likely to graze the plants. Native livestock apparently become sickened from eating the plant and tend to avoid it. An adequate supply of good feed during harsh times when livestock might be more prone to consume burroweed, may reduce its consumption." See text for additional information.), 85 (031012 - color presentation), 115 (color presentation), 124 (031012 - no record of species or genus), 140 (Pages 78-79 & 285), **WTK** (April 16, 2008)*

Iva ambrosiifolia (see *Hedosyne ambrosiifolia*)

Lactuca scariola (see *Lactuca serriola*)

***Lactuca serriola* C. Linnaeus: Prickly Lettuce**

SYNONYMY: *Lactuca scariola* C. Linnaeus. COMMON NAMES: Alface-de-espinho (Portuguese: Brazil); Alface-silvestre (Portuguese); Azee' Hókánii Łibáhígíí <azee'xokhánii'łipáhikíih> (Athapascan: Navajo)[140]; Ch'il 'abe' <c'il ʔabeʔ, coh, nca.gi'> (Athapascan: Navajo)[140]; China Lettuce; Common Prickly Lettuce; Compass Plant (a name also applied to other species); Compass Plant (English)[140]; Compass-plant (a name also applied to other species); Compassplant; English Thistle (a name also applied to other species); Escarola (Spanish); Horse Thistle (a name also applied to other species); Horse Thistle (English)[140]; Horse-thistle (a name also applied to other species); It'ąą'dotł'izhí (Athapascan: Western Apache)[140]; Khass El-baqar (Arabic); Khass El-homar (Arabic); Laitue Sauvage (French); Lecheras ("One Who Sells Milk", Spanish: Spain)[140]; Lechuga Espinaca [Silvestre] ("[Wild] Spinach Lettuce", Spanish: Sonora)[140]; Lechuguilla ("Little Lettuce" a name also applied to other species, Spanish: Mexico)[140]; Lechuuwa (Uto-Aztecan: Yaqui)[140]; Lettuce (a name also applied to other species and the genus *Lactuca*; noted as being under cultivation by English colonists by 1671); Licú [Ricú] (Yuman: Cocopa)[140]; Milk Thistle (misapplied, a name applied to another species and the genus *Silybum*); Milk-thistle (misapplied, a name applied to another

species and to the genus *Silybum*); Prickly Lettuce (a name also applied to other species); Prickly [Opium, Acrid, Wild] Lettuce (English)[140]; Prickly Wild Lettuce; Saĝwátųkápi (Uto-Aztecan: Ute)[140]; Serriola Prickly Lettuce; Stachellattich (German); Taggsallat (Swedish); Wild Lettuce (a name also applied to other species); Wild Opium (a name also applied to other species); Wilder Lattich (German). DESCRIPTION: Terrestrial annual or biennial forb/herb (erect stems 6 inches to 10 feet in height); the stems are whitish; the leaves are medium green; the ray florets may be light blue, greenish-white, lemon-yellow, pinkish, pink-white, purple, rose, whitish, pale yellow or yellow (sometimes with bluish or purplish tips); flowering generally takes place between late May and late October (additional records: one for early February, two for late March and one for mid-December). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; mesas; plateaus; rims of canyons; bases of cliffs; along and in rocky canyons; bedrock, rocky, rocky-gravelly-sandy and rocky-sandy-silty canyon bottoms; scree slopes; rock slides; talus slopes; shaley bluffs; bases of bluffs; buttes; rocky ridges; ridgetops; loamy-clayey clearings and openings in forests; loamy-clayey and silty-clayey meadows; cinder cones; bases of cinder cones; rocky, rocky-gravelly and gravelly hills; hilltops; rocky hillsides; bedrock, bouldery, rocky, shaley, stony-sandy, stony-loamy, cindery, gravelly, gravelly-sandy, gravelly-loamy, sandy, sandy-loamy, sandy-clayey, clayey, silty-loamy, silty-clayey-loamy and humusy-loamy slopes; bedrock and rocky outcrops; lava flows; rocky and gravelly-clayey banks; breaks; grassy steppes; sandy, sandy-loamy and clayey prairies; sandy plains; stony, gravelly, sandy, sandy-loamy, sandy-silty, loamy, clayey, clayey-loamy and silty flats; rocky, sandy, clayey and clayey-loamy uplands; valley floors; basins; along railroad right-of-ways; sandy roadbeds; shaley roadcuts; along rocky, cindery, gravelly, gravelly-sandy, sandy, sandy-loamy, clayey, clayey-loamy and silty-loamy roadsides; along arroyos; bottoms of arroyos; along and in sandy, loamy and loamy-clayey draws; bottoms of draws; gulches; gullies; grassy ravines; grassy bottoms of ravines; around seeps; springs; along streams; within loamy-clayey streambeds; along and in creeks; along and in muddy creekbeds; along rivers; stony and gravelly riverbeds; along and in rocky, gravelly, sandy and loamy washes; along and in bedrock and rocky-clayey-silty drainages; drainage ways; along waterways; vernal pools; around ponds; lakebeds; ciénegas; freshwater marshes; clayey depressions; bottoms of sinks; swales; along (rocky-clayey, gravelly, clayey and humusy-loamy) banks of streams, creeks, rivers and drainages; edges of creeks and ponds; along margins of arroyos, streams, creeks, washes, ponds and lakes; (gravelly) sides of streams and lakes; (clayey-loamy) shores of ponds and lakes; areas of drawdown; mudflats; stony-gravel, gravel and sand bars; rocky-sandy beaches; loamy benches; terraces; rocky, stony, gravelly, loamy and clayey bottomlands; along rocky-gravelly-sandy, gravelly-sandy-loamy, sandy, clayey, silty-loamy and silty-clayey floodplains; rocky-gravelly and clayey lowlands; along sandy fencelines; around stock tanks; bottoms of stock tanks; along banks, edges, margins and shores of reservoirs; within clayey reservoirs; dry beds of reservoirs; along canals; along sandy ditches; along ditch banks; bouldery-sandy, cobbly and sandy riparian areas; sandy-clayey and clayey-loamy waste places, and disturbed areas growing in muddy and wet, moist, damp and dry bouldery, bouldery-sandy, rocky, rocky-gravelly, rocky-gravelly-sandy, rocky-sandy, stony, stony-gravelly, stony-sandy, cobbly, cindery, gravelly, gravelly-sandy and sandy ground; rocky-sandy loam, rocky-clayey loam, stony loam, gravelly loam, gravelly-sandy loam, sandy loam, clayey loam, silty loam, silty-clayey loam, humusy loam and loam ground; gravelly clay, sandy clay, loamy clay, silty clay and clay ground, and rocky-sandy silty, rocky-clayey silty, sandy silty and silty ground, occurring from sea level to 9,700 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. Prickly lettuce may be browsed by Mule Deer (*Odocoileus hemionus*). *Lactuca serriola* is native to Europe and coastal islands in the North Atlantic Ocean and Mediterranean Sea; Asia, and northern Africa. *5, 6, 15, 16, 28 (color photograph), 43 (053011), 44 (060111 - color photograph), 46 (Page 966), 58, 63 (031012 - color presentation), 68, 77, 80 (This species is listed as a Rarely Poisonous or Suspected Poisonous Range Plant. “Hungry animals consuming large amounts of this biennial milky-juiced forb may develop pulmonary emphysema. It at also develops toxic levels of nitrate.”), 85 (031312 - color presentation), 101 (color photograph), 115 (color presentation), 124 (053011), 127, 140 (Pages 79-80 & 285), **HR***

Lasthenia californica A.P. de Candolle ex J. Lindley (subsp. *californica* is the subspecies reported as occurring in Arizona): California Goldfields

SYNONYMY: (for subsp. *californica*: *Baeria chrysostoma* F.E. von Fischer & C.A. von Meyer; *Baeria chrysostoma* F.E. von Fischer & C.A. von Meyer var. *gracilis* (A.P. de Candolle) H.M. Hall; *Lasthenia chrysostoma* (F.E. von Fischer & C.A. von Meyer) E.L. Greene). COMMON NAMES: California Gold Fields; California Gold-fields; California Goldfield; California Goldfields; California Goldenfields; California Goldfield; California Goldfields; Coast Gold Fields; Coast Gold-fields; Coast Goldfield; Coast Goldfields; Dwarf Goldfields; Gold-fields (a name also applied to the genus *Lasthenia*); Goldfields (a name also applied to the genus *Lasthenia*). DESCRIPTION: Terrestrial annual or perennial forb/herb (decumbent [cespitose], ascending and/or erect stems 3 to 16 inches in height); the foliage is green; the disc florets may be orange or yellow; the ray florets may be golden-yellow, yellow or yellow-orange; flowering generally takes place between late January and mid-June. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; gravelly mesas; plateaus; rocky canyons; canyon bottoms; bluffs; ridges; ridgetops; sandy meadows; foothills; rocky hills; rocky hillsides; rocky, rocky-loamy, gravelly, sandy-loamy, clayey and clayey-loamy slopes; bajadas; rocky outcrops; amongst boulders and rocks; sandy and clayey-loamy plains; rocky and gravelly flats; sandy basins; valley floors; coastal bluffs; along sandy roadsides; sandy draws; seeps; along streams; sandy riverbeds; along and in rocky and sandy washes; clayey lakebeds; banks of arroyos and washes; edges of creeks and rivers; gravelly and sandy-loamy terraces; bottomlands; floodplains; lowlands; gravelly-sandy riparian areas, and disturbed areas growing in dry bouldery, bouldery-gravelly, rocky, rocky-gravelly-sandy, gravelly, gravelly-sandy and sandy ground; rocky loam, stony loam, sandy loam, clayey loam and loam ground, and clay ground, occurring from sea level to 5,600 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive

component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. *Lasthenia californica* is native to southwest-central and southern North America. *5, 6, 15, 16, 28 (recorded as *Lasthenia chrysostoma* - color photograph 418), 43 (120409), 44 (060211 - color photograph of habitat), 46 (recorded as *Baeria chrysostoma* Fisch. & Mey. var. *gracilis* (DC.) Hall, reports that variety *gracillis* is the only form occurring in Arizona, Pages 917-918), 63 (031612 - color presentation including habitat), 77, **85** (031612 - color presentation), 86 (recorded as *Lasthenia chrysostoma*, color photograph), 124 (053111 - no record of species or genus), 127, 140 (recorded as *Lasthenia californica* DeCandolle ex Lindley [*Lasthenia chrysostoma* (Fischer & C.A. Meyer) Greene], Page 285)*

***Lasthenia californica* A.P. de Candolle ex J. Lindley subsp. *californica*: California Goldfields**

SYNONYMY: *Baeria chrysostoma* F.E. von Fischer & C.A. von Meyer; *Baeria chrysostoma* F.E. von Fischer & C.A. von Meyer var. *gracilis* (A.P. de Candolle) H.M. Hall; *Lasthenia chrysostoma* (F.E. von Fischer & C.A. von Meyer) E.L. Greene. COMMON NAMES: California Gold Fields (a name also applied to the species); California Gold-fields (a name also applied to the species); California Goldfield (a name also applied to the species); California Goldfields (a name also applied to the species); California Goldenfields (a name also applied to the species); California Goldfield (a name also applied to the species); California Goldfields (a name also applied to the species); Coast Gold Fields (a name also applied to the species); Coast Gold-fields (a name also applied to the species); Coast Goldfield (a name also applied to the species); Coast Goldfields (a name also applied to the species); Dwarf Goldfields (a name also applied to the species); Gold-fields (a name also applied to the species and the genus *Lasthenia*); Goldfields (a name also applied to the species and the genus *Lasthenia*). DESCRIPTION: Terrestrial annual forb/herb (decumbent [cespitose], ascending and/or erect stems 3 to 16 inches in height); the foliage is green; the disc florets may be orange or yellow; the ray florets may be golden-yellow, yellow or yellow-orange; flowering generally takes place between late January and mid-June. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; gravelly mesas; plateaus; rocky canyons; canyon bottoms; bluffs; ridges; ridgetops; meadows; foothills; rocky hills; rocky hillsides; rocky, gravelly and stony-loamy slopes; bajadas; amongst boulders and rocks; clayey-loamy plains; gravelly flats; sandy basins; valley floors; along roadsides; sandy draws; seeps; along streams; bouldery-gravelly streambeds; sandy riverbeds; along and in rocky and sandy washes; clayey lakebeds; banks of washes; edges of creeks and rivers; gravelly and sandy-loamy terraces; bottomlands; floodplains; gravelly-sandy riparian areas, and disturbed areas growing in dry bouldery, bouldery-gravelly, rocky, rocky-gravelly-sandy, gravelly, gravelly-sandy and sandy ground; rocky loam, stony loam, sandy loam and clayey loam ground, and clay ground, occurring from sea level to 5,600 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The flowers are reportedly fragrant. The species, *Lasthenia californica*, was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. *Lasthenia californica* subsp. *californica* is native to southwest-central and southern North America. *5, 6, 15, 28 (recorded as *Lasthenia chrysostoma*, color photograph 418), 43 (120409), 44 (060211), 46 (recorded as *Baeria chrysostoma* Fisch. & Mey. var. *gracilis* (DC.) Hall, reports that variety *gracillis* is the only form occurring in Arizona, Pages 917-918), 63 (031712 - color presentation including habitat), 77, **85** (031712 - color presentation), 86 (recorded as *Lasthenia chrysostoma* - color photograph), 124 (053111 - no record of subspecies, species or genus), 127 (species), 140 (recorded as *Lasthenia californica* DeCandolle ex Lindley [*Lasthenia chrysostoma* (Fischer & C.A. Meyer) Greene], Page 285)*

Lasthenia chrysostoma (see *Lasthenia californica* subsp. *californica*)

***Logfia californica* (T. Nuttall) J. Holub: California Cottonrose**

SYNONYMY: *Filago californica* T. Nuttall. COMMON NAMES: California Cottonrose; California Filago; California Fluffweed; Herba Impia (a name also applied to other species). DESCRIPTION: Terrestrial annual forb/herb (erect stems 3 to 22 inches in height); the stems may be grayish to green; the leaves may be grayish, gray-green or green; the flower heads may be cream-white, white, white-straw, yellow or yellowish; flowering generally takes place between mid-February and early June (additional records: three for late June and one record for early November). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; rocky-sandy and gravelly mesas; plateaus; rocky cliffs; rocky canyons; rocky canyon rims; rocky, rocky-gravelly, gravelly-sandy and sandy canyon bottoms; shaley-cobbly talus slopes; buttes; ridges; rocky ridgetops; rocky ridgecrests; openings in chaparral; foothills; bouldery and rocky hills; rocky, cobbly-sandy-loamy and clayey hillsides; bouldery, rocky, rocky-gravelly-loamy, rocky-sandy, rocky-loamy-clayey, cobbly-sandy-loamy, gravelly, gravelly-sandy, sandy, loamy, clayey and clayey-loamy slopes; sandy alluvial fans; bajadas; bouldery and rocky outcrops; sandy bases of rocky outcrops; amongst boulders and rocks; edges of boulders; plains; gravelly, sandy and sandy-loamy flats; basins; hollows; valley floors; roadbeds along roadsides; rocky arroyos; around springs; along sandy streams; within sandy streambeds; along creeks; along sandy creekbeds; rivers; riverbeds; along and in bedrock, rocky, rocky-sandy, gravelly, gravelly-sandy and sandy washes; drainages; drainage ways; sandy depressions; (rocky) banks of arroyos and rivers; (cobbly) edges of washes; (sandy) shorelines of lakes; benches; bouldery-gravelly-sandy and sandy terraces; loamy bottomlands; floodplains; bar ditches; sandy riparian areas; recently burned areas in woodlands and chaparrals, and disturbed areas growing in wet, moist and dry bouldery, bouldery-gravelly, bouldery-gravelly-sandy, rocky, rocky-gravelly, rocky-sandy, shaley-cobbly, cobbly, gravelly, gravelly-sandy and sandy ground; rocky-gravelly loam, cobbly-sandy loam, sandy loam, clayey loam and loam ground; rocky-loamy clay and clay ground, and gravelly-sandy silty ground, occurring from sea level to 7,300 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Logfia californica* is native to southwest-

central and southern North America. *5, 6, 15 (recorded as *Filago californica* Nutt.), 16 (recorded as *Filago californica* Nutt.), 43 (120509), 44 (060211 - no records listed under Common Names), 46 (recorded as *Filago californica* Nutt., Page 886), 58, 63 (031712), 77 (recorded as *Filago californica* Nutt.), **85** (031712 - color presentation), 124 (060211 - no record of species; genus record), 140 (Page 285)*

***Machaeranthera arida* B.L. Turner & D.B. Horne: Arid Tansyaster**

SYNONYMY: *Arida arizonica* (R.C. Jackson & R.R. Johnson) D.R. Morgan & R.L. Hartman; *Machaeranthera coulteri* (A. Gray) B.L. Turner & D.B. Horne var. *arida* (B.L. Turner & D.B. Horne) B.L. Turner; *Psilactis coulteri* auct. non A. Gray. p.p. COMMON NAMES: Arid Machaeranthera; Arid Spiny Daisy; Arid Tansyaster; Silver Lake Daisy. DESCRIPTION: Terrestrial annual forb/herb (ascending and/or erect stems 2 to 16 inches in height); the disk florets may be gold or yellow; the ray florets may be blue, bluish-lavender, lavender, lavender-blue, pale lavender-pink, lavender-white, pink, purple, pale violet, violet, white or whitish; flowering generally takes place between early March and early September (additional records: one for late September, three for early October, one for mid-October, one for early November, two for late November and one for early December). HABITAT: Within the range of this species it has been reported from mountains; mesas; crater walls; hills; hilltops; hillsides; rocky and gravelly slopes; gypsum outcrops; sand dunes; blowout areas between dunes; banks; sandy breaks; sandy plains; gravelly and sandy flats; basins; gravelly-sandy and sandy-clayey-loamy valley floors; coastal plains; along railroad right-of-ways; along rocky, sandy and sandy-loamy roadsides; along sandy arroyos; springs; gravelly-sandy and sandy-silty riverbeds; along and in gravelly and sandy washes; drainages; around pools; silty lakebeds; depressions; alkali sinks; banks of rivers; edges of seeps and playas; shores of lakes; sandy islands in riverbeds; gravelly benches; along gravelly-sandy-silty and clayey floodplains; along and in ditches; ditch banks, and disturbed areas growing in wet, moist and dry rocky, rocky-sandy, gravelly, gravelly-sandy and sandy ground; sandy loam and sandy-clayey loam ground; clay ground, and gravelly-sandy silty, sandy silty and silty ground, occurring from sea level to 4,800 feet in elevation in the scrub, desertscrub and wetland ecological formations. NOTE: *Machaeranthera arida* is native to southwest-central and southern North America. *5, 6, 43 (082112), 44 (031712 - no listing under Common Names; genus listing), 46 (recorded as *Psilactis coulteri* Gray, Page 867), 63 (031712), 80 (Species of the genus *Machaeranthera* (*Aster* sp.) are listed as Rarely Poisonous and Suspected Poisonous Range Plants. "Species of this genus are secondary or facultative selenium absorbers and can be dangerous to livestock."), **85** (031712 - color presentation of dried material), 124 (031712 - no record of species; genus record)*

Machaeranthera coulteri var. *arida* (see *Machaeranthera arida*)

***Machaeranthera tagetina* E.L. Greene: Mesa Tansyaster**

SYNONYMY: *Aster tagetinus* (E.L. Greene) S.F. Blake. COMMON NAMES: Flor de Capita (Spanish); Mesa Tansy-aster; Mesa Tansyaster; Tansyleaf Spine Aster. DESCRIPTION: Terrestrial annual forb/herb (erect stems 2 to 40 inches in height; one plant was observed and described as being 10 inches in height and width); the foliage is gray-green; the disk florets are yellow, the ray florets may be blue, dark blue, blue-purple, blue-violet, lavender, dark lavender, purple, purple-blue, purple-indigo or violet; flowering generally takes place between early July and mid-December (additional records: one for mid-March and one for mid-April). HABITAT: Within the range of this species it has been reported from mountains; mesas; canyons; canyon bottoms; bases of cliffs; ridges; ridgetops; foothills; hills; rocky and rocky-clayey hillsides; rocky, gravelly, gravelly-sandy-loamy and sandy-loamy slopes; alluvial fans; bajadas; rocky-loamy, gravelly, gravelly-sandy and clayey flats; basins; valley floors; gravelly roadbeds; along rocky roadsides; bottoms of arroyos; springs; along streams; streambeds; along creeks; sandy creekbeds; along and in rocky washes; rocky drainages; within drainage ways; ciénegas; banks of rivers; benches; terraces; floodplains; rocky mesquite bosques; ditch banks; riparian areas, and disturbed areas growing in dry rocky, stony-sandy, gravelly, gravelly-sandy and sandy ground; rocky loam, gravelly-sandy loam, sandy loam and clayey loam ground, and rocky clay, sandy clay and clay ground, occurring from 300 to 8,100 feet elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Machaeranthera tagetina* is native to southwest-central and southern North America. *5, 6, 16, 43 (062109), 44 (060611 - no record of species; genus record), 46 (recorded as *Aster tagetinus* (Greene) Blake, Page 873), 58, 63 (032512), 77, 80 (Species of the genus *Machaeranthera* (*Aster* sp.) are listed as a Rarely Poisonous and Suspected Poisonous Range Plant. "Species of this genus are secondary or facultative selenium absorbers and can be dangerous to livestock."), **85** (032512 - color presentation), 124 (060611 - no record of species; genus record), 140 (Page 285)*

***Matricaria discoidea* A.P. de Candolle: Disc Mayweed**

SYNONYMY: *Matricaria matricarioides* auct. non (C.F. Lessing) T.C. Porter; *Matricaria suaveolens* (F.T. Pursh) F.G. Buchenau. COMMON NAMES: Chamomile (a name also applied to other species; South Dakota); Common Pineapple Weed; Common Pineapple-weed; Common Pineappleweed; Disc May Weed; Disc May-weed; Disc Mayweed; False Chamomile (a name also applied to the genus *Matricaria*); Gatkamomill (Swedish); Green Dog Fennel (Montana); Green Dog-fennel (a name also applied to the genus *Matricaria*; Montana, Nebraska); Lavender Cotton; Lavender-cotton; Manzanilla (a name also applied to other species); Matricaire Odorante (French); Pineapple Camomile; Pineapple Chamomile; Pineapple Mayweed; Pineapple Weed (a name also applied to other species); Pineapple-weed (a name also applied to other species); Pineapple-weed Chamomile; Pineappleweed (a name also applied to other species); Rayless Camomile; Rayless Chamomile; Rayless Dog Fennel; Rayless Dog-fennel; Rayless Dogfennel (Montana); Rayless Mayweed; Rounded Chamomile; Strahlenlose Kamille (German); Tong Hua Mu Ju (transcribed Chinese); Uv Spuluv 'Smelly Clover' (Pima); Wild Marigold (a name also applied to

other species, Col. Springs, California). DESCRIPTION: Terrestrial annual forb/herb (decumbent, ascending or erect stems ½ to 20 inches in height); the disc florets may be green, greenish-yellow, white, dull yellow, yellow, dull yellow-green or yellow-green; flowering generally takes place between mid-February and late September (additional records: one for mid-October and two for late October). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; sandy mesas; rocky canyons; canyon bottoms; pockets of soil in rock; gravelly bluffs; buttes; calcareous ledges; ridges; ridgetops; clearings in forests; rocky and sandy meadows; foothills; rocky and loamy hills; sandy hilltops; hillsides; bouldery, bouldery-sandy, rocky, gravelly, sandy-loamy, loamy, clayey and silty slopes; rocky outcrops; sandy banks; clay pans; steppes; plains; sandy-loamy and clayey flats; uplands; valley floors; loamy valley bottoms; railroad right-of-ways; along and in roadbeds; along muddy, rocky, rocky-sandy, gravelly, sandy, loamy, clayey and silty roadsides; draws; gulches; ravines; seep-springs; springs; along streams; streambeds; along creeks; creekbeds; along rivers; along riverbeds; along and in gravelly and sandy washes; along sandy-clayey-loamy drainages; pothole lakes; alkali lakebeds; marshy areas; within swales; (sandy) banks of streams, creeks, rivers, pools and lakes; margins of streams, ponds and lakes; shores of lakes; areas of drawdown; rocky-sand, gravel and sand bars; rocky beaches; sandy terraces; sandy bottomlands; lowlands; beaver ponds; stock tanks; banks and shores of reservoirs; canals; along and in ditches; riparian areas; sandy, loamy and clayey waste places, and disturbed areas growing in muddy and wet, moist, damp and dry bouldery, bouldery-sandy, rocky, rocky-sandy, gravelly, gravelly-sandy and sandy ground; gravelly loam, sandy loam, sandy-clayey loam, clayey loam and loam ground; rocky clay, sandy clay and clay ground, and silty ground, occurring from sea level to 10,300 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food and/or fiber (dried and crushed plants used to line baby cradles crop; it was also noted as having been used as a drug or medication, the dried blossoms were used for jewelry, perfume and as an insect repellent, and the plant was used as an indicator of the salmonberry picking time. *Matricaria discoidea* is native to northwestern, northern, west-central and southern North America, and eastern Asia; however, its exact native range is obscure. *5, 6, 16, 43 (120809), 44 (060611), 46 (recorded as *Matricaria matricarioides* (Less.) Porter, Page 937), 63 (032912), 77, **85** (033012 - color presentation), 101 (color photograph), 124 (060611), 127*

Matricaria matricarioides (see *Matricaria discoidea*)

Matricaria suaveolens (see *Matricaria discoidea*)

***Parthenice mollis* A. Gray: Annual Monsterwort**

COMMON NAME: Annual Monsterwort. DESCRIPTION: Terrestrial annual forb/herb (erect stem 20 inches to 8 feet in height); the foliage is pale green or green; the flower heads may be green or greenish-white; flowering generally takes place between mid-August and late October (additional records: one for late March, one for early April, one for late April, one for late June and one for early July, flowering ending as late as December has been reported). HABITAT: Within the range of this species it has been reported from mountains; rocky cliffs; sandy canyons; canyon bottoms; foothills; rocky hills; rocky hillsides; rocky and silty-loamy slopes; bajadas; amongst rocks; banks; flats; rocky and gravelly roadsides; ravines; seeps; along streams; along streambeds; along and in sandy washes; in rocky drainages; banks of washes and lakes; along edges of washes; benches; floodplains; riparian areas, and disturbed areas growing in dry rocky and sandy ground and silty loam ground, occurring from 400 to 6,300 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Parthenice mollis* is native to southwest-central and southern North America. *5, 6, 15, 43 (120909), 44 (060611 - no record of species or genus), 46 (Page 891), 58, 63 (033112), **85** (033112 - color presentation), 124 (060611 - no record of species or genus), 140 (Page 285)*

Perezia nana (see *Acourtia nana*)

Perezia wrightii (see *Acourtia wrightii*)

***Pseudognaphalium canescens* (A.P. de Candolle) W.A. Weber subsp. *canescens*: Wright's Cudweed**

SYNONYMY: *Gnaphalium canescens* A.P. de Candolle; *Gnaphalium wrightii* A. Gray. COMMON NAMES: Everlasting; Gordolobo; Wright Cudweed (a name also applied to the species); Wright's Cudweed (a name also applied to the species). DESCRIPTION: Terrestrial annual, biennial or perennial forb/herb (erect stems 8 to 40 inches in height); the foliage is gray; the flowers are cream, straw, white, yellow or yellow-cream; flowering generally takes place between early July and early November (additional records: one for mid-January, one for late January, one for early February, one for late February, one for early April, one for mid-April, one for late April, one for late May, one for early June and one for late December). HABITAT: Within the range of this species it has been reported from mountains; mesas; rocky canyons; along canyon bottoms; bases of cliffs; sandy crevices in boulders and rocks; knolls; ridgetops; meadows; hills; sandy hillsides; rocky and gravelly slopes; bases of slopes; rocky outcrops; amongst boulders; banks; flats; along roadsides; gullies; along streambeds; riverbeds; rocky and sandy washes; within pools; edges of seeps; cobbly-sandy terraces; gravelly-sandy riparian areas, and disturbed areas growing in moist and dry rocky, gravelly, gravelly-sandy and sandy ground, occurring from sea level to 8,900 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: The foliage may be scented. *Pseudognaphalium canescens* subsp. *canescens* is native to southwest-central and southern North America. *5, 6, 15, 43

(071710), 44 (060611), 46 (recorded as *Gnaphalium wrightii* Gray, Page 888), 58, 63 (071710), 77, **85** (060611), 124 (060611), 140 (recorded as *Gnaphalium wrightii* A. Gray, Page 284)*

Psilactis coulteri (see *Machaeranthera arida*)

***Psilostrophe cooperi* (A. Gray) E.L. Greene: Whitestem Paperflower**

SYNONYMY: *Riddellia cooperi* A Gray. COMMON NAMES: Cooper Paper Daisy; Cooper Paper Flower; Cooper Paper-daisy; Cooper Paper-flower; Cooper Paperflower; Cooper's Paper Daisy; Cooper's Paper Flower; Cooper's Paper-daisy; Cooper's Paper-flower; Coopers Paperflower; Paper Daisy; Paper Flower (a name also applied to the genus *Psilostrophe*); Paper-daisy; Paper-flower (a name also applied to the genus *Psilostrophe*); Paperflower (a name also applied to the genus *Psilostrophe*); White Stem Paperflower; White-stem Paper-flower; White-stem Paperflower; Whitestem Paperflower; Yellow Paper Daisy. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (erect stems 4 to 32 inches in height; one plant was observed and described as being 32 inches in height and 40 inches in width); the stems are white; the leaves may be blue-green, gray, gray-green, green, greenish-gray or white; the disk florets are yellow, the ray florets are lemon-yellow, pale yellow or yellow fading to cream or white and remaining on the plants when dry; flowering generally takes place between early January and early December. HABITAT: Within the range of this species it has been reported from mountains; mountainsides; rocky mesas; bouldery, bouldery-gravelly and rocky canyons; along canyon bottoms; buttes; rocky and chalky ridges; ridgelines; foothills; rocky, stony-gravelly, cobbly-gravelly-loamy and clayey hills; rocky and gravelly hillsides; bouldery, rocky, rocky-gravelly-clayey, stony, gravelly-sandy-silty, gravelly-clayey, sandy-loamy and sandy-silty slopes; sandy bajadas; rocky outcrops; amongst boulders and rocks; lava fields; sand dunes; rocky banks; plains; gravelly, sandy and clayey-loamy flats; basins; sandy valley floors; roadbeds; along rocky-sandy-loamy, gravelly-sandy, sandy and clayey roadsides; arroyos; along streams; along and in rocky, rocky-sandy, gravelly, gravelly-sandy and sandy washes; drainages; sandy along rocky drainage ways; sandy depressions; along (sandy) banks of arroyos, rivers and washes; borders of washes; (gravelly-silty) edges of draws; mudflats; rocky benches; gravelly terraces; sandy bottomlands; floodplains; sandy riparian areas, and disturbed areas growing in moist and dry desert pavement; bouldery, bouldery-gravelly, rocky, rocky-sandy, stony, stony-gravelly, cindery, gravelly, gravelly-sandy and sandy ground; rocky-sandy loam, cobbly-gravelly loam, sandy-clayey loam, sandy-silty loam and clayey loam ground; rocky clay, rocky-gravelly clay, gravelly clay and clay ground; gravelly silty, gravelly-sandy silty and sandy silty ground, and chalky ground, occurring from 500 to 6,900 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Psilostrophe cooperi* is native to southwest-central and southern North America. *5, 6, 13 (Page 309, color photograph: Plate W., Page 408), 15, 16, 18, 28 (color photograph 421), 43 (040912 - *Psilostrophe cooperi* Greene), 44 (060611), 46 (Page 914), 48 (genus), 63 (040912 - color presentation), 77, 80 (This species is listed as a Rarely Poisonous and Suspected Poisonous Range Plant. "This showy, low-growing shrub is widespread in Arizona. No losses have been documented, but it may cause some poisoning similar to the other paperflowers."), **85** (060811 - color presentation), 86 (color photograph), 115 (color presentation), 124 (060611 - no record of species; genus record), 140 (Page 286)*

Senecio douglasii var. *monoensis* (see *Senecio flaccidus* var. *monoensis*)

***Senecio flaccidus* C.F. Lessing var. *monoensis* (E.L. Greene) B.L. Turner & T.M. Barkley: Smooth Threadleaf Ragwort**

SYNONYMY: *Senecio douglasii* A.P. de Candolle var. *monoensis* (E.L. Greene) W.L. Jepson; *Senecio monoensis* E.L. Greene. COMMON NAMES: Bush Groundsel; Bush Ragwort; Bush Senecio; Comb Butterweed; Felty Groundsel; Creek Senecio; Groundsel (a name also applied to other species and to the genus *Senecio*); Mono Groundsel (a name applied to other species); Mono Ragwort (a name also applied to other species); Mono Senicio; Sand Wash Butterweed; Sand Wash Groundsel; Sand-wash Butterweed; Sand-wash Groundsel; Sandwash Senecio; Shrubby Butterweed; Shrubby Ragwort; Smooth Threadleaf; Smooth Threadleaf Ragwort; Thread-leaf Groundsel; Thread-leaf Ragwort; Thread-leaved Ragwort; Threadleaf Butterleaf; Threadleaf Groundsel; Threadleaf Ragwort; Wash Groundsel. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (erect stems 1 to 4 feet in height); the hairless foliage may be green, dark green or yellow-green; the disk florets may be orange-yellow or yellow; the ray florets are yellow; flowering generally takes place between late January and late November. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; mesas; plateaus; cliffs; canyons; rocky canyon bottoms; foothills; bouldery and rocky hills; rocky hillsides; bedrock, bouldery-rocky, rocky, rocky-sandy-loamy, rocky-silty, cindery, gravelly, gravelly-loamy, gravelly-clayey and sandy slopes; gravelly alluvial fans; bajadas; rocky and shaley outcrops; amongst boulders and rocks; banks; sandy plains; gravelly and sandy flats; basins; valley floors; along gravelly, gravelly-loamy and sandy roadsides; rocky and rocky-gravelly arroyos; bottoms of arroyos; silty draws; bottoms of draws; deep shaded ravines; springs; along rivulets; along streams; streambeds; along creeks; sandy creekbeds; riverbeds; along and in rocky, rocky-gravelly, rocky-sandy, gravelly, gravelly-sandy, sandy and sandy-loamy washes; within drainages; clayey depressions; borders of washes; edges of washes; benches; sandy bottomlands; sandy floodplains; bouldery, gravelly-sandy and sandy riparian areas, and disturbed areas growing in dry bouldery, bouldery-rocky, rocky, rocky-gravelly, rocky-sandy, shaley, cindery, gravelly, gravelly-sandy and sandy ground; bouldery-gravelly loam, rocky-sandy loam, gravelly loam, sandy loam and clayey loam ground; gravelly clay and clay ground, and rocky silty, gravelly-sandy silty and silty ground, occurring from sea level to 8,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant is reported to be a nectar source for many butterflies. *Senecio flaccidus* var. *monoensis* is native to southwest-central and

southern North America. *5, 6, 13 (Pages 349-350), 15 (recorded as *Senecio douglasii* DC. var. *monoensis* (Greene) Jepson), 16, 28 (color photograph 426 labeled Sand Wash Groundsel [*Senecio douglasii* var. *douglasii* (*Senecio monoensis*)] Page 289), 43 (062409), 44 (060811), 46 (recorded as *Senecio monoensis* Greene, Page 947), 63 (041612 - color presentation), 77 (recorded as *Senecio douglasii* DC. var. *monoensis* (Greene) Jepson), 80 (The Threadleaf Groundsel, Woolly Groundsel, Senecio (*Senecio longilobus* and others) are listed as Major Poisonous Range Plants. Poisoning by Threadleaf Groundsel has been attributed to the presence of a number of alkaloids. "These alkaloids belong to a single group - the pyrrolizidine alkaloids. Upon hydrolysis, these break into a nitrogen-containing fraction and a mono- or di-carboxylic necic acid. The nitrogen oxides are hepatotoxic, causing liver lesions that are attributed to senecio poisoning. ... Cattle and horses are equally sensitive to senecio poisoning; sheep and goats are less susceptible. ... Also, the consumption of small amounts of the plant over a period of a month or more will have a cumulative effect. ... When possible, livestock should be kept from areas heavily infested with Threadleaf Groundsel, particularly when the range is excessively dry." See text for additional information.), **85** (060811 - color presentation), 115 (color presentation), 124 (060811 - no record of variety or species; genus record), 140 (Page 286)*

Senecio monoensis (see *Senecio flaccidus* var. *monoensis*)

***Sonchus asper* (C. Linnaeus) J. Hill: Spiny Sowthistle**

SYNONYMY: *Sonchus asper* (C. Linnaeus) J. Hill subsp. *asper* (C. Linnaeus) J. Hill. COMMON NAMES: Achicoria [Chicoria] Dulce ("Sweet Chickory", Spanish: Arizona, Texas, Sonora)[140]; 'Azee' Hókánii Łibáhígíí <azee'xokhánii'łipáhikíih> (Athapascan: Navajo)[140]; Annual Sow-thistle (a name also applied to other species); Cardo Lechero ("Milky Thistle", Spanish: Spain)[140]; Cerraja ("a saw", Spanish: Chihuahua, Durango)[140]; Chinita (Spanish: Arizona, Sonora)[140]; Činaka <china-ri> (Uto-Aztecan: Tarahumara)[140]; Ho'idkam 'I:vaki ("Spiny Greens", Uto-Aztecan: Hiá Ceḍ O'odham); Ho'idkam 'I:vakĭ ("Eaten Greens", Uto-Aztecan: Hiá Ceḍ O'odham)[140]; Hoi'idkham 'I:waki (Spanish); Kee Tá Ha (Yuman: Mohave)[140]; Laiteron Rude (French); Letchiterna ("Soft and Milky", Spanish: Spain)[140]; Lyonsheart; Ma:xškáłʸ [Ma:škáłʸ] (Yuman: Cocopa)[140]; Mu'tcigĭp [Mo'tcigĭp, Mu'tcigi, Mo'tcigi] (Uto-Aztecan: Shoshoni)[140]; Perennial Sowthistle (a name also applied to other species); Prickly [Spiny] Sow Thistle (English)[140]; Prickly Sow-thistle; Prickly Sowthistle; Prickly-leaved Sow Thistle; Raue Gänsedistel (German); Rough Milk Thistle; Rough Sow Thistle; Rough Sow-thistle; Rough Sowthistle; S-ho'idag Shaipag <shaipuk> (Uto-Aztecan: Tohono O'odham)[140]; S-ho'idkam Iivagi ("Spiny Eaten Greens", Uto-Aztecan: Akimel O'odham)[140]; Serralha-comum (Portuguese: Brazil); Shá'inałał <sáʔinałał> (Athapascan: Navajo)[140]; Si'imel Iivagi ("Lactating Eaten Greens", Uto-Aztecan: Akimel O'odham)[140]; Sharp Fringe Sow-thistle; Sharp-fringe Sow-thistle; Sharp-fringed Sow Thistle; Sharp-fringed Sow-thistle; Sow Thistle (a name also applied to other species and the genus *Sonchus*); Sow-thistle (a name also applied to other species and the genus *Sonchus*); Sowthistle (a name also applied to other species and the genus *Sonchus*); Spiny Leaved Sow Thistle; Spiny Sow Thistle; Spiny Sow-thistle; Spiny Sowthistle; Spiny-leaf Sow Thistle; Spiny-leaf Sow-thistle; Spiny-leaf Sowthistle; Spiney-leaf Sow Thistle; Spiney-leaved Sow Thistle; Spiny-leaved Sow Thistle; Spiny-leaved Sow-thistle; Spiny-leaved Sowthistle; Spinyleaf Sow Thistle; Spinyleaf Sow-thistle; Spinyleaf Sowthistle; Spinyleaved Sow Thistle; Svimmolke (Swedish). DESCRIPTION: Terrestrial annual forb/herb (erect stems 4 inches to 7 feet in height); the leaves may be green, purplish and/or purple-green; the flower heads are yellow; flowering generally takes place between late January and mid-October (additional records: one for early January and one for mid-November; flowering year round has been reported). HABITAT: Within the range of this species it has been reported from mountains; rocky-clayey mountaintops; plateaus; hanging gardens; rocky and sandy canyons; rocky canyonsides; bouldery-gravelly-sandy and sandy canyon bottoms; talus slopes; crevices in rocks; gravelly-sandy bluffs; ridges; meadows; hills; rocky hillsides; rocky, rocky-clayey-loamy and sandy slopes; bajadas; amongst rocks; volcanic plugs; banks; plains; flats; valleys; along railroad right-of-ways; roadsides; bottoms of arroyos; draws; bottoms of draws; gulches; ravines; around and on muddy seeps; in sand around springs; sandy spring-seeps; along streams; sandy streambeds; along sandy creeks; creekbeds; along gravelly-sandy rivers; riverbeds; along and in stony-gravelly, gravelly-sandy and sandy washes; sandy-loamy and clayey-loamy drainages; drainage ways; waterholes; lakebeds; ciénegas; marshes; depressions; (sandy and sandy-silty) banks of springs, streams, creeks, rivers and washes; (sandy) edges of streams, ponds, lakes and freshwater and saltwater marshes; margins of washes, drainages, poolbeds, lakes and marshes; shores of lakes; along sand bars; sandy beaches; sandy benches; terraces; bottomlands; floodplains; along fencelines; margins of stock tanks; along canals; along gravelly-clayey canal banks; sandy channels; along ditches; along ditch banks; bouldery-sandy, rocky and sandy riparian areas; waste places, and disturbed areas growing in shallow water; muddy, and wet, moist, damp and dry bouldery-gravelly-sandy, bouldery-sandy, rocky, stony-gravelly, gravelly, gravelly-sandy and sandy ground; rocky-clayey loam, sandy loam, sandy-silty loam, clayey loam, silty loam and loam ground; rocky clay, gravelly clay and clay ground, sandy silty and silty ground, occurring from sea level to 8,400 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used for food and as a drug or medication. *Sonchus asper* may be native to northern, middle, eastern and southern Europe; Asia, and Africa and coastal islands in the Indian Ocean; however, the exact native range is obscure. *5, 6, 15, 28 (note), 43 (121709), 44 (060811 - color photograph), 46 (Page 965), 30, 58, 63 (041812 - color presentation), 68, 77, 80 (Species of the genus *Sonchus* are considered to be Rarely Poisonous and Suspected Poisonous Range Plants. "Species of this genus (*Sonchus*) have been reported to accumulate dangerous levels of nitrates."), **85** (041812 - color presentation), 101 (color photograph), 115 (color presentation), 124 (060811), 127, 140 (Pages 83-84 & 286)*

Sonchus asper subsp. *asper* (see *Sonchus asper*)

***Sonchus oleraceus* C. Linnaeus: Common Sowthistle**

COMMON NAMES: Achicoria (Hispanic); Achicoria Dulce (Hispanic); Annual Common Sowthistle; Annual Sow Thistle (a name also applied to other species); Annual Sow-thistle (a name also applied to other species); Annual Sowthistle (a name also applied to other species); Borraja (Hispanic); Borrajilla (Hispanic); Cardo (Hispanic); Cerraja (Spanish); Chicalotillo (Hispanic); Chicoria (Hispanic); Chicoria (Purépecha); Chicória-brava (Portuguese: Brazil); Colewort; Common Annual Sow Thistle; Common Annual Sow-thistle; Common Annual Sowthistle; Common Milk Thistle; Common Sow Thistle (a name also applied to other species); Common Sow-thistle (a name also applied to other species); Common Sowthistle (a name also applied to other species); Dashel; Diente de León (Hispanic); Endivia (Hispanic); Gänsedistel (German); Grespino Commune (Hispanic); Hare's Colewort (a name also applied to other species); Hare's Lettuce (a name also applied to other species, old English name); Hare's Palace (a name also applied to other species, old English name); Hare's Thistle (a name also applied to other species); Hare's-colewort (a name also applied to other species); Hare's-lettuce (a name also applied to other species, old English name); Hare's-palace (a name also applied to other species, old English name); Hare's-thistle (a name also applied to other species); Hierba del Golpe (Hispanic); Huai Hehevo ("Mule Deer's Eyelashes", Uto-Aztecan: Akimel O'odham); Hwai Hoehoevo ("Deer Lashes", Pima); Kaalivalvatti (Hispanic); Kålmolke (Swedish); Kohl-gänsedistel (German); Ku Ju Cai (transcribed Chinese); Laiteron (a name also applied to other species, French); Lechuguilla (Hispanic); Matalí Morado (Hispanic); Milk Thistle (misapplied; a name applied to another species and the genus *Silybum*); Milk Weed (misapplied; a name applied to other species); Milk-thistle (misapplied; a name applied to another species and the genus *Silybum*); Milk-weed (misapplied; a name applied to other species, the genus *Asclepias* and to the family Asclepiadaceae); Milkweed (misapplied; a name applied to other species, the genus *Asclepias* and to the family Asclepiadaceae); Milky Dickles; Mikly Tassel (a name also applied to other species); Milky-dickles; Milky-tassel (a name also applied to other species); Milky-tassels (a name also applied to other species); Mitihuaraca (Hispanic); Muela de Caballo (Hispanic); Pualele; Saudistel (German); Serralha-lisa (Portuguese: Brazil); Smooth Sowthistle (a name also applied to other species); Sow Thistle (a name also applied to other species and the genus *Sonchus*); Sow-dindle (a name also applied to other species); Sow-dingle; Sow-thistle (a name also applied to other species and the genus *Sonchus*); Sowthistle (a name also applied to other species and the genus *Sonchus*); St. Mary's Seed; St. Mary's-seed; Swinies (a name also applied to other species); Tlamatsalin (Michoacán); Tskutsuk Chekamiti (Purépecha). DESCRIPTION: Terrestrial annual forb/herb (erect stems 4 inches to 8 feet in height); the stems may be reddish or reddish-pink with a white sap; the leaves are green above and pale green below; the disk florets are yellow; the ray florets are cream or yellow; flowering generally takes place between mid-January and mid-October (additional records: one for early November and one for mid-November; flowering year round has been reported). HABITAT: Within the range of this species it has been reported from mountains; rocky-clayey mountaintops; rocky mountainsides; cliff faces; along rocky canyons; along bouldery-gravelly-sandy, rocky and clayey canyon bottoms; chasms; bluffs; ridgetops; meadows; foothills; rocky hillsides; rocky, rocky-clayey, gravelly-loamy and sandy slopes; sandy loamy bajadas; bedrock and rocky outcrops; amongst rocks; sand dunes; blow-sand deposits; prairies; sandy plains; sandy and clayey uplands; muddy, gravelly, sandy and clayey flats; basins; valley floors; clayey coastal cliffs; coastal flats; along roadsides; two-tracks; within draws; seeps; along sandy streams; streambeds; along creeks; along and in creekbeds; along rivers; rocky riverbeds; along and in gravelly and sandy washes; within clayey and silty drainages; within rocky-silty drainage ways; lakebeds; saltwater marshes; depressions; along (cobbly and gravelly) banks of creeks and rivers; borders of washes; (sandy) edges of rivers, washes, ponds and lagoons; margins of rivers; (muddy, sandy and clayey) shores of creeks and rivers; sand bars; sandy beaches; terraces; loamy bottomlands; sandy floodplains; stock tanks; along canals; along clayey banks, edges and walls of canals; sandy channels; along and in silty ditches; ditch banks and edges; muddy, cobbly and gravelly-sandy riparian areas; waste places, and disturbed areas growing in muddy and wet, moist, damp and dry bouldery-gravelly-sandy, rocky, rocky-sandy, cobbly, cindery-sandy, gravelly, gravelly-sandy and sandy ground; gravelly loam, sandy loam, clayey loam and loam ground; rocky clay, silty clay and clay ground; rocky silty and silty ground, and sandy humusy ground occurring from sea level to 8,100 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used for food, fodder and as a drug or medication. *Sonchus oleraceus* is native to northern, eastern, middle and southern Europe; Asia, and northern Africa. *5, 6, 15, 16, 28 (color photograph 454), 30, 43 (121709), 44 (061111 - color photograph), 46 (Page 965), 63 (041812 - color presentation), 68, 77 (color photograph #23), 80 (Species of the genus *Sonchus* are considered to be Rarely Poisonous and Suspected Poisonous Range Plants. "Species of this genus (*Sonchus*) have been reported to accumulate dangerous levels of nitrates."), 85 (041812 - color presentation), 101 (color photograph), 115 (color presentation), 124 (061111), 140 (Pages 84 & 286), **HR***

***Stephanomeria pauciflora* (J. Torrey) A. Nelson: Brownplume Wirelettuce**

SYNONYMY: *Stephanomeria pauciflora* (J. Torrey) A. Nelson var. *parishii* (W.L. Jepson) P.A. Munz; *Stephanomeria pauciflora* (J. Torrey) A. Nelson var. *pauciflora*. COMMON NAMES: Brown Plume Wire Lettuce; Brown Plume Wire-lettuce; Brown Plume Wirelettuce; Brown-plume Ptiloria; Brown-plume Wire-lettuce (English)[140]; Brownplume Wirelettuce; Brown-plumed Ptiloria; Desert Milk-aster; Desert Milkaster; Desert Straw (a name also applied to other species); Desert-straw (English: Arizona)[140]; Few Flower Wreath-plant; Few Flowered Wire Lettuce; Few-flower Desert-straw; Few-flower Wreath-plant; Few-flower Wire-lettuce; Few-flower Wreath-plant; Few-flowered Stephanomeria; Few-flowered Wire Lettuce; Few-flowered Wire-lettuce; Few-flowered Wirelettuce; Fewflower Wire-lettuce; Fewflower Wirelettuce; Hebe Imixáa ("Rootless Plant", Yuman: Seri)[140]; Jeeh Dootł'izh [Ts'oh, Ts'ósí] <jéʔdóy.is, ɜ^{v}eʾ doɬ'iš [coh, c'o's]> (Athapascan: Navajo)[140]; Parish's Wire-lettuce (var. *parishii*); Piinga <pí:nga> (Uto-Aztecan: Hopi)[140]; Pionilla ("Little Peonia" a name also applied to other species, Spanish: Mexico)[140]; Posapátx Camoz ("What Thinks It's a Sweet-bush", Hokan: Seri)[140]; Prairie Skeleton Plant; Prairie Skeleton-plant;

Prairie Skeletonplant; Sanako'ogad~~ɨ~~b~~ɨ~~ (Uto-Aztecan: Paiute)[140]; Skeleton Plant; Skeleton-weed (a name also applied to the genus *Stephanomeria*); Skeleton-weed (English)[140]; Small-flowered Wirelettuce; Wire Lettuce (a name also applied to the genus *Stephanomeria*); Wire-lettuce (a name also applied to the genus *Stephanomeria*); Wirelettuce (a name also applied to the genus *Stephanomeria*). DESCRIPTION: Terrestrial perennial forb/herb or subshrub (stems 4 to 20 inches in height with some plants described as being up to 5 feet in height, plants up to 4 feet in width were reported; plants were observed and described as being 10 inches in height and 14 inches in width, plants were observed and described as being 20 inches in height and 28 inches in width); the foliage may be blue-green, gray-green, pale green or green; the flower heads may be bluish-white, cream, pale & dark gray, pale lavender, pale lavender-pink, lavender, lavender-pink, orange, pale pink, pink fading to tan-brown, pinkish, pink-lavender, pink-purple, pink-violet, pink-white, pale purple, purple, rose, pale red-lavender, tan, violet, white, dull white, off-white or white-pink; flowering generally takes between late February and late December (additional records: on for mid-January and one for early February). HABITAT: Within the range of this species it has been reported from mountains; cindery mountainsides; bases of mountains; clayey-loamy mesas; rock cliffs; rocky, sandy and sandy-loamy canyons; spurs; crevices in canyon walls; rocky, gravelly-sandy and sandy canyon bottoms; talus; crevices in rocks; sandy knolls; rocky ridges; bouldery ridgetops; rocky ridgelines; shortgrass meadows; tops of cinder cones; crater floors; rocky foothills; bouldery, rocky and clay hills; hilltops; rocky and gravelly hillsides; along bouldery, rocky, rocky-gravelly-loamy, cobbly, cobbly-sandy-clayey, cindery, gravelly, gravelly-loamy, sandy, sandy-silty, loamy and clayey slopes; gravelly bajadas; rocky outcrops; amongst rocks; stony mounds; sand hills; sand dunes; rocky-gravelly and sandy outwash fans; sandy prairies; stony, gravelly-sandy, sandy and clayey plains; rocky-sandy, gravelly, gravelly-loamy, sandy and sandy-silty flats; uplands; valley floors; gravelly valley bottoms; coastal sand dunes; coastal plains; coastal beaches; railroad right-of-ways; along gravelly, gravelly-sandy, gravelly-loamy, gravelly-clayey-loamy, sandy, sandy-silty and silty roadsides; sandy and clayey-loamy arroyos; gravelly-silty and sandy draws; gulches; within ravines; seeps; around springs; seeping streams; along streams; streambeds; along creeks; sandy creekbeds; bouldery-cobbly-sandy and sandy riverbeds; along and in rocky-sandy, cobbly-sandy, gravelly, gravelly-sandy and sandy washes; along rocky-sandy drainages; along drainage ways; around ponds; (gravelly) banks of rivers and washes; borders of washes; (sandy) edges of arroyos and washes; around fringes of playas; along margins of arroyos and washes; shores of rivers; gravel bars, rocky beaches; gravelly and sandy benches; rocky and sandy terraces; rocky-sandy bottomlands; floodplains; stock tanks; ditch banks; rocky-sandy, sandy and clayey-loamy riparian areas, and disturbed areas growing in moist, damp and dry desert pavement; bouldery, bouldery-cobbly-sandy, rocky, rocky-gravelly, rocky-sandy, shaley, stony, cobbly, cobbly-sandy, cindery, gravelly, gravelly-sandy and sandy ground; rocky-gravelly loam, rocky loam, gravelly loam, gravelly-sandy loam, gravelly-sandy-clayey loam, gravelly-clayey loam, sandy-clayey loam, sandy-clayey and clayey loam and loam ground; cobbly-sandy clay and clay ground, and gravelly silty, gravelly-sandy silty, sandy silty and silty ground, occurring from sea level to 8,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food (candy) crop; it was also noted as having been used as a ceremonial item and as a drug or medication. This plant has a milky sap. Butterflies visit the flowers for their nectar. *Stephanomeria pauciflora* is native to southwest-central and southern North America. *5, 6, 15, 16, 28 (color photograph 726), 43 (121909), 44 (061211), 46 (Page 960), 58, 63 (041912 - color presentation), 77 (color photograph #70), **85** (061211 - color presentation), 115 (color presentation), 124 (061211), 127, 140 (Pages 84-86 & 286)*

Stephanomeria pauciflora var. *parishii* (see *Stephanomeria pauciflora*)

Stephanomeria pauciflora var. *pauciflora* (see *Stephanomeria pauciflora*)

***Trixis californica* A. Kellogg: American Threefold**

SYNONYMY: *Trixis californica* A. Kellogg var. *californica*. COMMON NAMES: American Threefold; American [California] Trixis (English)[140]; Arizona Green Plant; Cachano (Spanish: New Mexico, Chiricahua, Coahuila)[140]; California Threefold; California Trixis; Cocazn-ootizx ("Rattlesnake's Foreskin", Hokan: Seri)[140]; Hebai Sa'igar <j'bai sa'igar> (Athapascan: Mountain Pima)[140]; Hierba de Aire ("Air Herb", Spanish: Sonora)[140]; Hierba de Pasmo ("Herb for Pasmo", Spanish: Sonora)[140]; Ruina ("Ruin", Spanish: Sonora)[140]; Santa Lucia (Spanish); Trixis (a name also applied to the genus *Trixis*). DESCRIPTION: Terrestrial perennial (leaves are cold and drought deciduous) subshrub or shrub (10 inches to 6 feet in height); the stems are gray, the leaves are green, dark green or yellow-green; the disk flowers may be yellow; the ray flowers are white or yellow; flowering generally takes place between mid-January and late December; the seeds have straw-colored bristles. HABITAT: Within the range of this species it has been reported from mountains; rocky mountaintops; mountainsides; rocky mesas; rocky cliffs; cliff faces; bases of cliffs; along rocky canyons; canyon walls; canyon bottoms; rocky gorges; talus slopes; crevices in rocks; gravelly and sandy knolls; rocky ledges; bouldery and rocky ridges; bouldery ridgetops; bouldery and rocky foothills; rocky hills; rocky hilltops; rocky and gravelly hillsides; bedrock, bouldery, bouldery-gravelly, rocky, rocky-gravelly, rocky-sandy-clayey, gravelly and loamy slopes; alluvial fans; sandy bajadas; bouldery and rocky outcrops; amongst boulders and rocks; bases of boulders; sandy boulder fields; shady coves; plains; sandy and sandy-clayey-loamy flats; valley floors; along gravelly roadsides; within sandy arroyos; bottoms of arroyos; draws; bottoms of rocky gullies; within ravines; around springs; around seeping streams; along creeks; creekbeds; riverbeds; along and in bouldery, bouldery-gravelly-sandy, rocky, rocky-sandy, stony, gravelly, pebbly and sandy washes; within rocky-bedrock drainage ways; rocky bowls; along banks of arroyos, streams, creeks, rivers, washes and drainages; borders of washes; (rocky) edges of arroyos and washes; sandy beaches; floodplains; riparian areas, and disturbed areas growing in moist and dry bouldery, bouldery-rocky, bouldery-gravelly, bouldery-gravelly-

sandy, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, stony, gravelly, gravelly-sandy, pebbly and sandy ground; sandy-clayey loam and loam ground, and rocky-sandy clay ground often in the shade of rocks and larger shrubs and trees, occurring from sea level to 7,800 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat and may live to be 40 years of age. This plant is occasionally browsed by Mule Deer (*Odocoileus hemionus*). *Trixis californica* is native to southwest-central and southern North America. *5, 6, 13 (Page 356), 15, 16, 28 (color photograph 472), 43 (122309), 44 (061411 - color presentation), 46 (Page 958), 58, 63 (050612 - color presentation), 77, 85 (050712 - color presentation), 86 (color photograph), 91 (Pages 391-392), 106 (122309 - color presentation), 115 (color presentation), 124 (061211 - no record of species or genus), 140 (Pages 86-87 & 286), **HR***

Trixis californica var. *californica* (see *Trixis californica*)

Xanthium canadense (see *Xanthium strumarium* var. *canadense*)

Xanthium commune (see *Xanthium strumarium* var. *canadense*)

Xanthium saccharatum (see *Xanthium strumarium* var. *canadense*)

***Xanthium strumarium* C. Linnaeus (var. *canadense* (P. Miller) J. Torrey & A. Gray is the variety reported as occurring in Arizona): Rough Cocklebur**

SYNONYMY: (for *X.s.* var. *canadense*: *Xanthium californicum* E.L. Greene; *Xanthium canadense* P. Miller; *Xanthium commune* N.L. Britton; *Xanthium saccharatum* C.F. Wallroth). COMMON NAMES: Abrojo ("Bur", Spanish: Arizona to Texas, Tabasco)[140]; 'Ałta'neets'éhii <'alxa'niits'éhiih, ta'neets'éhii> (Athapascan: Navajo)[140]; American Cocklebur (var. *canadense* and *glabratum*); Atsiáŋwádova (Uto-Aztecan)[140]; Atsiogopapa (Uto-Aztecan: Northern Paiute)[140]; Bachapo'or (Uto-Aztecan: Mountain Pima)[140]; Beach Clotbur (var. *canadense*); Beach Cocklebur (var. *canadense*); Broad Bur-weed; Broad Burweed; Broad Cocklebur; Bur Thistle Burdock; Burr Thistle; Bur Weed; Bur-weed (a name also applied to var. *canadense* and other species); Burweed (a name also applied to var. *canadense*, other species and the genus *Xanthium*); Button-bur (var. *canadense*); Buttonbur (English)[140]; Cadio (var. *canadense*); Cadillo ("Bur", Spanish: Arizona, New Mexico, Sonora)[140]; Cadillos (Hispanic); California Bur (a name also applied to var. *canadense* and other species); California Burr (var. *canadense*); California-bur (as *X. orientale*); Californian Burr (var. *canadense*); Canada Cocklebur (var. *canadense*); Canada Cockleburr (var. *canadense*); Canadian Canadian Bur (a name also applied to var. *canadense*); Cang Er (transcribed Chinese); Cocklebur (var. *canadense*); Carrapicho-de-carneiro (Portuguese: Brazil); Carrapicho-grande (Portuguese: Brazil); Chayotillo (Hispanic); Clot-bur (a name also applied to var. *canadense* and to other species); Clotbur (a name also applied to var. *canadense*, other species and the genus *Xanthium*); Clotbur [Clothbur] ("Ball-bur", English: England, Texas)[140]; Clote-bur (a name also applied to the genus *Xanthium*); Clott Bur (a name also applied to other species); Clott-bur (a name also applied to other species); Cocklebur (a name also applied to var. *canadense*, other species and the genus *Xanthium*); Cockleburr; Common Clotbur; Common Cockle Bur; Common Cockle-bur (var. *canadense*); Common Cockle-burr; Common [Spiny] Cocklebur (a name also applied to other species (English)[140]; Common Cocklebur (var. *canadense*); Common Cuckelbur; Common Cucklebur; Cözazni Caacöl ("Large Sandbur", Hokan: Seri)[140]; Cucklebur (a name also applied to var. *canadense* and the genus *Xanthium*); Cuckle Bur (var. *canadense*); Cuckold Burs; Dike-but; Ditch Bur; Ditch-bur; Ditchbur (English)[140]; Gewöhnliche Spitzklette (German); Glandular Clot-bur (var. *canadense*); Glandulart Clotbur (var. *canadense*); Glandular Cocklebur (var. *canadense*); Great Clotbur (var. *canadense*); Great Cocklebur (a name also applied to var. *canadense* and other species); Gullfrö (Swedish); Heartleaf Cocklebur; Hedge-hog Bur-weed; Hedge-hog-bur-weed (var. *canadense*); Hedgehog Burweed (var. *canadense*); Hedgehog-burweed; Huichapole <güichapol, güichapori, guachapore, guacaporo, huichaori, huachapore> (Spanish: California, Sonora to Puebla)[140]; Italian Cocklebur (var. *canadense*); Izee Inlwozh <izee inkozee> (Athapascan: Western Apache)[140]; Kámuknívų (Uto-Aztecan: Ute)[140]; Kmn^{y}a (Yuman: Cocopah)[140]; Kankerroos (Afrikaans); Kropfklette (German); Kwĭ'tcĕmbogop ("Bison Fruit", Uto-Aztecan: Shoshoni)[140]; Lampourde (French); Lampourde Glouteron (French); Large Cockle Bur; Large Cockle-bur; Large Cockle-burr; Large Cocklebur; Large-leaf Cocklebur; Lesser Burdock (var. *canadense*); Lesser Clot-bur; Lesser Clotbur; Louse-bur; Louse-burr; Lousebur; Mo'kĭachipa (Language Isolate: Zuni)[140]; Mo'kiyatchipba ("Round Stickers", Zuni); Mokoksh (Chumash: Ineseño Chumash)[140]; Noogoora-bur (as *X. pungens*); Ŋwaejoka (Kiowa Tanoan: Tewa)[140]; O-namomi (Japanese Rōmaji); Paatso <pá:taco, pa:tcótco> (Uto-Aztecan: Hopi)[140]; Pennsylvania Clotbur (var. *canadense*); Petit Glouteron (French); Qum Nah (Yuman: Paipai)[140]; Rough Cockle-bur; Rough Cocklebur; Rough Cockle-burr; Rough Cockleburr; Sea Burdock; Sea-burdock; Sea Cocklebur (var. *canadense*); Sea Cucklebur (var. *canadense*); Sheep-bur (a name also applied to other species); Sheepbur (a name also applied to other species); Sheepbur (English)[140]; Sheepburr (a name also applied to other species); Sho'moy <shomoy> (Chumash: Barbareño Chumash)[140]; Siberian Cocklebur (for *X. sibericum*); Small Burdock (var. *canadense*); Small Cocklebur (var. *canadense*); Spitzklette (German); Strumarium; Ta'neets'éhii Ntsxaaz <ʔdtani-c'ehí ɳca·gí> (Athapascan: Navajo)[140]; Vaiwa <vaiva, váiva> (Uto-Aztecan: Akimel O'odham, Hiá Ceḍ O'odham)[140]; Waiwel <vaivul> (Uto-Aztecan: Tohono O'odham)[140]; Wisapole (Yuman: Paipai)[140]. DESCRIPTION: Terrestrial annual forb/herb (erect stems 4 inches to 6½ feet in height; plants were observed and described as being 2 to 3 feet in height and 3 to 4 feet in width); the foliage is green, yellowish-green or yellow; the flower heads may be green, greenish-yellow or yellow-green; flowering generally takes place between early May and early November (additional record: one for early January, one for mid-February, one for early April and one for early December); the fruits are green, green-yellow or yellow-green with yellow spines turning to brown prickly burs.

HABITAT: Within the range of this species it has been reported from mountains; mesas; plateaus; cliffs; bases of cliffs; rocky canyons; rock walls of canyons; along sandy canyon bottoms; gorges; shaley bluffs; sandy knolls; clearings in woodlands; meadows; foothills; clayey hills; rocky hillsides; sandy-loamy and clayey slopes; bajadas; sand dunes; benches; shaley breaks; clayey prairies; plains; mud, gravelly, sandy, clayey and silty flats; uplands; basins; sandy and clayey valley floors; valley bottoms; in coastal saltwater marshes; railroad right-of-ways; abandoned roadbeds; sandy roadcuts; along rocky, shaley, gravelly-loamy, sandy, sandy-loamy, sandy-clayey and loamy roadsides; along rocky-sandy arroyos; gravelly and sandy bottoms of arroyos; within rocky, shaley-silty and silty draws; clayey bottoms of draws; gulches; gullies; rocky and sandy ravines; shaley bottoms of ravines; seeps; springs; along streams; along and in rocky and sandy streambeds; along creeks; along and in gravelly-sandy and sandy creekbeds; along rivers; along and in rocky, sandy, sandy-clayey and clayey riverbeds; along and in rocky, rocky-gravelly, gravelly and sandy washes; along and in clayey drainages; sandy-clayey drainage ways; around waterholes; vernal pools; in clayey-loamy poolbeds; around ponds; pondbeds; lakebeds; playas; sandy bogs; sandy areas around and in marshes; swamps; dried mud puddles; depressions; clayey-loamy swales; along (shaley, sandy, sandy-silty, clayey and silty) banks of springs, streams, creeks, creekbeds, rivers, riverbeds and washes; (sandy) edges of seeps, streams, clayey creeks, rivers, ponds, lakes, marshes and lagoons; (muddy) margins of streams, rivers, ponds and lakes; (rocky-sandy, sandy, sandy-loamy, sandy-clayey and clayey) shorelines of creeks, rivers, ponds and lakes; muddy areas of drawdown; rocky-sandy, gravelly, gravelly-sandy, sandy, sandy-clayey, sandy-silty and silty sand bars; gravelly-sandy and sandy beaches; cobbly-sandy and sandy benches; sandy terraces; sandy-loamy, loamy and clayey bottomlands; along stony, gravelly-sandy, gravelly-silty-clayey, sandy, sandy-silty and clayey floodplains; lowlands; sandy fencerows; stock ponds; dry beds of stock tanks; around and in sandy-silty, loamy, loamy-clayey, clayey and clayey-loamy reservoirs; sandy-clayey dry beds of reservoirs; along rocky, sandy and loamy-clayey banks and shores of reservoirs; around and in stock tanks; dams; levees; canals; canal banks; along sandy and loamy ditches; along ditch banks; along bouldery-cobbly-sandy, gravelly and sandy riparian areas; sandy waste places, and disturbed areas growing in mucky, muddy and wet, moist, damp and dry (most often vernally or seasonally wet) bouldery-cobbly-sandy, rocky, rocky-gravelly, rocky-sandy, shaley, stony, cobbly-sandy, gravelly, gravelly-sandy and sandy ground; gravelly loam, sandy loam, clayey loam and loam ground; gravelly-clayey, gravelly-silty clay, sandy clay, loamy clay and clay ground, and shaley silty, sandy silty and silty ground, occurring from sea level to 8,400 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: Exotic? *Xanthium commune* Britton was listed under Miscellaneous Introduced Species as a Long-lived Annual by J.J. Thornber in the "Vegetation Groups of the Desert Laboratory Domain. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used for food (*X.s.* var. *canadense*), as cooking tools (*X.s.* var. *canadense*), paint (seed powder used as a blue paint for the mask dancers (*X.s.* var. *canadense*)) and as a drug or medication. USDA Forest Service Fire Effects Information System reports that "Common Cocklebur seeds and cotyledon leaves are poisonous to all classes of livestock. Beyond the cotyledon stage, plants are not poisonous." Elk (*Cervus elaphus*) browse the plants and Mourning Doves (*Zenaida macroura*) feed on the seeds. *Xanthium strumarium* is native to eastern, middle and southern Europe including islands in the Mediterranean Sea; Asia and islands in the North Pacific Ocean; northwestern, central and southern North America, and northern South America. *5, 6, 15, 28 (color photograph 810) 30, 43 (062509), 44 (061411 - color presentation), 46 (recorded as *Xanthium saccharatum* Wallr., "The seeds and seedlings contain a glucoside, xanthostrumarin, that is poisonous to livestock, especially to swine and poultry." If ingested, the spiny burs may cause the death of young animals by irritating or clogging the intestinal tract.), 63 (050912 - color presentation), 68, 77, 80 (This species (*Xanthium saccharatum*) is listed as a Major Poisonous Range Plant. "Although the toxic principle in cocklebur has been attributed to a glycoside isolated from seeds, the poisonous principle in *Xanthium strumarium* has been identified as hydroquinone. ... The seeds, enclosed in prickly burs, contain the toxic substance, but are rarely ever eaten. Upon germination, the toxic principle is distributed to the seedling and remains through the cotyledon stage. The concentration of the toxic substance drops rapidly as the first true leaves develop. ... Because cocklebur is an annual and a prolific seed producer, every effort should be made to prevent its producing seed." See text for additional information.), **85** (0050912 - color presentation), 101 (color photograph), 115 (color presentation), 124 (012211), 127, 140 (Pages 87-88 & 286)*

***Zinnia acerosa* (A.P. de Candolle) A. Gray: Desert Zinnia**

SYNONYMY: *Zinnia pumila* A. Gray. COMMON NAMES: Cmajíic Ihásaquim ("What Women Brush Their Hair With", Hokan: Seri)[140]; Desert Zinnia; Desert [White] Zinnia (English)[140]; Hierba del Burro (Spanish); Mojépe Ihásaquim Cmaam ("Female Saguaro Hairbrush", Hokan: Seri)[140]; Saapom Ipémt ("What Purple Prickly-pear is Rubbed With", Hokan: Seri)[140]; Spinyleaf Zinnia; White Zinnia; Wild Zinnia; Zinia (a name also applied to other species, Spanish); Zinia del Desierto ("Desert Zinnia", Spanish: Sonora)[140]. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (stems 3 to 20 inches in height and up to 2 feet in width with a flat or rounded crown); the stems may be gray or greenish; the leaves may be gray or gray-green; the disk florets may be green-yellow, yellow or yellow-orange; the ray florets may be cream, cream-white, white, white-cream, pale yellow, yellow or yellow-white; flowering generally takes place between early March and early November (additional records: three for early December). HABITAT: Within the range of this species it has been reported from mountains; sandy and sandy-loamy mesas; sandy-loamy plateaus; canyons; canyon bottoms; crevices in bedrock; along rocky and stony ridges; rocky ridgetops; foothills; rocky hills; rocky and gravelly hillsides; bedrock, bedrock, bouldery, rocky, rocky-gravelly-sandy, gravelly, gravelly-sandy, gravelly-sandy-loamy, gravelly-loamy, sandy, sandy-loamy and loamy slopes; rocky, gravelly, gravelly-sandy, sandy and clayey bajadas; rocky outcrops; stony and sand hills; sand dunes; plains; rocky-gravelly-sandy, rocky-sandy, gravelly and gravelly-sandy-clayey flats; rocky valley floors; gravelly-silty and gravelly-silty-loamy valley bottoms; along gravelly-sandy-clayey-loamy roadsides; arroyos; sandy bottoms of arroyos; washes; sandy drainages; along ponds; (gravelly-sandy) banks of washes; edges of swales; sandy benches; terraces; floodplains; lowlands; riparian areas; waste places, and

disturbed areas growing in damp and dry desert pavement; bouldery, rocky, rocky-gravelly-sandy, rocky-sandy, stony, gravelly, gravelly-sandy and sandy ground; gravelly loam, gravelly-sandy loam, gravelly-sandy-clayey loam, gravelly-silty loam, sandy loam and loam ground; gravelly-sandy clay and clay ground, gravelly silty ground, and chalky ground, occurring from 1,500 to 6,300 feet in elevation in the woodland, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. *Zinnia acerosa* is native to southwest-central and southern North America. *5, 6, 13 (Page 297), 15, 16, 18, 28 (color photograph 257), 43 (062609 - *Zinnia acerosa* A. Gray), 44 (050912 - no record of species or genus), 46 (recorded as *Zinnia pumila* Gray, Page 897), 48 (genus), 58, 63 (050912 - color presentation), 77 (color photograph #71), 85 (050912 - color presentation), 115 (color presentation), 124 (050912 - no record of species; genus record), 127, 140 (Pages 88-90 & 286), **WTK** (April 16, 2008)*

Zinnia pumila (see *Zinnia acerosa*)

Bignoniaceae: The Trumpet-creeper Family

***Chilopsis linearis* (A.J. Cavanilles) R. Sweet: Desert Willow**

COMMON NAMES: Bow Willow; Catalpa Willow (Texas); Desert Catalpa; Desert Willow (a name also applied to other species); Desert-willow (a name also applied to the genus *Chilopsis*); Desertwillow (a name also applied to the genus *Chilopsis*); False-willow (a name also applied to other species); Flor de Mimbre (a name also applied to other species); Flowering Willow; Flowering-willow; Jano (Spanish); Janos (Spanish); Mimbres (Spanish); Ökentrumpet (Swedish); Texas Desert Willow; Willow-leaved Catalpa; Willowleaf Catalpa. DESCRIPTION: Terrestrial perennial (cold-deciduous) shrub or tree (5 to 33 feet in height; plants were observed and described as being 10 to 13 feet in height with spreading crowns to 33 feet in width, one plant was observed and described as being 15 feet in height with a crown 20 feet in width, plants were observed and described as being 18 feet in height with crowns 20 feet in width, plants were observed and described as being 22 feet in height with crowns 25 feet in width); the bark is dark brown or dark gray-brown; the light green leaves may be straight (subsp. *linearis* and roughly to 12 inches in length and 3/8 inch in width) or curved (subsp. *arcuata* and roughly 3 to 5½ in length and 1/8 to 1/4 inch in width); the flowers may be light lavender, lavender, lavender-white, pale pink, pink, pink-lavender, pink-lavender-magenta with a white throat, pinkish-white, purple, purple-white, purple with yellow markings, reddish-purple, rose, violet, white, whitish, white with a pink tint or white with pink or purple lines; flowering generally takes place between mid-April and mid-October (additional records: two for late March, two for late October and one for mid-December); the seeds are dispersed from slender pods (4 to 12 inches in length). HABITAT: Within the range of this species it has been reported from mountains; mudstone mesas; bases of cliffs; rocky and sandy canyons; rocky canyon bottoms; rocky and sandy talus slopes; ledges; foothills; talus hills; gravelly-sandy hillsides; rocky, gravelly, gravelly-sandy, sandy, sandy-loamy and loamy slopes; sandy bajadas; amongst rocks; sand dunes; plains; sandy and sandy-loamy flats; silty valley floors; along gravelly, gravelly-sandy and gravelly-sandy-clayey-loamy roadsides; along and in gravelly-sandy, sandy and clayey-loamy arroyos; bottoms of arroyos; gulches; ravines; along sandy springs; along streams; rocky and gravelly-sandy streambeds; in sandy soil along creeks; along and in sandy creekbeds; sandy riverbeds; along and in rocky, rocky-sandy, gravelly, gravelly-sandy and sandy washes; rocky and sandy-loamy drainages; drainage ways; sandy and silty depressions; along (rocky, rocky-sandy, gravelly-sandy and sandy) banks of streams, creeks, washes and water courses; borders of washes; edges of washes; along margins of washes; sand bars; bottomlands; sandy floodplains; mesquite bosques; along canals; sandy and clayey-loamy riparian areas and disturbed areas growing in dry bouldery-cobbly-sandy, rocky, rocky-sandy, gravelly, gravelly-sandy and sandy ground; rocky-gravelly loam soils; rocky-gravelly loam, gravelly-sandy-clayey loam, sandy loam, clayey loam and loam ground, and silty ground, occurring from sea level to 6,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, the flowers may be fragrant. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial fiber crop. The Desert Willow may be useful in controlling erosion. The bee, *Bombus sonorus*, is a pollinator, and hummingbirds are attracted to the flowers and feed on the nectar. *Chilopsis linearis* is native to south-central and southern North America. *5, 6, 13 Pages 214-215), 15, 18, 26 (color photographs), 28 (color photograph 55), 43 (062609 - *Chilopsis linearis* Sweet), 44 (061411), 46 (Page 794), 48, 52 (color photograph), 53, 63 (050912 - color presentation), 74, 77, **85** (051012 - color presentation), 86 (color photograph), 91 (Pages 160-163), 115 (color presentation), 124 (061211), 127*

***Chilopsis linearis* (A.J. Cavanilles) R. Sweet subsp. *arcuata* (F.R. Fosberg) J.S. Henrickson: Desert Willow**

SYNONYMY: *Chilopsis linearis* (A.J. Cavanilles) R. Sweet var. *arcuata* F.R. Fosberg. COMMON NAMES: Bow Willow (a name also applied to the species); Catalpa Willow (a name also applied to the species, Texas); Desert Catalpa (a name also applied to the species); Desert Willow (a name also applied to the species and to other species); Desert-willow (a name also applied to the species and the genus *Chilopsis*); Desertwillow (a name also applied to the species and the genus *Chilopsis*); False-willow (a name also applied to the species and to other species); Flor de Mimbre (a name also applied to the species and to other species); Flowering Willow (a name also applied to the species); Flowering-willow (a name also applied to the species); Jano (a name also applied to the species, Spanish); Mimbres (a name also applied to the species, Spanish); Texas Desert Willow (a name also applied to the species); Western Desert Willow; Western Desert-willow; Western Desertwillow; Willow-leaved Catalpa (a name also applied to the species); Willowleaf Catalpa (a name also applied to the species). DESCRIPTION: Terrestrial perennial

(cold deciduous) shrub or tree (5 to 33 feet in height; one plant was observed and described as being 13 feet in height with a crown 13 feet in width); the leaves are curved and roughly 3 to 5½ in length and 1/8 to 1/4 inch in width; the flowers may be pale pink, pink, purple, violet with yellow markings, white, white with maroon-purple or yellow & magenta lines or whitish tinged with lavender and yellow; flowering generally takes place between mid-April and early October (additional record: one for late October); the seeds are dispersed from slender pods (4 to 12 inches in length). HABITAT: Within the range of this species it has been reported from mountains; mesas; canyons; foothills; bedrock, rocky, rocky-sandy, gravelly-sandy and sandy-silty-loamy slopes; sandy bajadas; amongst rocks; breaks; plains; flats; valley floors; along sandy-loamy roadsides; arroyos; draws; along streams; along sandy streambeds; along rocky creeks, along and in rocky, gravelly, gravelly-sandy and sandy washes; drainages; (sandy) banks of water courses; margins of washes; sand bars; floodplains, and riparian areas growing in dry rocky, rocky-sandy, gravelly, gravelly-sandy and sandy ground and rocky-gravelly loam, sandy loam and sandy-silty loam ground, occurring from sea level to 6,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The species, *Chilopsis linearis*, was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial fiber crop. The Desert Willow may be useful in controlling erosion. The bee, *Bombus sonorus*, is a pollinator, and hummingbirds are attracted to the flowers and feed on the nectar. *Chilopsis linearis* subsp. *arcuata* is native to south-central and southern North America. *5, 6, 13 (Page 215, color photograph: Plate P.2., Page 402; "The desert willows have been used widely as ornamentals. They are prized for their graceful habit and large, attractive, sweet-scented flowers."), 18 (species), 26 (species, color photographs of species), 28 (species, color photograph 55), 43 (062609), 44 (061411 - color photograph), 46 (Page 794), 48 (species), 52 (species, color photograph of species), 53, 58, 63 (050912 - color presentation), 74 (species), **85** (051012 - color presentation of dried material), 86 (species, color photograph of species), 91 (species, Pages 160-163), 115 (color presentation of species), 124 (061211 - no record of subspecies; species record), 127 (species)*

Chilopsis linearis var. *arcuata* (see *Chilopsis linearis* subsp. *arcuata*)

Boraginaceae: The Borage Family

Amsinckia echinata (see *Amsinckia menziesii* var. *intermedia*)

Amsinckia intermedia (see *Amsinckia menziesii* var. *intermedia*)

Amsinckia intermedia var. *echinata* (see *Amsinckia menziesii* var. *intermedia*)

***Amsinckia menziesii* (J.G. Lehmann) A. Nelson & J.F. Macbride var. *intermedia* (F.E. von Fischer & C.A. Meyer) F.R. Ganders: Common Fiddleneck**

SYNONYMY: *Amsinckia echinata* A. Gray; *Amsinckia intermedia* F.E. von Fischer & C.A. Meyer; *Amsinckia intermedia* F.E. von Fischer & C.A. Meyer var. *echinata* (A. Gray) I.L. Wiggins. COMMON NAMES: Cedkam (a name also applied to other species, Uto-Aztecan: Hiá Ceḍ O'odham)[140]; Cetkom <chetkom> (Uto-Aztecan: Tohono O'odham)[140]; Chedkoadag <tci-itkatak, djeh-t-ka-tak> (Uto-Aztecan: Akimel O'odham)[140]; Coast Buckthorn; Coast Fiddleneck (a name also applied to other species); Common Fiddleneck; Common Rancher's Fireweed; Common Rancher's-fireweed; Common Ranchers Fireweed; Devil's Lettuce (English)[140]; Fiddle Neck (a name also applied to the genus *Amsinckia*); Fiddleneck (a name also applied to the genus *Amsinckia* and to the family Boraginaceae); [Fireweed] Fiddleneck (English)[140]; Finger Weed; Fireweed Fiddleneck; Intermediate Fiddleneck; Intermediate Rancher's Fireweed; Kacú:l N^{y}mpał^{y} (Yuman: Cocopa)[140]; Kuniroûmp (Uto-Aztecan: Shoshoni)[140]; Kurttukeltalemmikki; Menzies Fiddleneck; Orange-flowered Menzies Fiddleneck; Orange-flowered Menzies's Fiddleneck; Orange-flowered Menzies' Fiddleneck; Ranchers Fireweed; Sacate Gordo; Sacoto Gordo; Tarweed (a name also applied to other species and the genus *Amsinckia*); Yellow Burnweed; Yellow Burweed; Yellow Burrweed (a name also applied to other species); Yellow Forget Me Not (a name also applied to other species); Yellow Tarweed (a name also applied to other species). DESCRIPTION: Terrestrial annual forb/herb (erect stems 2 inches to 4 feet in height); the flowers are golden-yellow, orange, orange-yellow, yellow or yellow-orange; flowering generally takes place between late January and late May (additional records: one for mid-June, one for late June, one for late November and one for early December). HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; sandy mesas; plateaus; bases of cliffs; silty canyons; rocky canyon bottoms; sandy-clayey pockets in rocks; hogbacks; clayey ridges; ridgetops; meadows; foothills; rocky and silty hills; clayey hilltops; bouldery, rocky and rocky-sandy hillsides; bouldery, rocky, rocky-loamy-clayey, shaley-clayey-loamy, cobbly-sandy-loamy, gravelly-sandy, gravelly-loamy and clayey slopes; rocky-sandy alluvial fans; bajadas; rocky outcrops; amongst boulders and rocks; boulderfields; along boulders; sand dunes; sand sheets; blow-sand deposits; gravelly, gravelly-sandy, sandy, sandy-clayey and clayey flats; sandy uplands; basins; rocky valley floors; coastal terraces; along roadsides; along arroyos; along bottoms of arroyos; draws; seeps; in clay around springs; along streams; along creeks; along creekbeds; along rivers; riverbeds; along and in rocky-sandy, gravelly-sandy, sandy and sandy-loamy washes; within sandy drainages; sandy drainage ways; around ponds; marshes; clayey-loamy depressions; swales; (sandy) banks of streams and lakes; edges of washes; margins of washes; mudflats; benches; rocky and gravelly and sandy terraces; loamy bottomlands; silty floodplains; silty impoundments; edges of stock tanks; edges of ditches; riparian areas; recently burned areas of oak woodland and chaparral, and disturbed areas growing in moist and dry bouldery, bouldery-sandy, rocky, rocky-sandy, cindery-sandy,

gravelly, gravelly-sandy and sandy ground; shaley-clayey loam, cobbly-sandy loam, gravelly loam, sandy loam, clayey loam and loam ground; rocky-loamy clay, sandy clay and clay ground, and gravelly-silty and silty ground, occurring from sea level to 7,000 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Amsinckia menziesii* var. *intermedia* is native to west-central and southern North America. *5, 6, 15 (reported as *Amsinckia intermedia* Fisch. & Mey.), 16 (reported as *Amsinckia intermedia* Fisch. & Mey.), 28 (reported as *Amsinckia intermedia*, color photograph 380), 43 (052412 - no record for *Amsinckia menziesii* var. *intermedia*), 44 (061511), 46 (reported as *Amsinckia intermedia* Fisch. & Meyer, Page 723), 58 (reported as *Amsinckia intermedia* Fisch. & Meyer), 63 (051012 - color presentation), 68 ("The mature seeds have been demonstrated to cause hepatic cirrhosis, known as "hard liver disease" of cattle and swine, and the "walking disease" of horses. Sheep are either immune or highly resistant to the poison. The disease is common in the Pacific Northwest, but not in Arizona. This plant also may cause nitrate poisoning."), 77 (reported as *Amsinckia intermedia* F. & M., color photograph labeled *Amsinckia intermedia* #7), 80 (This plant (*Amsinckia intermedia* and others) is listed as a Rarely Poisonous and Suspected Poisonous Range Plant. "Cattle, horses and swine may be poisoned by an unknown liver toxin from eating large amounts of the seeds of this desert annual. Also plants may cause nitrate poisoning."), **85** (061511 - color presentation), 101, 115 (color presentation), 124 (061511), 140 (recorded as *Amsinckia menziesii* (Lehmann) A. Nelson & J.F. Macbride var. *intermedia* (Fischer & C.A. Meyer) Ganders [*Amsinckia intermedia* C.F. Fischer & C.A. Meyer], Pages 91-92 & 287), **WTK** (April 16, 2008)*

***Amsinckia tessellata* A. Gray (var. *tesselata* is the variety reported as occurring in Arizona): Bristly Fiddleneck**

COMMON NAMES: Bristly Fiddle-neck; Bristly Fiddleneck; Cedkam (a name also applied to other species, Uto-Aztecan: Hiá Ceḍ O'odham); Checker Fiddle-neck; Checker Fiddleneck; Checkered Fiddleneck; Cobblestone Fiddleneck; Devil's Fiddleneck; Devil's Lettuce; Devil's-lettuce; Fiddleneck (a name also applied to other species, the genus *Amsinckia* and to the family Boraginaceae); Tessellate Fiddle Neck; Tessellate Fiddle-neck; Tessellate Fiddleneck; Tiva'nɨbɨ (Uto-Aztecan: Kawaiisu)[140]; Tso'hamp [Tso'nap] (Uto-Aztecan: Shoshoni)[140]; Tu'karûmp (Uto-Aztecan: Ute)[140]; Western Fiddleneck. DESCRIPTION: Terrestrial annual forb/herb (erect stems 4 inches to 4 feet height); the foliage is green; the flowers may be golden, golden-yellow, orange, orange-yellow, yellow, dark yellow or yellow-orange; flowering generally takes place between early January and late June (additional records: one for early September, one for late November and one for early December). HABITAT: Within the range of this species it has been reported from mountains; clayey mountaintops; mountainsides; pebbly-sandy-silty and sandy-clayey-loamy mesas; stony bases of cliffs; rocky, rocky-silty, gravelly and sandy canyons; gravelly, gravelly-sandy and sandy canyon bottoms; talus slopes; rocky knolls; ledges; rocky and sandy ridges; gravelly-sandy and sandy ridgetops; meadows; foothills; bouldery, rocky, rocky-stony, loamy and clayey hills; rocky, rocky-sandy-loamy, shaley and clayey hillsides; rocky, stony, cobbly-sandy, cobbly-loamy, gravelly, sandy, sandy-loamy and sandy-clayey-loamy slopes; alluvial fans; gravelly and silty bajadas; rocky outcrops; gravelly bases of rock outcrops; amongst boulders and rocks; around rocks; sand dunes; sloping sand sheets; sandy edges of dunes; plains; gravelly, pebbly-sandy-silty and sandy flats; valley floors; valley bottoms; along rocky, rocky-sandy, rocky-silty, gravelly, gravelly-sandy, sandy and loamy roadsides; arroyos; gullies; sandy bottoms of ravines; seeps; clay soil along creeks; along and in rocky, rocky-sandy, cobbly-gravelly-sandy, gravelly, gravelly-sandy, sandy and sandy-loamy washes; within gravelly and sandy drainages; along and in drainage ways; depressions; silty lakebeds; banks of arroyos and rivers; sandy edges of washes and lakes; along margins of washes; silty-clayey shores of lakes and lakebeds; beaches; gravelly and sandy benches; terraces; mesquite bosques; margins of stock tanks; riparian areas; waste places, and disturbed areas growing in moist, damp and dry desert pavement; bouldery, bouldery-rocky, bouldery-sandy, rocky, rocky-stony, rocky-sandy, shaley, stony, cobbly-gravelly-sandy, cobbly-sandy, gravelly, gravelly-sandy and sandy ground; bouldery-gravelly-sandy-clayey loam, rocky-sandy loam, cobbly loam, gravelly loam, gravelly-sandy loam, gravelly-sandy-clayey loam, sandy loam, sandy-clayey loam, sandy-silty loam and loam ground; rocky clay, sandy clay, silty clay and clay ground, and rocky-silty, gravelly silty and pebbly-sandy silty ground, occurring from 100 to 8,500 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. *Amsinckia tessellata* is native to southwest-central and southern North America. *5, 6, 15, 16, 43 (122709), 44 (061611 - color photograph), 46 (Page 723), 63 (051012 - color presentation), 77, 80 (The plant *Amsinckia intermedia* and others are listed as a Rarely Poisonous and Suspected Poisonous Range Plant. "Cattle, horses and swine may be poisoned by an unknown liver toxin from eating large amounts of the seeds of this desert annual. Also plants may cause nitrate poisoning."), **85** (051012 - color presentation of dried material), 124 (061611 - no record of species; genus record), 127, 140 (Page 91)*

***Cryptantha angustifolia* (J. Torrey) E.L. Greene: Panamint Cryptantha**

COMMON NAMES: Bristlelobe Cryptantha; Cat's-eye Panamint; Creosote-bush Cat's-eye; Desert Cryptantha (a name also applied to other species); Forget-me-not (a name also applied to the family Boraginaceae); Hehe Ksatx (Seri); Narrow-leaf Cryptantha; Narrow-leaf Forget-me-not; Narrow-leaf Nievitas; Narrow-leaf Pick-me-not; Narrow-leaf Popcorn Flower; Narrow-leaf Popcorn-flower; Narrow-leaf Popcornflower; Narrow-leaved Cryptantha; Narrow-leaved Forget-me-not; Narrow-leaved Nievitas; Narrow-leaved Popcorn Flower; Narrow-leaved Popcorn-flower; Narrow-leaved Popcornflower; Narrowleaf Cryptanth; Narrowleaf Cryptantha; Narrowleaf Nievitas; Narrowleaf Pick-me-not; Nievitas (a name also applied to other species, Spanish); Panamint Catseye (a name also applied to other species); Panamint Cryptantha (a name also applied to other species); Peluda (a name also applied to other species, Spanish). DESCRIPTION: Terrestrial annual forb/herb (stems 2 to 12 inches in height); the foliage may be gray-green, grayish or greenish; the flowers may be white, whitish or white with a yellow throat;

flowering generally takes place between early January and mid-July (additional record: one for mid-November). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; sandy-silty mesas; rocky canyons; bouldery and sandy canyon bottoms; scree; talus slopes; sandy and clayey ridges; sandy cinder cones; foothills; rocky, gravelly and sandy hills; bouldery-sandy and rocky hillsides; rocky, rocky-sandy, stony-sandy, cobbly-gravelly, cobbly-gravelly-sandy, gravelly, gravelly-sandy and sandy slopes; rocky and gravelly alluvial fans; gravelly and gravelly-sandy bajadas; gravelly-sandy pediments; about and in rocky outcrops; sandy lava flows; sandy lava fields; sand hills; sand dunes; sandy hummocks; blow-sand deposits; gravelly-sandy-loamy and sandy plains; gravelly, gravelly-sandy, sandy and silty flats; basins; gravelly and sandy valley floors; sandy coastal plains; sandy coastal flats; hilly beach gravels; sandy coastal flats; along sandy, sandy-loamy and loamy roadsides; arroyos; sandy draws; in gravel along streams; along gravelly-sandy creeks; sandy riverbeds; along and in bouldery, rocky-sandy, stony-sandy, cobbly-gravelly-sandy, cobbly-pebbly-sandy, gravelly, gravelly-sandy and sandy washes; in drainages; drainage ways; sandy-silty bottoms of playas; sandy and silty depressions; along (muddy, gravelly-sandy and sandy) banks of arroyos, rivers and washes; (sandy) edges of washes, lakes and playas; margins of washes; mudflats; gravel and sand bars; shelves; gravelly-sandy-silty terraces; sandy bottomland; floodplains; canal banks; riparian areas, and disturbed areas growing in muddy, and moist and dry desert pavement; bouldery, bouldery-sandy, rocky, rocky-sandy, cobbly-gravelly, cobbly-gravelly-sandy, cobbly-pebbly-sandy, gravelly, gravelly-sandy and sandy ground; gravelly-sandy loam; gravelly-sandy-clayey loam, sandy loam and loam ground; clay ground, and gravelly-sandy silty, sandy-silty and silty ground, occurring from sea level to 7,000 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: One record included the observation that the taproot contained a purplish dye. *Cryptantha angustifolia* is native to southwest-central and southern North America. *5, 6, 15, 16, 28 (color photograph 229), 43 (122709 - *Cryptantha angustifolia* Greene), 44 (061611), 46 (Page 719), 58, 63 (051112 - color presentation), 77, **85** (061611 - color presentation), 124 (061611 - no record of species; genus record), 140 (Page 287)*

Cryptantha barbigera (A. Gray) E.L. Greene: Bearded Cryptantha

COMMON NAMES: Bearded Cat's Eye; Bearded Cat's-eye; Bearded Catseye; Bearded Cryptanth; Bearded Cryptantha; Bearded Forget-me-not; Bearded Nievitas; Narrowleaf Nievitas (a name also applied to other species, Spanish); Peluda (a name also applied to other species, Spanish). DESCRIPTION: Terrestrial annual forb/herb (stems 4 to 16 inches in height; one plant was observed and described as being 4 inches in height and 20 inches in length, one plant was observed and described as being 5 inches in height and 12 inches in width, one plant was observed and described as being 12 inches in height and 10 inches in width); the foliage is deep green; the flowers may be cream, white or white with a yellow throat; flowering generally takes place between mid-January and mid-June (additional records: two for late November and one for late December). HABITAT: Within the range of this species it has been reported from mountains; sandy mesas; rim rock; cliffs; bases of cliffs; rocky canyons; bases of canyon walls; along rocky and sandy canyon bottoms; rocky spurs; scree; bouldery talus slopes; rocky ledges; ridges; ridgetops; sandy meadows; crater floors; gravelly, gravelly-sandy and sandy foothills; bouldery, rocky and rocky-gravelly hills; rocky hillsides; bedrock, bouldery, bouldery-rocky-sandy, rocky, rocky-gravelly, rocky-sandy, stony-sandy, cobbly-gravelly-sandy, cindery, gravelly, gravelly-loamy, sandy, sandy-loamy, clayey and clayey-loamy slopes; bases of slopes; rocky alluvial fans; bajadas; bouldery and rocky outcrops; amongst boulders and rocks; sand hills; sand dunes; sandy edges of dunes; blow-sand deposits; plains; rocky-gravelly, cindery, gravelly, sandy and clayey-loamy flats; basins; sandy valley floors; railroad right-of-ways; along gravelly, sandy and clayey roadsides; arroyos; bottoms of arroyos; draws; within rocky gullies; ravines; springs; along streams; rocky-sandy and gravelly streambeds; beside creeks; creekbeds; along rivers; sandy riverbeds; along and in bedrock, bouldery, bouldery-gravelly, rocky, rocky-sandy, cobbly-gravelly-sandy, gravelly, gravelly-sandy, sandy and silty washes; along gravelly drainages; sandy bottoms of waterholes; marshes; banks of rivers; (rocky) edges of arroyos and washes; margins of washes; mudflats; sandy benches; shelves; gravelly terraces; loamy bottomlands; sandy floodplains; riparian areas, and disturbed areas growing in moist and dry desert pavement; bouldery, bouldery-rocky-sandy, bouldery-gravelly, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, cobbly-sandy, cindery, cindery-sandy, gravelly, gravelly-sandy and sandy ground; bouldery-sandy-clayey loam, gravelly-sandy loam, gravelly loam, sandy loam, clayey loam and loam ground; gravelly clay and clay ground, and sandy silty and silty ground, occurring from sea level to 7,400 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: One record included an observation that the taproot contained a purplish dye. *Cryptantha barbigera* is native to southwest-central and southern North America. *5, 6, 15, 16, 43 (122809 - *Cryptantha barbigera* Greene), 44 (061611), 46 (Page 721), 58, 63 (051112 - color presentation), 77, **85** (051112 - color presentation), 124 (061611 - no record of species; genus record), 140 (Page 287)*

Lappula occidentalis var. *occidentalis* (S. Watson) E.L. Greene: Flatspine Stickseed

SYNONYMY: *Lappula redowski* auct. non (J.W. Hornemann) E.L. Greene; *Lappula redowskii* (J.W. Hornemann) E.L. Greene var. *desertorum* (E.L. Greene) I.M. Johnston; *Lappula redowskii* (J.W. Hornemann) E.L. Greene var. *occidentalis* (S. Watson) P.A. Rydberg; *Lappula redowskii* (J.W. Hornemann) E.L. Greene var. *redowskii*. COMMON NAMES: Beggar's Tick (a name also applied to the species and other species); Bluebur (a name also applied to the species); Desert Stickseed; Flat Spine Sheepburr; Flat-spine Sheepbur; Flat-spine Sheepburr; Flat-spine Stickseed; Flat-spine Stickweed; Flatspine Sheep-burr; Flatspine Stickseed (a name also applied to var. *cupulata* and the species); Flatspine Stickweed; Hairy Stick Seed; Hairy Stickseed; Hairy Sticktight; Redowski Stickseed; Redowski Stickweed; Redowski's Stickseed; Redowski's Stickweed; Small Beggar's-lice (Kansas); Spiny Sheepbur (a name also applied to the species); Stickseed (a name also applied to the genus *Lappula*); Stick-tight (a name also applied to the species, other species and to the genus *Lappula*); Sticktight (a name also applied to other species and the genus *Lappula*); Western Blue Bur; Western Blue-bur; Western Bluebur; Western Beggar's Lice;

Western Beggar's-lice; Western Stickseed (a name also applied to the species and to other species); Western Sticktight; Western Stickweed; White Stickseed. DESCRIPTION: Terrestrial annual or biennial forb/herb (erect stems 4 to 32 inches in height); the foliage is gray-green; the flowers may be pale blue, pale blue-white, blue, light pink, purple, sky blue, white or yellow; flowering generally takes place between mid-February and mid-September (additional records: five for mid-January and four for mid-October). HABITAT: Within the range of this species it has been reported from mountains; rocky mountaintops; mountainsides; gravelly, gravelly-sandy and sandy mesas; plateaus; cliffs; bouldery bases of cliffs; along rocky, gravelly-loamy and sandy canyons; sandy canyon bottoms; bouldery-gravelly-sandy gorges; talus; sandy bluffs; rocky, rocky-gravelly-clayey, gravelly, gravelly-sandy and gravelly-silty-loamy buttes; bedrock knolls; rocky-gravelly-silty ledges; rocky, rocky-shaley, shaley-gravelly, gravelly, sandy and sandy-clayey ridges; rocky, sandy and loamy ridgetops; gravelly-clayey edges of ridgetops; rocky clearings in forests and woodlands; around and in rocky, stony, gravelly-sandy, sandy, loamy-clayey, silty-clayey and humusy meadows; foothills; rocky, gravelly, gravelly-sandy, sandy and sandy-loamy hills; cindery (scoria) hilltops; rocky, rocky-sandy and rocky-loamy hillsides; along bouldery-rocky-gravelly, bouldery-sandy, rocky, rocky-shaley, rocky-sandy, rocky-silty-clayey, shaley, shaley-silty, stony, stony-sandy, cobbly-loamy, cindery, gravelly, gravelly-sandy, gravelly-sandy-loamy, sandy, sandy-loamy, sandy-clayey, sandy-clayey-loamy, loamy, loamy-clayey, clayey, clayey-loamy, silty, silty-loamy and silty-clayey slopes; bajadas; rocky outcrops; gravelly-sandy bases of outcrops; amongst boulders and rocks; sandy bases of rocks; clayey rock beds; alcoves; sheltered rock coves; lava flows; lava fields; sand bluffs; sandy dunes; rocky outwash; gravelly-sandy and loamy-clayey banks; breaks; steppes; gravelly-sandy and silty-loamy prairies; plains; rocky, gravelly, gravelly-sandy, sandy, sandy-loamy, sandy-clayey, loamy and clayey flats; rocky, rocky-sandy and sandy uplands; basins; basin bottoms; loamy valley floors; along railroad right-of-ways; railroad beds; gravelly-sandy roadbeds; along rocky, rocky-sandy, gravelly, gravelly-loamy and sandy roadsides; rocky and sandy arroyos; bottoms of arroyos; rocky draws; bottoms of draws; gulches; within ravines; springs; sandy streambeds; along creeks; creekbeds; in sand along rivers; sandy and clayey riverbeds; along and in rocky, gravelly, gravelly-sandy-silty and sandy washes; within gravelly, sandy and clayey drainages; in rocks around ponds; boggy areas; depressions; clayey swales; along (shaley, sandy and silty-clayey) banks of arroyos, draws, streams, creeks, rivers and drainages; (sandy-loamy) edges of gulches and swales; mudflats; gravel bars; beaches; sandy benches; cobbly-loamy, sandy and loamy bottomlands; rocky-sandy-clayey, sandy and clayey floodplains; along fencelines; edges of stock tanks; canal banks; within ditches; gravelly-sandy-loamy and sandy riparian areas; clayey-loamy waste places, and disturbed areas growing in wet, moist and dry desert pavement; bouldery, bouldery-rocky-gravelly, bouldery-gravelly-sandy, bouldery-sandy, rocky, rocky-shaley, rocky-gravelly, rocky-sandy, shaley, shaley-gravelly, stony, stony-sandy, cindery, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-gravelly-sandy-clayey loam, rocky-sandy-clayey loam, cobbly loam, gravelly loam, gravelly-sandy loam, gravelly-clayey loam, gravelly-silty loam, sandy loam, sandy-clayey loam, sandy-silty loam, clayey loam, silty loam and loam ground; rocky clay, rocky-gravelly clay, rocky-sandy clay, rocky-silty clay, gravelly clay, sandy clay, loamy clay, silty clay and clay ground; rocky-gravelly silty, shaley silty, gravelly-sandy silty and silty ground; humusy ground, and gravelly-sandy chalky ground, occurring from 700 to 10,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial fodder crop; it was also noted as having been used as a drug or medication. *Lappula occidentalis* var. *occidentalis* is native to northwestern, northern, west-central and southern North America. *5, 6, 15 (recorded as *Lappula redowskii* (Hornem.) Greene var. *redowskii*), 16 (recorded as *Lappula redowskii* (Hornem.) Greene var. *redowskii*), 43 (010110 - *Lappula redowskii* Greene var. *desertorum* (Greene) I.M. Johnst., *Lappula redowskii* (Hornem.) Greene var. *occidentalis* Á. Löve & D. Löve), 44 (051412 - no records listed under Common Names for variety or species; genus record, records listed under *Lappula redowskii* and *Lappula redowskii* var. *redowskii*, color picture), 46 (recorded as *Lappula redowskii* (Hornem.) Greene, Page 713), 58 (recorded as *Lappula redowskii* (Hornem.) Greene), 63 (051412 - color presentation), 77 (recorded as *Lappula redowskii* (Hornem.) Greene), **85** (051512 - color presentation), 101 (color photograph), 115 (color presentation of species), 124 (051312), 127*

Lappula redowskii (see *Lappula occidentalis* var. *occidentalis*)

Lappula redowskii var. *desertorum* (see *Lappula occidentalis* var. *occidentalis*)

Lappula redowskii var. *occidentalis* (see *Lappula occidentalis* var. *occidentalis*)

Lappula redowskii var. *redowskii* (see *Lappula occidentalis* var. *occidentalis*)

***Pectocarya heterocarpa* (I.M. Johnston) I.M. Johnston: Chuckwalla Combseed**

SYNONYMY: *Pectocarya penicillata* (W.J. Hooker & G.A. Arnott) A.P. de Candolle var. *heterocarpa* I.M. Johnston. COMMON NAMES: Chuckwalla Combbur; Chuckwalla Combseed; Chuckwalla Pectocarya; Hairyleaf Combbur (a name also applied to other species); Hairy-leaved Combbur (a name also applied to other species); Mixed-nut Comb-bur; Mixed-nut Combseed; Mixed-nut Pectocarya; Two-faced Pectocarya; Unequal Combseed. DESCRIPTION: Terrestrial annual forb/herb (spreading prostrate stems 2 to 8 inches in height); the flowers may be pale lavender or white; flowering generally takes place between mid-February and early June (additional records: four for mid-January, one for late June and one for early November). HABITAT: Within the range of this species it has been reported from mountains; rocky and pebbly-sandy-silty mesas; hanging gardens; rims of canyons; rocky canyons; talus; crevices in rocks; along ridges; openings in Joshua-tree woodlands and creosote-bush scrub; foothills; rocky hills; rocky hillsides; rocky, rocky-sandy, stony-sandy, cobbly-gravelly, cobbly-gravelly-sandy,

cobbly-sandy, gravelly, gravelly-sandy and sandy slopes; rocky and gravelly-sandy alluvial fans; rocky, gravelly and gravelly-sandy bajadas; amongst boulders; sand dunes; sandy edges of dunes; blow-sand deposits; rocky, gravelly, gravelly-sandy and sandy flats; rocky upland; sandy valley floors; sandy roadsides; draws; creekbeds; along rivers; riverbeds; along and in rocky, rocky-sandy, gravelly and sandy washes; sandy-silty, clayey and silty depressions; (gravelly-sandy and sandy) banks of washes; (sandy and silty-clayey) edges of lakebeds; margins of washes; shorelines; gravel, gravelly-sand and sand bars; sandy beaches; rocky benches; floodplains; at stock tanks; canal walls; riparian areas, and disturbed areas growing in moist and dry desert pavement; bouldery, rocky, rocky-sandy, stony-sandy, cobbly-gravelly, cobbly-gravelly-sandy, cobbly-sandy, gravelly, gravelly-sandy and sandy ground; cobbly-silty loam, gravelly-sandy loam, gravelly-clayey-silty loam and sandy-clayey loam ground; clay ground, and gravelly-sandy silty, pebbly-sandy silty, sandy silty and silty ground, occurring from sea level to 4,800 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Pectocarya heterocarpa* is native to southwest-central and southern North America. *5, 6, 15, 16, 43 (051512 - *Pectocarya penicillata* var. *heterocarpa* I.M. Johnst.), 44 (051512), 46 (Page 712), 58, 63 (051512 - color presentation), 77, **85** (051512 - color presentation), 124 (051512 - no record of species or genus), 140 (Page 287)*

***Pectocarya recurvata* I.M. Johnston: Curvenut Combseed**

COMMON NAMES: Arch-nutted Comb Bur; Arch-nutted Comb-bur; Arch-nutted Combbur; Arched Bomb-bur (possibly a spelling error); Arched Comb-bur; Archnut Combbur; Bent Combseed; Combbur (a name also applied to the genus *Pectocarya*); Curve-nut Combseed; Curved Combseed; Curvenut Combseed; Curvenut Pectocarya; Desert Combbur; Recurve Combseed; Recurved Pectocarya. DESCRIPTION: Terrestrial annual forb/herb (ascending and/or erect stems 2 to 8¼ inches in height); the flowers are white (sometimes reported with a yellow throat); flowering generally takes place between mid-January and late May (additional record: one for late November). HABITAT: Within the range of this species it has been reported from mountains; clayey mountaintops; rocky mountainsides; rocky mesas; rocky canyons; sandy canyon bottoms; ledges; clayey ridgetops; rocky foothills; rocky hills; bouldery-rocky, rocky and gravelly hillsides; rocky, rocky-cobbly-sandy, rocky-gravelly, rocky-gravelly-sandy, rocky-gravelly-loamy, stony, stony-sandy, cobbly-gravelly, cobbly-gravelly-sandy, cobbly-sandy-loamy, gravelly, gravelly-sandy, sandy and clayey slopes; bouldery-gravelly and rocky-sandy alluvial fans; bajadas; bouldery and rocky outcrops; amongst boulders and rocks; sandy lava fields; dunes; plains; gravelly, sandy, sandy-clayey and clayey flats; valley bottoms; along sandy roadsides; arroyos; rocky gullies; sandy springs; along sandy streams; along creeks; along creekbeds; along and in bouldery-gravelly, rocky, rocky-sandy, gravelly, gravelly-sandy and sandy washes; drainages; rocky drainage ways; clayey depressions; (rocky-gravelly-sandy and gravelly) edges of rivers and washes; (rocky-gravelly-sandy) margins of washes; shores of lakes; gravelly and clayey benches; terraces; loamy bottomlands; sandy floodplains; mesquite woodlands; riparian areas, and disturbed areas growing in dry desert pavement; bouldery, bouldery-rocky, bouldery-gravelly, bouldery-sandy, rocky, rocky-cobbly-sandy, rocky-gravelly, rocky-gravelly-sandy, rocky-sandy, stony, stony-sandy, cobbly-gravelly, cobbly-gravelly-sandy, cindery-sandy, gravelly, gravelly-sandy and sandy ground; rocky-gravelly loam, cobbly-sandy loam, cobbly-silty loam, gravelly-clayey loam, silty loam and loam ground, and sandy clay and clay ground, occurring from sea level to 5,300 feet (one record at 9,000 feet) in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Pectocarya recurvata* is native to southwest-central and southern North America. *5, 6, 15, 16, 43 (010210), 44 (061711), 46 (Page 712), 58, 63 (051512 - color presentation), 77, **85** (051512 - color presentation), 124 (061711 - no record of species or genus), 140 (Page 287)*

***Plagiobothrys pringlei* E.L. Greene: Pringle's Popcornflower**

COMMON NAMES: Popcorn Flower (a name also applied to the genus *Plagiobothrys*); Pringle Popcorn-flower; Pringle's Popcorn-flower; Pringle's Popcornflower. DESCRIPTION: Terrestrial annual forb/herb (prostrate or decumbent stems 4 to 16 inches in length); the flowers are white; flowering generally takes place between late February and mid-April (additional records: one for early February and one for mid-May). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; sandy mesas; bluffs; sandy bases of buttes; ridges; foothills; rocky hillsides; rocky, gravelly and gravelly-loamy slopes; plains; muddy and sandy flats; valley floors; along rocky, gravelly and sandy roadsides; along streams; along sandy washes; benches; floodplains; lowlands, and disturbed areas growing in muddy and moist and dry rocky, gravelly and sandy ground and gravelly loam ground, occurring from 1,200 to 8,000 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Plagiobothrys pringlei* is native to southwest-central and southern North America. *5, 6, 8, 15, 16, 43 (010310), 44 (061711 - no record of species; genus record), 46 (Page 722), 58, 63 (051512), 77, 80 (*Plagiobothrys* sp. - Species of the genus *Plagiobothrys* have been listed as Rarely Poisonous and Suspected Poisonous Range Plants. "Members of this genus have been reported to accumulate toxic levels of nitrate."), **85** (051512 - color presentation of dried material), 124 (061711 - no record of species; genus record), 140 (Page 287)*

Brassicaceae (Cruciferae): The Mustard Family

***Brassica nigra* (C. Linnaeus) W.D. Koch: Black Mustard**

COMMON NAMES: Annual Black Mustard; Black Mustard (a name also applied to other species and the genus *Brassica*); Brauner Senf (German); Brown Mustard (a name also applied to other species); Cadlock (a name also applied to other species); Charlock (a name also applied to other species and the genus *Brassica*); Common Black Mustard; Common Mustard (a name also applied to other species); Hei Jie (transcribed Chinese); Kerlock; Kuro-garashi (Japanese Rōmaji); Khardal (Arabic);

Mostarda-preta (Portuguese); Mostaza ("Mustard" a name applied to mustards, Spanish); Mostaza Negra (Spanish); Moutarde Noire (French); Red Mustard; Schwarz Senf (German); Schwarzer Senf (German); Scurvy; Scurvy Senvie; Scurvy Grass (a name also applied to other species); Scurvy-grass (a name also applied to other species); Senf-Kohl (German); Senore; Senors; Short-pod Mustard; Shortpod Mustard; Svartsenap (Swedish); Warlock (a name also applied to other species); Weedy Annual Black Mustard; Weedy Black Mustard; Wild Mustard (a name also applied to other species, Nebraska). DESCRIPTION: Terrestrial annual forb/herb (widely spreading stems 16 inches to 10 feet in height); the flowers may be golden yellow, pale yellow, yellow or deep yellow; flowering generally takes place between mid-February and mid-September (additional records: two for early January, one for late January, one for mid-October, one for mid-November and one for late December). HABITAT: Within the range of this species it has been reported from mountains; plateaus; clayey cliffs; canyons; canyon bottoms; bluffs; clayey ridgetops; clearings in woodlands; meadows; foothills; hills; hillsides; rocky, clayey-loamy and clayey slopes; clayey flats; valley bottoms; rolling coastal dunes; in roadbeds; along rocky-loamy roadsides; draws; springs; along streams; along rivers; riverbeds; sandy washes; edges of saltmarshes; (gravelly) shores of rivers; sand bars; clayey benches; deltas; clayey terraces; bottomlands; gravelly lowlands; along canals; along and in ditches; riparian areas; waste places, and disturbed areas growing in wet and dry rocky, gravelly and sandy ground; rocky loam and clayey loam ground, and clay ground, occurring from sea level to 8,300 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formation. NOTES: EXOTIC Invasive Plant. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used for food, as a spice, as a fuel and as a drug or medication. Geese reportedly feed on this plant. *Brassica nigra* is native to northern, central, eastern and southern Europe and coastal islands in the North Atlantic Ocean and Mediterranean Sea; western, central, eastern and southern Asia, and northern Africa; however, the exact native range is obscure. *5, 6, 15 (listed as an excluded species), 43 (010410), 44 (061811), 46 (Page 338), 63 (052112 - color presentation), 68, 77, 80 (The genus *Brassica* is listed as both a Rarely Poisonous and Suspected Poisonous Range Plant "Mustards, both native and escaped, may cause several diseases including goiter and gastroenteritis." and a Poisonous Cropland and Garden Plant "Cultivated mustards may cause numerous diseases including gastroenteritis, blindness, goiter, emphysema, redwater disease, nitrate poisoning, anemia, and photosensitization."), **85** (052112 - color presentation), 101 (color photograph), 124 (061811), 127*

Brassica tournefortii A. Gouan: Asian Mustard

COMMON NAMES: African Mustard (a name also applied to other species); Asian Mustard (a name also applied to other species); Desert Mustard (a name also applied to other species); Long Fruited Wild Turnip; Long-fruited Turnip; Long-fruited Wild Turnip; Mediterranean Mustard (a name also applied to other species); Mediterranean Turnip; Moroccan Mustard; Mostaza ("Mustard" a name applied to mustards, Spanish); Mostaza Africana; Mostaza del Desierto (Spanish); Mostaza del Sahara (Spanish); Mustard (a name applied to other species and the genus *Brassica*); Pale Cabbage; Prickly Turnip; Qarras (Arabic); Sahara Mustard; Saharan Mustard; Shiltam (Arabic); Tournefort Birdrape; Tournefort Mustard; Tournefort's Birdrape; Tournefort's Mustard; Turnip Weed (a name also applied to other species); Wild Turnip (a name also applied to other species). DESCRIPTION: Terrestrial annual forb/herb (stems 1 to 4 feet in height; one plant was observed and described as being 22 inches in height and 40 inches in width; plants were observed and described as being 24 to 30 inches in height and 18 inches in width at the base); the large and serrated green leaves form in a basal rosette clasping on the stem; the flowers may be green-white, ivory, white, pale yellow, yellow or yellow-cream; flowering generally takes place between mid-January and late May (additional records: one for mid-November, three for early December and one for mid-December). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; sandy mesas; bases of cliffs; clayey canyons; bouldery and rocky canyon bottoms; bluffs; rocky and rocky-clayey ridgetops; rocky hills; bouldery hillsides; bouldery, rocky, gravelly-sandy, gravelly-sandy-loamy, pebbly-sandy and sandy slopes; alluvial fans; gravelly bajadas; amongst boulders; volcanic dikes and plugs; lava flows; sand hills; sand shelves; sand dunes; sand hummocks; blow-sand deposits; sand sheets; rocky-sandy outwash fans; gravelly-sandy-loamy and silty plains; gravelly-sandy, sandy and silty flats; sandy and silty valley floors; along rocky-clayey, gravelly, gravelly-sandy-loamy and sandy roadsides; sandy arroyos; gullies; about springs; creekbeds; along rivers; along and in rocky, rocky-sandy, gravelly, gravelly-sandy and sandy washes; along drainages; within sandy drainage ways; depressions; (gravelly-sandy) banks of rivers and washes; borders of washes; (sandy) edges of arroyos, rivers, washes and playas; (sandy) margins of washes and ponds; sandy beaches; benches; rocky strands; sandy terraces; loamy bottomlands; floodplains; sandy levees; canal banks; along ditches; recently burned areas of coastal sage scrub; bouldery-cobbly-sandy, gravelly-sandy and sandy riparian areas; waste places, and disturbed areas growing in dry desert pavement; bouldery, bouldery-cobbly-sandy, bouldery-sandy, rocky, rocky-sandy, shaley, cindery-sandy, gravelly, gravelly-sandy, pebbly-sandy and sandy ground; gravelly-sandy loam, sandy loam and loam ground; rocky clay and clay ground, and silty ground, occurring from sea level to 6,600 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant that poses a significant threat to our native biotic communities. Sahara Mustard is usually a very large and robust plant. This plant was first reported in Arizona in 1959. *Brassica tournefortii* is native to southern Europe; western, central and southern Asia, and northern Africa. *5, 6, 15, 16, 22, 28, 43 (010410), 44 (052212), 46 (Supplement Page 1051), 63 (052212 - color presentation), 77, 80 (The genus *Brassica* is listed as both a Rarely Poisonous and Suspected Poisonous Range Plant "Mustards, both native and escaped, may cause several diseases including goiter and gastroenteritis." and a Poisonous Cropland and Garden Plant "Cultivated mustards may cause numerous diseases including gastroenteritis, blindness, goiter, emphysema, redwater disease, nitrate poisoning, anemia, and photosensitization."), 85 (052212 - color presentation), 115 (color presentation), 124 (061811 - no record of species; genus record), **WTK** (August 4, 2005)*

Descurainia pinnata (T. Walter) N.L. Britton: Western Tansymustard

COMMON NAMES: Aasa <asa, a:sá, ʾasa> (Uto-Aztecan: Hopi)[140]; Aasam (Yaqui); Ai'yaho (Language Isolate: Zuni)[140]; Akav (Yuman: Mohave)[140]; Atsa' <acá> ("Red", Uto-Aztecan: Paiute)[140]; 'Atsé <ʾosceʾ> ("First One", Athapascan: Navajo)[140]; 'Akavɨ (Uto-Aztecan: Kawaiisu)[140]; Atsé 'Áłts' Óózí <ʾosceʾ 'a.lc'ozigi> ("Slender First One", Athapascan: Navajo)[140]; 'Atsé Ts'oh <ʾosceʾ coh> ("Big First One", Athapascan: Navajo)[140]; 'Awae (Kiowa Tanoan: Hano Tewa)[140]; Chooyn 'Azee' <co'in ʾazéʾ> (Athapascan: Navajo)[140]; Da:pk ("smooth/slippery", Uto-Aztecan: Tohono O'odham)[140]; ʾDṣi-la <asil, asily> (Uto-Aztecan: Cahuilla)[140]; Green Tansy Mustard; Green Tansy-mustard; Green Tansymustard; Hahck (Uto-Aztecan: Southern Paiute)[140]; Hasá <jasá> (Uto-Aztecan: Guarijío)[140]; Huy Aasum (Yaqui); Ívagi (Uto-Aztecan: Northern Tepehuan)[140]; Ka SiB (Yuman: Paipai)[140]; Kosen (Yuman: Cocopa)[140]; Kse.v Ilokwak (Yuman: Maricopa)[140]; Moutarde Tanaisie (French); Northern Tansy-mustard; Palmita (Spanish); Pamita [Palmita, Pamitón] (Spanish: Baja California, Sonora)[140]; Pamitón (Spanish); Pinnate Tansy Mustard; Pinnate Tansy-mustard; Pinnate Tansymustard; Shortfruit Tansymustard; Shuu'uvad <rú-u-what, show-ou-wat> (Uto-Aztecan: Akimel O'odham, Arizona)[140]; Sinapismo (Spanish)[140]; Sirolitutilli; Su'uvad (Uto-Aztecan: Hiá Ceḍ O'odham)[140]; Ṣu:waḍ <shu'awat> (Uto-Aztecan: Onavas Pima)[140]; Suavoli (Uto-Aztecan: Northern Tepehuan)[140]; Tansy Mustard (a name also applied to the genus *Descurainia*); [Pinnate, Western, Yellow] Tansy Mustard (English)[140]; Tansy-mustard (a name also applied to the genus *Descurainia*); Tansymustard (a name also applied to the genus *Descurainia*); Toloache (Mexico: Sonora); Western Tansy Mustard; Western Tansy-mustard; Western Tansymustard; Yellow Tansy Mustard; Yellow Tansy-mustard; Yellow Tansymustard. DESCRIPTION: Terrestrial annual, biennial or perennial forb/herb (erect stems 3¼ to 40 inches in height); the foliage may be gray-green, greenish, purplish or reddish; the flowers may be cream, greenish-white, greenish-yellow, purplish, white, white tinged with mauve, whitish, dull yellow, pale yellow, yellow, yellow-green or yellowish-green; flowering generally takes place between mid-January and mid-September (additional record: one for late December). HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; along sandy bases of mountains; sandy mesas; plateaus; along sandy rims of canyons; rocky cliffs; sandy bases of cliffs; rocky and sandy canyons; sandy canyonsides; along bouldery, rocky, rocky-sandy, gravelly, gravelly-sandy, sandy and silty canyon bottoms; scree; bluffs; buttes; hogbacks; rocky ledges; rocky ridges; rocky ridgetops; rocky-sandy meadows; cinder cones; rocky tops of cinder cones; rims of craters foothills; bouldery and rocky hills; rocky hilltops; bouldery-sandy, rocky, rocky-stony, rocky-loamy, clayey, gravelly-sandy and silty-loamy hillsides; sandy bases of escarpments; bedrock, rocky, rocky-stony, rocky-cobbly, rocky-cobbly-sandy, rocky-sandy, cobbly-gravelly-sandy, cobbly-loamy, cindery, gravelly, gravelly-sandy, gravelly-loamy, gravelly-silty-loamy, sandy, sandy-loamy, sandy-clayey, loamy, clayey-loamy and silty-clayey slopes; rocky-sandy alluvial fans; gravelly-sandy bajadas; rocky outcrops; sandy bases of rock outcrops; amongst boulders and rocks; sheltered rocky coves; volcanic dikes and plugs; sand hills; sand dunes; sand sheets; blow-sand deposits; rocky outwash fans; banks; barrens; loamy steppes; sandy prairies; cobbly and sandy plains; gravelly, gravelly-sandy, gravelly-clayey-loamy, sandy, sandy-clayey, loamy and silty-loamy flats; basins; basin bottoms; shaley and sandy valley floors; gravelly-sandy valley bottoms; coastal plains; sandy coastal strands; along railroad right-of-way; along rocky, gravelly, gravelly-clayey, sandy and sandy-loamy roadsides; along sandy arroyos; draws; within sandy ravines; seeps; rocks areas around springs; along streams; along streambeds; in sand along creeks; along rivers; bouldery and bouldery-rocky-gravelly riverbeds; along and in bouldery, rocky, rocky-sandy, cobbly, cobbly-gravelly-sandy, gravelly, gravelly-sandy, sandy, sandy-loamy, sandy-clayey and clayey washes; within gravelly drainages; drainage ways; waterholes; depressions; banks of creeks and rivers; borders of washes; along edges of streams, creeks and washes; margins of marshy areas; (sandy) sides of rivers; shorelines of lakes; sand bars; beaches; sandy terraces; loamy bottomlands; clayey and silty floodplains; sandy lowlands; mesquite bosques; clayey catchments; in dry stock tanks; muddy and rocky shores of reservoirs; along canals; on top of and within ditches; sandy riparian areas; waste places; recently burned areas of woodland and desertscrub, and disturbed areas growing in mucky ground; muddy ground, and wet, moist, damp and dry desert pavement; bouldery, bouldery-rocky-gravelly, bouldery-sandy, rocky, rocky-stony, rocky-cobbly, rocky-cobbly-sandy, rocky-gravelly-sandy, rocky-sandy, shaley, cobbly, cobbly-gravelly-sandy, cindery, cindery-sandy, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-clayey loam, cobbly loam, cobbly-sandy loam, gravelly loam, gravelly-sandy loam, gravelly-clayey loam, gravelly-silty loam, sandy loam, sandy-clayey loam, clayey loam, silty loam and loam ground; gravelly clay, sandy clay, silty clay and clay ground, and silty ground, occurring from sea level to 11,900 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, beverage and/or spice crop; it was also noted as having been used as a preservative (subsp. *halictorum*), fertilizer (subsp. *halictorum*), paint for pottery decoration (flowers mixed with dark iron pigment, subsp. *pinnata*) and as a drug or medication. This plant is a larval food plant of the Desert Orangetip Butterfly (*Anthocharis cethura*) and is sometimes planted in butterfly gardens to attract Orangetip, Checkered White and White Cabbage Butterflies. Black-tailed Jack Rabbits (*Lepus californicus*), Pronghorn (*Antilocapra americana*) and Rocky Mountain Mule Deer (*Odocoileus hemionus hemionus*) feed on this plant, and the Ord's Kangaroo Rat (*Dipodomys ordii*), Spotted Ground Squirrel (*Spermophilus spilosoma*), Townsend Ground Squirrel (*Spermophilus townsendii*) and Northern Grasshopper Mice (*Onychomys leucogaster*) feed on the seeds. *Descurainia pinnata* is native to northern, central and southern North America. *5, 6, 15, 16, 43 (010510), 44 (061811), 46 (Page 349), 63 (052712 - color presentation), 68, 77, 80 (This species is listed as a Secondary Poisonous Range Plant. "Symptoms of poisoning are similar to the "blind staggers" disease caused by selenium, but the principle is unknown. Large quantities of the plant must be eaten for a considerably long time before symptoms appear. Consumption of toxic amounts is most likely to occur during the blossoming period in the spring. Poisoned cattle become partially or completely blind and wander aimlessly about until exhausted, or stand pushing against some solid object for hours. Animals lose their ability to use their tongue in swallowing and cannot eat or drink. They eventually die if neglected. As a result a popular term for the disease is "paralyzed tongue". ... Analysis of plants in Arizona shows that tansy mustard also may accumulate toxic levels of nitrate. Poisoning may be prevented by deferring heavily infested pastures during

the spring-growth period, or by providing more desirable forage to reduce mustard consumption." See text for additional information.), **85** (052712 - color presentation), 101 (note), 124 (061811), 127, 140 (Pages 94-95 & 287)*

***Descurainia pinnata* (T. Walter) N.L. Britton subsp. *halictorum* (T.D. Cockerell) L.E. Detling: Western Tansymustard**

SYNONYMY: *Descurainia pinnata* (T. Walter) N.L. Britton var. *osmiarum* (T.D. Cockerell) L.H. Shinners - an alternate spelling of *osmiarum* (*osmiarium*) was observed. COMMON NAME: Alkali Western Tansy-mustard; Alkali Western Tansymustard; Tansy Mustard (a name also applied to the species and the genus *Descurainia*); Tansy-mustard (a name also applied to the species, to other species and to the genus *Descurainia*); Western Tansymustard (a name also applied to the species). DESCRIPTION: Terrestrial annual, biennial or perennial forb/herb (13 to 32 inches in height); the flowers may be pink, white, pale yellow, yellow or yellowish; flowering generally takes place between early March and mid-August (additional record: one for mid-January). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; sandy mesas; plateaus; canyons; canyon bottoms; clayey bluffs; buttes; rocky ridges; cobbly and clayey ridgetops; meadows; clayey foothills; hilltops; shaley, gravelly-sandy-loamy, sandy and clayey hills; hilltops; rocky, rocky-sandy-clayey, shaley, shaley-gravelly, stony-clayey, cobbly, cobbly-gravelly, gravelly, gravelly-sandy, sandy, sandy-clayey and clayey slopes; bajadas; rocky outcrops; sand dunes; sandy-silty hummocks; breaks; gravelly-sandy steppes; prairies; rocky-sandy, sandy and sandy-clayey plains; shaley, cobbly-gravelly, sandy, sandy-clayey and clayey flats; sandy basins; valley floors; valley bottoms; along railroad right-of-ways; roadcuts; along gravelly roadsides; within sandy-loamy arroyos; sandy draws; ravines; seeps; springs; along streams; riverbeds; along creeks; in rocky-sandy, gravelly and sandy washes; sandy-clayey drainages; waterfalls; within playas; (sandy) banks of creeks and rivers; gravelly-loamy borders of rivers; (rocky) edges of washes; (mucky) shorelines; shaley and sandy benches; sandy bottomlands; floodplains; sandy mesquite woodlands; fencerows; margins of reservoirs; riparian areas, and disturbed areas growing in mucky and dry rocky, rocky-sandy, shaley, shaley-gravelly, shaley-sandy, cobbly, cobbly-gravelly, cindery, gravelly, gravelly-sandy and sandy ground; gravelly-loam, gravelly-sandy loam, sandy loam and silty loam ground; rocky-sandy clay, stony clay, sandy clay and clay ground, and sandy silty ground, occurring from sea level to 11,800 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop; it was also noted as having been used as a preservative and a fertilizer. This plant is a larval food plant of the Desert Orangetip Butterfly (*Anthocharis cethura*) and is sometimes planted in butterfly gardens to attract Orangetip, Checkered White and White Cabbage Butterflies. Black-tailed Jack Rabbits (*Lepus californicus*), Pronghorn (*Antilocapra americana*) and Rocky Mountain Mule Deer (*Odocoileus hemionus hemionus*) feed on this plant, and the Ord's Kangaroo Rat (*Dipodomys ordii*), Spotted Ground Squirrel (*Spermophilus spilosoma*), Townsend Ground Squirrel (*Spermophilus townsendii*) and Northern Grasshopper Mice (*Onychomys leucogaster*) feed on the seeds. *Descurainia pinnata* subsp. *halictorum* is native to southwest-central and southern North America. *5, 6, 43 (010510), 44 (120710), 46 (Page 349), 58, 63 (010510), 68 (species), 80 (The species is listed as a Secondary Poisonous Range Plant. "Symptoms of poisoning are similar to the "blind staggers" disease caused by selenium, but the principle is unknown. Large quantities of the plant must be eaten for a considerably long time before symptoms appear. Consumption of toxic amounts is most likely to occur during the blossoming period in the spring. Poisoned cattle become partially or completely blind and wander aimlessly about until exhausted, or stand pushing against some solid object for hours. Animals lose their ability to use their tongue in swallowing and cannot eat or drink. They eventually die if neglected. As a result a popular term for the disease is "paralyzed tongue". ... Analysis of plants in Arizona shows that tansy mustard also may accumulate toxic levels of nitrate. Poisoning may be prevented by deferring heavily infested pastures during the spring-growth period, or by providing more desirable forage to reduce mustard consumption." See text for additional information.), **85** (061811 - color presentation of dried material), 124 (061811), 127*

Descurainia pinnata var. *osmiarum* (see *Descurainia pinnata* subsp. *halictorum*)

***Lepidium oblongum* J.K. Small (var. *oblongum* is the variety reported as occurring in Arizona): Veiny Pepperweed**

COMMON NAMES: Oblong Pepper Grass; Oblong Pepper-grass; Oblong Peppergrass; Pepper Grass (a name also applied to other species and the genus *Lepidium*); Pepper-grass (a name also applied to other species and the genus *Lepidium*, Oklahoma); Peppergrass (a name also applied to other species and the genus *Lepidium*); South American Pepper-grass; Veiny Peppergrass (a name also applied to other species); Veiny Pepperweed; Veiny Pepperwort; Wayside Peppergrass (a name also applied to other species); Wayside Pepperweed (var. *oblongum*). DESCRIPTION: Terrestrial annual or biennial forb/herb (prostrate, decumbent, ascending and/or erect stems 2 to 13 inches in height; specimens of var. *insularae* were reported as forming sprawling mounds 1 foot in height and 2 feet in width); the flowers are white; flowering generally takes place between mid-January and mid-May (additional records: one for early June and one for late October). HABITAT: Within the range of this species it has been reported from mountains; mesas; bases of cliffs; bluffs; canyon bottoms; hills; grassy hillsides; clayey-loamy slopes; alluvial terraces; bajadas; rocky outcrops; dunes; prairies; llanos; cobbly plains; valley floors; valley bottoms; coastal plains; sandy coasts; along rocky, cindery and sandy roadsides; springs; along streams; along sandy streambeds; in sand along rivers; sandy riverbeds; along washes; clayey playas; marshes; (loamy) banks of rivers; edges of rivers and ciénegas; terraces; floodplains; sandy margins of reservoirs; along ditches; gravelly-sandy-loamy riparian areas; waste places, and disturbed areas growing in moist and dry rocky, cobbly, cindery, gravelly-sandy and sandy ground; rocky-gravelly loam, gravelly-sandy loam, clayey loam and loam ground; clay ground, and silty ground, occurring from sea level to 7,700 feet in elevation in the woodland,

grassland, desertscrub and wetland ecological formations. NOTES: This plant may be food for both quail and bighorn. *Lepidium oblongum* is native to southwest-central and southern North America and Central America. *5, 6, 16, 43 (011210), 44 (061911), 46 (Page 334), 63 (062612 - color presentation of seed), **85** (062612 - color presentation), 106 (061911 - color presentation of dried material), 124 (062612), 140 (Page 287)*

Lepidium thurberi E.O. Wooton: Thurber's Pepperweed

COMMON NAMES: Thurber Pepper-grass; Thurber Peppergrass; Thurber Pepperweed; Thurber Pepperwort; Thurber's Pepper-grass; Thurber's Peppergrass; Thurber's Pepperweed; Thurber's Pepperwort; Wooton's Peppergrass. DESCRIPTION: Terrestrial annual or biennial forb/herb (erect stems 3 to 40 inches in height); the leaves are gray-green, light green or green; the flowers are white; the anthers are yellow; flowering generally takes place between early February and mid-November. HABITAT: Within the range of this species it has been reported from mountains; mesas; plateaus; rocky canyons; bluffs; foothills; rocky hills; hillsides; rocky, gravelly, sandy, sandy-clayey and sandy-loamy slopes; sandy alluvial fans; sandy bajadas; amongst boulders; gravelly, sandy, sandy-clayey-loamy and clayey flats; basin bottoms; valley floors; railroad right-of-ways; along gravelly and sandy roadsides; arroyos; draws; gullies; along creekbeds; in sandy riverbeds; within gravelly and sandy washes; edges of playas; gravelly-gravelly-sandy and sandy bowls; (sandy) banks of streams and rivers; channel bars; benches; silty terraces; sandy-clayey and clayey bottomlands; floodplains; dry stock tanks (represos); riparian areas, and disturbed areas growing in damp and dry bouldery, rocky, gravelly, gravelly-sandy and sandy ground; sandy loam and sandy-clayey loam ground; sandy clay and clay ground, and gravelly-sandy silty and sandy silty and silty ground, occurring from 1,500 to 8,400 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. *Lepidium thurberi* is native to southwest-central and southern North America. *5, 6, 15, 28 (color photograph 157), 43 (062809), 44 (022811), 46 (Page 333), 58, 63 (062612), 77, **85** (062612 - color presentation), 124 (061911 - no record of species; genus record), 127, 140 (Page 287)*

Lesquerella purpurea (A. Gray) S. Watson: Rose Bladderpod

COMMON NAMES: Bladder-pod (a name also applied to other species and the genus *Lesquerella*); Purple Bladderpod; Rose Bladderpod; White Bladderpod. DESCRIPTION: Terrestrial perennial forb/herb (sprawling prostrate, decumbent, weakly ascending to nearly erect stems 6 inches to 2 feet in height); the stems may be dark green; the leaves are bluish-green, gray-green or silvery-green; the flowers (to 3/8 inch diameter) may be blue, lavender-white, purple, purplish, white (fading to pink or purplish), white tinged with lavender, white-purple, white-violet or whitish-lavender; flowering generally takes place between late January and late May (additional records: one for late June, one for late August, one for early September and two for mid-November). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; mesas; cliffs; bases of cliffs; rocky canyons; rocky canyon bottoms; chasms; talus slopes; ledges; bedrock ridges; rocky foothills; rocky hills; rocky hillsides; along bedrock, rocky, gravelly, gravelly-sandy and sandy-silty slopes; bajadas; sandy bases of rocky outcrops; amongst boulders and rocks; gravelly bases of boulders and rocks; flats; bottoms of arroyos; draws; along creeks; along and in gravelly-sandy-silty washes; drainages; (stony-clayey and sandy) banks of creeks and rivers; borders of washes, and bouldery-cobbly-sandy and bouldery-gravelly riparian areas growing in wet, moist and dry bouldery, bouldery-cobbly-sandy, bouldery-gravelly, rocky, gravelly, gravelly-sandy and sandy ground; stony clay ground, and rocky-gravelly silty, gravelly-sandy silty and sandy silty ground, occurring from 1,500 to 6,300 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Lesquerella purpurea* is native to southwest-central and southern North America. *5, 6, 15, 28 (color photograph 158), 34 (genus), 43 (071810), 44 (062712 - no listings under Common Names for either species or genus), 46 (Page 343), 48 (genus), 63 (062712 - color presentation), 77 (color photograph #26), **85** (062712 - color presentation), 115 (color presentation), 124 (061911 - no record of species; genus record)*

Sisymbrium irio C. Linnaeus: London Rocket

COMMON NAMES: Ban Cenṣañig ("Coyote's Mouth", Uto-Aztecan: Hiá Ceḍ O'odham, Sonora)[140]; Ban Ciñiṣañ <ban ciniṣani> ("Coyote's Mouth", Uto-Aztecan: Tohono O'odham)[140]; Cocóol (Hokan: Seri)[140]; Glanz-Rauke (German); Haskahl' <has káhl> (Yuman: Mohave)[140]; London Mustard; London Rocket; London Rocket (English)[140]; London-rocket; Londonrocket; Mostaza (Spanish)[85]; Mostaza [Silvestre] ("[Wild] Mustard", Spanish: Sonora)[140]; Pamit (Uto-Aztecan: Ópata)[140]; Pamita (Spanish)[85]; Pamita (Spanish: Sonora)[140]; Pamitón (Uto-Aztecan: Mayo)[140]; Rocket Mustard (English)[140]; Rocket-mustard; Rocketmustard; Shuu'uvaḍ (Uto-Aztecan: Akimel O'odham)[140]; Tumble Mustard (a name also applied to other species and the genus *Sisymbrium*); Vallsenap (Swedish). DESCRIPTION: Terrestrial annual forb/herb (erect stems 4 inches to 5 feet in height; plants were observed and described as being 8 inches in height and 6 inches in width); the flowers may be golden-yellow, white, pale yellow or yellow; the anthers are cream; flowering generally takes place between mid-December and mid-June (additional records: one for early July, one for late July, one for early August, one for mid-August, two for late August, one for mid-September, one for late September, one for early October, one for mid-October, one for early November, one for mid-November and four for late November). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; sandy mesas; plateaus; rocky canyons; along bouldery-gravelly-sandy and sandy canyon bottoms; rocky buttes; rock ledges; ridges; ridgetops; clayey meadows; foothills; rocky hills; rocky hillsides; bouldery, rocky, rocky-sandy, gravelly-sandy, sandy and sandy-loamy slopes; rocky alluvial fans; bajadas; rocky outcrops; amongst boulders and rocks; sandy lava flows; sand dunes; banks; berms; cobbly plains; rocky, gravelly, sandy and sandy-silty flats; basins; valley floors; loamy valley

bottoms; railroad right-of-ways; gravelly-sandy roadbeds; cindery, gravelly, sandy and clayey roadsides; within rocky and sandy arroyos; along bottoms of arroyos; bottoms of ravines; seeps; springs; along streams; streambeds; along creeks; bouldery-rocky and rocky creekbeds; along rivers; rocky and rocky-cobbly-sandy riverbeds; along and in rocky, rocky-sandy, gravelly, gravelly-sandy, sandy and sandy-loamy washes; within sandy drainage ways; silty lakebeds; bogs; sandy-loamy and silty depressions; along (cobbly-sandy, gravelly-sandy and sandy) banks of streams, creeks, rivers and washes; borders of washes; (rocky) edges of springs, streams, creeks, washes and ponds; margins of washes; sandy beaches; sandy benches; terraces; sandy and loamy bottomlands; floodplains; mesquite bosques; margins of stock tanks; canal edges and walls; along ditches; riparian areas; waste places; recently burned areas of woodland and desertscrub, and disturbed areas growing in muddy and wet, moist, damp and dry bouldery, bouldery-gravelly-sandy, rocky, rocky-cobbly; rocky-cobbly-sandy, rocky-sandy, cobbly, cobbly-sandy, cindery, gravelly, gravelly-sandy and sandy ground; rocky-clayey loam, gravelly-sandy loam, sandy loam and loam ground; sandy clay and clay ground, and sandy silty ground, occurring from sea level to 10,300 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant that poses a significant threat to our native biotic communities, this plant was first reported as occurring in Arizona, in Phoenix, in 1909. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a food and beverage and as a drug or medication. *Sisymbrium irio* is native to central and southern Europe and islands in the Mediterranean Sea; western, central, eastern and southern Asia, and northern Africa. *5, 6, 15, 16, 22, 28 (color photograph), 43 (011410), 44 (033111), 46 (Page 336), 58, 63 (062812 - color presentation), 68, 77, **85** (062812 - color presentation), 101 (color photograph), 115 (color presentation), 124 (033111), 127, 140 (Pages 98-99 & 287), **WTK** (August 4, 2005)*

***Sisymbrium orientale* C. Linnaeus: Indian Hedgemustard**

COMMON NAMES: Eastern Rocket; Eastern Tumble Mustard; Eastern Tumble-mustard; Indian Hedge Mustard; Indian Hedge-mustard; Indian Hedgemustard; Mostaza (Spanish); Oriental Hedge Mustard; Oriental Hedge-mustard; Oriental Hedgemustard; Oriental Mustard (a name also applied to other species); Oriental Rocket; Oriental Sisymbrium; Orientalische Rauke (German); Orientsenap (Swedish); Tumble Mustard (a name also applied to other species and the genus *Sisymbrium*); Wild Mustard (a name also applied to other species). DESCRIPTION: Terrestrial annual forb/herb (erect stems 4 inches to 5 feet in height); the flowers may be purple (one record), dull yellow, light yellow or yellow; flowering generally takes place between early February and late June (additional records: one for mid-July and one for late July, flowering ending as late as August has been reported). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; sandy mesas; rocky canyons; bouldery-gravelly-sandy, rocky, rocky-sandy and gravelly-sandy canyon bottoms; gorges; talus; along ridges; ridgetops; openings in chaparral; foothills; sandy-clayey hilltops; cobbly-sandy-loamy hillsides; rocky, cobbly-sandy-loamy and sandy slopes; rocky-sandy and sandy bajadas; rocky outcrops; amongst rocks; lava fields; sandy flats; sandy ruts in roadbeds; rocky, rocky-loamy-clayey, gravelly and clayey-loamy roadsides; along arroyos; along bottoms of arroyos; draws; seeps; springs; along streams; along rocky stream courses; riverbeds; along and in rocky-sandy and sandy washes; within drainages; banks of streambeds and rivers; along (sandy) edges of washes and freshwater marshes; along (stony-sandy) margins of washes; along bouldery benches; sandy terraces; along fencelines; riparian areas; waste places; recently burned areas of woodland and chaparral, and disturbed areas growing in moist and dry bouldery, bouldery-gravelly-sandy, rocky, rocky-sandy, stony-sandy, gravelly, gravelly-sandy and sandy ground; cobbly-sandy loam, clayey loam and loam ground, and rocky-loamy clay, rocky clay and sandy clay ground, occurring from sea level to 7,600 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant that poses a significant threat to our native biotic communities. A plant in fruit was collected on April 22, 1977, by Casey Hamilton at Milepost 210 on Interstate 10 at Eloy that was recorded as being a new record for this species for Arizona. *Sisymbrium orientale* is native to eastern and southern Europe and islands in the Mediterranean Sea; western, central and southern Asia, and northern Africa. *5, 6, 43 (011510), 44 (062912), 63 (062912), 77, **85** (062912 - color presentation), 124 (061911 - no record of species; genus record)*

Streptanthus arizonicus (see *Streptanthus carinatus* subsp. *arizonicus*)

***Streptanthus carinatus* C. Wright ex A. Gray subsp. *arizonicus* (S. Watson) A.R. Kruckeberg, J.E. Rodman & R.D. Worthington: Lyreleaf Jewelflower**

SYNONYMY: *Streptanthus arizonicus* S. Watson. COMMON NAMES: Arizona Jewel Flower; Arizona Twist Flower; Lyreleaf Jewelflower; Lyreleaf Twistflower (a name also applied to the species); Lyre-leaved Twistflower (a name also applied to the species); Silver Bells (a name also applied to the species); Twist Flower (a name also applied to the species); Twistflower (a name also applied to the species and the genus *Streptanthus*). DESCRIPTION: Terrestrial annual or biennial forb/herb (erect stems 6 to 42 inches in height; one plant was observed and described as being 10 inches in height with a crown 5 inches in width); the foliage is bluish-green or grayish-green; the flowers may be brownish, cream, cream-white, cream-yellow, bright golden-yellow, lemon-yellow, pinkish-cream, white, pale yellow, yellow or deep yellow tipped with red; flowering generally takes place between mid-February and early May (additional record: one for late May, flowering beginning as early as January has been reported). HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; mesas; cliffs; rocky bases of cliffs; rocky canyons; canyon bottoms; talus slopes; ridges; foothills; gravelly hills; rocky slopes; gravelly bajadas; rocky outcrops; sandy lava flows; rocky and gravelly flats; sandy roadsides; rocky arroyos; along draws; cobbly-sandy riverbeds; along and in sandy washes; drainages; (gravelly) edges of arroyos; margins of rivers and washes; bottomlands, and floodplains growing in dry rocky, cobbly-sandy, gravelly and sandy ground and gravelly loam ground, occurring from 1,500 to 7,000 feet in elevation in the woodland, grassland, desertscrub and wetland ecological formations.

NOTE: *Streptanthus carinatus* subsp. *arizonicus* is native to southwest-central and southern North America. *5, 6, 15, 16 (*Streptanthus arizonicus* Wats.), 28 (recorded as *Streptanthus arizonicus*, color photograph 160), 43 (063009), 44 (062912 - no record of species or subspecies; genus record), 46 (*Streptanthus arizonicus* Wats., Pages 331-332), 63 (062912 - color presentation), **85** (062912 - color presentation), 86 (color photograph of *Streptanthus arizonicus*), 115 (color presentation of species), 124 (062912 - no record of species or subspecies; genus record)*

Cactaceae: The Cactus Family

Cactus grahamii (see *Mammillaria grahamii*)

***Carnegiea gigantea* (G. Engelmann) N.L. Britton & J.N. Rose: Saguaro**

SYNONYMY: *Cereus giganteus* G. Engelmann. COMMON NAMES: ʾA:ʾá (Yuman: Cocopa)[140]; A'a' (plant and fruit, Yuman: Maricopa)[140]; A'á'īl'íla (Yuman: Walapai, fruit a'á')[140]; Bahidaj (the fruit, Uto-Aztecan: Hiá Ceḍ O'odham and Tohono O'odham, Arizona)[140]; Giant Cactus; Giant Cereus; Giant Saguara; Giant Saguara Cactus; Giant Saguaro; Giant Saguaro Cactus; Giant Sahuara; Giant Sahuara Cactus; Giant Sahuaro; Giant Sahuaro Cactus; Giant Suwarro Cactus; Ha Shun (Pima); Ha:sañ (Uto-Aztecan: Hiá Ceḍ O'odham, Sonora)[140]; Ha:sañ (Uto-Aztecan: Tohono O'odham)[140]; Haashan <ha:canyi, hahshani> (Uto-Aztecan: Akimel O'odham, Arizona)[140]; Hosh 'Aditshaii <xwoctítshahiih> (Athapascan: Navajo)[140]; Mashad (Tohono O'odham); Mojépe <moxéppe> (Hokan: Seri)[140]; Nanolzheegé [Nanolzheegí] (Athapascan: Western Apache)[140]; Pitahaya (Spanish Conquistadors); Riesenkaktus (German); Sage of the Desert; Sage-of-the-desert; Saguara; Saguara Cactus; Saguaro (a name also applied to the genus *Carnegiea*); Saguaro (English)[140]; Saguaro Cactus; Saguarokaktus (Swedish); Saguo <sauguo> (Uto-Aztecan: Mayo); Sahuara; Sahuara Cactus; Sahuaro (Spanish)[140]; Sauwo (Uto-Aztecan: Yaqui)[140]; Suwarro; Tudhua (Uto-Aztecan: Ópata)[140]; Xucntsai ("Large Cactus", Athapascan: Chiricahua and Mescalero Apache)[140]. DESCRIPTION: Terrestrial perennial stem-succulent tree (erect stems 5 to 60 feet in height and 6 to 30 inches in diameter); the plants are green; the spines are yellow or reddish-brown aging to gray or gray-black; the flowers (2 to 3 inches in diameter) are a waxy creamy-white opening at about 8 p.m. and closing at about 5 p.m. the next day with around four blooms opening per day over a 30 day period; the anthers are cream-white; the stigma lobes are cream-white; flowering generally takes place between late April and mid-June (additional records: one for late March, one for early July, one for mid-July, two for early September and one for early October), the ripe fruits (2¼ to 3 inches in length and 1 to 1½ inches in diameter) split into 2 to 6 segments that curl back to reveal the red inner lining of the rinds which are sometimes mistakenly thought to be red flowers. HABITAT: Within the range of this species it has been reported from mountains; mountainsides; mesas; cliffs; rocky canyons; canyon walls; rocky canyon bottoms; buttes; ridges; ridgelines; rocky foothills; rocky and gravelly hills; rocky hilltops; rocky hillsides; rocky, gravelly, gravelly-loamy and sandy-clayey-loamy slopes; rocky and gravelly bajadas; rocky outcrops; amongst and on boulders and rocks; stabilized sandy and sandy-powdery dunes; plains; cindery, gravelly, gravelly-sandy and sandy flats; valley floors; along and in rocky and sandy arroyos; rocky bottoms of arroyos; streambeds; along and in riverbeds; within sandy washes; borders of washes; drainages; bottomlands; floodplains; mesquite bosques, and on rocks in riparian areas growing in dry desert pavement; bouldery, rocky, cindery-sandy, gravelly, sandy and sandy-powdery ground, and gravelly loam and sandy-clayey loam ground, occurring from sea level to 5,100 feet in elevation in the scrub, grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, fodder (seeds), beverage and/or fiber crop; it was also noted as having been used as tools, for ceremonial items and musical instruments, and as an indicator of the changing of the seasons (with the Saguaro harvest marking the beginning of a new year). Saguaros are very slow to establish, a 5 year old plant may be no more than ¼ to ½ inch in height. The growth rate of Saguaros is extremely variable. William G. McGinnies in his book "Discovering the Desert" reports that a plant 36 inches in height may be from 20 to 50 years of age, he also presents a table of typical growth rates reporting the following: 4 inches - 8.0 years, 8 inches - 12.5 years, 16 inches - 19.1 years, 32 inches - 27.3 years, 3.3 feet - 30.3 years, 6.6 feet - 40.5 years, 10 feet - 47.5 years, 13 feet - 54 years, 16 feet - 60.0 years, 18 feet - 74.0 years. 20 feet - 83.0 years, 25 feet - 107.0 years, 30 feet - 131.0 years, and 35 feet - 157.0 years. The growth rate of propagated and cultivated saguaros is much faster. One of the largest known saguaros, located in Saguaro National Monument, was reported to be 52 feet in height, had 52 arms, weighed an estimated 10 tons and was thought to be 235 years of age. Cristate forms have been reported. The Broad-billed Hummingbird (*Cynanthus latirostris*), Broad-tailed Hummingbird (*Selasphorus platycercus*), Costa's Hummingbird (*Calypte costae*), Curved-billed Thrasher (*Toxostoma curvirostre*), Lesser Long-nosed Bat (*Leptonycteris curasoae* subsp. *yerbabuenae*), Rufous Hummingbird (*Selasphorus rufus*) and White-winged Dove (*Zenaida asiatica*) have been observed visiting the flowers. Coyotes (*Canis latrans*), Desert Mule Deer (*Odocoileus hemionus* subsp. *crooki*), Desert Bighorn Sheep (*Ovis canadensis* subsp. *mexicana*), Javelina (*Peccari tajacu*) and White-winged Doves (*Zenaida asiatica*) as well as other animals and birds feed on the saguaro fruit and seeds. the Gila Woodpecker (*Melanerpes uropygialis*) and Gilded Flicker (*Colaptes chrysoides*) make holes in this plant for their nests which are later utilized by the Ash-throated Flycatcher (*Myiarchus cinerascens*), Cactus Wren (*Campylorhynchus brunneicapillus*), Elf Owl (*Micrathene whitneyi*), House Finch (*Carpodacus mexicanus*), Lucy's Warbler (*Vermivora luciae*), Purple Martin (*Progne subis*) and Cactus Wren (*Campylorhynchus brunneicapillus*). Red-tailed Hawks (*Buteo jamaicensis*), White-winged Doves (*Zenaida asiatica*) and other birds nest on the arms of the plant. *Carnegiea gigantea* is native to southwest-central and southern North America. *5, 6, 12 (recorded as *Cereus giganteus* Engelm., Pages 108-111: Frontispiece (color photograph including habitat with associated species), Page ii, Plate 2.1, Page 109 and Plate 2.5, Page 112), 13 (color photographs including habitat with associated species:

Plates C.2., Page 391 and D.3, Page 392), 15 (color photograph including habitat and associated species, Page 7), 16, 18, 26 (color photograph), 27 (recorded as *Cereus giganteus*, Pages 64-65; color photographs: Plates 39, 39A & 39B, Page 102), 28 (recorded as *Cereus giganteus*, color photographs 109 A,B&C), 38 (color photograph), 43 (011610), 44 (040111), 45 (color photograph), 46 (Page 569), 48 (recorded as *Cereus giganteus*), 52 (recorded as *Cereus giganteus*, color photograph), 53 (recorded as *Cereus giganteus* Engelm.), 58 (recorded as *Cereus giganteus* Engelm.), 63 (070112 - color presentation), 77 (color photograph #63), **85** (070112 - color presentation, reduced recovery), 86 (recorded as *Cereus gigantea*, color photograph), 91 (Pages 146-149), 107, 115 (color presentation), 119, 124 (040111 - no record of species or genus), 127, 134, 140 (Pages 100-102 & 288), ADS (Friday, April 20, 2012, Page A1&4: Saguaros, emblems of the desert, now claim higher ground), **WTK** (August 4, 2005)*

Cereus giganteus (see *Carnegiea gigantea*)

Cereus greggii var. *transmontanus* (see *Peniocereus greggii* var. *transmontanus*)

Coryphantha aggregata (see footnote 119 under *Escobaria vivipara* var. *bisbeeana*)

Coryphantha vivipara var. *bisbeeana* (see *Escobaria vivipara* var. *bisbeeana*)

***Cylindropuntia arbuscula* (G. Engelmann) F.M. Knuth: Arizona Pencil Cholla**

SYNONYMY: *Opuntia arbuscula* G. Engelmann. COMMON NAMES: Arizona Pencil Cholla; Bush Pencil Cholla; Clavellina (Spanish); Pencil Cholla; Siviri (Spanish); Wipnoi. DESCRIPTION: Terrestrial perennial stem-succulent shrub (erect stems 20 inches to 12 feet in height; one plant observed and described as being 5 feet in height with a crown 5 feet in width, one plant was observed and described as being 78 inches in height with a crown 102 inches in width, one plant was observed and described as being 7 feet in height with a crown 66 inches in width); the trunk may be dark gray; the stems may be blue-green, gray-green, dull green, green or yellow-green and sometimes tinged with purple; the spines may be pale yellow or red-brown turning black with age; the glochids are pale yellow; the flowers (¾ to 1½ inches in diameter) may be dark bronze, brown, green, greenish-yellow tinged with red, orange-bronze, orange-yellow, red, terra cotta, pale yellow-green or yellow-green; the anthers are yellow; the stigma lobes may be pale green or greenish; flowering generally takes place between early April and early June (additional record: one for late July); the spineless fleshy pear-shaped fruits (1/2 to 7/8 inch in diameter and 1 to 1¼ inches in length) are green with a pink blush, green tinged with purple or red or yellow-green. HABITAT: Within the range of this species it has been reported from rocky canyon bottoms; hills; rocky hillsides; rocky, gravelly, sandy and silty-loamy slopes; rocky and gravelly bajadas; plains; gravelly, sandy, sandy-loamy and silty flats; basins; valley floors; coastal plains; coastal beaches; along gravelly roadsides; along arroyos; within gullies; riverbeds; along gravelly, gravelly-sandy and sandy washes; along drainages; borders of washes; floodplains; mesquite bosques; around represos, and disturbed areas growing in damp and dry desert pavement; rocky, gravelly, gravelly-sandy and sandy ground; sandy loam and silty loam ground, and silty ground, occurring from sea level to 5,600 feet in elevation in the grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. The fruit is eaten by browsing animals including the Javelina (*Peccari tajacu* subsp. *sonoriensis*). *Cylindropuntia arbuscula* is native to southwest-central and southern North America. *5, 6, 12 (recorded as *Opuntia arbuscula* Engelm., Pages 58-59), 15 (recorded as *Opuntia arbuscula* Engelm.), 26 (genus, recorded as recorded as *Opuntia*), 27 (Page 3; color photograph: Plate 3, Page 94), 28 (recorded as *Opuntia arbuscula*, color photograph 114), 43 (011710), 44 (112910 - no record of species; genus record), 45 (color photograph), 46 (recorded as *Opuntia arbuscula* Engelm., Page 584), 48 (genus, recorded as recorded as *Opuntia*), 58 (recorded as *Opuntia arbuscula* Engelm.), 63 (070212 - color presentation), 77 (recorded as *Opuntia arbuscula* Engelm.), 85 (070212 - color presentation, reduced recovery), 91, 115 (color presentation), 119 (recorded as *Opuntia arbuscula* Engelm.), 124 (111210 - no record of species or genus, "chollas" are included under the genus *Opuntia*), 127, 140 (Pages 103 & 288), **HR***

***Cylindropuntia bigelovii* (G. Engelmann) F.M. Knuth: Teddybear Cholla**

SYNONYMY: *Opuntia bigelovii* G. Engelmann. COMMON NAMES: Arizona Jumping Cactus; "Ball" Cholla; Bigelow Cholla; Bigelow's Cholla; Bigelow Cholla Cactus; Bigelow's Cholla Cactus; Cholla Guera; Choya Guera; Golden-spined Jumping Cholla; Go'te (Seri); Jumping Cactus (a name also applied to other species); Jumping Cholla (a name also applied to other species); Jumping Teddy-bear Cholla; Jumping Teddybear Cholla; Jumping Teddybear Cholla Cactus; Silver Cholla (a name also applied to other species); Teddybear Cactus; Teddy Bear Cholla; Teddy-bear Cholla; Teddy-bear Cholla Cactus; Teddy-bear Jumping Cholla; Teddybear Cactus; Teddybear Cholla; Teddybear Cholla Cactus; Teddy-bear Jumping Cholla. DESCRIPTION: Terrestrial perennial stem-succulent subshrub or shrub (erect stem 20 inches to 10 feet in height; one plant was observed and described as being just over 8 feet in height and 40 inches in width with 2 to 3 main trunks); the central trunk may be black or dark brown; older branches are dark-brown; the stems (3 to 10 inches in length and 1¼ to 2½ inches in diameter) may be bluish, light green, green or bluish-green; the spines may be golden, silvery, tan, pale yellow or yellow aging to dark brown; the glochids are yellow; the flowers (1 to 1½ inches in diameter) may be chartreuse-yellow, cream tinged with rose, green, green-yellow, greenish-yellow, magenta, pink, white-yellow, yellow tinged with red-purple or white tinged with lavender; the anthers may be orange-yellow, yellow, deep yellow, yellow-orange or deep yellow-orange; the stigma lobes may be cream, dark chartreuse-green, green, dark green or olive green; flowering generally takes place between early March and mid-June

(additional records: one for late January, one for early February, one for early September, one for mid-November, two for late November and one for early December); the ripe fruits (½ to ¾ inch in length and ½ to ¾ inch in diameter) are fleshy, nearly spineless and may be greenish-yellow, yellow or yellow-green possibly tinged with purple-red. HABITAT: Within the range of this species it has been reported from mountains; rocky and sandy mountainsides; cliffs; canyons; canyon bottoms; talus slopes; bluffs; rocky ridges; rocky ridgetops; rocky foothills; rocky and sandy hills; rocky hillsides; rocky, rocky-gravelly, rocky-sandy, gravelly and sandy slopes; rocky alluvial fans; rocky-gravelly and gravelly-loamy bajadas; plains; cobbly-silty, gravelly, sandy and silty flats; basins; valley floors; along roadsides; arroyos; along and in rocky, gravelly and sandy washes; sandy drainages; benches; bouldery-rocky terraces; lowlands, and disturbed areas growing in dry desert pavement; bouldery-rocky, rocky, rocky-gravelly, rocky-sandy, gravelly and sandy ground; gravelly loam and silty loam ground; clay ground, and cobbly-silty and silty ground, occurring from sea level to 4,400 feet in elevation in the scrub and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. This is the spiniest of the cholla cacti in Arizona. Thomas Kearney and Robert Peebles in their book Arizona Flora had this to say about the Teddybear Cholla: "The combination of barbed spines and densely armed, easily detached joints has earned profound respect for this formidable cholla." Teddy-bear Chollas may live to be 60 or more years of age. The Teddybear Cholla is a preferred nesting site of the Cactus Wren (*Campylorhynchus brunneicapillus*). Pack Rats (*Neotoma* sp.) use the joints of this plant in the construction of their nests. *Cylindropuntia bigelovii* is native to southwest-central and southern North America. *5, 6, 12 (recorded as *Opuntia bigelovii* Engelm., Pages 50, 52 & 54-55), 15 (recorded as *Opuntia bigelovii* Engelm., color photograph on Page 77 includes habitat and associated species), 18, 26 (genus, recorded as *Opuntia*), 27 (Page 5; color photographs including habitat: Plates 5 & 5A, Page 94), 28 (recorded as *Opuntia bigelovii*, color photograph 115 A&B), 43 (052110), 44 (061911), 45 (color photograph), 46 (recorded as *Opuntia bigelovii* Engelm., Page 584), 48, 63 (052110 - color presentation including habitat), 77 (recorded as *Opuntia bigelovii* Engelm., color photograph #13), **85** (062011 - color presentation), 86 (color photograph), 91 (recorded as *Opuntia bigelovii* Engelm.), 115 (color presentation), 119 (recorded as *Opuntia bigelovii* Engelm.), 124 (061911 - no record of species or genus, "chollas" are included under the genus *Opuntia*), 127, **HR***

Cylindropuntia fulgida (G. Engelmann) F.M. Knuth var. *fulgida*: Jumping Cholla

SYNONYMY: *Opuntia fulgida* G. Engelmann; *Opuntia fulgida* G. Engelmann var. *fulgida*. COMMON NAMES: Brincadora (Spanish: a name also applied to the species); Chain Cholla (a name also applied to the species); Chain-fruit Cholla (a name also applied to the species); Cholla (a name also applied to the species, other species and to the genus *Cylindropuntia*); Cholla Brincadora (a name also applied to the species); Choya (Spanish: a name also applied to the species, other species and to the genus *Cylindropuntia*); Jumping Chain-fruit Cholla (a name also applied to the species); Jumping Cholla (a name also applied to the species); Sonora Jumping Cholla (a name also applied to the species); Velas de Ccoyote (a name also applied to the species). DESCRIPTION: Terrestrial perennial stem-succulent shrub or tree (erect stems 3 to 15 feet in height; one plant was observed and described as being 4¼ feet in height with a crown 40 inches in width, one plant was observed and described as being 4¼ feet in height with a crown 8¼ feet in width, one plant was observed and described as being 6½ feet in height with a crown 5 feet in width, one plant was observed and described as being 10 feet in height with a crown 13 feet in width); the stems may be green or purple; the spines are golden-yellow, yellow or pale pinkish aging to brown; the glochids are yellow; the flowers (¾ to 1 inch in diameter) may be cream-yellow, pink, pink-purple, purple, purple-pink, red-purple, rose-pink or yellow tinged with pink; the anthers may be cream or white; the stigma lobes are whitish to pale yellow; flowering generally takes place between mid-April and mid-September (additional records: one for late March, one for early December); the smooth fleshy fruits (¾ to 2 inches in length and ¾ to 1 inch in diameter) may be gray-green, green or purple forming clusters or pendulant "chains". HABITAT: Within the range of this species it has been reported from mountains; bases of mountains; mesas; canyons; ledges; ridges; hills; bases of hills; hillsides; rocky, gravelly-loamy and sandy slopes; gravelly bajadas; plains; rocky-gravelly, gravelly, sandy and sandy-silty flats; along valley floors; coastal plains; along rocky-gravelly and sandy roadsides; along creeks; along and in washes; banks of streams, creeks and washes; edges of washes; terraces, and floodplains growing in dry desert pavement; rocky, rocky-gravelly, gravelly and sandy ground; gravelly loam and silty-clayey loam ground; clay ground, and sandy silty ground, occurring from 600 to 4,100 feet in elevation in the grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. Each year, following flowering, additional fruits are added to the end of the chains. Chain-fruit Chollas may live to be from 40 to 80 years of age. The Chain-fruit Cholla is a preferred nesting site of the Cactus Wren (*Campylorhynchus brunneicapillus*). The Costa's Hummingbird (*Calypte costae*) has been observed visiting the flowers. Deer and Javelina feed on the fruits. *Cylindropuntia fulgida* var. *fulgida* is native to southwest-central and southern North America. *5, 6, 12 (recorded as *Opuntia fulgida* Engelm. var. *fulgida*, Pages 49-52), 15 (recorded as *Opuntia fulgida* Engelm. var. *fulgida*), 16 (recorded as *Opuntia fulgida* Engelm.), 26 (genus, recorded as *Opuntia*), 27 (species, Pages 10-11; color photograph: Plate 10, Page 96), 28 (recorded as *Opuntia fulgida*, color photographs 116 A&B), 43 (011810), 44 (070312 - no record of variety or species; genus record), 45 (species, color photograph of species), 46 (recorded as *Opuntia fulgida* Engelm., Page 585), 48 (genus, recorded as *Opuntia*), 52 (recorded as *Opuntia fulgida*, color photograph), 53 (recorded as *Opuntia fulgida* Engelm.), 63 (070312 - color presentation), 77 (recorded as *Opuntia fulgida* Engelm. var. *fulgida*), 85 (070312 - color presentation, reduced recovery), 91 (recorded as *Opuntia fulgida* Engelm. var. *fulgida*, Pages 293-294), 115 (color presentation of species), 119 (recorded as *Opuntia fulgida* Engelm.; genus record: the chollas are included under the genus *Opuntia*), 124 (070312 - no record of species or genus; species record found under *Opuntia fulgida*), 127, 140 (Page 288), **WTK** (August 4, 2005)*

***Cylindropuntia fulgida* (G. Engelmann) F.M. Knuth var. *mamillata* (A.C. Schott ex G. Engelmann) C. Backeberg: Jumping Cholla**

SYNONYMY: *Opuntia fulgida* G. Engelmann var. *mamillata* (A.C. Schott ex G. Engelmann) J.M. Coulter; *Opuntia fulgida* G. Engelmann var. *mamillata* (A.C. Schott ex G. Engelmann) J.M. Coulter forma *monstrosa* J.M. Coulter; *Opuntia mamillata* A.C. Schott ex G. Engelmann. COMMON NAMES: Boxing-glove Cactus (forma *monstrosa*); Boxing-glove Cholla (forma *monstrosa*); Brincadora (Spanish: a name also applied to the species); Chain [-fruit] Cholla[140]; Chain-fruit Cholla (a name also applied to the species); Cholla Brincadora (a name also applied to the species); Cholla (a name also applied to the species, other species and to the genus *Cylindropuntia*); Choya (Spanish: a name also applied to the species, other species and to the genus *Cylindropuntia*); Club Cactus (a name also applied to the species); Jumping Cholla (a name also applied to the species); Smooth Chain-fruit Cholla; Velas de Coyote (a name also applied to the species). DESCRIPTION: Terrestrial perennial stem-succulent shrub or tree (erect stems 2 to 9 feet in height; one plant was observed and described as being 6 feet in height with a crown 4 feet in width, one plant was observed and described as being 8 feet in height with a crown 8 feet in width); the stems may be drab green or green; the flowers (¾ to 1 inch in diameter) may be cream tinged with magenta, light pink, pink, pink-purple, rose-pink or violet; the anthers may be cream or white; the stigma lobes are whitish to pale yellow; flowering generally takes place between late May and mid-September (additional records: one for mid-April and one for late April; flowering as late as October has been reported); the smooth fleshy fruits (¾ to 2 inches in length and ¾ to 1 inch in diameter) may be gray-green or green forming pendulant "chains". HABITAT: Within the range of this species it has been reported from mountains; mesas; ledges; ridges; rocky ridgetops; foothills; hills; rocky hillsides; rocky slopes; bajadas; lava plains; sand dunes; plains; gravelly and sandy flats; roadsides; sandy arroyos; along washes; rocky-sandy benches; floodplains, and disturbed areas growing in dry rocky, rocky-sandy, gravelly and sandy ground, occurring from sea level to 3,900 feet in elevation in the grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The plant, *Opuntia fulgida*, was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. Each year, following flowering, additional fruits may be added to the end of the chains. Chain-fruit Cholla may live to be from 40 to 80 years of age. Cristate forms (forma *monstrosa* J.M. Coulter) have been reported. The Chain-fruit Cholla is a preferred nesting site of the Cactus Wren (*Campylorhynchus brunneicapillus*). The Costa's Hummingbird (*Calypte costae*) has been observed visiting the flowers. Deer and Javelina feed on the fruits. *Cylindropuntia fulgida* var. *mamillata* is native to southwest-central and southern North America. *5, 6, 12 (recorded as *Opuntia fulgida* Engelm. var. *mammillata* (Schott) Coulter, Pages 50 & 52), 15 (recorded as *Opuntia fulgida* var. *mammillata* (Schott) Coult.), 26 (genus, recorded as *Opuntia*), 27 (Pages 12 & 13 (forma *monstrosa*); color photograph: Plate 11, Page 96), 43 (011810 - recorded as *Opuntia fulgida* Engelm. var. *mamillata* (A. Schott) J.M. Coult., no record for *Opuntia fulgida* var. *mamillata* forma *monstrosa*), 44 (070312 - no record of variety or species; genus record), 45 (species, color photograph of species), 46 (recorded as *Opuntia fulgida* Engelm. var. *mammillata* (Schott) Coult., Page 585), 48 (genus, recorded as *Opuntia*), 53 (recorded as *Opuntia fulgida* Engelm. var. *mammillata* (Schott) Coult.), 58 (recorded as *Opuntia fulgida* Engelm. var. *mammillata* (Schott) Coult.), 63 (070312), 77 (recorded as *Opuntia fulgida* Engelm. var. *mammillata* (Schott) Coult.), 85 (062011 - color presentation, reduced recovery), 91 (recorded as *Opuntia fulgida* Engelm. var. *mammillata* (Schott) Coult., Pages 293-294), 115 (color presentation of species), 124 (070312 - no record of species or genus; species record found under *Opuntia fulgida*), 127, 140 (Pages 103, 105 & 288), **HR***

Cylindropuntia fulgida var. *mamillata* forma *monstrosa* (see NOTES under *Cylindropuntia fulgida* var. *mamillata*)

***Cylindropuntia leptocaulis* (A.P. de Candolle) F.M. Knuth: Christmas Cactus**

SYNONYMY: *Opuntia leptocaulis* A.P. de Candolle. COMMON NAMES: Agujilla; Alfilerillo (Spanish); Catalineria (Spanish); Christmas Cactus; Christmas Cholla; Darning Needle Cactus; Desert Christmas Cactus; Desert Christmas Cholla; Diamond Cactus; Holycross Cholla; Naf (or Nav?, Gila River Pima); Pencil Cactus (a name also applied to other species); Pencil Cholla (a name also applied to other species); Pencil-joint Cholla; Pennopuntia (Swedish); Pipestem Cactus; Rat-tail Cactus; Rattail Cactus; Slender-stem Cactus; Tajasilla; Tasajilla (Hispanic); Tasajillo[140]; Tasajillo (Spanish, Texas); Tasajo (Spanish); Tesajo (Hispanic); Tesajo Cactus (Christmastree Cacti); Tassajilla (Oklahoma); Tassijilla; Wipnoi[140]. DESCRIPTION: Terrestrial perennial stem-succulent shrub (trailing (rarely), sub-erect (rarely) and/or erect stems 1 to 6 feet in height (sometimes becoming vine-like and growing upwards 8 to 15 feet in height with support); plants were observed and described as being 20 inches in height with crowns 20 inches in width, one plant was observed and described as being 20 inches in height with a crown 40 inches in width, one plant was observed and described as being 20 inches in height with a crown 6½ feet in width, one plant was observed and described as being 2 feet in height with a crown 2 feet in width, one plant was observed and described as being 30 inches in height with a crown 5 feet in width, plants were observed and described as being to 40 inches in height with crowns 40 inches in width, one plant was observed and described as being 40 inches in height with a crown 5 feet in width, one plant was observed and described as being 4 feet in height with a crown 8 feet in width, one plant was observed and described as being 5 feet in height with a crown 8¼ feet in width); the stems may be gray-green, dark gray-green, green, purplish or yellow-green; the spines gray-brown, purple-brown, red-brown or yellow-brown often being paler toward the tip; the glochids may be reddish-brown or yellow; the anthers are yellow; the stigma lobes are greenish-yellow; the flowers (3/8 to 3/4 inch in diameter) are bronze, cream, light green-cream, cream-yellow, green, green-yellow, greenish-cream, greenish-yellow, pale yellow, yellow or whitish; flowering generally takes place between late March and late June (additional records: two for mid-July, one for late July, one for early August, one for early October, one for mid-October and one for late October); the spineless (with glochids) fleshy

fruits (1/2 to 3/4 inch in length and 1/4 to 7/16 inch in diameter) may be coral, green (rarely, sometimes tinged with scarlet), pale green-yellow, orange, orange-red, red, reddish-orange, scarlet, scarlet-red or yellow (rarely) when mature. HABITAT: Within the range of this species it has been reported from mountains; sandy mountainsides; rocky-sandy, gravelly and silty mesas; along cliffs; rocky canyons; bases of canyon walls; rocky canyon bottoms; rocky talus slopes; rocky ledges; bedrock and gravelly ridges; foothills; rocky and rocky-gravelly hills; hilltops; rocky hillsides; bedrock, rocky, gravelly, gravelly-sandy-loamy, sandy and silty-loamy slopes; clayey-loamy alluvial fans; rocky, gravelly, gravelly-silty and sandy bajadas; rocky and gypsum outcrops; amongst cobbles; sandy lava flows; lava beds; sand hills; sand dunes; breaks; sandy and clayey-loamy plains; rocky-sandy, gravelly, gravelly-sandy and sandy flats; basins; rocky-gravelly valley floors; gravelly and gravelly-sandy roadsides; within gravelly and sandy arroyos; bottoms of arroyos; along ravines; along rivers; riverbeds; along and in rocky, gravelly and sandy washes; along sandy drainages; along (cobbly-sandy) banks of rivers and drainages; borders of washes; edges of arroyos, ravines and washes; rocky and sandy benches; terraces; bottomlands; floodplains; along fencelines; along ditches; riparian areas, and disturbed areas growing in dry desert pavement; rocky, rocky-gravelly, rocky-sandy, cobbly-sandy, gravelly, gravelly-sandy and sandy ground; gravelly-sandy loam, clayey loam, silty loam and loam ground; rocky-sandy clay and loamy clay ground, and gravelly silty and silty ground often found growing within grasses, shrubs or trees, occurring from sea level to 6,200 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. The Desert Christmas Cactus is believed to have a life span of about 50 years. A high mortality rate is to be expected with plants coming into contact with fire. Hummingbirds have been observed visiting the flowers; the fruits are eaten by birds and small mammals, and Cochineal Scale (*Dactylophius coccus*) has been observed growing on this plant. *Cylindropuntia leptocaulis* is native to southwest-central and southern North America. *5, 6, 12 (recorded as *Opuntia leptocaulis* DC., Pages 56-58), 15 (recorded as *Opuntia leptocaulis* DC.), 16 (recorded as *Opuntia leptocaulis* DC.), 18, 26 (genus, recorded as *Opuntia*), 27 (Page 2; color photograph: Plate 2, Page 94), 28 (recorded as *Opuntia leptocaulis*, color photograph 129), 43 (011910), 44 (070312 - no record of species; genus record), 45 (color photograph), 46 (recorded as *Opuntia leptocaulis* DC., Page), 48 (genus, recorded as *Opuntia*), 58 (recorded as *Opuntia leptocaulis* DC.), 63 (070412 - color presentation), 77 (recorded as *Opuntia leptocaulis* DC.), 85 (070312 - color presentation, reduced recovery), 86 (recorded as *Opuntia leptocaulis*, color photograph), 91 (recorded as *Opuntia leptocaulis* DC.), 115 (color presentation), 119 (recorded as *Opuntia leptocaulis* DC.), 124 (070312 - no record of species or genus, recorded as *Opuntia leptocaulis*), 127, 140 (Pages 103 & 288), **HR***

Cylindropuntia spinosior (G. Engelmann) F.M. Knuth: Walkingstick Cactus

SYNONYMY: *Opuntia spinosior* (G. Engelmann) J.W. Toumey. COMMON NAMES: Atáta (Yuman: Havasupai); Atót (Yuman: Maricopa); Cac Q^{w}ʔi:š (Yuman: Cocopa); Cane Cholla; Cane [Handlegrip] Cholla <choya> ("Cholla" is Spanish for "skull" or "head" in allusion to the fruits ..., English)[140]; Cardenche; Ceolim <ciolim, cialim, tci'orim> (Uto-Aztecan: Tohono O'odham)[140]; 'Chi'odima' (Uto-Aztecan: Hiá Ceḍ O'odham)[140]; Choa (Uto-Aztecan: Yaqui)[140]; Ḍaqwi:s (Yuman: Walapai); Hanam <hánam> (Uto-Aztecan: Tohono O'odham)[140]; Handgrip Cholla; Handlegrip Cholla; Hosh 'Aditsahiitsoh <hosh 'aditsahii, xwoctítshahiih> (Athapascan: Navajo)[140]; Hosh Ńchaagi <k'intsǫǫze> (Athapascan: Western Apache)[140]; Spiny Cholla; Ösö <ʔöso, ɜsɜ'> (Uto-Aztecan: Hopi)[140]; Siviri <sivili> (Uto-Aztecan: Cahita)[140]; Tasajo (Spanish: Arizona, New Mexico, Chihuahua, Sonora)[140]; Tourney-cane Cholla (Arizona); Ušil <ʔusi-l> (Uto-Aztecan: Tübatulabal)[140]; Úunvat (Uto-Aztecan: Luiseño, Juaneño dialect)[140]; Walking-stick Cactus (English: New Mexico)[140]; Walkingstick Cactus; Walking Stick Cholla; Wehcábori [Wehcapó] (Uto-Aztecan: Guarijío)[140]; Wiyattampü (Uto-Aztecan: Panamint)[140]. DESCRIPTION: Terrestrial perennial stem-succulent shrub (erect stems 16 inches to 10 feet in height; one plant was observed and described as being 6½ feet in height with a crown 5 to 6½ feet in width, one plant was observed and described as being 6½ feet in height with a crown 10 feet in width); the stems may be brown-green, dark gray-green, grayish-maroon, grayish-purple, green, dark green, purple or purplish-green; the spines may be brown, gray, pale pink, pink, pinkish, purplish-gray, red-brown, reddish-gray, pale tan, tan or yellowish; the glochids may be tan, yellow or yellowish-white aging to gray; the flowers (1¾ to 2 inches in diameter) may be bronze-purple, brown, greenish-yellow, magenta, magenta-red, maroon, orange, pink, dark pink, light purple, purple, purple-pink, red, dark red, red-purple, red & yellow, saffron, salmon-pink, terra-cotta, white or yellow; the anthers are pale yellow or yellow; the stigma lobes are cream to white; flowering generally takes place between early April and early August (additional records: three for early January, two for early February and one for late September); the fleshy ripe fruits (1 to 1¾ inches in length and ¾ to 1 inch in diameter) may be bright lemon-yellow, pale yellow, yellow, yellow-green or yellowish-green sometimes with a purple-brown, red, reddish or purple cast. HABITAT: Within the range of this species it has been reported from mountains; mountaintops; mountainsides; mesas; cliffs; rocky canyons; rocky canyon bottoms; talus, bedrock ridges; rocky ridgetops; ridgelines; foothills; rocky hills; rocky hillsides; along bedrock, rocky, rocky-sandy, gravelly and sandy slopes; bajadas; rock outcrops; amongst rocks; plains; gravelly, gravelly-sandy and silty flats; silty valley floors; roadsides; arroyos; bottoms of arroyos; rocky draws; springs; along creeks; creekbeds; along sandy washes; drainages; along drainage ways; banks of washes; sandy flood channels; terraces; floodplains; mesquite bosques; riparian areas, and disturbed areas growing in dry rocky, rocky-sandy, gravelly, gravelly-sandy and sandy ground; silty-clayey loam, silty loam and loam ground, and silty ground, occurring from 900 to 7,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. The Cactus Wren (*Campylorhynchus brunneicapillus*) nests in the branches. *Cylindropuntia spinosior* is native to southwest-central and southern North America. *5, 6, 12 (recorded as *Opuntia spinosior* (Engelm.) Toumey, Pages 39-43; color photograph: Plate

1.17, Page 43), 15 (recorded as *Opuntia spinosior* (Engelm.) Toumey), 16 (recorded as *Opuntia spinosior* (Engelm.) Toumey), 26 (genus, recorded as *Opuntia*), 27 (Page 14, color photograph: Plate 12, Page 96), 28 (color photograph 117), 43 (063009), 44 (040111 - no record of species; genus record), 45 (color photographs), 46 (recorded as *Opuntia spinosior* (Engelm. & Bigel.) Toumey, Page 585), 48 (genus, recorded as *Opuntia*), 53, 58 (recorded as *Opuntia spinosior* (Engelm.) Toumey), 63 (070412 - color presentation), 77 (recorded as *Opuntia spinosior* (Engelm.) Toumey), 85 (070512 - color presentation, reduced recovery), 115 (color presentation), 119, 124 (070512 - no record of species or genus, "chollas" are included under the genus *Opuntia*), 127, 140 (Pages 102-103 & 288), **WTK** (April 16, 2008)*

***Cylindropuntia* x *tetracantha* (J.W. Toumey) F.M. Knuth (pro sp.) [*Cylindropuntia acanthocarpa* x *Cylindropuntia leptocaulis*]: Four-spined Klein's Cholla**

SYNONYMY: *Opuntia kleiniae* A.P. de Candolle var. *tetracantha* (J.W. Toumey) W.T. Marshall; *Opuntia tetracantha* J.W. Toumey; *Opuntia* x *tetracantha* J.W. Toumey (pro sp.). COMMON NAMES: Candle Cholla; Cane Cholla; Four-spined Cholla; Four-spined Klein's Cholla; Hybrid Pencil Cholla; Klein Pencil Cholla; Pencil Joint Cholla; Tucson Cholla; Tucson Prickly-pear; Tucson Pricklypear. DESCRIPTION: Terrestrial perennial stem-succulent shrub (erect stems 1 to 8 feet in height; plants were observed and described as being 20 inches in height and 32 inches in width, one plant was observed and described as being 4 feet in height and width); the stems may be gray-green, green (often reported with a gray wax) or reddish; the spines may be purple-brown or yellow; the glochids are dark brown or yellow; the flowers (3/4 to 1 3/8 inches in diameter) may be green edged with brown, maroon or red, greenish-bronze, dirty pink, pink-purple-red over yellow, light reddish, dirty reddish-purple, red-magenta, yellow-green suffused with purple-brown; the anthers are pale green or pale yellow; flowering generally takes place between mid-April and late May (additional records: one for early February, one for late March, one for mid-September and one for late September); the egg-shaped fleshy to dry fruits are green turning yellow with a red blush or red with age; the ripe fruits (3/4 to 1 inch in length and 1/2 to 5/8 inch in diameter) are green, green-red, greenish-yellow, red or reddish-orange. HABITAT: Within the range of this species it has been reported from mountains; canyons; ridgetops; rocky hills; rocky slopes; gravelly bajadas; rocky and gravelly flats; roadsides; gullies; along washes; banks of arroyos, and mesquite bosques growing in damp and dry desert pavement and rocky and gravelly ground, occurring from 700 to 4,400 feet in elevation in the grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Cylindropuntia* x *tetracantha* is native to southwest-central and southern North America. *5, 6, 12 (recorded as *Opuntia kleiniae* DC. var. *tetracantha* (Toumey) W.T. Marshall, Page 60), 15 (recorded as *Opuntia kleiniae* DC. var. *tetracantha* (Toumey) W.T. Marshall), 16 (recorded as *Opuntia kleiniae* DC. var. *tetracantha* (Toumey) Marshall), 26 (genus, recorded as *Opuntia*), 27 (recorded as *Opuntia kleiniae* DeCandolle var. *tetracantha* (Toumey) F.M, Knuth, Marshall, Page 4; color photograph: Plate 4, Page 94), 43 (070512), 44 (062111 - no record of species; genus record), 46 (recorded as *Opuntia tetracantha* Toumey, Page 584), 48 (genus, recorded as *Opuntia*), 63 (070512), 77 (recorded as *Opuntia* x *tetracantha* Toumey), 85 (070512 - color presentation of dried material), 124 (010911 - no record of species or genus, "chollas" are included under the genus *Opuntia*), **HR***

***Cylindropuntia versicolor* (G. Engelmann ex J.M. Coulter) F.M. Knuth: Staghorn Cholla**

SYNONYMY: *Opuntia versicolor* G. Engelmann ex J.M. Coulter. COMMON NAMES: Deer Horn Cactus; Deer Horn Cholla; Deerhorn Cholla; Morada Cholla (Spanish); Staghorn Cholla; Tree Cholla. DESCRIPTION: Terrestrial perennial stem-succulent shrub (erect stems 3 to 15 feet in height; one plant was observed and described as being 40 inches in height with a crown 40 inches in width, one plant was observed and described as being 40 inches in height with a crown 6½ feet in width, one plant was observed and described as being 50 inches in height with a crown 40 inches in width, one plant was observed and described as being 51 inches in height with a crown 6½ feet in width, one plant was observed and described as being 63 inches in height with a crown 87 inches in width, one plant was observed and described as being 75 inches in height with a crown 87 inches in width); the stems may be green, green-purple, greenish-red, maroon, purple, purple-green or dark purple-red; the spines may be dark brown, gray, pinkish, purple-brown, red-brown; dark reddish-brown or whitish; the glochids are yellow or dark yellow; the flowers (1¼ to 2¼ inches in diameter) may be bronze, bronze-red, brown, burnt orange, gold, green, lavender, magenta, orange, orange-brown, orange-red, orange-rust, pink-red, purple, red, rose, rose-purple, yellow, yellow-green or yellow-green-bronze; the anthers are yellow; the stigma lobes are whitish; flowering generally takes place between early April and mid-June (additional records: one for early January, one for early March, two for mid-August, one for late August and one for mid-September); the fleshy, spineless or nearly spineless pear-shaped fruits (¾ to 1¾ inches in length and ¾ inch in diameter) may be green tinged with lavender, purple, straw-yellow, red, bright yellow or yellowish-green sometimes tinged with purple or red, sometimes forming chains of 2 to 4 fruits. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; mesas; rocky and sandy canyons; rocky canyon bottoms; ridges; rocky ridgetops; foothills; rocky and rocky-gravelly hills; rocky hillsides; rocky and gravelly slopes; gravelly-sandy alluvial fans; rocky and gravelly-sandy bajadas; sand dunes; plains; gravelly and gravelly-sandy flats; sandy valley floors; along roadsides; along sandy arroyos; gravelly and sandy bottoms of arroyos; ravines; along sandy streambeds; riverbeds; along sandy washes; playas; sandy gravel bars; strands; bottomlands; riparian areas, and disturbed areas growing in dry rocky, rocky-gravelly, gravelly, gravelly-sandy and sandy ground, occurring from sea level to 5,000 feet in elevation in the woodland, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. Varied flower colors between plants, the cascading branches of the larger plants, along with pendulous fruits make this an attractive plant. *Cylindropuntia versicolor* is native to southwest-central and southern North America. *5, 6,

12 (recorded as *Opuntia versicolor*, Pages 43 & 45-46; color photograph: Plate 1.17, Page 43), 15 (recorded as *Opuntia versicolor* Engelm.), 16 (recorded as *Opuntia versicolor* Engelm.), 26 (genus, recorded as *Opuntia*), 27 (Page 6; color photographs: Plates 6, 6A & 6B, Page 95), 28 (color photograph 118), 43 (012110 - *Cylindropuntia versicolor* (Engelm.) F.M. Knuth), 44 (070512 - no record of species; genus record), 45 (color photograph), 46 (recorded as *Opuntia versicolor* Engelm., Page 585), 48 (genus, recorded as *Opuntia*), 58 (recorded as *Opuntia versicolor* Engelm.), 63 (070512 - color presentation), 77 (recorded as *Opuntia versicolor* Engelm., color photograph #15), 85 (070512 - color presentation), 115 (color presentation), 119 (recorded as *Opuntia versicolor* Engelm.), 124 (070512 - no record of species or genus, "chollas" are included under the genus *Opuntia*), 127, 140 (Pages 102, 103 & 288), **WTK** (August 4, 2005)*

Echinocactus wislizeni (see *Ferocactus wislizeni*)

***Echinocereus fasciculatus* (G. Engelmann ex B.D. Jackson) L.D. Benson: Pinkflower Hedgehog Cactus**

SYNONYMY: *Echinocereus fasciculatus* (G. Engelmann) L.D. Benson var. *fasciculatus*; *Echinocereus fendleri* (G. Engelmann) F. Sencke ex J.N. Haage var. *fasciculatus* (G. Engelmann ex B.D. Jackson) N.P. Taylor; *Echinocereus fendleri* (G. Engelmann) F. Sencke ex J.N. Haage var. *robustus* (R.H. Peebles) L.D. Benson; *Mammillaria fasciculata* G. Engelmann ex B.D. Jackson (possibly incorrectly applied). COMMON NAMES: Bundle Hedgehog; Bundle Hedgehog Cactus; Bundle-spine Hedgehog; Magenta-flower Hedgehog Cactus; Pinkflower Hedgehog Cactus (a name also applied to other species); Robust Hedgehog; Robust Hedgehog Cactus; Short-spine Strawberry Cactus; Strawberry Cactus (a name also applied to other species). DESCRIPTION: Terrestrial perennial stem-succulent shrub (ascending to erect stems 2 to 18 inches in height and 1½ to 3 inches in width; either single or in clusters of up to 30 stems; one plant was reported to have 150 stems); the stems are green or dark green; the spines often having zones of differing colors including black, gray, grayish-black-purplish, reddish-brown, whitish or yellowish turning gray with age; the flowers (2 to 3 inches in diameter) may be cerise, lavender-pink, pale magenta, magenta, magenta-maroon, magenta-pink, magenta-purple, magenta-red, pink, pink-purple, purple, reddish-purple, rose-pink or white; the anthers are yellow; the stigma lobes may be green, dark green or olive green; flowering generally takes place between late March and late June (additional records: one for early October, one for mid-October, one for late October, two for early November and one for early December); the mature fruits (¾ to 1¼ inches in length and ½ to 1 inch in diameter) may be orange-red or bright red. HABITAT: Within the range of this species it has been reported from mountains; mountainsides; mesas; cliffs; bases of cliffs; canyons; canyonsides; buttes; knolls; ledges; ridges; along rocky and stony ridgetops; foothills; rocky, gravelly and sandy hills; rocky hilltops; rocky and sandy hillsides; rocky, stony and gravelly slopes; bajadas; rocky outcrops; amongst rocks and gravels; rocky and sandy banks; plains; gravelly flats; valley floors; along cobbly creeks; along and in washes, and floodplains growing in dry rocky, rocky-gravelly, stony, cobbly, gravelly and sandy ground, occurring from sea level to 6,300 feet in elevation in the woodland, scrub, grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The species, *Echinocereus fendleri*, was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. The fruits are eaten by birds and other animals. *Echinocereus fasciculatus* is native to southwest-central and southern North America. *5, 6, 8, 12 (color photograph - recorded as *Echinocereus fasciculatus* (Engelm.) L. Benson var. *fasciculatus*, Pages 132-135), 15 (recorded as *Echinocereus fasciculatus* (Engelm.) L. Benson var. *fasciculatus*), 16 (recorded as *Echinocereus fasciculatus* (Engelm.) L. Benson), 27 (Page 81; color photograph: Plate 50, Page 104), 43 (101510 - *Echinocereus fendleri* var. *fasciculatus* (Engelm. ex B.D. Jacks.) N.P. Taylor, *Echinocereus fendleri* var. *robustus* (Peebles) L.D. Benson), 44 (070512 - no record of species; genus record), 45 (color photograph), 46 (recorded as *Echinocereus fendleri* (Engelm.) Rümpler var. *robustus* (Peebles) L. Benson, Page 572 and *Echinocereus fendleri* (Engelm.) Rümpler var. *robustus* (Peebles) L. Benson, Page 572), 48 (genus), 58 (recorded as *Echinocereus fasciculatus* (Engelm.) L. Benson var. *fasciculatus*), 63 (070512), 77 (recorded as *Echinocereus fasciculatus* (Engelm.) L. Benson, color photograph #64), 85 (070512 - color presentation), 115 (color presentation), 119 (species, recorded as *Echinocereus fendleri* (Engelm.) Rümpler), 124 (070512 - no record of species; genus record), 127, 140 (recorded as *Echinocereus fendleri* (Engelmann) F. Seitz var. *fasciculatus* (Engelmann ex B.D. Jackson) N.P. Taylor, Page 288), **WTK** (April 16, 2008)*

Echinocereus fasciculatus var. *fasciculatus* (see *Echinocereus fasciculatus*)

Echinocereus fendleri var. *fasciculatus* (see *Echinocereus fasciculatus*)

Echinocereus fendleri var. *robustus* (see *Echinocereus fasciculatus*)

***Escobaria vivipara* (T. Nuttall) F. Buxbaum var. *bisbeeana* (C.R. Orcutt) D.R. Hunt: Bisbee Spinystar**

SYNONYMY: *Coryphantha vivipara* (T. Nuttall) N.L. Britton & J.N. Rose var. *bisbeeana* (C.R. Orcutt) L.D. Benson. COMMON NAMES: Beehive Cactus; Bisbee Beehive Cactus; Bisbee Spinystar; Cushion Cactus; Spinystar (a name also applied to the species); Spiny Star Cactus. DESCRIPTION: Terrestrial perennial stem-succulent shrub (erect stems 2 to 3 inches in height and 2 to 2¾ inches in width forming clustered mounds containing up to 50 or more heads and reaching 1 to 2 feet in height and up to 2 feet in width); the stems are green; the radial spines are brown or white; the central spines are brown or gray with brown or pink tips; the flowers (1 to 2 inches in diameter) are lavender, magenta or pink; based on few records, flowering generally takes place between late April and early August; the fruits (1/2 to 1 inch in length and 3/8 to 5/8 inch in diameter) are green with a purple tinge. HABITAT: Within the range of this species it has been reported from mountains; canyons; ridgetops;

hills; hillsides; slopes; bajadas; rocky outcrops; plains; flats; sandy floodplains, and riparian areas growing in dry rocky and sandy ground and gravelly loam ground, occurring from 3,000 to 8,000 feet in elevation in the forest, woodland, scrub, grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Escobaria vivipara* var. *bisbeeana* is native to southwest-central and southern North America. *5, 6, 12 (recorded as *Coryphantha vivipara* (Nutt.) Britton & Rose var. *bisbeeana* (Orcutt) L. Benson, Page 197; color photograph: Plate 11.7, Page 201), 15 (recorded as *Coryphantha vivipara* (Nutt.) Britton & Rose var. *bisbeeana* (Orcutt) L. Benson), 18 (species), 27 (recorded as *Escobaria vivipara* (Nuttall) Britton & Rose var. *bisbeeana* (Orcutt) L. Benson, Page 152; color photograph: Plate 81, Page 111), 43 (063009), 44 (062111 - no records listed under Common Names for the genus or species), 45 (recorded as *Escobaria vivipara*, color photograph), 46 (recorded as *Mammillaria aggregata* Engelm., Page 577), 58 (recorded as *Coryphantha vivipara* (Nutt.) Britton & Rose var. *bisbeeana* (Orcutt) Benson), 63 (063009), 85 (062111 - included under *Escobaria vivipara* (Nutt.) Brit. & Rose, color presentation), 86 (species), 115 (color presentation of species), 119 (recorded as *Coryphantha aggregata* (Engelm.) B. & R.), 124 (062111 - no record of variety; genus and species records), **HR***

***Ferocactus wislizeni* (G. Engelmann) N.L. Britton & J.N. Rose: Candy Barrelcactus**

SYNONYMY: *Echinocactus wislizeni* G. Engelmann. COMMON NAMES: Arizona Barrel Cactus; Arizona [Fish-hook, Candy] Barrel Cactus (English)[140]; Barrel Cactus (a name also applied to other species and the genus *Ferocactus*); Bisnaga, Biznaga; Biznaga [de Agua, Gigantesca, Hembra] ("[Water, Giant, Female] Barrel Cactus', Spanish)[140]; Biznaga de Agua (Spanish); Biznagre; Candy Barrel; Candy Barrel Cactus; Candy Barrelcactus; Chiávul (Uto-Aztecan: Akimel O'odham)[140]; Compass Barrel; Compass Plant; Fish-hook Barrel; Fishhook Barrel Cactus; Fishhook Cactus; Hisil <hísely> ("Cholla", Uto-Aztecan: Mountain Pima)[140]; Hosh Tsał <hosh chaal> (Athapascan: Western Apache)[140]; Hosh Sidáhí (Athapascan: Navajo)[140]; Ibávoli (Uto-Aztecan: Northern Tepehuan)[140]; Jiavul (Uto-Aztecan: Hiá Ceḍ O'odham)[140]; Jiavuli <jiawul, tciaur, tjedvoli> (Uto-Aztecan: Tohono O'odham)[140]; Kĭče'apĭl (Uto-Aztecan: Tübatulabal)[140]; Miltát <milḍaḍ> (Yuman: Walapai)[140]; Miltót (Yuman: Maricopa)[140]; Multát (Yuman: Havasupai)[140]; Mułʸcác (Yuman: Cocopa)[140]; Nookwi'a(pi) (Uto-Aztecan: Panamint)[140]; Ono'e (Uto-Aztecan: Yaqui)[140]; Siml <simláa> ("True Barrel Cactus", Hokan: Seri)[140]; Southwest Barrel Cactus; Southwestern Barrel Cactus; Táci (Uto-Aztecan: Southern Paiute)[140]; Te'íwe (Uto-Aztecan: Guarijío)[140]; Visnaga; Viznaga Hembra (Spanish); Wislizenus Barrel; Yellow-spined Barrel Cactus. DESCRIPTION: Terrestrial perennial stem-succulent shrub or tree (erect stems 8 inches to 11 feet [one record at 20 feet] in height and 8 to 40 inches in diameter); the stem is green or blue-gray-green; the central spines and larger radial spines are ashy gray, gray, dull pink, reddish or tan; the smaller radial spines are white; the flowers (1½ to 2½ inches in diameter) are orange, orange-yellow, orange-red, orange-yellow, parchment, pinkish-red, reddish, red-orange, yellow or yellow-orange; the stigma lobes are orange, red or yellow; flowering generally takes place between mid-July and mid-October (additional records: one for early January, three for early March, five for mid-March, two for late March, three for early April, one for mid-April, one for late April and two for early June); the mature fruits (1¼ to 2 inches in length and 1 to 1½ inches in diameter) are greenish-brown, yellow or yellow-green and may remain on the plant until the next flowering period. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; mesas; rocky, gravelly and sandy canyons; canyon walls; rocky and sandy canyon bottoms; bluffs; foothills; bouldery, rocky, gravelly and sandy hills; hillsides; rocky, cobbly, gravelly and clayey-loamy slopes; rocky, gravelly and sandy alluvial fans; bajadas; rocky outcrops; plains; rocky, gravelly and sandy flats; valley floors; along roadsides; arroyos; sandy bottoms of arroyos; along washes; (rocky, gravelly and sandy) borders of washes; margins of washes; floodplains; mesquite bosques, and riparian areas growing in dry desert pavement; bouldery, rocky, cobbly, gravelly and sandy ground, and sandy-clayey loam and clayey loam ground, occurring from 200 to 5,600 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food and/or beverage crop; it was also noted as having been used as a tool (the spines were heated and used to make fishing hooks). Fishhook Barrel Cacti are very slow to establish. A 4 year old plant may be no more than 1½ inches in height and 2 inches in width, and an 8 year old plant may be no more that 4¼ inches in height and 4¾ inches in width. The growth rate of propagated and cultivated barrel cacti may be much faster. The life-span of Fishhook Barrel Cactus has been reported to be from 50 to over 130 years of age. Some plants tend to lean to the south with age. Cristate forms have been reported. The Cactus Beetle (*Moneilema gigas*) feeds on this plant, the flowers are pollinated by Cactus Bees of the genus *Lithurge*; the fruits are eaten by Javelina (*Peccari tajacu*), Mule Deer (*Odocoileus hemionus*), Rock Squirrels (*Spermophilus variegatus*) and other animals, and the seeds are eaten by birds and rodents. *Ferocactus wislizeni* is native to southwest-central and southern North America. *5, 6, 12 (Pages 166-170; color photograph: Plate 5.5, Page 169), 15, 16, 18, 26 (genus, color photograph of genus), 27 (Page 120; color photographs: Plates 60, 60A, 60B & 60C Pages 106), 28 (color photograph 125), 43 (063009 - *Ferocactus wislizeni* Britton & Rose), 44 (040111 - no record of species; genus record), 45 (color photograph), 46 (Page 573), 48 (genus), 58, 63 (070612 - color presentation), 77 (color photograph #10), 85 (070612 - color presentation, reduced recovery), 91 (Pages 215-216), 106 (110110), 115 (color presentation), 119, 124 (040111 - no record of species or genus), 127, 135 (110110 - *Moneilema gigas*), 140 (Pages 103-105 & 288), **WTK** (August 4, 2005)*

Ferocactus wislizeni var. *wislizeni* (see footnote 85 under *Ferocactus wislizeni*)

Mammillaria aggregata (see footnote 46 under *Escobaria vivipara* var. *bisbeeana*)

Mammillaria fasciculata (see *Echinocereus fasciculatus* and/or *Mammillaria thornberi*)

***Mammillaria grahamii* G. Engelmann: Graham's Nipple Cactus**

SYNONYMY: *Cactus grahamii* (G. Engelmann) C.E. Kuntze; *Mammillaria grahamii* G. Engelmann var. *grahamii* G. Engelmann; *Mammillaria grahamii* G. Engelmann var. *oliviae* (C.R. Orcutt) L.D. Benson; *Mammillaria microcarpa* G. Engelmann; *Mammillaria milleri* (N.L. Britton & J.N. Rose) F. Boedeker; *Mammillaria oliviae* C.R. Orcutt; *Neomammillaria microcarpa* (G. Engelmann) N.L. Britton & J.N. Rose; *Neomammillaria milleri* N.L. Britton & J.N. Rose; *Neomammillaria oliviae* (C.R. Orcutt) N.L. Britton & J.N. Rose. COMMON NAMES: Arimo'o <urimo'o> (Uto-Aztecan: Onavas Pima)[140]; Arizona Fishhook (a name also applied to other species); Arizona Fishhook Cactus; Ba:ban Ha-'is:vig ("Coyotes' Hedgehog-cactus", Uto-Aztecan: Hiá Ceḍ O'odham)[140]; Ba:ban Ha-i:swigĭ <bahban ha-ihswig, baaban ha-iiswikga> ("Coyotes' Hedgehog-cactus", Uto-Aztecan: Tohono O'odham)[140]; Ban Cekida ("Coyote Vaccination", Uto-Aztecan: Hiá Ceḍ O'odham and O'odham and Tohono O'odham)[140]; Ban Cepla (Uto-Aztecan: Tohono O'odham)[140]; Ban Cesani (Uto-Aztecan: Hiá Ceḍ O'odham)[140]; Ban Ha 'Iswig ("Coyotes' Hedgehog-cactus", Uto-Aztecan: Tohono O'odham)[140]; Ban Mauppa <baaban makuppa> ("Coyotes' Paws", Uto-Aztecan: Akimel O'odham)[140]; Ban Maupai ("Like Coyote Paws", Uto-Aztecan: Akimel O'odham)[140]; Biznaguita ("Little Barrel Cactus", Spanish: Sonora)[140]; Black-spined Pincushion; Cabeza de Viejo ("Old Man's Head", Spanish: Sonora)[140]; Cekida Cactus; Chi-kul Hu'i (Uto-Aztecan: Yaqui)[140]; Chicul Ónore (Uto-Aztecan: Mayo, Sonora)[140]; Chilitos de Viznaga ("Little Cactus Chiles", Spanish: San Luis Potosi)[140]; Choyita (Spanish: Sonora)[140]; Churrito (Spanish: Sonora)[140]; Corkseed Cactus; Fish-hook Cactus (a name also applied to other species); Fish-hook Cactus [Pincushion] (English: Arizona, Sonora)[140]; Fishhook Cactus; Fishhook Mammillaria (a name also applied to other species); Fishhook Pincushion (a name also applied to other species); Graham Fishhook; Graham Fishhook Cactus; Graham Nipple Cactus; Graham Nipple-cactus; Graham Pincushion Cactus; Graham's Fishhook; Graham's Fishhook Cactus; Graham's Fishhook Pincushion; Graham's Nipple Cactus (English)[140]; Graham's Nipple-cactus; Graham's Pincushion Cactus; Hant Iipzx Itéja ("Bladder of the Arroyo", Hokan: Seri)[140]; Hi-i:swigĭ; Híkuri (Uto-Aztecan: Tarahumara)[140]; Hue Tchurí <we'cúri, wehcúri> (Uto-Aztecan: Guarijío)[140]; Lizard Catcher; Miller's Fishhook Cactus; Miller's Fish-hook Cactus; Miller's Pincushion; Miller's Pincushion Cactus; Mu'tsa (for pincushions in general, Uto-Aztecan: Shoshoni)[140]; Nipple Cactus (a name also applied to other species and the genus *Mammillaria*); Noog^{w}iyav$\dot{+}$ (Uto-Aztecan: Kawaiisu)[140]; Olive Pincushion; Olive's Pincushion; Pin-cushion Cactus (a name also applied to other species); Pitahayita <pitaiaya, pitajaya, pitahaya> ("Little Cactus Fruit", (Spanish: Sonora)[140]; Strawberry Cactus (English)[140]; Sunset Cactus; ^{a}Tat (Yuman: Walapai)[140]; Tori Bichu (Uto-Aztecan: Mayo, Sonora)[140]; Tuur Soigai <tu'i shogi> (Uto-Aztecan: Mountain Pima)[140]; Uvayu'u^{s} (Uto-Aztecan: Southern Paiute)[140]; Xuebi (Athapascan: Chiricahua and Mescalero Apache)[140]. DESCRIPTION: Terrestrial perennial stem-succulent shrub (ascending to erect stems 1 to 12 inches in height and 1 to 3 inches in diameter; one plant was observed and described as being 1¼ inches in height and 1½ inches in width); the stems are gray-green or green; the central spines may be black, golden-brown, purplish-brown or reddish; the radial spines are whitish or whitish-yellow; the flowers (½ to 1½ inches in diameter) may be lavender, pink, pink with a darker mid-stripe, pink-lavender, rose-pink, rose-purple or white, the anthers are yellow; the stigma lobes are green to yellow-green; flowering generally takes place between mid-May and early August (additional records: flowering has also been described as taking place one week after heavy rains that occur between mid-March and late September); the mature club-shaped fruits (1/2 to 1 1/8 inches in length and 3/16 to 1/2 inch in diameter) are carmine, orange, orange-red, red, bright red, scarlet, yellow or yellowish (rarely). HABITAT: Within the range of this species it has been reported from rocky mountains; gravelly mesas; rocky canyons; rocky canyon walls; canyon bottoms; crevices in boulders and rocks; knobs; bedrock and cobbly ridges; rocky ridgetops; ridgelines; foothills; rocky and gravelly hills; rocky hillsides; bedrock, rocky and sandy slopes; bajadas; rocky outcrops; amongst boulders and rocks; bases of boulders; protected clefts; plains; gravelly and sandy flats; valley floors; sandy arroyos; bottoms of arroyos; rocky ravines; streambeds; riverbeds; along and in bouldery and sandy washes; edges of streams; margins of arroyos; terraces; bottomlands; floodplains, and riparian areas growing in dry bouldery, rocky, cobbly, cindery-sandy, gravelly and sandy ground; gravelly loam ground; clay ground; silty ground, and humusy ground often in the shade of other plants, occurring from sea level to 5,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop; it was also noted as having been used as a drug or medication. Birds and rodents feed on the fruits. *Mammillaria grahamii* is native to southwest-central and southern North America. *5, 6, 12 (recorded as *Mammillaria grahamii* Engelm., Pages 156 &159-161, *Mammillaria grahamii* Engelm. var. *grahamii*, Pages 159-160, *Mammillaria grahamii* Engelm. var. *oliviae* (Orcutt) L. Benson, Pages 160-161 and *Mammillaria microcarpa* Engelm., Pages 152-153 &156; color photographs: Plate 4.8, Page 156), 15 (recorded as *Mammillaria grahamii* Engelm. var. *grahamii*, *Mammillaria grahamii* Engelm. var. *oliviae* (Orcutt) L. Benson and *Mammillaria microcarpa* Engelm.), 16 (recorded as *Mammillaria microcarpa* Engelm.), 18 (genus), 27 (recorded as *Mammillaria grahamii*, Page 172, *Mammillaria grahamii* Engelmann var. *oliviae* (Orcutt) L. Benson, Page 173 and as *Mammillaria microcarpa* Engelmann, Page 179; color photographs: Plate 94, Page 113, Plate 95, Page 113 and Plate 99, Page 114), 28 (recorded as *Mammillaria microcarpa*, color photograph 126), 43 (071212), 44 (112910), 45 (color photograph), 46 (recorded as *Mammillaria microcarpa* Engelm., Page 578 and as *Mammillaria oliviae* Orcutt, Page 578), 48 (genus), 58 (recorded as *Mammillaria microcarpa* Engelm.), 63 (070712 - color presentation), 77 (color photograph #11), 85 (070712 - color presentation, reduced recovery), 86 (recorded as *Mammillaria microcarpa*, color photograph), 115 (color presentation), 119 (recorded as *Neomammillaria microcarpa* (Engelm.) B. & R., *Neomammillaria milleri* B. & R.), 124 (062311 - no record of species; genus record), 127, 140 (recorded as *Mammillaria grahamii* Engelmann var. *grahamii*, Pages 106-107 & 288), **WTK** (August 4, 2005)*

Mammillaria grahamii var. *grahamii* (see *Mammillaria grahamii*)

Mammillaria grahamii var. *oliviae* (see *Mammillaria grahamii*)

Mammillaria microcarpa (see *Mammillaria grahamii*)

Mammillaria milleri (see *Mammillaria grahamii*)

Mammillaria oliviae (see *Mammillaria grahamii*)

Neomammillaria microcarpa (see *Mammillaria grahamii*)

Neomammillaria milleri (see *Mammillaria grahamii*)

Neomammillaria oliviae (see *Mammillaria grahamii*)

Opuntia arbuscula (see *Cylindropuntia arbuscula*)

Opuntia bigelovii (see *Cylindropuntia bigelovii*)

***Opuntia chlorotica* G. Engelmann & J. Bigelow: Dollarjoint Pricklypear**

COMMON NAMES: Clock Face Prickly-pear; Clock Face Prickly Pear; Clock-face Prickly-pear; Clock-face Pricklypear; Clock-face Pricklypear Cactus; Clockface Prickly Pear; Clockface Prickly-pear; Dollar-joint Prickly-pear; Dollarjoint Prickly Pear; Dollarjoint Pricklypear; Flap Jack Prickly Pear; Flapjack Prickly Pear; Flapjack Prickly-pear; Nopal (a name also applied to other species and the genus *Opuntia*); Nopal Rastrera; Pancake Pear; Pancake Pear Cactus; Pancake-pear; Pancake Prickly Pear; Pancake Prickly Pear Cactus; Pancake Prickly-pear; Pancake Pricklypear; Pancake Pricklypear Cactus; Silver-dollar Cactus (a name also applied to other species); Smooth Clock-face Pricklypear; Verdoso. DESCRIPTION: Terrestrial perennial stem-succulent shrub (erect stems 2 to 10 feet in height with a definite trunk to 12 inches in height and 3 to 8 inches in width); the orbicular paddle-shaped stems (4 to 8 inches in diameter) may be blue-green, bluish-green, green or gray-green; the glochids and spines may be golden, straw, light yellow, yellow (aging blackish, brown, grayish and/or reddish-brown), or pale yellow-brown; the flowers (1½ to 2½ inches in diameter) are pale yellow, pale yellow-green, yellow-green, yellow-orange or yellow with a reddish flush; the anthers may be pale green, white or yellow-green; the stigma lobes may be pale green, white or yellow-green; flowering generally takes place between early April and mid-July (additional records: one for late August and one for mid-September); the ripe barrel-shaped fruits (1½ to 2½ inches in length and ¾ to 1½ inches in diameter) are purple or red aging bluish or grayish tinged with purple or red. HABITAT: Within the range of this species it has been reported from mountains; mountaintops; rocky mountainsides; mesas; cliffs; bases of cliffs; rocky canyons; canyon bottoms; ledges; bedrock and rocky ridges; rocky ridgetops; foothills; bouldery-rocky and rocky hills; hilltops; rocky hillsides; bouldery, bouldery-rocky-gravelly and rocky slopes; cobbly-sandy alluvial fans; bajadas; rocky outcrops; amongst rocks; lava flows; sandy flats; valley floors; along rocky and gravelly roadsides; arroyos; draws; rocky ravines; seeps; springs; streambeds; creekbeds; along rivers; drainages; edges of washes; bottomlands; sandy floodplains, and riparian areas growing in dry bouldery, bouldery-rocky, bouldery-rocky-gravelly, rocky, cobbly-sandy, gravelly, gravelly-sandy and sandy ground; clayey loam ground, and silty ground, occurring from 900 to 9,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat and is occasionally grown as an ornamental. Solitary bees and Sap Beetles have been observed visiting the flowers. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. *Opuntia chlorotica* is native to southwest-central and southern North America. *5, 6, 12 (Pages 103&105-106), 15, 26 (genus), 27 (Page 69; color photograph: Plate 35, Page 101), 43 (011710 - *Opuntia chlorotica* Engelm. & J.M. Bigelow), 44 (062311 - color photograph), 45 (color photograph), 46 (Page 582), 48 (genus - *Opuntia*), 63 (062610 - color presentation), 77, 85 (062311 - color presentation including habitat), 91 (Pages 286-287), 119, 124 (062311 - no record of species; genus record), 127, 140 (Pages 106 & 288), **HR***

Opuntia discata (see *Opuntia engelmannii* var. *engelmannii*)

***Opuntia engelmannii* J.F. Salm-Reifferscheid-Dyck ex G. Engelmann var. *engelmannii*: Cactus Apple**

SYNONYMY: *Opuntia discata* D. Griffiths; *Opuntia phaeacantha* G. Engelmann var. *discata* (D. Griffiths) L.D. Benson & D.L. Walkington. COMMON NAMES: Á'láv[a] <alav> (Yuman: Walapai)[140]; Abrojo; Ai'gwobi (Uto-Aztecan: Shoshoni)[140]; Ăláva (Yuman: Havasupai)[140]; Cactus Apple (a name also applied to the species and to other species); Cactus-apple (a name also applied to the species and to other species); Coyonoxtle <joconostle> (Spanish: Náhuatl)[140]; Cuija (Spanish)[140]; Desert Pricklypear Cactus (a name also applied to the species and to other species); Discus Prickly Pear; Ekupittsi (Uto-Aztecan: Panamint)[140]; Engelmann Prickly Pear; Engelmann Prickly Pear Cactus; Engelmann Prickly-pear; Engelmann Pricklypear; Engelmann's Prickly Pear; Engelmann's Prickly Pear Cactus; Engelmann's Prickly-pear; Engelmann's Prickly-pear Cactus; Engelmann's Pricklypear; Flaming Prickly-pear; Gołtcide <gułtcide> (Athapascan: Chiricahua and Mescalero Apache)[140]; Heel Hayéen Ipáii ("Prickly-pear Used for Face Painting", Hokan: Seri)[140]; Hosh Nteelí <h[w]os> (Athapascan: Navajo)[140]; Hosh Nteelí

[ts'osé] (Athapascan: Western Apache)[140]; Huichacame <huichanabo> (Spanish: Sonora)[140]; I:bai <Ibai> (Uto-Aztecan: Onavas Pima)[140]; 'I:bhai <iibhai> ("Fruit", Uto-Aztecan: Akimel O'odham and Hiá Ceḍ O'odham)[140]; I:bhai ("Fruit", Uto-Aztecan: Tohono O'odham)[140]; Ila' (Uto-Aztecan: Guarijío)[140]; Irá [Ira-ka, Rihuirí] (Uto-Aztecan: Tarahumara)[140]; Ĭyal <i'yal> (Uto-Aztecan: Tübatulabal)[140]; Joconostle; Kal Yap (Yuman: Maricopa)[140]; Naavo (Uto-Aztecan: Yaqui)[140]; Náavut (Uto-Aztecan: Luiseño)[140]; Nabo <nacoó> (Uto-Aztecan: Cahita)[140]; Nabu (Uto-Aztecan: Northern Paiute)[140]; Napó (Uto-Aztecan: Tarahumara)[140]; Nav (Uto-Aztecan: Hiá Ceḍ O'odham)[140]; Nava (Uto-Aztecan: Mountain Pima)[140]; Navet <náve-t, navit> (Uto-Aztecan: Cahuilla)[140]; Navĭ <naf, naw, nohwi> ("the Plant", Uto-Aztecan: Akimel O'odham and Tohono O'odham)[140]; Návoi (Uto-Aztecan: Northern Tepehuan)[140]; Návu ("the Plant", Uto-Aztecan: Hopi)[140]; Navú-c (Uto-Aztecan - Eudeve)[140]; Návūt (Uto-Aztecan: Cupeño, Luiseño)[140]; Nopal [Cuixo] ("[Lizard] Prickly-pear", Spanish: Sonora)[140]; Nopal de Engelmann; Prickly Pear (a name also applied to this species, to other species and to the genus *Opuntia*); Prickly Pear Cactus (a name also applied to the species, to other species and to the genus *Opuntia*); Prickly-pear (a name also applied to the species, to other species and to the genus *Opuntia*); Prickly-pear (English)[140]; Pricklypear (a name also applied to the species, to other species and to the genus *Opuntia*); Sae (Kiowa Tanoan: Tewa)[140]; Tach Pa (Yuman: Yuma)[140]; Tuna [Cuija] ("[Lizard] Prickly-pear", Spanish: Sonora)[140]; Vela de Coyote ("Coyote's Candle", Spanish)[140]; Xpa: (Yuman: Cocopa)[140]; Xté (Yuman: Paipai)[140]; Yöngö <yüñü, yɜ́:ngu> ("the Fruit", Uto-Aztecan: Hopi)[140]. DESCRIPTION: Terrestrial perennial stem-succulent shrub (forms clumps with ascending and/or decumbent stems 20 inches to 8 feet in height and 20 inches to 10 feet or more in width; one plant was observed and described as being 20 inches in height and 8¼ feet in width, one plant was observed and described as being 3 feet in height and 4½ feet in width, one plant was observed and described as being 3 feet in height and 6 to 12 feet in width, one plant was observed and described as being 3 feet in height and 8 feet in width, one plant was observed and described as being 40 inches in height and 79 inches in width, one plant was observed and described as being 40 inches in height and 10 feet in width); the paddle-shaped stems (8 to 16 inches in length and 6½ to 12 inches in width) may be bluish-green, gray-green, green, dark green or yellow-green; the spines may be brown-red, chalky-white, pale straw or pale yellow-brown usually with red or red-brown bases aging to black or gray; the glochids are reddish or yellow; the flowers (2¼ to 3½ in diameter) may be lemon-yellow, pink, pink-red, red-pink, rose-red, salmon, tannish-yellow, yellow, light yellow-orange, yellow-orange or yellow-peach turning to orange, orange-yellow or pink-orange with age; the anthers are yellow; the stigma lobes are lime green; flowering generally takes place between mid-March and mid-July (additional records: one for early January, two for mid-February, two for mid-August, one for early September, six for mid-September, four for early October and one for late December); the mature fruits (also known as tunas are 2½ to 3¼ in length and 1¼ inches in diameter) are magenta-rose, purple, red or reddish-purple. HABITAT: Within the range of this species it has been reported from mountains; mountaintops; sandy mountainsides; bedrock mesas; edges of cliffs; canyons; canyon bottoms; talus slopes; ledges; ridges; rocky ridgetops; rocky hills; bouldery, rocky and gravelly hillsides; bouldery, rocky, rocky-gravelly and sandy slopes; bajadas; rocky outcrops; amongst boulders and rocks; lava beds; breaks; steppes; plains; rocky, gravelly and sandy and silty flats; basins; valley floors; along roadsides; along and in gravelly and gravelly-humusy arroyos; gullies; along streams; along creeks; creekbeds; along and in washes; along and in rocky-sandy and gravelly-sandy drainages; banks of rivers; beaches; benches; shelves; terraces; sandy floodplains; amongst mesquites; ditches, and gravelly-sandy and sandy riparian areas growing in dry bouldery, rocky, rocky-gravelly, rocky-sandy, shaley, gravelly, gravelly-sandy and sandy ground; rocky-gravelly loam ground; clay ground; silty ground, and gravelly humusy ground, occurring from 100 to 7,500 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The species, *Opuntia engelmannii*, was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, beverage, cooking agent or paint crop; it was also noted as having been used as a tool, as a lubricant (var. *engelmannii*) and as a drug or medication. The flowers open around 8 AM and remaining open for one or two days, and may live to be 30 or more years of age. The juicy fruits (tunas) with edible pulp are fed on by many browsing animals, including Black Bear (*Ursus americanus amblyceps*), Coyote (*Canis latrans mearnsi*), Javelina (*Peccari tajacu sonoriensis*) and Desert Tortoise (*Gopherus agassizi*) among others, and birds. The plant provides cover for many desert animals. *Opuntia engelmannii* var. *engelmannii* is native to southwest-central and southern North America. *5, 6, 12 (recorded as *Opuntia phaeacantha* Engelm. var. *discata* (Griffiths) Benson & Walkington "This is the largest and, in especially southern Arizona, one of the best-known native prickly pears of the Southwestern Deserts of the United States. It is variable in habit of growth, shape and size of joints, and size and distribution of spines. It is almost always found growing with var. *major*, which has longer brown spines restricted largely to the upper part of the narrower joint. Almost everywhere there are intergrading forms with many character recombinations. Var. *discata* is rarely stable but apparently a fringe-population extreme tied in closely with the more abundant and wide-ranging var. *major*.", Pages 99 & 101-103; color photograph: Plate 1.74, Page 102), 15 (recorded as *Opuntia phaeacantha* Engelm. var. *discata* (Griffiths) Benson & Walkington), 16 (recorded as *Opuntia phaeacantha* Engelmann var. *discata* (Griffiths) L. Benson - "Rocky slopes and gravelly flats; common; intergrading with *O. p.* var. *major*."), 26 (species), 27 (recorded as *Opuntia phaeacantha* Engelmann var. *discata* (Griffiths) L. Benson, Pages 53 & 99-100; color photographs: Plates 30 & 30A, Pages 99 & 100), 28 (recorded as *Opuntia phaeacantha* var. *discata*, color photograph 135 A&B), 43 (063009), 44 (062311), 45 (species, color photograph), 46 (species, Page 583), 48 (genus), 58 (recorded as *Opuntia phaeacantha* Engelm. var. *discata* (Griffiths) Benson & Walk.), 63 (070812 - color presentation), 77 (recorded as *Opuntia phaeacantha* var. *discata* (Griffiths) Benson & Walkington, color photograph #14 labeled as *Opuntia phaeacantha*), 85 (071112 - color presentation, reduced recovery), 91 (recorded together with *Opuntia engelmannii* Salm-Dyck. *Opuntia phaeacantha* var. *discata* (Griffiths) L.D. Benson & Walkington / *Opuntia phaeacantha* var. *major* Engelmann: "Both species are sympatric throughout much of their range and often can be found together.", Pages 291-293), 115 (color presentation of the species), 119 (recorded as *Opuntia discata* Griffiths), 124 (062311 - no record of variety; genus and species record), 127 (variety *engelmannii* and species), 140

(reported as *Opuntia engelmannii* Salm-Dyck [*Opuntia phaeacantha* var. *discata* (Griffiths) Benson & Walkington], Pages 105-106 & 288), **WTK** (August 4, 2005)*

***Opuntia engelmannii* J.F. Salm-Reifferscheid-Dyck ex G. Engelmann var. *lindheimeri* (G. Engelmann) B.D. Parfitt & D.J. Pinkava: Texas Pricklypear**

SYNONYMY: *Opuntia lindheimeri* G. Engelmann G. Engelmann. COMMON NAMES: Cacanapo (Spanish); Cactus Apple; Chenille Prickly-pear; Klein Rondeblaarturksvy (Afrikaans); Lindheimer Prickly-pear; Nopal Prickly-pear; Nopal Pricklypear; Prickly Pear (a name also applied to the species, to other species and to the genus *Opuntia*); Small Round-leaf Prickly-pear; Texas Prickly-pear; Texas Pricklypear. DESCRIPTION: Terrestrial perennial stem-succulent shrub (stems 32 inches to 5 feet in height and to 6½ feet in width); the spines are yellow aging to blackish; the flowers (3 to 3¾ inches in diameter) are yellow; flowering generally takes place between March and June (flowering records: one for late May, two for late June and one for mid-August); the mature fruits may be purple or red. HABITAT: Within the range of this species it has been reported from mountains; canyons; hills; slopes; gravelly flats; basins; valley floors; along roadsides; within arroyos; in washes; drainages; terraces; mesquite bosques, and along fencelines growing in dry rocky, rocky-sandy, gravelly, gravelly-sandy and sandy ground and gravelly loam ground, occurring from sea level to 6,300 feet in elevation in the woodland, scrub and desertscrub ecological formations. NOTES: EXOTIC Invasive Plant. The species, *Opuntia engelmannii*, was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, beverage, cooking agent or paint crop; it was also noted as having been used as a tool, as a lubricant (var. *engelmannii*) and as a drug or medication. *Opuntia engelmannii* var. *lindheimeri* is native to south-central and southern North America. *5, 6, 26 (species), 43 (063009), 45 (color photograph, species), 46 (species, Page 583), 48 (genus), 63 (070812 - color presentation), 85 (071112), 127 (variety *lindheimeri* and species), **HR***

Opuntia fulgida (see *Cylindropuntia fulgida* var. *fulgida*)

Opuntia fulgida var. *fulgida* (see *Cylindropuntia fulgida* var. *fulgida*)

Opuntia fulgida var. *mamillata* (see *Cylindropuntia fulgida* var. *mamillata*)

Opuntia fulgida var. *mamillata* forma *monstrosa* (see NOTES under *Cylindropuntia fulgida* var. *mamillata*)

Opuntia gilvescens (see *Opuntia phaeacantha*)

Opuntia kleiniae var. *tetracantha* (see *Cylindropuntia* x *tetracantha*)

Opuntia leptocaulis (see *Cylindropuntia leptocaulis*)

Opuntia lindheimeri var. *linguiformis* (see *Opuntia engelmannii* var. *linguiformis*)

***Opuntia microdasys* (J.G. Lehmann) L.K. Pfeiffer: Angel's-wings**

COMMON NAMES: Angel's-wings (a name also applied to other species); Bunny Cactus (a name also applied to other species); Bunny Ear Prickly Pear; Bunny Ears; Bunny Ears Pricklypear; Bunny-ear Prickly Pear; Bunny-ear Prickly-pear; Bunny-ears Cactus; Bunny-ears Prickly-pear; Bunny-ears Pricklypear; Bunnyears Cactus; Cegador (Spanish); Golden-bristle; Goldplush; Guldopuntia (Swedish); Nopal Cegador (Spanish); Nopalillo Cegador (Spanish); Polka Dot Cactus; Polka-dot Cactus; Prickly Pear (a name also applied to other species and the genus *Opuntia*); Rabbit Ears (a name also applied to other species); Rabbit Ears Prickly Pear. DESCRIPTION: Terrestrial perennial stem-succulent shrub (erect sprawling stems 12 to 40 inches in height and 4 to 5 feet in width); the paddle-shaped stems (2 to 6 inches in length and 1¼ to 4 inches in width) are light green or green; the glochids may be brown, golden-yellow, reddish-brown, white, whitish or yellow; the flowers (1 to 1¼ inches in width) are bright yellow aging to peach or pinkish-salmon; the anthers are yellowish; the stigma lobes are green or dark green; flowering generally takes place between late April and early June (additional records: one for late June and one for early October); the ripe fruits may be green or red. HABITAT: Within range reported from mountains; rocky canyon bottoms; bouldery-rocky hills; slopes; bajadas; amongst boulders and rocks; flats; uplands; along and in rocky-sandy washes; banks of washes; benches, and floodplains growing in dry bouldery, bouldery-rocky, rocky, rocky-sandy and sandy ground and loam ground, occurring from 800 to 6,900 feet in elevation in the scrub and desertscrub ecological formations. NOTES: EXOTIC Invasive Plant that poses a significant threat to native habitat. *Opuntia microdasys* is native to southern North America. *5, 6, 18, 26 (color photograph), 43 (012310), 44 (062411), 48 (genus - *Opuntia*), 63 (071112 - recorded as *Opuntia microdasys* (Lehm.) N.E. Pfeiffer, color presentation), 77, 85 (071112 - color presentation of dried material), 106 (102308), 124 (062411 - no record of species; genus record), **WTK** (April 16, 2008)*

Opuntia mamillata (see *Cylindropuntia fulgida* var. *mamillata*)

***Opuntia phaeacantha* G. Engelmann: Tulip Pricklypear**

SYNONYMY: *Opuntia arizonica* D. Griffiths; *Opuntia gilvescens* D. Griffiths; *Opuntia phaeacantha* G. Engelmann var. *major* G. Engelmann; *Opuntia phaeacantha* G. Engelmann var. *phaeacantha*; *Opuntia phaeacantha* G. Engelmann var. *superbospina* (D. Griffith) L.D. Benson. COMMON NAMES: Abrojo; Berry Prickly Pear; Berry Prickly Pear Cactus; Berry Pricklypear; Blåopuntia (Swedish); Brown Spine Prickly-pear Cactus; Brown Spined Prickly Pear; Brown Spined Prickly Pear Cactus; Brown-spine Prickly-pear; Brown-spine Prickly-pear Cactus; Brown-spine Pricklypear; Brown-spined Prickly Pear; Brown-spined Prickly Pear Cactus; Brown-spined Prickly-pear; Brown-spined Pricklypear; Brownspine Prickly Pear; Brownspine Prickly-pear; Brownspine Pricklypear; Brownspined Prickly Pear; Brownspined Prickly-pear; Brownspined Pricklypear; Dense-spine Prickly-pear; Densely Spined Prickly Pear; Desert Prickly-pear (a name also applied to other species); Figuier de Barbarie à Fruits Violets (French); Great Pricklypear; Great Pricklypear Cactus; Joconostle; Major Prickly Pear, Major Prickly-pear; Major Pricklypear; Major Pricklypear Cactus; Mojave Prickly-pear (a name also applied to other species); Mojave Pricklypear (a name also applied to other species); Mojave Tuna; New Mexico Prickly-pear (a name also applied to other species); Nopal (a name also applied to other species and the genus *Opuntia*, Spanish); Nopal Pardo; Plains Pricky-pear[140]; Prickly Pear (a name also applied to other species and the genus *Opuntia*); Prickly-pear (a name also applied to other species and the genus *Opuntia*); Pricklypear (a name also applied to other species and the genus *Opuntia*); Purple-fruit Prickly-pear (a name also applied to other species); Sprawling Prickly Pear (a name also applied to other species); Tulip Prickly Pear; Tulip Prickly Pear Cactus; Tulip Prickly-pear; Tulip Pricklypear; Vela de Coyote; Yellow Pricklypear; Yellow-spine Prickly-pear (a name also applied to other species). DESCRIPTION: Terrestrial perennial stem-succulent shrub (trailing and/or decumbent stems 10 inches to 7 feet in height and 3 to 10 feet in width sometimes forming clumps up to 75 feet in width; one plant was observed and described as being 10 inches in height and 40 inches in width, one plant was observed and described as being 1 foot in height and 3 feet in width, one plant was observed and described as being 14 inches in height and 52 inches in width, plants were observed and described as being 16 inches in height and 40 inches in width, one plant was observed and described as being 16 inches in height and 48 inches in width, one plant was observed and described as being 16 inches in height and 60 inches in width, one plant was observed and described as being 18 inches in height and 8 to 10 feet in width, one plant was observed and described as being 20 inches in height and 13 feet in width, one plant was observed and described as being 2 feet in height and 5 to 6 feet in width, one plant was observed and described as being 30 inches in height and 5 feet in width, plants were observed and described as being 3 feet in height and 4 to 10 feet in width); may develop a trunk; the paddle-shaped stems (4 to 10 inches in length and 3 to 8 inches in width) may be bluish-green, gray-brown, gray-green, green, dark green, dull green, greenish-yellow, purple, reddish or yellow-gray-green; the spines may be blackish, brown, charcoal, gray, reddish, red-brown, white or yellow; the glochids may be golden, red-brown, reddish-brown or tan; the flowers (1½ to 3 inches in diameter) may be golden-apricot (with yellow-green mid-stripes), orange, orange-yellow, pink, pink-purple, red, red-pink, pale yellow, yellow (with an orange or red center or brown, greenish, greenish-brown or red mid-stripes) or yellow-orange aging to red-orange; the anthers are yellow; the stigma lobes are green to yellow-green; flowering generally takes place between mid-March to late July (additional records: one for early January, one for late January, one for early February, three for mid-August, two for late August, one for late September and one for early October); the mature pear-shaped fruits (1¼ to 3½ inches in length and 1 to 1¼ inches in width) may be maroon, purple, purple-red, red, dark red, red-brown or wine-red. HABITAT: Within the range of this species it has been reported from mountains; mountainsides; mesas; plateaus; cliffs; bases of cliffs; rocky canyons; bedrock canyon rims; rocky and sandy-silty canyon bottoms; rocky rincons; talus slopes; bluffs; rocky-gravelly-sandy buttes; knolls; rocky ledges; bedrock ridges; rocky and sandy-loamy ridgetops; meadows; foothills; rocky and gravelly hills; cobbly and sandy hilltops; bouldery, rocky, gravelly and gravelly-sandy-loamy hillsides; bedrock, bouldery, rocky, rocky-gravelly, gravelly, gravelly-clayey, sandy, sandy-loamy and silty slopes; gravelly bajadas; rocky outcrops, amongst rocks; on boulders and rocks; lava beds; blow-sand; prairies; plains; sandy llanos; plains; rocky, shaley, cindery and sandy flats; sandy uplands; valley floors; along sandy roadsides; within rocky and sandy arroyos; bottoms of arroyos; draws; springs; sandy streambeds; along creeks; along creekbeds; along and in sandy riverbeds; along and in bedrock-bouldery-sandy, gravelly and sandy washes; sandy drainages; silty-loamy and silty-clayey-loamy dry lakebeds; along (sandy) banks of rivers; borders of washes; cobbly-sandy-silty and gravelly-sandy terraces; sandy-loamy bottomlands; sandy floodplains; mesquite bosques; riparian areas, and disturbed areas growing in dry cryptogrammic soil; rimrock pavement; bouldery, bouldery-sandy, rocky, rocky-gravelly, rocky-gravelly-sandy, rocky-sandy, shaley, cobbly, cindery, gravelly, gravelly-sandy and sandy ground; gravelly-sandy loam, sandy loam, sandy-clayey loam, clayey loam, silty loam and silty-clayey loam ground; gravelly-sandy clay and gravelly clay ground; cobbly-sandy silty, sandy silty and silty ground, and humusy ground, occurring from 600 to 8,700 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, beverage and/or cooking agent crop; it was also noted as having been used for tools, in pottery making and as a drug or medication. This plant provides cover for many desert animals. Deer, Javelina (*Peccari tajacu sonoriensis*) and rodents feed on the stems, and the fruits are eaten by deer, grasshoppers, Javelina and other desert animals (including grasshoppers). Cristate forms have been reported. The change in nomenclature in USDA NRCS has not been recognized in BONAP, varieties remain as varieties of *Opuntia phaeacantha* (accessed 041806). *Opuntia phaeacantha* is native to southwest-central and southern North America. *5, 6, 12 (recorded as *Opuntia phaeacantha* Engelm., Pages 95-101, *Opuntia phaeacantha* Engelm. var. *major* Engelm., Pages 99-101 and *Opuntia phaeacantha* Engelm. var. *phaeacantha*, Pages 97-98), 15 (recorded as *Opuntia phaeacantha* var. *major* Engelm., color photograph which includes habitat and associated species, Page 77), 16 (recorded as *Opuntia phaeacantha* Engelm. var. *major* Engelm.), 26 (color photograph), 27 (recorded as *Opuntia phaeacantha* Engelmann, Page 50, *Opuntia phaeacantha* Engelmann var. *major* Engelmann, Page 51 and *Opuntia phaeacantha* Engelmann var. *superbospina* (Griffith) L. Benson, Page 54; color photographs: Plate 28, Page 99, Plate 29, Page 99 and Plate 31, Page 100),

43 (071212), 44 (062411 - color photograph), 45 (color photograph), 46 (recorded as *Opuntia phaeacantha* Engelm., Page 583 and *Opuntia gilvescens* Griffiths, Page 583), 48 (genus - recorded as *Opuntia*), 58 (recorded as *Opuntia phaeacantha* Engelm. var. *major* Engelm.), 63 (071212 - color presentation), 77 (recorded as *Opuntia phaeacantha* Engelm. var. *major* Engelm., color photograph #14 labeled as *Opuntia phaeacantha*), 85 (071212 - color presentation, reduced recovery), 91 (recorded together with *Opuntia engelmannii* Salm-Dyck. (*Opuntia phaeacantha* var. *discata* (Griffiths) Benson & Walkington) / *Opuntia phaeacantha* var. *major* Engelmann - "Both species are sympatric throughout much of their range and often can be found together.", Pages 291-293), 119, 124 (062411), 127, 140 (recorded as *Opuntia phaeacantha* Engelmann var. *major* Engelmann, Pages 105, 106 & 288), **WTK** (April 16, 2008, recorded as *Opuntia phaeacantha* var. *major*)*

Opuntia phaeacantha var. *major* (see *Opuntia phaeacantha*)

Opuntia phaeacantha var. *phaeacantha* (see *Opuntia phaeacantha*)

Opuntia phaeacantha var. *superbospina* (see *Opuntia phaeacantha*)

***Opuntia santa-rita* (D. Griffiths & R.F. Hare) J.N. Rose: Santa Rita Pricklypear**

SYNONYMY: *Opuntia violacea* G. Engelmann var. *santa-rita* (D. Griffiths & R.F. Hare) L.D. Benson. COMMON NAMES: Blue Blade; Blue-blade; Dollar Cactus; Duraznilla (Spanish); Nopal Morado (Spanish); Purple Prickly Pear; Purple Pricklypear; Red Blade Pricklypear; Santa Rita Cactus; Santa Rita Prickly Pear; Santa Rita Prickly-pear; Santa Rita Pricklypear; Santa-Rita Cactus. DESCRIPTION: Terrestrial perennial stem-succulent shrub or tree (erect stems 2 to 6½ feet in height); the paddle-shaped stems (4 to 8 inches in length) may be azure-purple (warmer months), bluish-green, gray-green with a red tinge on the edge, green, greenish-blue, lavender, pink, red-purple, reddish-purple (cooler months), rose or pale violet-purple; the spines may be golden, pale yellow or pale yellow-gray aging to reddish-brown; the glochids may be golden, tan or yellow aging to brown or reddish-brown; the flowers (3 to 3½ inches in diameter) may be lemon-yellow, orange-yellow, pale yellow or yellow; the anthers are pale yellow or yellow; the stigma lobes may be light chartreuse, light green, green or light yellow; flowering generally takes place between early March and early June (additional record: one for early January and one for early August); the ripe fruits (1 to 1½ inches in length and ¾ inch in diameter) may be maroon, purple, purplish or reddish aging to gray. HABITAT: Within the range of this species it has been reported from mountains; mountainsides; mesas; canyons; canyon bottoms; ridges; rocky hills; rocky hillsides; rocky and gravelly-sandy-loamy slopes; bajadas; rocky outcrops; sandy dunes; terraces; gravelly and sandy plains; flats; valley floors; along roadsides; creekbeds, and disturbed areas growing in dry rocky, rocky-sandy, gravelly and sandy ground and gravelly-sandy loam ground, occurring from 2,000 to 5,600 feet in elevation in the woodland, grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was observed as an escaped and naturalized ornamental. *Opuntia santa-rita* is native to southwest-central and southern North America. *5, 6, 12 (recorded as *Opuntia violacea* Engelm. var. *santa-rita* (Griffiths & Hare) L. Benson, Pages 92 & 95-96), 26 (recorded as *Opuntia violacea* var. *santa-rita*, color photograph), 27 (recorded as *Opuntia violacea* Engelmann var. *santa-rita* (Griffiths & Hare) L. Benson, Page 58; color photographs: Plates 34 & 34A, Pages 100-101), 28 (recorded as *Opuntia violacea* var. *santa-rita*, color photograph 136), 43 (071810 - *Opuntia violacea* G. Engelmann in Emory var. *santa-rita* (Griffiths & Hare) L.D. Benson), 44 (062411 - no record of species; genus record), 45 (color photograph), 46 (Page 582), 48 (genus), 58 (recorded as *Opuntia violacea* Engelm. var. *santa-rita* (Griff. & Hare) L. Benson), 63 (071212), 77, 85 (071212 - color presentation), 91 (Pages 294-295), 115 (color presentation), 124 (062411 - no record of species; genus record), 140 (Pages 106 & 288), **WTK** (April 16, 2008)*

Opuntia spinosior (see *Cylindropuntia spinosior*)

Opuntia tetracantha (see footnote 46 under *Cylindropuntia* x *tetracantha*)

Opuntia x *tetracantha* (see *Cylindropuntia* x *tetracantha*)

Opuntia versicolor (see *Cylindropuntia versicolor*)

Opuntia violacea var. *santa-rita* (see *Opuntia santa-rita*)

***Peniocereus greggii* (G. Engelmann) N.L. Britton & J.N. Rose var. *transmontanus* (G. Engelmann) C. Backeberg: Nightblooming Cereus**

SYNONYMY: *Cereus greggii* G. Engelmann var. *transmontanus* G. Engelmann. COMMON NAMES: Arizona Night-blooming Cereus; Arizona Queen-of-the-night (a name also applied to the species); Chaparral Cactus (a name also applied to the species); Deer-horn Cactus (a name also applied to the species); Desert Night-blooming Cereus (a name also applied to the species); Desert Threadcereus (a name also applied to the species); Nightblooming Cereus (a name also applied to the species); Queen of the Night (a name also applied to the species); Queen-of-the-night (a name also applied to the species); Reina-de-la-noche (a name also applied to the species, Spanish). DESCRIPTION: Terrestrial perennial root- and stem-succulent shrub (erect stems 1 to 8 feet in height and ¼ to ½ inch in width); the large white flowers (2 to 5 inches in diameter and 6 to 8½ inches in length) open after dusk and last only one night; flowering generally takes place between late May and early July (additional

records: one for early January, two for mid-March and one for early December); the ripe fruits (1¼ to 4 inches in length and ¾ to 2 inches in diameter) are orange red or bright red. HABITAT: Within the range of this species it has been reported from mountains; mesas; ridges; ridge crests; hills; rocky hillsides; rocky and gravelly slopes; gravelly bajadas; sand dunes; gravelly-sandy plains; gravelly flats; valley floors; arroyos; along sandy washes; drainages; edges of washes, and bottomlands growing in dry desert pavement; rocky, gravelly and sandy ground, and gravelly loam, gravelly-sandy loam, sandy loam and clayey loam ground, occurring from 800 to 3,500 feet in elevation in the grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, the flowers are fragrant. The plant, *Peniocereus greggii* var. *greggii*, was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food and/or beverage crop; it was also noted as having been used as a drug or medication. Plant with other desert shrubs and trees, such as the Creosote Bush (*Larrea tridentata* var. *tridentata*), Foothill Paloverde (*Parkinsonia microphylla*) and Velvet Mesquite (*Prosopis velutina*), that will provide support and protection. Birds feed on the fruit and seeds. *Peniocereus greggii* var. *transmontanus* is native to southwest-central and southern North America. *5, 6, 12 (recorded as *Cereus greggii* Engelm. var. *transmontanus* Engelm., Pages 116 & 118; color photograph Fig. 2.5, Page 112), 15, 27 (species, recorded as *Cereus greggii* Engelmann, Pages 61; color photographs of species: Plates 36 &36A, Page 101), 28 (recorded as *Peniocereus greggii*, color photographs 112 A&B), 43 (012310), 44 (040111 - no record of variety, species or genus), 45 (color photograph of species), 46 (species, Page 568), 48, 63 (012310), 85 (062511 - color presentation of dried material), 86, 115 (color presentation of the species), 119 (species), 124 (040111 - no record of variety, species or genus), 127 (records found under *Peniocereus greggii* var. *greggii*), **HR***

Capparaceae (Capparidaceae): The Caper Family

***Polanisia dodecandra* (C. Linnaeus) A.P. de Candolle subsp. *trachysperma* (J. Torrey & A. Gray) H.H. Iltis: Sandyseed Clammyweed**

SYNONYMY: *Polanisia dodecandra* (C. Linnaeus) A.P. de Candolle var. *trachysperma* (J. Torrey & A. Gray) H.H. Iltis; *Polanisia trachysperma* J. Torrey & A. Gray. COMMON NAMES: Clammy Weed (a name also applied to the genus *Polanisia*); Clammy-weed (a name also applied to the genus *Polanisia*); Clammyweed (a name also applied to the genus *Polanisia*); Common Clammy Weed (a name also applied to the species); Common Clammy-weed (a name also applied to the species); Common Clammyweed (a name also applied to the species); Large Clammy Weed; Large Clammy-weed; Large Clammyweed; Large-flower Clammyweed; Large-flowered Clammy Weed; Large-flowered Clammy Weed; Large-flowered Clammy-weed; Large-flowered Clammyweed; Polansia (a name also applied to the genus *Polanisia*, Iowa); Red-whisker Clammyweed (a name also applied to the species); Red-whisker Clammy-weed (a name also applied to the species); Red-whisker Clammyweed (a name also applied to the species); Redwhisker Clammyweed (a name also applied to the species); Rough-seed Clammy-weed (a name also applied to the species); Rough-seed Clammyweed (a name also applied to the species); Roughseed Clammyweed (a name also applied to the species); Sandy-seed Clammy-weed; Sandyseed Clammyweed; Stinking Clammy-weed (a name also applied to the species); Stinking Clammyweed (a name also applied to the species); Stinkweed (Iowa, a name also applied to other species); Western Clammy-weed; Western Clammyweed; Western Trachysperma Clammyweed. DESCRIPTION: Terrestrial annual forb/herb (erect stems 4 to 40 inches in height); the stems are hairy and sticky; the leaves are dark green; the flowers may be cream, lavender, light pink, pink-purple, purple, white, white tinged with purple, white-yellow or yellowish; the anthers are red; flowering generally takes place between early May and late November (additional record: one for early January). HABITAT: Within the range of this species it has been reported from mountains; gravelly and sandy mesas; plateaus; rocky canyons; canyonsides; along gravelly and sandy canyon bottoms; talus slopes; bluffs; cindery buttes; ledges; shaley ridgetops; meadows; foothills; bouldery-cindery, stony, cindery, cindery-clayey, gravelly and sandy hills; gravelly-sandy hilltops; rocky and cindery hillsides; bouldery, rocky, rocky-sandy, shaley, stony-sandy, cindery, gravelly, gravelly-loamy, sandy, clayey and clayey-loamy slopes; bajadas; rocky outcrops; amongst rocks; sand hills; sand dunes; around and in ant hills; sandy terraces; prairies; gravelly and sandy plains; rocky-sandy uplands; gravelly and sandy flats; basins; gravelly-sandy valley floors; valley bottoms; along railroad right-of-ways; roadbanks; along rocky, rocky-sandy-loamy, gravelly and sandy roadsides; within sandy arroyos; along sandy and sandy-silty bottoms of arroyos; silty draws; gravelly-sandy and sandy bottoms of draws; gulches; gullies; ravines; springs; along sandy streams; along and in rocky, cobbly-gravelly and gravelly-sandy streambeds; along creeks; along and in stony-cobbly-gravelly, gravelly-sandy and sandy creekbeds; in sand along rivers; along and in rocky, gravelly-sandy and sandy riverbeds; along and in rocky, rocky-gravelly-sandy, gravelly, gravelly-sandy, sandy and clayey washes; drainage ways; sandy bowls; along (muddy, rocky, gravelly and sandy) banks of streams, creeks and rivers; (gravelly and sandy) edges of arroyos and streams; margins of rivers; (sandy) sides of brooks and streams; mudflats; rocky-sand, shaley, stony-cobbly-gravel, stony-sand, gravel, gravelly-sand and sand bars; sandy beaches; sandy-clayey benches; terraces; bottomlands; rocky-sandy-clayey and sandy floodplains; lowlands; fencerows; banks of reservoirs; in sandy ditches; bouldery-cobbly-sandy, cobbly-sandy and sandy riparian areas; waste places, and disturbed areas growing in mucky, muddy and wet, moist and dry bouldery, bouldery-cobbly-sandy, bouldery-cindery, rocky, rocky-cindery, rocky-gravelly-sandy, rocky-sandy, stony, stony-cobbly-gravelly, stony-sandy, cobbly-gravelly, cobbly-sandy, cindery, gravelly, gravelly-sandy and sandy ground; rocky-sandy loam, gravelly loam, clayey loam and loam ground; rocky-sandy clay, cindery clay, sandy clay and clay ground, and sandy silty and silty ground, occurring from 300 to 7,800 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, the crushed or bruised stems give off an odor that may be objectionable. *Polanisia dodecandra* subsp. *trachysperma* is native to central and southern North

America. *5, 6, 15, 16 (recorded as *Polanisia dodecandra* (L.) DC. var. *trachysperma* (Torr. & Gray) Iltis, placed in the Cleomaceae), 28 (recorded as *Polanisia dodecandra*, color photograph 162), 43 (070209), 44 (062511 - color picture), 46 (recorded as *Polanisia trachysperma* J. Torrey & A. Gray - placed in the Capparidaceae: The Caper Family, Page 358), 58, 63 (071412 - color presentation), 68 (recorded as *Polanisia trachysperma* Torr. & Gray), 77, **85** (071512 - color presentation), 86 (recorded as *Polanisia dodecandra*, color photograph), 115 (color presentation of the species), 124 (062511)*

Polanisia dodecandra var. *trachysperma* (see *Polanisia dodecandra* subsp. *trachysperma*)

Polanisia trachysperma (see *Polanisia dodecandra* subsp. *trachysperma*)

***Wislizenia refracta* G. Engelmann: Spectacle Fruit**

COMMON NAMES: Jack-ass Clover; Jackass Clover (a name also applied to the genus *Wislizenia*); Jackass-clover (a name also applied to the genus *Wislizenia*); Jackassclover (a name also applied to the genus *Wislizenia*); Rocky Mountain Bee Plant; Spectacle Fruit; Spectacle Pod (a name also applied to other species); Spectacle-fruit; Spectacle-pod (a name also applied to other species); Spectaclefruit; Spider Flower; Yellow Bee Weed. DESCRIPTION: Terrestrial annual (subspp. *californica* and *refracta*) or perennial (subsp. *palmeri*) forb/herb (erect stems 2 inches to 8 feet in height); the foliage is light green; the flowers are yellow; flowering generally takes place between mid-February and early December (additional record: one for mid-January). HABITAT: Within the range of this species it has been reported from mountains; crevices in rocks; cinder cones; foothills; sandy hills; hillsides; cindery slopes; bajadas; amongst boulders; lava flows; sand dunes; sand hummocks; sandy, sandy-loamy, clayey and silty flats; valley bottoms; coastal dunes; coastal plains; coastal beaches; gravelly-sandy road beds; along rocky, gravelly, gravelly-sandy-loamy and sandy roadsides; arroyos; bottoms of arroyos; within gullies; seeps; springs; streambeds; along rivers; in sandy washes; bouldery-sandy-silty drainages; silty lakebeds; playas; palm oases; marshes; depressions; sandy swales; edges of ponds; margins of washes; mudflats; sandy beaches; bottomlands; sandy floodplains; along riparian areas, and disturbed areas growing in wet and dry bouldery, bouldery-sandy, rocky, cindery, gravelly, gravelly-sandy and sandy ground; gravelly-sandy loam, gravelly-sandy-clayey loam and sandy loam ground; clay ground, and bouldery-sandy-silty and silty ground, occurring from sea level to 7,900 feet in elevation in the grassland, desertscrub and wetland ecological formations. NOTES: Rufous Hummingbirds (*Selasphorus rufus*) and Pygmy Blue Butterflies have been observed visiting the flowers. *Wislizenia refracta* is native to southwest-central and southern North America. *5, 6, 28 (color photograph 332), 43 (012410), 44 (071512 - color photograph), 46 (placed in the Capparidaceae: The Caper Family, Page 357), 63 (071512 - color presentation of seed), 80 (This species is listed as a Rarely Poisonous and Suspected Poisonous Range Plants. “Feeding experiments have shown this annual forb to be highly toxic but the plant is not very palatable.”), **85** (071512 - color presentation), 86 (color photograph), 115 (color presentation), 124 (071512 - no record of species or genus)*

***Wislizenia refracta* G. Engelmann subsp. *refracta*: Spectacle Fruit**

SYNONYMY: *Wislizenia refracta* G. Engelmann var. *melilotoides* (E.L. Greene) I.M. Johnston. COMMON NAMES: Jack-ass Clover (a name also applied to the species); Jackass Clover (a name also applied to the species and genus *Wislizenia*); Jackass-clover (a name also applied to the species and genus *Wislizenia*); Rocky Mountain Bee Plant; Spectacle Fruit (a name also applied to the species); Spectacle Pod (a name also applied to other species); Spectacle-fruit (a name also applied to other species); Spectaclefruit (a name also applied to other species); Yellow Bee Weed. DESCRIPTION: Terrestrial annual forb/herb (erect stems 16 inches to 4 feet in height); the flowers are yellow; flowering generally takes place between mid-April and mid-October (additional record: one for early March). HABITAT: Within the range of this species it has been reported from crevices in rocks; foothills; sandy hills; sand dunes; sandy-loamy flats; sandy valley floors; along rocky, gravelly and sandy roadsides; rocky arroyos; bottoms of arroyos; within gullies; springs; streambeds; in sandy and sandy-silty washes; lakebeds; playas; depressions; sandy swales; edges of ponds and playas; bottomlands, and sandy floodplains growing in wet and dry rocky, gravelly and sandy ground; sandy loam ground; clay ground, and sandy silty and silty ground, occurring from sea level to 6,500 feet in elevation in the desertscrub ecological formation. NOTES: The Rufous Hummingbird (*Selasphorus rufus*) has been observed visiting the flowers. *Wislizenia refracta* subsp. *refracta* is native to southwest-central and southern North America. *5, 6, 28 (species, color photograph of species 332), 43 (062611), 44 (071512 - color picture), 46 (recorded as *Wislizenia refracta* Engelm. var. *melilotoides* (Greene) Johnst., placed in the Capparidaceae: The Caper Family, Page 357), 63 (071512), 80 (The species is listed as a Rarely Poisonous and Suspected Poisonous Range Plants. “Feeding experiments have shown this annual forb to be highly toxic but the plant is not very palatable.”), **85** (071512 - color presentation), 86 (species, color photograph of species), 115 (color presentation of the species), 124 (071512 - no record of subspecies, species or genus)*

Wislizenia refracta var. *melilotoides* (see *Wislizenia refracta* subsp. *refracta*)

Caprifoliaceae: The Honeysuckle Family

Sambucus caerulea (see *Sambucus nigra* subsp. *cerulea*)

Sambucus caerulea var. *mexicana* (C. Presl ex DC.) L.D. Benson (see *Sambucus nigra* subsp. *canadensis*)

Sambucus caerulea var. *neomexicana* (see *Sambucus nigra* subsp. *cerulea*)

Sambucus canadensis (see *Sambucus nigra* subsp. *canadensis*)

Sambucus cerulea (see *Sambucus nigra* subsp. *cerulea*)

Sambucus cerulea var. *mexicana* (C. Presl ex DC.) L.D. Benson (see *Sambucus nigra* subsp. *canadensis*)

Sambucus cerulea var. *neomexicana* (see *Sambucus nigra* subsp. *cerulea*)

Sambucus coerulea (see *Sambucus nigra* subsp. *cerulea*)

Sambucus glauca (see *Sambucus nigra* subsp. *cerulea*)

Sambucus mexicana C. Presl ex DC. (see *Sambucus nigra* subsp. *canadensis*)

Sambucus neomexicana (see *Sambucus nigra* subsp. *cerulea*)

Sambucus nigra subsp. *caerulea* (see *Sambucus nigra* subsp. *cerulea*)

***Sambucus nigra* C. Linnaeus: Black Elderberry**

SYNONYMY: (For subsp. *canadensis* (C. Linnaeus) R. Bolli: *Sambucus caerulea* C.S. Rafinesque-Schmaltz var. *mexicana* (C.B. Presl ex A.P. de Candolle) L.D. Benson, orth. var. (alternate spelling: *Sambucus cerulea* C.S. Rafinesque-Schmaltz var. *mexicana* (C.B. Presl ex A.P. de Candolle) L.D. Benson); *Sambucus canadensis* C. Linnaeus; *Sambucus mexicana* C.B. Presl ex A.P. de Candolle. For subsp. *cerulea* (C.S. Rafinesque-Schmaltz) R. Bolli: *Sambucus caerulea* (alternate spellings observed: *Sambucus cerulea* and *Sambucus coerulea*) C.S. Rafinesque-Schmaltz; *Sambucus caerulea* (alternate spellings observed: *Sambucus cerulea* var. *neomexicana*) C.S. Rafinesque-Schmaltz var. *neomexicana* (E.O. Wooten) A. Rehder; *Sambucus glauca* T. Nuttall; *Sambucus neomexicana* E.O. Wooten; *Sambucus nigra* C. Linnaeus subsp. *caerulea* (C.S. Rafinesque-Schmaltz) R. Bolli, orth.var.). COMMON NAMES: Alcanfor (Hispanic); Alderne; American Black-berry Elder; American Black-berried Elder; American Black Elderberry; American Elder; American Elder Tree (applied to subsp. *canadensis*); American Elderberry; Arizona Blueberry Elder; Arizona Blue Elder; Arizona Elder; ‘Atsiniltł’ish ‘Ii’tąą’ <ʔacinl̨̃-iš ʔilt’ąʔí> (applied to *Sambucus mexicana*, Athapascan: Navajo)[140]; Azumate (applied to subsp. *canadensis*, en Mich); Azumatl (applied to subsp. *canadensis*, en Mich); Azumate (applied to subsp. *canadensis*, en Mich); Azumatl (applied to subsp. *canadensis*, en Mich); Azumate (en Mich); Azumatl (en Mich); Baaduʔ <páru> (applied to *Sambucus mexicana*, Hokan: Washo)[140]; Bapoki Hi (applied to subsp. *canadensis* “Popping Blackhaw Plant”, Osage); Bixhumí (applied to *Sambucus mexicana*, Oto-Manguean: Zapotec)[140]; Black Elder; Black-berry Elder; Black-berried Elder; Black-berried European Elder; Blue Elder (applied to subsp. *cerulea*, a name also applied to other species); Blue Elderberry (applied to subsp. *cerulea*, a name also applied to other species); Blueberry Elder (a name also applied to other species); Bone Tree (a name also applied to the genus *Sambucus*); Bone-tree (a name also applied to the genus *Sambucus*); Bore Tree (applied to subsp. *canadensis*); Bore-tree (applied to subsp. *canadensis*); Bottery Tree (applied to subsp. *canadensis*); Bottery-tree (applied to subsp. *canadensis*); Bountry; Boutry; Bur Tree (a name also applied to the genus *Sambucus*); Bur-tree (a name also applied to the genus *Sambucus*); Canadian Elderberry (applied to subsp. *canadensis*); Canadian Red-berry Elder (applied to subsp. *canadensis*); Canadian Red-berried Elder (applied to subsp. *canadensis*); Canadische Hollunder (applied to subsp. *canadensis*, German); Capiro (applied to *Sambucus mexicana*, Spanish)[140]; Chaputa (applied to subsp. *canadensis*, Dakota); Chaputa-hu (applied to subsp. *canadensis* “Elder Bush”, Dakota); Ch’ił Bitsiin Łizhin <č’il bicin łižin> (applied to *Sambucus mexicana*, Athapascan: Navajo)[140]; Ch’ilhazhé <suul> (applied to *Sambucus mexicana*, Athapascan: Western Apache)[140]; Common Elder; Common Elderberry; Continental Elder; Coyapa (Chiapas); Coyapa (applied to *Sambucus mexicana*, Mixe-Zoque: Zoque)[140]; Cumdemba <cumdumba, cumtempa, condumbo> (applied to *Sambucus mexicana*, Tarascan: Purépecha)[140]; Dahapdam (applied to *Sambucus mexicana*, Uto-Aztecan: Akimel O’odham)[140]; Danewort; Desert Elderberry (a name also applied to other species); [Blue-] Desert Elderberry (applied to *Sambucus mexicana* and subsp. *cerulea*, English)[140]; Dwarf Elder; Dwarf Elder (applied to subsp. *cerulea*); Dwarf Elder; Elder (a name also applied to other species and the genus *Sambucus*); Elder Bush (applied to subsp. *canadensis*); Elder Flowers (applied to subsp. *canadensis*); Elder Rob (applied to subsp. *canadensis*, a name given to the juice of the berries); Elder-blow (applied to subsp. *canadensis*); Elder-blows (applied to subsp. *canadensis*); Elder-flowers (applied to subsp. *canadensis*); Elderberry (a name also applied to other species and the genus *Sambucus*); Ellar; Ellarne (a name also applied to the genus *Sambucus*); Ellen; Ellenwood (a name also applied to the genus *Sambucus*); Ellet; Ellhorn (a name also applied to the genus *Sambucus*); Elnorne (a name also applied to the genus *Sambucus*); Elren (a name also applied to the genus *Sambucus*); English Elder; European Black Elder (applied to subsp. *nigra*); European Black Elderberry (applied to subsp. *nigra*); European Common Elder; European Common Elderberry; Euroelder; European Elder; European Elder Berry; European Elderberry (applied to subsp. *nigra*); Fläder (Swedish); Filkfläder (Swedish); Flieder (German); Flor de Sauco (Hispanic); Flor Sauco; Florida Elder (applied to subsp. *canadensis*); Florida Elderberry; German Elder; Guarico (Hispanic); Hairy Blue Elderberry; Hauk U’usi <hauk u’ushi> (applied to *Sambucus mexicana*, Uto-Aztecan: Mountain Pima)[140]; Hilder; Hillerne; Hollunder (German); Hubu’ <hub·ú> (applied to *Sambucus mexicana*, Uto-Aztecan: Northern Paiute)[140]; Hungwat <hun-kwat> (applied to *Sambucus mexicana*, Uto-Aztecan:

Cahuilla)[140]; Huvúhya (applied to *Sambucus mexicana*, Uto-Aztecan: Mono)[140]; Huvúi (applied to *Sambucus mexicana*, Uto-Aztecan: Western Paiute)[140]; Hylder; Ita Tindo (Yuku en Oax); Ita Tindoo (yaa Mixteco en Oax); Jiłhazhí (applied to *Sambucus mexicana*, Jiłhazí is a name that may also be applied to *Celtis palida* and *Celtis reticulata*, Athapascan: Navajo)[140]; Joday Kanadese Vlier (applied to subsp. *canadensis*, Afrikaans); Joday Llochic (Tepehuano en Nayarit); Judas Tree (misapplied); Kanadese Vlier (Afrikaans); Kēwēmäm <kíwimám, kiwimöm, kiwi> (applied to *Sambucus mexicana*, Yuki: Yuki)[140]; Kondembasi (Tarasco); Kopáhl (applied to *Sambucus mexicana*, Yuman: Kumiai)[140]; Kuhupïl <kuhupɨ-l> (applied to *Sambucus mexicana*, Uto-Aztecan: Tübatulabal)[140]; Kunugívū (applied to *Sambucus mexicana*, Uto-Aztecan: Mono)[140]; Kunuki(ppüh) (applied to *Sambucus mexicana*, Uto-Aztecan: Panamint)[140]; Kunuvugɨ (applied to *Sambucus mexicana*, Uto-Aztecan: Kawaiisu, the berry is called kunuvugu'ivi)[140]; Ku:ta (applied to *Sambucus mexicana*, Uto-Aztecan: Luiseño)[140]; Kuuhuutɨ (applied to *Sambucus mexicana*, Uto-Aztecan: Serrano)[140]; Kúūt (applied to *Sambucus mexicana*, Uto-Aztecan: Cupeño)[140]; Llochic (applied to subsp. *canadensis*, Tepehuano en Nayarit); Má' Ma Joo (Hispanic); Mexican Elder; Mexican Elder (applied to *Sambucus mexicana* and subsp. *cerulea*, English)[140]; Mexican Elderberry; Ne Ho (en Oax); New Mexican Blueberry; New Mexican Elder (applied to subsp. *cerulea*); New Mexican Elderberry (applied to subsp. *cerulea*); New Mexico Blueberry Elder; Nttzirza (applied to *Sambucus mexicana*, Oto-Manguean: Otomí)[140]; Ocoquihui (Chiapas); Ocoquihui (applied to *Sambucus mexicana*, Spanish)[140]; Pa'gonogwīp [Pa'go-nogīp] (applied to *Sambucus mexicana*, Uto-Aztecan: Shoshoni)[140]; Parsley Elder; Pɨgūbūxia, Hūbū́xia, Saíinoiya^{a}, Sainó̱waiyu^{u} (applied to *Sambucus mexicana*, Uto-Aztecan: Northern Paiute)[140]; Pipigwe-minan (applied to subsp. *canadensis*, Chippewa); Qayas (applied to *Sambucus mexicana*, Chumash: Chumash)[140]; Road Berry (Ohio); Rotosí (applied to *Sambucus mexicana*, Uto-Aztecan: Tarahumara)[140]; Sabugueiro-negro (Portuguese); Sahuco (Spanish); Sambugo (Spanish); Sau (applied to *Sambucus mexicana*, Uto-Aztecan: Mountain Pima)[140]; Sauce (Hispanic); Sauce Chico (Hispanic); Sauco (Spanish); S'auco (applied to subsp. *canadensis*, Zoque-popoluca en Veracruz); Sáuco (applied to subsp. *cerulea*, Spanish); Saúco (Spanish); Saúco [Azul] <sauco> (applied to *Sambucus mexicana*, "[Blue] Elder", Spanish: California, Chihuahua, Sonora south)[140]; Sauco Grande (Hispanic); Sauko [Saokó] (applied to *Sambucus mexicana*, Uto-Aztecan: Guarijío)[140]; Sauzo Tapiro (Hispanic); Schwarzer Holunder (German); Skaw; Skirariu (applied to subsp. *canadensis*, Pawnee); Soapberry (a name also applied to other species); Sureau (a name also applied to the genus *Sambucus*, French); Sureau du Canada (applied to subsp. *canadensis*, French); Sureau Noir (French); Sweet Elder (a name also applied to other species); Tapiro (Hispanic); Tahapidam (applied to *Sambucus mexicana*, Uto-Aztecan: Hiá Ceḍ O'odham, Tohono O'odham)[140]; Tal Tal (applied to *Sambucus mexicana*, Yuma: Paipai)[140]; Tapiro (Hispanic: New Mexico); Tápiro (applied to *Sambucus mexicana*, Spanish: Arizona, Sonora)[140]; Tapiro Sauco (Hispanic); Tóisavui (applied to *Sambucus mexicana*, Uto-Aztecan: Western Paiute)[140]; Toxem o Toxeem (Mixe en Oax); Toxiwua (en Michoacán); Tree of Music; Tsizoł (applied to *Sambucus mexicana*, Athapascan: Chiricahua and Mescalero Apache)[140]; Velvet Elder; Velvet-leaf Elder; Velvetleaf Elder; Wagathahashka (applied to subsp. *canadensis*, Omaha-Ponca); Wagathahashka-hi (applied to subsp. *canadensis*, "Elder Bush", Omaha-Ponca); Walewort; Western Blue Elder (applied to subsp. *cerulea*); Western Blue Berry Elder (applied to subsp. *cerulea*); Western Blue Elder Berry (applied to subsp. *cerulea*); Western Blue Elder-berry (applied to subsp. *cerulea*); Western Blue Elderberry (applied to subsp. *cerulea*); Western Blue-berry Elder (applied to subsp. *cerulea*); Western Blueberry Elder (applied to subsp. *cerulea*); Whist-aller; Wild Elder; Winlin-berry; Xiiksh (applied to *Sambucus mexicana*, Mixe-Zoque: Mixe)[140]; Xometl <azumiatl, azu-miatl, xomét> (applied to *Sambucus mexicana*, Uto-Aztecan: Náhuatl, San Luis Potosí, Veracruz)[140]; Xsa:wk (applied to *Sambucus mexicana*, Yuman: Cocopah)[140]; Yutnucate (applied to *Sambucus mexicana*, Oto-Manguean: Mixtec)[140]. DESCRIPTION: Terrestrial perennial drought-deciduous (nearly evergreen) shrub or tree (erect stems 6 to 36 feet in height with a compact rounded crown 8 to 26 feet in width; one tree was observed and described as being 10 feet in height with a crown 13 feet in width, one tree was observed and described as being 12 feet in height with a crown 10 feet in width and a trunk diameter of 4 inches, one plant was observed and described as being 13 feet in height with a crown 16½ feet in width); the bark may be light brown, dark brown, gray or grayish; the branches are gray-brown; the twigs are light green or green; the leaves may be bright green, dark green or yellow green with 3 to 5 leaflets (subsp. *canadensis*) or with 5 to 9 leaflets (subsp. *cerulea*); the flowers (between 1/8 to 1/4 inch in diameter in many-branched clusters 1½ to 10 inches in width) may be buff, pale cream, cream, creamy-white, creamy-white-yellowish, creamy-yellow, golden-ivory, pale green, white, white-cream, white-pink, pale yellow, yellow, yellow-cream, yellow-green, yellow-white, yellowish or yellowish-white; the anthers are cream-yellow; flowering generally takes place between mid-March and late October (additional records: one for mid-February, two for late February, two for late November and one for mid-December); the mature berrylike fruits (between 1/8 to 1/4 inch in diameter in clusters) are black, blackish, blue, dark blue, blue-black, blue-gray, dark blue-purple, purple, dark purple or purple-black. HABITAT: Within the range of this species it has been reported from mountains; mountaintops; plateaus; rock walls; clayey cliffs; cliff ledges; bases of cliffs; rocky canyons; along bouldery-gravelly-sandy and sandy-silty canyon bottoms; rocky talus slopes; rocky bluffs; buttes; along ridges; clearings and openings in forests; meadows; foothills; bouldery and rocky hills; hilltops; bouldery, rocky, rocky-humusy-loamy, cobbly-loamy and clayey hillsides; rocky escarpments; bouldery, rocky, rocky-sandy, shaley, cobbly-sandy-loamy, sandy and loamy-clayey slopes; rocky-sandy-loamy alluvial fans; amongst boulders and rocks; bases of rocks; sheltered spring nooks; rocky banks; plains; flats; uplands; basins; gravelly-sandy and silty valley floors; valley bottoms; railroad right-of-ways; railroad beds; along rocky-gravelly roadsides; along and in arroyos; along bottoms of arroyos; within draws; gulches; gullies; along gravelly-sandy ravines; seeps; springs; along bouldery streams; rocky and gravelly-sandy streambeds; along creeks; creekbeds; along rivers; silty riverbeds; along and in gravelly, sandy and loamy washes; along and in drainages; drainage ways; watercourses; playas; ciénegas; marshes; sloughs; along (rocky and sandy-clayey-loamy) banks of streams, streambeds, creekbeds and rivers; along (sandy-silty and clayey) edges of creeks and rivers, washes and marshes; along (rocky-sandy and sandy) margins of washes, creeks and playas; shorelines of lakes; sandy beaches; sandy benches; sandy terraces; sandy and silty bottomlands; sandy floodplains; mesquite bosques; along fencerows; along canal banks; along ditches; along ditch banks; sandy canal banks; gravelly-sandy and sandy

riparian areas, and disturbed areas growing in wet, moist and dry bouldery, bouldery-gravelly, bouldery-gravelly-sandy, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, shaley, stony, gravelly, gravelly-sandy and sandy ground; rocky-sandy loam, rocky-humusy loam, cobbly loam, cobbly-sandy loam, gravelly loam, gravelly-clayey loam, sandy loam, sandy-clayey loam, clayey loam and loam ground; gravelly clay, sandy clay, loamy clay, humusy clay and clay ground, and gravelly silty, sandy silty and silty ground, occurring from sea level to 11,400 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: A plant with EXOTIC and NATIVE subspecies. The native subspecies may be attractive components of a restored native habitat, and valuable in controlling erosion and in stabilizing the banks of streams. This plant, *Sambucus nigra* including *Sambucus nigra* subsp. *canadensis* and *Sambucus nigra* subsp. *cerulea*, was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, beverage (subsp. *canadensis*), spice (subsp. *cerulea*), and/or dye (black, orange, purple and yellow dyes - subsp. *canadensis*) crop; it was also noted as having been used as a fuel (subsp. *cerulea*), as tools, for making musical instruments (clappers, flutes, music sticks and whistles), as a toy or in games, as a drug or medication and as an insecticide (inner bark of young shoots used to repel flies and insects - subsp. *canadensis*). The Blue Elderberry has been reported to be fairly easy to establish from direct seeding and planting of cuttings, rootstock and seedlings and older plants stock. The flowers may be fragrant. The Blue Elderberry produces valuable cover and food for wildlife as well as perching and nesting sites for birds. The Blue Elderberry provides nesting habitat for the Dusky Flycatcher (*Empidonax oberholseri*), Broad-tailed Hummingbird (*Cynanthus latirostris*), Lincoln Sparrow (*Melospiza lincolnii*), White-crowned Sparrow (*Zonotrichia leucophrys*), MacGilllivray's Warbler (*Oporornis tolmiei*) and Orange-crowned Warbler (*Vermivora celata*); the foliage is browsed by Black Bear (*Ursus americanus*), Elk (*Cervus elaphus*), Mule Deer (*Odocoileus hemionus*), White-tailed Deer (*Odocoileus virginianus*), Pronghorn (*Antilocapra americana*) and other animals; hummingbirds have been observed visiting the flowers for nectar, and the fruits are eaten by many species of birds, including among others: bluebirds, Green-tailed Towhees (*Pipilo chlorurus*), grosbeaks, grouse, House Finches (*Carpodacus mexicanus*), magpies, pheasant, quail, Townsend Solitaires (*Myadestes townsendi*), Warbling Vireos (*Vireo gilvus*), Western Tanagers (*Piranga ludoviciana*) and woodpeckers. When restoring the floodplains of the major river systems in this township consider including the following plants in the mix: Inland Saltgrass (*Distichlis spicata*), Vine Mesquite Grass (*Panicum obtusum*), Indian Rushpea (*Hoffmannseggia glauca*), Little Snapdragon Vine (*Maurandella antirrhiniflora*), Schott Yellowhood (*Nissolia schottii*), Fingerleaf Gourd (*Cucurbita digitata*), Red Sprangletop (*Leptochloa panicea* subsp. *brachiata*), Whiplash Pappusgrass (*Pappophorum vaginatum*), Alkali Sacaton (*Sporobolus airoides*), Big Sacaton (*Sporobolus wrightii*), Hartweg Twinevine (*Funastrum cynanchoides*), Hartweg Twinevine (*Funastrum cynanchoides* subsp. *heterophyllum*), Virginia Creeper (*Parthenocissus quinquefolia*), Canyon Grape (*Vitis arizonica*), Drummond Clematis (*Clematis drummondii*), Mojave Seablite (*Suaeda moquinii*), Prairie Acacia (*Acacia angustissima*), Allthorn (*Koeberlinia spinosa* var. *spinosa*), Desert Saltbush (*Atriplex polycarpa*), Fourwing Saltbush (*Atriplex canescens*), Wright Lycium (*Lycium andersonii* var. *wrightii*), Torrey Lycium (*Lycium torreyi*), Arrowweed (*Pluchea sericea*), Fremont Lycium (*Lycium fremontii*), Creosote Bush (*Larrea tridentata* var. *tridentata*), Greythorn (*Ziziphus obtusifolia* var. *canescens*), Southern Cattail (*Typha domingensis*), Seep Willow (*Baccharis salicifolia*), Whitethorn Acacia (*Acacia constricta*), Desert Hackberry (*Celtis ehrenbergiana*), Catclaw Acacia (*Acacia greggii* var. *greggii*), Soaptree Yucca (*Yucca elata*), Coyote Willow (*Salix exigua*), Screwbean Mesquite (*Prosopis pubescens*), Common Cottonbush (*Cephalanthus occidentalis*), Desert Elderberry (*Sambucus nigra* ssp. *canadensis*), Blue Paloverde (*Parkinsonia florida*), Western Soapberry (*Sapindus saponaria* var. *drummondii*), Netleaf Hackberry (*Celtis laevigata* var. *reticulata*), Velvet Mesquite (*Prosopis velutina*), Western Black Willow (*Salix gooddingii*), Velvet Ash (*Fraxinus velutina*), Arizona Black Walnut (*Juglans major*), Fremont Cottonwood (*Populus fremontii* subsp. *fremontii*). *Sambucus nigra* subsp. *cerulea* is native to west-central and southern North America. *Sambucus nigra* C. Linnaeus subsp. *cerulea* (C.S. Rafinesque-Schmaltz) R. Bolli and *Sambucus nigra* C. Linnaeus subsp. *canadensis* (C. Linnaeus) R. Bolli are the native Arizona subspecies. *Sambucus nigra* C. Linnaeus subsp. *nigra* (European Black Elderberry) is native to northeastern North America; northern, central, eastern and southern Europe; western Asia, and northern Africa and is not known to occur in Arizona. *5, 6, 18, 43 (012510), 44 (062811 - color photograph), 46 (recorded as *Sambucus neomexicana* Wooten, *Sambucus mexicana* Presl and *Sambucus coerulea* Raf., Pages 813-814), 48 (genus), 52 (recorded as *Sambucus coerulea* and *Sambucus mexicana*, color photographs), 63 (071812 - color presentation), 80 (Species of the genus *Sambucus* are considered to be Rarely Poisonous and Suspected Poisonous Range Plants. "This tall shrub is reported poisonous to livestock and humans but the cooked berries are harmless."), **85** (071912 - color presentation), 124 (062711), 127, 140 (recorded as *Sambucus nigra* Linnaeus subsp. *cerulea* (Rafinesque-Schmaltz) R. Bolli [*Sambucus mexicana* C. Presl ex DeCandolle], Pages 107-109 & 289)*

Sambucus nigra C. Linnaeus subsp. *canadensis* (C. Linnaeus) R. Bolli: American Black Elderberry

SYNONYMY: *Sambucus caerulea* C.S. Rafinesque-Schmaltz var. *mexicana* (C.B. Presl ex A.P. de Candolle) L.D. Benson, orth. var. (alternate spelling: *Sambucus cerulea* C.S. Rafinesque-Schmaltz var. *mexicana* (C.B. Presl ex A.P. de Candolle) L.D. Benson); *Sambucus canadensis* C. Linnaeus; *Sambucus mexicana* C.B. Presl ex A.P. de Candolle. COMMON NAMES: Alcanfor (Hispanic); American Black Elderberry; American Elder; American Elder Tree; American Elderberry; Arizona Blueberry Elder; Arizona Blue Elder; Arizona Elder; 'Atsiniltł'ish 'Ii'tąą' <ˀacinłƛiš ˀilt'ąˀí> (applied to *Sambucus mexicana*, Athapascan: Navajo)[140]; Azumate (en Mich); Azumatl (en Mich); Baaduˀ <páru> (applied to *Sambucus mexicana*, Hokan: Washo)[140]; Bapoki Hi ("Popping Blackhaw Plant", Osage); Bixhumí (applied to *Sambucus mexicana*, Oto-Manguean: Zapotec)[140]; Black Elder; Black-berry Elder; Black-berried Elder; Blueberry Elder; Bore Tree; Bore-tree; Bottery Tree; Bottery-tree; Canadian Elderberry; Canadian Red-berry Elder; Canadian Red-berried Elder; Canadische Hollunder (German); Capiro (applied to *Sambucus mexicana*, Spanish)[140]; Chaputa (Dakota); Chaputa-hu ("Elder Bush", Dakota); Ch'ił Bitsiin Łizhin <č'il bicin łižin> (applied to *Sambucus mexicana*, Athapascan: Navajo)[140]; Ch'ilhazhé <suul> (applied to *Sambucus mexicana*,

Athapascan: Western Apache)[140]; Common Elder (a name also applied to the species); Common Elderberry (a name also applied to the species); Coyapa (Chiapas); Coyapa (applied to *Sambucus mexicana*, Mixe-Zoque: Zoque)[140]; Cumdemba <cumdumba, cumtempa, condumbo> (applied to *Sambucus mexicana*, Tarascan: Purépecha)[140]; Dahapdam (applied to *Sambucus mexicana*, Uto-Aztecan: Akimel O'odham)[140]; Desert Elderberry (a name also applied to the species); [Blue-] Desert Elderberry (applied to *Sambucus mexicana*, English)[140]; Elder (a name also applied to the species, to other species and to the genus *Sambucus*); Elder Berry (a name also applied to the species, to other species and to the genus *Sambucus*); Elder Bush; Elder Flowers; Elder Rob (a name given to the juice of the berries); Elder-berry (a name also applied to the species, to other species and to the genus *Sambucus*); Elder-blow; Elder-blows; Elder-flowers; Elderberry (a name also applied to the species, to other species and to the genus *Sambucus*); Flor de Sauco (Hispanic); Florida Elder; Florida Elderberry; Guarico (Hispanic); Hauk U'usi <hauk u'ushi> (applied to *Sambucus mexicana*, Uto-Aztecan: Mountain Pima)[140]; Hubu' <hub·ú> (applied to *Sambucus mexicana*, Uto-Aztecan: Northern Paiute)[140]; Hungwat <hun-kwat> (applied to *Sambucus mexicana*, Uto-Aztecan: Cahuilla)[140]; Huvúhya (applied to *Sambucus mexicana*, Uto-Aztecan: Mono)[140]; Huvúi (applied to *Sambucus mexicana*, Uto-Aztecan: Western Paiute)[140]; Ita Tindo (Yuku en Oax); Ita Tindoo (yaa Mixteco en Oax); Jiłhazhí (applied to *Sambucus mexicana*, Jiłhazí is a name that may also be applied to *Celtis palida* and *Celtis reticulata*, Athapascan: Navajo)[140]; Joday Kanadese Vlier (Afrikaans); Kēwēmäm <kíwimám, kiwimöm, kiwi> (applied to *Sambucus mexicana*, Yuki: Yuki)[140]; Kondembasi (Tarasco); Kopáhl (applied to *Sambucus mexicana*, Yuman: Kumiai)[140]; Kuhupïl <kuhup**ɨ**-l> (applied to *Sambucus mexicana*, Uto-Aztecan: Tübatulabal)[140]; Kunugívū (Uto-Aztecan: Mono)[140]; Kunuki(ppüh) (applied to *Sambucus mexicana*, Uto-Aztecan: Panamint)[140]; Kunuvug**ɨ** (applied to *Sambucus mexicana*, Uto-Aztecan: Kawaiisu, the berry is called kunuvugu'ivi)[140]; Ku:ta (applied to *Sambucus mexicana*, Uto-Aztecan: Luiseño)[140]; Kuuhuut**ɨ** (applied to *Sambucus mexicana*, Uto-Aztecan: Serrano)[140]; Kúūt (applied to *Sambucus mexicana*, Uto-Aztecan: Cupeño)[140]; Llochic (Tepehuano en Nayarit); Má' Ma Joo (Hispanic); Mexican Elder; Mexican Elder (applied to *Sambucus mexicana*, English)[140]; Mexican Elderberry; Ne Ho (en Oax); New Mexican Blueberry; New Mexico Blueberry Elder; Nttzirza (applied to *Sambucus mexicana*, Oto-Manguean: Otomí)[140]; Ocoquihui (Chiapas); Ocoquihui (applied to *Sambucus mexicana*, Spanish)[140]; Pa'gonogwĭp [Pa'go-nogĭp] (applied to *Sambucus mexicana*, Uto-Aztecan: Shoshoni)[140]; Pipigwe-minan (Chippewa); P**ɨ**gūbūxia, Hūbű́xia, Saíinoiya^{a}, Sainő́waiyu^{u} (applied to *Sambucus mexicana*, Uto-Aztecan: Northern Paiute)[140]; Qayas (applied to *Sambucus mexicana*, Chumash: Chumash)[140]; Road Berry (Ohio); Rotosí (applied to *Sambucus mexicana*, Uto-Aztecan: Tarahumara)[140]; Sambucus (a name also applied to the genus *Sambucus*); Sau (applied to *Sambucus mexicana*, Uto-Aztecan: Mountain Pima)[140]; Sauce (Hispanic); Sauce Chico (Hispanic); Sauco (Spanish); S'auco (Zoque-popoluca en Veracruz); Saúco [Azul] <sauco> (applied to *Sambucus mexicana*, "[Blue] Elder", Spanish: California, Chihuahua, Sonora south)[140]; Sauco Grande (Hispanic); Sauko [Saokó] (applied to *Sambucus mexicana*, Uto-Aztecan: Guarijío)[140]; Sauzo Tapiro (Hispanic); Skirariu (Pawnee); Sureau du Canada (French); Sweet Elder; Tahapidam (applied to *Sambucus mexicana*, Uto-Aztecan: Hiá Ced̩ O'odham, Tohono O'odham)[140]; Tal Tal (applied to *Sambucus mexicana*, Yuma: Paipai)[140]; Tapiro (Hispanic: New Mexico); Tápiro (applied to *Sambucus mexicana*, Spanish: Arizona, Sonora)[140]; Tapiro Sauco (Hispanic); Tóisavui (applied to *Sambucus mexicana*, Uto-Aztecan: Western Paiute)[140]; Toxem o Toxeem (Mixe en Oax); Toxiwua (en Michoacán); Tsizoł (applied to *Sambucus mexicana*, Athapascan: Chiricahua and Mescalero Apache)[140]; Wagathahashka (Omaha-Ponca); Wagathahashka-hi ("Elder Bush", Omaha-Ponca); Xiiksh (applied to *Sambucus mexicana*, Mixe-Zoque: Mixe)[140]; Xometl <azumiatl, azu-miatl, xomét> (applied to *Sambucus mexicana*, Uto-Aztecan: Náhuatl, San Luis Potosí, Veracruz)[140]; Xsa:wk (applied to *Sambucus mexicana*, Yuman: Cocopah)[140]; Yutnucate (applied to *Sambucus mexicana*, Oto-Manguean: Mixtec)[140]. DESCRIPTION: Terrestrial perennial drought-deciduous or nearly evergreen shrub or tree (erect stems 7 to 36 feet in height with a compact rounded crown 8 to 26 feet in width; one tree was observed and described as being 12 feet in height with a crown 10 feet in width and a trunk diameter of 4 inches); the bark is light brown or gray; the twigs are light green; the leaves are bright green with 3 to 5 leaflets; the flowers (between 1/8 to 1/4 inch in diameter in many-branched clusters 2 to 8 inches in width) may be buff, pale cream, cream, creamy-white, creamy-white-yellowish, creamy-yellow, pale green, white, white-cream, pale yellow, yellow, yellow-cream or yellowish-white; the anthers are cream-yellow; flowering generally takes place between mid-March and early October (additional records: one for late February, one for late October and one for late November); the mature berry-like fruits (between 1/8 to 1/4 inch in diameter in clusters) are black, blackish, blue, dark blue, blue-black, blue-gray or dark blue-purple. HABITAT: Within the range of this species it has been reported from mountains; plateaus; canyons; along bouldery-gravelly-sandy and sandy-silty canyon bottoms; talus slopes; bluffs; openings in forests; meadows; foothills; bouldery hills; hilltops; bouldery, rocky, cobbly-loamy and clayey hillsides; bouldery, rocky-sandy, cobbly-sandy-loamy, sandy and loamy-clayey slopes; rocky-sandy-loamy alluvial fans; amongst boulders and rocks; rocky banks; plains; flats; basins; gravelly-sandy valley floors; railroad right-of-ways; along rocky-gravelly roadsides; along and in arroyos; along bottoms of arroyos; within draws; gulches; gullies; along gravelly-sandy ravines; seeps; springs; along bouldery streams; gravelly-sandy streambeds; along creeks; creekbeds; riverbeds; along and in sandy and loamy washes; drainage ways; watercourses; playas; ciénegas; marshes; sloughs; (sandy-clayey-loamy) banks of streams and rivers; (sandy-silty) edges of rivers, washes and marshes; (sandy) margins of washes and playas; sandy beaches; sandy benches; sandy terraces; bottomlands; sandy floodplains; mesquite bosques; sandy canal banks; along ditches; along ditch banks; gravelly-sandy and sandy riparian areas, and disturbed areas growing in wet, moist and dry bouldery, bouldery-gravelly, bouldery-gravelly-sandy, rocky, rocky-gravelly, rocky-sandy, gravelly, gravelly-sandy and sandy ground; rocky-sandy loam, cobbly loam, cobbly-sandy loam, gravelly loam, sandy loam, sandy-clayey loam and loam ground; loamy clay, humusy clay and clay ground, and sandy silty ground, occurring from sea level to 9,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, beverage and/or dye (black, orange, purple and yellow dyes) crop; it was also noted as having been used as

tools, for making musical instruments (whistles), as a toy or in games, as a drug or medication and as an insecticide (inner bark of young shoots used to repel flies and insects). The tree is covered with bright green leaves during the cooler months, but is nearly deciduous during the hot summer months, the flowers may be fragrant. Hummingbirds have been observed visiting the flowers for nectar, the fruits are eaten by birds and the foliage is browsed by deer. When restoring the floodplains of the major river systems in this township consider including the following plants in the mix: Inland Saltgrass (*Distichlis spicata*), Vine Mesquite Grass (*Panicum obtusum*), Indian Rushpea (*Hoffmannseggia glauca*), Little Snapdragon Vine (*Maurandella antirrhiniflora*), Schott Yellowhood (*Nissolia schottii*), Fingerleaf Gourd (*Cucurbita digitata*), Red Sprangletop (*Leptochloa panicea* subsp. *brachiata*), Whiplash Pappusgrass (*Pappophorum vaginatum*), Alkali Sacaton (*Sporobolus airoides*), Big Sacaton (*Sporobolus wrightii*), Hartweg Twinevine (*Funastrum cynanchoides*), Hartweg Twinevine (*Funastrum cynanchoides* subsp. *heterophyllum*), Virginia Creeper (*Parthenocissus quinquefolia*), Canyon Grape (*Vitis arizonica*), Drummond Clematis (*Clematis drummondii*), Mojave Seablite (*Suaeda moquinii*), Prairie Acacia (*Acacia angustissima*), Allthorn (*Koeberlinia spinosa* var. *spinosa*), Desert Saltbush (*Atriplex polycarpa*), Fourwing Saltbush (*Atriplex canescens*), Wright Lycium (*Lycium andersonii* var. *wrightii*), Torrey Lycium (*Lycium torreyi*), Arrowweed (*Pluchea sericea*), Fremont Lycium (*Lycium fremontii*), Creosote Bush (*Larrea tridentata* var. *tridentata*), Greythorn (*Ziziphus obtusifolia* var. *canescens*), Southern Cattail (*Typha domingensis*), Seep Willow (*Baccharis salicifolia*), Whitethorn Acacia (*Acacia constricta*), Desert Hackberry (*Celtis ehrenbergiana*), Catclaw Acacia (*Acacia greggii* var. *greggii*), Soaptree Yucca (*Yucca elata*), Coyote Willow (*Salix exigua*), Screwbean Mesquite (*Prosopis pubescens*), Common Cottonbush (*Cephalanthus occidentalis*), Desert Elderberry (*Sambucus nigra* ssp. *canadensis*), Blue Paloverde (*Parkinsonia florida*), Western Soapberry (*Sapindus saponaria* var. *drummondii*), Netleaf Hackberry (*Celtis laevigata* var. *reticulata*), Velvet Mesquite (*Prosopis velutina*), Western Black Willow (*Salix gooddingii*), Velvet Ash (*Fraxinus velutina*), Arizona Black Walnut (*Juglans major*), Fremont Cottonwood (*Populus fremontii* subsp. *fremontii*). *Sambucus nigra* subsp. *canadensis* is native to central and southern North America and Central America. *5, 6, 13 (recorded as *Sambucus caerulea* Raf. var. *mexicana* (Presl) L. Benson), 15 (recorded as *Sambucus mexicana* Presl ex DC.), 16 (recorded as *Sambucus mexicana* Presl), 18 (recorded as *Sambucus* spp.), 26 (recorded as *Sambucus mexicana*, color photograph), 28 (recorded as *Sambucus mexicana*, color photograph), 30 (recorded as *Sambucus mexicana*), 43 (012510), 44 (062811 - no listing records under Common Names - subspecies does not occur in California), 46 (recorded as *Sambucus mexicana* Presl, Page 814), 48 (recorded as *Sambucus mexicana*), 52 (recorded as *Sambucus mexicana* Presl), 53 (recorded as *Sambucus mexicana* Presl), 58 (recorded as *Sambucus mexicana* Presl), 63 (071812 - color presentation), 77 (recorded as *Sambucus mexicana* Presl), 80 (Species of the genus *Sambucus* are considered to be Rarely Poisonous and Suspected Poisonous Range Plants. “This tall shrub has been reported poisonous to livestock and humans but the cooked berries are harmless.”), **85** (071912 - color presentation of dried material), 115 (color presentation), 124 (062711), 127, 140 (recorded as *Sambucus nigra* Linnaeus subsp. *cerulea* (Rafinesque-Schmaltz) R. Bolli [*Sambucus mexicana* C. Presl ex DeCandolle], Pages 107-109 & 289)*

Sambucus nigra C. Linnaeus subsp. *cerulea* (C.S. Rafinesque-Schmaltz) R. Bolli: Blue Elderberry

SYNONYMY: *Sambucus caerulea* (alternate spellings observed: *Sambucus cerulea* and *Sambucus coerulea*) C.S. Rafinesque-Schmaltz; *Sambucus caerulea* (alternate spellings observed: *Sambucus cerulea* var. *neomexicana*) C.S. Rafinesque-Schmaltz var. *neomexicana* (E.O. Wooten) A. Rehder; *Sambucus glauca* T. Nuttall; *Sambucus neomexicana* E.O. Wooten; *Sambucus nigra* C. Linnaeus subsp. *caerulea* (C.S. Rafinesque-Schmaltz) R. Bolli, orth.var. COMMON NAMES: Arizona Elderberry; ‘Atsiniltł’ish ‘Ii’tąą’ <ʔacinɬ̵iš ʔilt’ąʔí> (applied to *Sambucus mexicana*, Athapascan: Navajo)[140]; Baaduʔ <páru> (applied to *Sambucus mexicana*, Hokan: Washo)[140]; Bixhumí (applied to *Sambucus mexicana*, Oto-Manguean: Zapotec)[140]; Blue Elder (a name also applied to other species); Blue Elderberry (a name also applied to other species); Blueberry Elder (a name also applied to other species); Capiro (applied to *Sambucus mexicana*, Spanish)[140]; Ch’ił Bitsiin Łizhin <č’il bicin łižin> (applied to *Sambucus mexicana*, Athapascan: Navajo)[140]; Ch’ilhazhé <suul> (applied to *Sambucus mexicana*, Athapascan: Western Apache)[140]; Coyapa (applied to *Sambucus mexicana*, Mixe-Zoque: Zoque)[140]; Cumdemba <cumdumba, cumtempa, condumbo> (applied to *Sambucus mexicana*, Tarascan: Purépecha)[140]; Dahapdam (applied to *Sambucus mexicana*, Uto-Aztecan: Akimel O’odham)[140]; Danewort; Desert Elderberry (a name also applied to other species); [Blue-] Desert Elderberry (applied to *Sambucus mexicana*, English)[140]; Dwarf Elder; Elderberry (a name also applied to the species, to other species and to the genus *Sambucus*); Flor Sauco; Hairy Blue Elderberry; Hauk U’usi <hauk u’ushi> (applied to *Sambucus mexicana*, Uto-Aztecan: Mountain Pima)[140]; Hubu’ <hub·ú> (applied to *Sambucus mexicana*, Uto-Aztecan: Northern Paiute)[140]; Hungwat <hun-kwat> (applied to *Sambucus mexicana*, Uto-Aztecan: Cahuilla)[140]; Huvúhya (applied to *Sambucus mexicana*, Uto-Aztecan: Mono)[140]; Huvúi (applied to *Sambucus mexicana*, Uto-Aztecan: Western Paiute)[140]; Jiłhazhí (applied to *Sambucus mexicana*, Jiłhazí is a name that may also be applied to *Celtis palida* and *Celtis reticulata*, Athapascan: Navajo)[140]; Kēwēmäm <kíwimám, kiwimōm, kiwi> (applied to *Sambucus mexicana*, Yuki: Yuki)[140]; Kopáhl (applied to *Sambucus mexicana*, Yuman: Kumiai)[140]; Kuhupïl <kuhupɨ-l> (applied to *Sambucus mexicana*, Uto-Aztecan: Tübatulabal)[140]; Kunugívū (applied to *Sambucus mexicana*, Uto-Aztecan: Mono)[140]; Kunuki(ppüh) (Uto-Aztecan: Panamint)[140]; Kunuvugɨ (applied to *Sambucus mexicana*, Uto-Aztecan: Kawaiisu, the berry is called kunuvuguʔivi)[140]; Ku:ta (applied to *Sambucus mexicana*, Uto-Aztecan: Luiseño)[140]; Kuuhuutɨ (applied to *Sambucus mexicana*, Uto-Aztecan: Serrano)[140]; Kúūt (applied to *Sambucus mexicana*, Uto-Aztecan: Cupeño)[140]; Mexican Elder; Mexican Elder (applied to *Sambucus mexicana*, English)[140]; New Mexican Elder; New Mexican Elderberry; Nttzirza (applied to *Sambucus mexicana*, Oto-Manguean: Otomí)[140]; Ocoquihui (applied to *Sambucus mexicana*, Spanish)[140]; Pa’gonogwïp [Pa’go-nogïp] (applied to *Sambucus mexicana*, Uto-Aztecan: Shoshoni)[140]; Pɨgūbūxia, Hūbū́xia, Saíinoiyaʔª, Sainő́waiyuʔᵘ (applied to *Sambucus mexicana*, Uto-Aztecan: Northern Paiute)[140]; Qayas (applied to *Sambucus mexicana*, Chumash: Chumash)[140]; Rotosí (applied to *Sambucus mexicana*, Uto-Aztecan: Tarahumara)[140]; Sau (applied to *Sambucus mexicana*, Uto-Aztecan: Mountain Pima)[140]; Sáuco (Spanish); Saúco [Azul] <sauco> (applied to *Sambucus mexicana*, “[Blue]

Elder", Spanish: California, Chihuahua, Sonora south)[140]; Sauko [Saokó] (applied to *Sambucus mexicana*, Uto-Aztecan: Guarijío)[140]; Soapberry (a name also applied to other species); Sweet Elder (a name also applied to other species); Tahapidam (applied to *Sambucus mexicana*, Uto-Aztecan: Hiá Ceḍ O'odham, Tohono O'odham)[140]; Tal Tal (applied to *Sambucus mexicana*, Yuma: Paipai)[140]; Tapiro; Tápiro (applied to *Sambucus mexicana*, Spanish: Arizona, Sonora)[140]; Tóisavui (applied to *Sambucus mexicana*, Uto-Aztecan: Western Paiute)[140]; Tree of Music; Tsizoł (applied to *Sambucus mexicana*, Athapascan: Chiricahua and Mescalero Apache)[140]; Velvet Elder; Velvet-leaf Elder; Velvetleaf Elder; Walewort; Western Blue Elder; Western Blue Berry Elder; Western Blue Elder Berry; Western Blue Elder-berry; Western Blue Elderberry; Western Blue-berry Elder; Western Blueberry Elder; Wild Elder; Xiiksh (applied to *Sambucus mexicana*, Mixe-Zoque: Mixe)[140]; Xometl <azumiatl, azu-miatl, xomét> (applied to *Sambucus mexicana*, Uto-Aztecan: Náhuatl, San Luis Potosí, Veracruz)[140]; Xsa:wk (applied to *Sambucus mexicana*, Yuman: Cocopah)[140]; Yutnucate (applied to *Sambucus mexicana*, Oto-Manguean: Mixtec)[140]. DESCRIPTION: Terrestrial perennial deciduous (nearly evergreen) shrub or tree (erect stems 6 to 20 feet in height); the bark is grayish or dark brown; the branches are gray-brown; the leaves are dark green or yellow-green with 5 to 9 leaflets; the flowers (between 1/8 to 1/4 inch in diameter with the entire inflorescence 1½ to 10 inches in width) may be cream, creamy-white, white, whitish, white-pink or yellowish; the anthers are cream-yellow; flowering generally takes place between mid-May and late August (additional records: one for mid-February, one for late March, two for mid-April, one for late April, one for mid-September and one for mid-October); the berrylike fruits (between 1/8 to 1/4 inch in diameter) are blue, blue-black or purple-black. HABITAT: Within the range of this species it has been reported from mountains; mountaintops; plateaus; rock walls; clayey cliffs; cliff ledges; bases of cliffs; sandy canyons; canyon bottoms; rocky talus slopes; rocky bluffs; buttes; along ridges; clearings in forests; meadows; hills; rocky-humusy-loamy hillsides; rocky escarpments; bouldery, rocky, shaley and sandy slopes; amongst boulders and rocks; bases of rocks; sheltered spring nooks; uplands; basins; silty valley floors; valley bottoms; railroad beds; along roadsides; arroyos; bottoms of arroyos; gulches; ravines; springs; along streams; along creeks; silty riverbeds; within sandy washes; along and in drainages; along banks of streams and rivers; along (clayey) edges of creeks and marshes; along (rocky-sandy) margins of creeks; shorelines of lakes; sandy and silty bottomlands; along fencerows; along canal banks; along ditches, and riparian areas growing in wet, moist and dry well drained bouldery, bouldery-sandy, rocky, rocky-sandy, shaley, stony, gravelly and sandy ground; rocky-humusy loam, gravelly loam, gravelly-clayey loam, sandy loam, clayey loam and loam ground; gravelly clay, sandy clay, loamy clay and clay ground, and gravelly silty and silty ground, occurring from sea level to 11,400 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, and is valuable in controlling erosion and in stabilizing the banks of streams. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, beverage and/or spice crop; it was also noted as having been used as a fuel, as tools, for making musical instruments (clappers, flutes, music sticks and whistles), as a toy or in games and as a drug or medication. The Blue Elderberry has been reported to be fairly easy to establish from direct seeding and planting of cuttings, rootstock and seedlings and older plants stock. The Blue Elderberry produces valuable cover and food for wildlife as well as perching and nesting sites for birds. This plant provides nesting habitat for the Dusky Flycatcher (*Empidonax oberholseri*), Broad-tailed Hummingbird (*Cynanthus latirostris*), Lincoln Sparrow (*Melospiza lincolnii*), White-crowned Sparrow (*Zonotrichia leucophrys*), MacGilllivray's Warbler (*Oporornis tolmiei*) and Orange-crowned Warbler (*Vermivora celata*). The foliage is browsed by Black Bear (*Ursus americanus*), Elk (*Cervus elaphus*), Mule Deer (*Odocoileus hemionus*), White-tailed Deer (*Odocoileus virginianus*), Pronghorn (*Antilocapra americana*) and other animals; hummingbirds have been observed visiting the flowers for nectar, and the fruits are eaten by many species of birds, including among others: bluebirds, Green-tailed Towhees (*Pipilo chlorurus*), grosbeaks, grouse, House Finches (*Carpodacus mexicanus*), magpies, pheasant, quail, Townsend Solitaires (*Myadestes townsendi*), Warbling Vireos (*Vireo gilvus*), Western Tanagers (*Piranga ludoviciana*) and woodpeckers. When restoring the floodplains of the major river systems in this township consider including the following plants in the mix: Inland Saltgrass (*Distichlis spicata*), Vine Mesquite Grass (*Panicum obtusum*), Indian Rushpea (*Hoffmannseggia glauca*), Little Snapdragon Vine (*Maurandella antirrhiniflora*), Schott Yellowhood (*Nissolia schottii*), Fingerleaf Gourd (*Cucurbita digitata*), Red Sprangletop (*Leptochloa panicea* subsp. *brachiata*), Whiplash Pappusgrass (*Pappophorum vaginatum*), Alkali Sacaton (*Sporobolus airoides*), Big Sacaton (*Sporobolus wrightii*), Hartweg Twinevine (*Funastrum cynanchoides*), Hartweg Twinevine (*Funastrum cynanchoides* subsp. *heterophyllum*), Virginia Creeper (*Parthenocissus quinquefolia*), Canyon Grape (*Vitis arizonica*), Drummond Clematis (*Clematis drummondii*), Mojave Seablite (*Suaeda moquinii*), Prairie Acacia (*Acacia angustissima*), Allthorn (*Koeberlinia spinosa* var. *spinosa*), Desert Saltbush (*Atriplex polycarpa*), Fourwing Saltbush (*Atriplex canescens*), Wright Lycium (*Lycium andersonii* var. *wrightii*), Torrey Lycium (*Lycium torreyi*), Arrowweed (*Pluchea sericea*), Fremont Lycium (*Lycium fremontii*), Creosote Bush (*Larrea tridentata* var. *tridentata*), Greythorn (*Ziziphus obtusifolia* var. *canescens*), Southern Cattail (*Typha domingensis*), Seep Willow (*Baccharis salicifolia*), Whitethorn Acacia (*Acacia constricta*), Desert Hackberry (*Celtis ehrenbergiana*), Catclaw Acacia (*Acacia greggii* var. *greggii*), Soaptree Yucca (*Yucca elata*), Coyote Willow (*Salix exigua*), Screwbean Mesquite (*Prosopis pubescens*), Common Cottonbush (*Cephalanthus occidentalis*), Desert Elderberry (*Sambucus nigra* ssp. *canadensis*), Blue Paloverde (*Parkinsonia florida*), Western Soapberry (*Sapindus saponaria* var. *drummondii*), Netleaf Hackberry (*Celtis laevigata* var. *reticulata*), Velvet Mesquite (*Prosopis velutina*), Western Black Willow (*Salix gooddingii*), Velvet Ash (*Fraxinus velutina*), Arizona Black Walnut (*Juglans major*), Fremont Cottonwood (*Populus fremontii* subsp. *fremontii*). *Sambucus nigra* subsp. *cerulea* is native to west-central and southern North America. *5, 6, 10, 15 (recorded as *Sambucus cerulea* Raf. var. *neomexicana* (E.O. Wooten) A. Rehder), 18, 28, 43 (012510 - *Sambucus cerulea* Raf. var. *neomexicana* Rehder), 44 (062811- color photograph), 46 (recorded as *Sambucus neomexicana* Wooten and *Sambucus coerulea* Raf., Pages 813-814), 48 (genus), 52 (recorded as *Sambucus cerulea* Raf.), 53 (recorded as *Sambucus glauca* Nutt.), 63 (071812 - color presentation), 80 (Species of the genus *Sambucus* are considered to be Rarely Poisonous and Suspected Poisonous Range Plants. "This tall shrub is reported poisonous to livestock and

humans but the cooked berries are harmless."), **85** (071912 - color presentation), 124 (062711 - no record of subspecies; genus and species records), 127, 135, 140 (recorded as *Sambucus nigra* Linnaeus subsp. *cerulea* (Rafinesque-Schmaltz) R. Bolli [*Sambucus mexicana* C. Presl ex DeCandolle], Pages 107-109 & 289)*

Chenopodiaceae: The Goosefoot Family

***Atriplex canescens* (F.T. Pursh) T. Nuttall: Fourwing Saltbush**

COMMON NAMES: Atahi'xp (Seri); Buckwheat Shrub (English)[140]; Bushy Atriplex; Bushy Salt-sage; Bushy Saltsage; Ceniso <cenizo> ("Ashy One", Spanish: Baja California, Chihuahua, Sonora)[140]; Cenizo (Spanish); Chamere (Spanish); Chamiso (a name also applied to other species, Spanish); Chamiso <chamiza> (preferred over Chamise, Spanish: Baja California, Chihuahua, Sonora, New Mexico)[140]; Chamiso Cenizo [Blanco] ("Ashy [White] Chamiso", Spanish: Mexico)[140]; Chamiza; Chamizo (Spanish); Cïw'wïïbïl (Uto-Aztecan: Tübatulabal)[140]; Costilla de Vaca ("Cow's Rib", Spanish: Zacatecas)[140]; Ḍasilk (Yuman: Walapai)[140]; Diwoozhii Ibehi (Navajo); Díwózhiiłbeii <dóy^{w}ózhiłbáʔí, tiwójiiłpáih> ("Grey Greasewood", Athapascan: Navajo)[140]; Dzi'cûp (Uto-Aztecan: Shoshoni)[140]; Four Wing Saltbush; Four Winged Salt Bush; Four Winged Shadscale; Four-wing Salt Bush; Four-wing Salt-bush; Four-wing Saltbush; Four-wing Shadscale; Four-wing Shad-scale; Four-winged Salt Bush; Four-winged Salt-bush (English)[140]; Four-winged Saltbush; Four-winged Shadscale; Fourwing Saltbush; Fourwing Shadscale; Fourwinged Saltbush; Grease-wood (a name also applied to other species); Greasewood; Grey Grease Winter Chamiso; Grease-wood (English)[140]; Grey Sage Brush; Hataj-isijc ("Immature Vulva", Hokan: Seri)[140]; Hataj-ixp ("White Vulva", Hokan: Seri)[140]; Hoary Saltbush; Hoary Wingscale; Ke'ma:we (Zuni - "salt weed" refers to the salty taste of the flowers); Ke'mwe (Language Isolate: Zuni)[140]; Koksvul Sha'i ("Cocoon Bush", Uto-Aztecan: Akimel O'odham)[140]; Mu'kwapt (Yuman: Paipai)[140]; Murunavɨ (Uto-Aztecan: Kawaiisu)[140]; Narrow-leaf Saltbush; Narrowleaf Wingscale; 'Onk 'I:vagi, 'Onk 'I:vakĭ ("Salty Greens", Uto-Aztecan: Hiá Ceḍ O'odham)[140]; 'Onk 'I:wagi <teu'ari> ("Salty Greens", Uto-Aztecan: Tohono O'odham)[140]; Orache (a name also applied to the genus *Atriplex*); [Salt, Wafer]-sage (English)[140]; Sage Brush; Sagebrush; Saladillo ("Little Salty One", Spanish: Baja California, Chihuahua)[140]; Sha'ashkachk Iibatkam (River Pima); Sha'ashkadk Iibadkam ("It Has Rough Fruit", Uto-Aztecan: Akimel O'odham)[140]; Shad Scale; Shad-scale (English)[140]; Shadscale; Suwvi <cüovi, súovi> (Uto-Aztecan: Hopi)[140]; Taʔibi [tónova] (Uto-Aztecan: Northern Paiute)[140]; Ta'^{a}ñaeŋ (Kiow Tanoan: Tewa)[140]; Thinleaf Fourwing Saltbush; Wheel-scale; White Greasewood; Wing-scale; [Wheel-] Wing-scale (English)[140]; Wngscale; Wingscale Saltbush; Yup (Seri); 4-Winged Salt-bush. DESCRIPTION: Terrestrial perennial evergreen (winter-deciduous in cold climates) shrub (erect stems 1 to 10 feet in height; one plant was observed and described as being 4½ feet in height and 4½ feet in width, one plant was observed and described as being 40 inches in height and 5 feet in width, one plant was observed and described as being 5 feet in height and width, one plant was observed and described as being 5 feet in height and 6½ feet in width, plants were observed and described as being 6½ feet in height and width, one plant was observed and described as being 7 feet in height and 13 feet in width, plants were observed and described as being 8 feet in height and 15 feet in width); the branches are gray; the leaves are gray, gray-green, light green or green; the flowers (male and female flowers are usually borne on separate plants; however, this plant has been known to change sexes if stressed) are brown (rarely), cream, green, greenish, greenish-white, greenish-yellow, white-brown, pale yellow, yellow or yellowish; flowering generally takes place between early February and late October (additional records: one for mid-January, four for mid-November, one for late November and one for early December); the mature four-winged fruits (0.4 to 1 inch square bracts) are green or yellow-green drying to pale brown or tan. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; mesas; rocky plateaus; along rocky, rocky-sandy and sandy rims; cliffs; rocky, sandy and clayey canyons; sandy canyon walls; sandy and clayey canyon bottoms; gorges; rocky scree; talus slopes; along gravelly-sandy bluffs; knolls; rocky ledges; rocky and gravelly ridges; rocky-sandy, rocky-loamy and sandy ridgetops; meadows; foothills; rocky, gravelly-sandy, clayey and silty-loamy hills; rocky-gravelly hilltops; bouldery, rocky, gravelly and clayey hillsides; bedrock, bouldery, rocky, rocky-sandy, rocky-loamy, shaley, stony-loamy, cindery, gravelly, gravelly-sandy-loamy, sandy, sandy-loamy, sandy-loamy-silty-powdery, sandy-clayey, sandy-silty, clayey, clayey-loamy and silty-loamy slopes; alluvial fans; sandy bajadas; rocky and gypsum outcrops; amongst rocks; sandy lava flows; sand hills; sand dunes; blow-sand deposits; bouldery debris flows; sandy and sandy-loamy plains; rocky, gravelly, gravelly-loamy, sandy, sandy-loamy and clayey flats; basins; gravelly-sandy, sandy and sandy-loamy valley floors; coastal dunes; sandy coastal plains; coastal flats; coastal saltmarshes; along rocky, gravelly, gravelly-sandy, sandy and sandy-loamy roadsides; arroyos; bottoms of arroyos; draws; gulches; ravines; seeps; around springs; streambeds; along creeks; along sandy creekbeds; in sand along rivers; sandy riverbeds; along rocky, gravelly, gravelly-sandy and sandy washes; along and in drainages; lakebeds; playas; freshwater and saltwater marshes; around and in swamps; depressions; clayey pans; sinks; swales; along (gravelly-sandy, sandy and clayey) banks of arroyos, rivers and drainages; (cindery) edges of washes, ponds, lakes and salt marshes; margins of drainages; gravel bars; beaches; sandy and clayey benches; sandy-loamy terraces; sandy bottomlands; gravelly, gravelly-sandy and sandy floodplains; (Galleta) lowlands; mesquite bosques; ditches; sandy riparian areas; waste places, and disturbed areas growing in muddy and moist and dry bouldery, rocky, rocky-gravelly, rocky-sandy, shaley, cindery, gravelly, gravelly-sandy and sandy ground; rocky loam, stony loam, gravelly loam, gravelly-sandy loam, sandy loam, clayey loam, silty loam and loam ground; sandy clay and clay ground; rocky silty, sandy silty and silty ground, and sandy-loamy-silty powdery ground, occurring from sea level to 8,800 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, fodder, cooking agent (ashes used in place of baking soda and also to give a greenish-blue color to dough), spice and/or dye crop; it was also

noted as having been used as tools, as a drug or medication, to make ceremonial items (including prayer sticks - pahos) and as a commodity used in personal hygiene. The life span of the Fourwing Saltbush has been reported to be from 29 to over 100 years of age. Fourwing Saltbush may be useful in controlling erosion. Mule Deer (*Odocoileus hemionus*), White-tailed Deer (*Odocoileus virginianus*), Elk (*Cervus elaphus*), Black-tailed Jackrabbits (*Lepus californicus*), Pronghorn (*Antilocapra americana*) and Bighorn Sheep (*Ovis canadensis*) and other small mammals browse this plant, and Masked Bobwhite (*Colinus virginianus* subsp. *ridgwayi*), Deer, Grouse, Gray Partridge (*Perdis perdix*), Pronghorn (*Antilocapra americana*), Gambel's Quail (*Callipepla gambelii*), Scaled Quail (*Callipepla squamata*) and other birds as well as Kangaroo Rats, Pocket Mice and other small rodents feed on the fruits and seeds. This plant is a larval food plant for the Pygmy Blue (*Brefidium exile*). Possible predation was reported by the exotic Puncturevine Seed Weevil (*Microlarinus lareynii*). The keying out of Four-wing Saltbushes may be difficult due to intraspecific variation and introgression with other saltbush species. *Atriplex canescens* is native to west-central and southern North America. *5, 6, 13 (Pages 164-166), 15, 16, 18, 26 (color photograph), 28 (color photograph 490), 43 (012710), 44 (062811 - color photograph), 46 (Page 259), 48, 63 (012710 - color presentation), 77, 82, **85** (062911 - color presentation including habitat), 91 ("As a secondary or facultative absorber of selenium, *Atriplex canescens* can be mildly poisonous to livestock where selenium occurs in the soil.", Pages 100-103), 115 (color presentation), 124 (062811), 127, 140 (Pages 111-112 & 289)*

Atriplex wrightii S. Watson: Wright's Saltbush

COMMON NAMES: Wright Saltbush; Wright's Orach; Wright's Salt Bush; Wright's Saltbush. DESCRIPTION: Terrestrial annual forb/herb (ascending and erect stems 6 inches to 6 feet in height); the stems are reddish; the leaves are bright green above and silvery beneath; the flowers are inconspicuous; flowering generally takes place between early June and mid-September (additional record: one for late April). HABITAT: Within the range of this species it has been reported from mountains; canyons; hills; rocky and clayey-loamy slopes; valley floors; along railroad right-of-ways; along rocky roadsides; draws; springs; along rivers; along riverbeds; along washes; clayey playas; sandy depressions; (sandy) banks of rivers; terraces; bottomlands; floodplains; ditches; clayey-loamy ditch banks; riparian areas; waste places, and disturbed areas growing in damp and dry rocky and sandy ground; clayey loam ground, and clay ground, occurring from sea level to 7,000 feet in elevation in the woodland, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food and/or spice crop. This plant reportedly provides food for Mule Deer (*Odocoileus hemionus* subsp. *crooki*), Antelope and Quail. *Atriplex wrightii* is native to southwest-central and southern North America. *5, 6, 43 (070209), 44 (062911 - no species record; genus record), 46 (Page 258), 63 (012810), 68, **85** (062911 - color presentation), 124 (062911 - no species record; genus record), 127*

Chenopodium berlandieri C.H. Moquin-Tandon: Pitseed Goosefoot

COMMON NAMES: Belle Dame Sauvage (French: Louisiana)[140]; Berlandier Goosefoot; Berlandier's Goosefoot; Berlandiers Gänsefuß (German); Berlandier Netseed; Bledo (Spanish)[140]; Bledo Extranjero (Spanish - applied to subsp. *nuttalliae*); Cual (Uto-Aztecan: Tohono O'odham)[140]; Cuatztli (Uto-Aztecan: Náhuatl)[140]; Choupichoul (Gulf: Natchez)[140]; Chuale <chual, choale, guate> (Spanish: Mexico)[140]; Cotasula (Uto-Aztecan: Guarijío)[140]; Čuá <činaka, čuaka, chu-aka, chu-ya> (Uto-Aztecan: Tarahumara)[140]; Dích'íí 'Ik'eht'ąą' <dokó□z ʔikt'ąʔí> (Athapascan: Navajo)[140]; Hdhpši (Yuman: Cocopa)[140]; Ho:ohal (Uto-Aztecan: Tübatulabal)[140]; Höhöla (Uto-Aztecan: Hopi)[140]; Huaquilitl (Uto-Aztecan: Náhuatl)[140]; Huauthli (Spanish - applied to subsp. *nuttalliae*); Huauzontle (Spanish - applied to subsp. *nuttalliae*); Huauzontle <guausoncles, guauzoncles, huauzontl, huauzontli, huanzoncle> (Uto-Aztecan: Náhuatl)[140]; I'ûpi (Uto-Aztecan: Shoshoni; other species with different names)[140]; It'ąą Dit'ógé, It'ąą Nch'ii'é <it'ą inkozee> (Athapascan: Western Apache)[140]; Ita ("Leaf", Athapascan: Chiricahua and Mescalero Apache)[140]; Iwagi <ihwagi> (Uto-Aztecan: Tohono O'odham)[140]; Kapa (Uto-Aztecan: Yaqui)[140]; Ki'awet <kehawut, keit, kit> (Uto-Aztecan: Cahuilla)[140]; Kia'tsanna (Language Isolate: Zuni)[140]; Kö 'Yo (Uto-Aztecan: Northern Paiute)[140]; Kobu <cobu> (Uto-Aztecan: Nevome)[140]; Kokoncher <kokeynchár> (Uto-Aztecan: Mountain Pima)[140]; Koovi (Uto-Aztecan: Kawaiisu)[140]; Kovĭ (Uto-Aztecan: Akimel O'odham)[140]; Kwa'thami <quoth ah me> (Yuman: Mohave)[140]; Łibá'ígí <łabáʔígí> (Athapascan: Navajo)[140]; Łichíí' <łčíʔ> ("The One That Is Red", Athapascan: Navajo)[140]; Michihuatli (Uto-Aztecan: Náhuatl)[140]; Net-seeded Lamb's Quarters; Netseed Lambsquarters; Nuttalls Gänsefuß (German - applied to subsp. *nuttalliae*); 'Onk I:wagi ("Salty Edible Greens", Uto-Aztecan: Tohono O'odham)[140]; Pigseed Goosefoot; Pigweed (a name also applied to the genus *Chenopodium*); Pit-seed Goosefoot (English)[140]; Pit-seeded Goosefoot; Pitseed Goosefoot; Pitted Goosefoot; Quelite [Cenizo, Salado] ("[Ashy, Salty] Greens", Spanish: Mexico)[140]; Sirwa (Uto-Aztecan)[140]; Síswa (Uto-Aztecan: Hopi)[140]; Southern Huauzontle (Spanish - applied to subsp. *nuttalliae*); Stinking Lamb's-quarters; Ṣu:'uwaḍ (Uto-Aztecan: Tohono O'odham)[140]; Ṣu:'uwaḍ <šu'awat> (Uto-Aztecan: Onavas Pima)[140]; Teksasinsavikka; Tł'ohdeeí [Ts'oh, Ts'yaa] <y'oh de' [c'o's, ci'yah]> (Athapascan: Navajo)[140]; Tł'oh Łigai <tł'oh łigaii> (Athapascan: Navajo)[140]; Uauhquilitl (Uto-Aztecan: Náhuatl)[140]; Uauhtli (Uto-Aztecan: Náhuatl; name of *Chenopodium* seed)[140]; Uha (Uto-Aztecan: Onavas Pima)[140]; Waha <waja, wakk> (Uto-Aztecan: Mountain Pima)[140]; We'lel (Chumash: Barbareño Chumash)[140]; Welel (Chumash: Ineseño Chumash)[140]; Wɨtā <wa·'ta'> (Uto-Aztecan: Northern Paiute)[140]; Wiwida <guiguida> (to plant goosefoot or to scatter salt on food, Uto-Aztecan: Mountain Pima)[140]. DESCRIPTION: Terrestrial annual forb/herb (ascending to erect stems 4 inches to 6 feet in height); the stems are often reddish; the foliage is green; the inconspicuous flowers are light green, green, greenish-gray, greenish-white, white or yellow-green; flowering generally takes place between early April and late October (additional records: one for late January, one for mid-February, one for late February and two for late November). HABITAT: Within the range of this species it has been reported from mountains; gravelly-loamy mountainsides; sandy mesas; cliffs; bases of cliffs; rocky canyons; rocky and rocky-sandy and sandy canyon bottoms; sandy and loamy ridges; meadows; bouldery foothills; hills; hilltops; clayey hillsides; bouldery, rocky,

gravelly-loamy, sandy, sandy-loamy, clayey and silty-clayey slopes; alluvial fans; rocky outcrops; amongst boulders; boulder fields; dunes; steppes; silty plains; clayey, silty-loamy and silty-clayey flats; basins; silty-loamy valley floors; silty-loamy valley bottoms; coastal saltwater marshes; along sandy coastlines; along railroad right-of-ways; in sandy roadbeds; along gravelly, gravelly-loamy and sandy roadsides, arroyos; clayey draws; gulches; seeps; springs; bouldery-stony-gravelly-sandy and sandy soils along streams; streambeds; along creeks; along and in sandy creekbeds; in sandy soil along rivers; along and in riverbeds; along and in rocky, rocky-gravelly-sandy and sandy washes; along drainages; drainage ways; poolbeds; muddy lakebeds; bogs; freshwater marshes; clayey depressions; swales; along (sandy) banks of creeks, rivers and washes; edges of salt marshes; along (sandy) margins of creeks, washes; pools, ponds, lakes and marshes; along shores of lakes; mudflats; sandbars; sandy beaches; cobbly-sandy and sandy benches; cobbly-sandy and sandy terraces; sandy and clayey bottomlands; sandy and clayey floodplains; along fencelines; stock ponds; along and in ditches; ditch banks; rocky, gravelly-sandy and sandy riparian areas; waste places, and disturbed areas growing in moist and dry bouldery, bouldery-stony-gravelly-sandy rocky, rocky-gravelly-sandy, rocky-sandy, cobbly-sandy, gravelly, gravelly-sandy and sandy ground; gravelly loam, sandy loam, clayey loam and loam ground; silty clay and clay ground, and silty ground, occurring from sea level to 10,300 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: The foliage is browsed by Brush Rabbits (*Sylvilagus bachmani*). Pitseed Goosefoot is a host plant of the Beet Leafhopper which transmits the Curly Top Virus to Sugarbeets. *Chenopodium berlandieri* is native to northwestern, northern, central and southern North America. *5, 6, 15, 43 (070209), 44 (063011 - color photograph), 46 (Page 253), 63 (012910), 77, **85** (070111 - color presentation), 101 (color photograph), 124 (063011), 140 (Pages 112-114 & 289)*

***Monolepis nuttalliana* (J.A. Schultes) E.L. Greene: Nuttall's Povertyweed**

COMMON NAMES: Annual Povertyweed; Monolepis (a name also given to the genus *Monolepis*); Nutall Monolepis; Nuttall Poverty Weed; Nuttall Poverty-weed; Nuttall Povertyweed; Nuttall's Monolepis; Nuttall's Poverty Weed; Nuttall's Poverty-weed; Nuttall's Povertyweed; Opon (Pima); Papago Spinach; Patata; Patota; Patota Povertyweed; Patote; Poverty Weed (a name also given to other species and the genus *Monolepis*); Poverty-weed (a name also given to other species and the genus *Monolepis*); Povertyweed (a name also given to the genus *Monolepis*); Spear Leaved Goosefoot; Spear Leaved Povertyweed; Spear-leaved Goosefoot; Spear-leaved Povertyweed; Suolasavikka. DESCRIPTION: Terrestrial annual forb/herb (prostrate to ascending stems 2 to 20 inches in height); the inconspicuous flowers are green, greenish or yellow; flowering generally takes place between late January and early August (additional records: two for late August, two for early September, one for late September and one for mid-December). HABITAT: Within the range of this species it has been reported from mountains; grassy mesas; plateaus; cliffs; canyons; canyon bottoms; stony-cobbly, sandy and scree; chalky bluffs; rocky, rocky-gravely-clayey and clayey buttes; hogbacks; rocky-clayey knolls; ledges; rocky, shaley, gravelly, sandy and clayey ridges; rocky, shaley, stony, stony-cobbly, sandy and clayey ridgetops; bases of ridges; clearings in forests; rocky, loamy and clayey meadows; foothills; rocky, rocky-clayey, shaley and clayey hills; clayey hilltops; hillsides; bouldery, rocky, rocky-sandy, shaley, shaley-clayey, stony, stony-cobbly, stony-sandy, gravelly, gravelly-clayey, pebbly-clayey, sandy, sandy-loamy, sandy-clayey, loamy, clayey and silty-clayey slopes; rock outcrops; rocky-clayey rock beds; sand dunes; shaley breaks; sandy-clayey and clayey mounds; rocky clay and clay hardpans; sandy steppes; sandy prairies; clayey plains; prairie dog towns; uplands; rocky, gravelly, gravelly-sandy, sandy, sandy-loamy, sandy-clayey, loamy, clayey, silty and silty-clayey flats; basins; rocky-sandy and clayey valley floors; along railroad right-of-ways; roadbeds; along rocky-sandy, gravelly, gravelly-sandy, clayey and silty roadsides; along arroyos; clayey draws; gravelly-sandy bottoms of draws; gulches; gullies; within seeps; around springs; along streams; streambeds; along creeks; creekbeds; along rivers; rocky-sandy riverbeds; along and in gravelly-sandy, gravelly-loamy, sandy, sandy-loamy, sandy-silty and silty washes; around and in shaley, sandy, clayey, clayey-loamy and silty-loamy drainages; poolbeds; around ponds; silty lakebeds; silty playas; in soggy mossy areas; marshes; clayey depressions; sinks; swales; (sandy, loamy and clayey-silty) banks of draws, streams, creeks and rivers; (sandy) edges of draws, springs, ponds, lakes and lakebeds; around (sandy) margins of rivers, poolbeds, ponds and lagoons; (silty-clayey) shores of lakes and lakebeds; stony-cobbly gravel and gravel bars; sandy beaches; shaley benches; terraces; sandy and clayey bottomlands; sandy-clayey, loamy and clayey floodplains; clayey lowlands; dams; clayey catchments; around and in (drying beds) stock tanks (charcos); in mud and rocks around reservoirs and in draw-down areas; canal banks; along clayey and silty ditches; sandy and sandy-clayey riparian areas; waste places, and disturbed areas growing in muddy and wet, moist, damp and dry desert pavement; bouldery, rocky, rocky-gravelly-sandy, rocky-sandy, shaley, shaley-sandy, stony, stony-cobbly, stony-cobbly-gravelly, stony-sandy, gravelly, gravelly-sandy and sandy ground; rocky-sandy loam, gravelly loam, sandy loam, sandy-clayey loam, clayey loam, silty-loam, silty-clayey loam and loam ground; rocky clay, rocky-gravelly clay, shaley clay, gravelly clay, pebbly clay, sandy clay, silty clay and clay ground; sandy silty, clayey silt and silty ground; peaty ground, and sandy chalky and chalky ground, occurring from 100 to 11,600 feet in elevation in the tundra, forest, woodland, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a food, fodder and drug or medication. *Monolepis nuttalliana* is native to northwestern, northern, west-central and southern North America. *5, 6, 16, 43 (013010), 44 (070211 - color photograph), 46 (Page 254), 58, 63 (013010 - color presentation), 68, 77, 80 (This species is listed as a Major Poisonous Range Plant. "The toxic principle in Patota is nitrate. The accumulation of toxic quantities of nitrate in the plant varies from year to year and generally is the result of marked change in the growth pattern of the plant. ... Control of Patota on a large scale would be impractical and not necessarily desirable as this plant does provide good nutritious feed for livestock during a normal growing season." See text for additional information.), **85** (070611 - color presentation of dried material), 124 (070211), 127*

Salsola australis (see *Salsola tragus*)

Salsola iberica (see *Salsola tragus*)

Salsola kali (see *Salsola tragus*)

Salsola kali subsp. *tenuifolia* (see *Salsola tragus*)

Salsola kali var. *tenuifolia* (see *Salsola tragus*)

Salsola kali subsp. *tragus* (see *Salsola tragus*)

***Salsola tragus* C. Linnaeus: Prickly Russian Thistle**

SYNONYMY: *Salsola australis* R. Brown; *Salsola iberica* (f. Sennen & C. Pau) V.P. Botschantzev ex S.K. Czerepanov; *Salsola kali* C. Linnaeus; *Salsola kali* C. Linnaeus subsp. *tenuifolia* C.H. Moquis-Tandon; *Salsola kali* C. Linnaeus var. *tenuifolia* I.F. Tausch; *Salsola kali* C. Linnaeus subsp. *tragus* (C. Linnaeus) L.J. Čelakovský. COMMON NAMES: Cardo Ruso; Chamiso; Chamiso Valador; Ci Sha Peng (transcribed Chinese); Coast Saltwort; Common Russian Thistle (a name also applied to other species); Common Russian Thistle Tumbleweed; Hari Hijikii (transcribed Japanese); Leap the Field; Prickly Russian Thistle (a name also applied to other species); Russian Cactus (a name also applied to other species); Russian-cactus; Russian Thistle (a name also applied to the genus *Salsola*); Russian-thistle (a name also applied to the genus *Salsola*); Russian Tumble Weed; Russian Tumble-weed; Russian Tumbleweed (a name also applied to the genus *Salsola*); Soude Epineuse (French); Soude Roulante (French); Spineless Saltwort; Tumbleweed (a name also applied to other species); Tumbling Thistle; Ukraine Salzkraut (German); Volador; Wind Witch; Wind-witch; Windwitch. DESCRIPTION: Terrestrial annual forb/herb (ascending and/or erect stems 2 inches to 7 feet in height; plants were observed and described as being 4 feet in height and 3 feet in width); the foliage may be blue-green, gray-green, grayish-green, green, purple or red striped, reddish-purple or yellow-green; the inconspicuous flowers (without petals) are brown, pale green, green, green-red, pink, white, whitish, whitish-green, white-pink, white-yellow or yellowish-green; flowering generally takes place between early April and mid-November (additional records: one for early February, one for mid-March and one for early December); the fruit is a reddish top-shaped pod with papery wings. HABITAT: Within the range of this species it has been reported from mountains; gravelly mountainsides; sandy bases of mountains; sandy mesas; plateaus; canyon rims; chalky cliffs; bases of cliffs; rocky and sandy canyons; bouldery-gravelly-sandy, rocky and sandy canyon bottoms; bluffs; cindery (scoria) buttes; rocky- rocky, sandy and sandy-loamy ridges; sandy rims of craters; rocky-clayey foothills; rocky, sandy and clayey hills; rocky, gravelly and sandy hillsides; sandy bases of escarpments; bouldery, rocky, rocky-gravelly, rocky-sandy-loamy, shaley, cindery, gravelly, gravelly-loamy, gravelly-sandy-loamy, sandy, sandy-loamy, loamy, clayey, clayey-loamy and silty slopes; alluvial fans; bajadas; rocky and shaley outcrops; sand hills; sand dunes; sandy berms; sandy-clayey breaks; clayey prairie dog towns; steppes; prairies; sandy plains; sandy uplands; gravelly, gravelly-clayey, sandy, sandy-loamy, sandy-silty, clayey and silty flats; basins; gravelly, gravelly-sandy and sandy valley floors; valley bottoms; coastal dunes; sandy coastal beaches; coastal salt marshes; clayey prairie dog towns; along gravelly-clayey railroad right-of-ways; gravelly roadbeds; sandy roadcuts; along rocky-sandy, shaley-clayey-loamy, gravelly, gravelly-sandy, gravelly-clayey, sandy, sandy-loamy, sandy-clayey and clayey roadsides; sandy arroyos; bottoms of arroyos; rocky-sandy, sandy, loamy and loamy-clayey draws; bottoms of draws; gravelly gullies; seeps; along streams; along sandy streambeds; along cobbly-loamy, sandy and sandy-silty creekbeds; along rivers; along rocky, rocky-sandy, sandy, sandy-clayey and clayey riverbeds; along bouldery, sandy, sandy-loamy and sandy-clayey washes; within gravelly-clayey, sandy and clayey drainages; pondbeds; around lakes; lakebeds; sandy-loamy playas; ciénegas; marshes; depressions; gravelly and gravelly-sandy swales; (sandy, clayey and clayey-loamy) banks of springs, streams, rivers and washes; (sandy) edges of creeks and marshes; margins of streams and rivers; (sandy and clayey-loamy) shores of lakes; mudflats; cobble, sand and silt bars; sandy and sandy-clayey beaches; sandy and clayey benches; cobbly-gravelly and gravelly terraces; sandy-clayey bottomlands; along sandy, sandy-clayey and clayey floodplains; mesquite bosques; along fencelines; around and in (dry) stock tanks; along banks and shores of reservoirs; along canals; along sandy ditches; along sandy ditch banks; bouldery-cobbly-sandy, gravelly, sandy and silty-loamy riparian areas; sandy waste places, and disturbed areas growing in wet and dry desert pavement; bouldery, bouldery-cobbly-sandy, bouldery-gravelly-sandy, rocky, rocky-sandy, stony, cobbly-gravelly, cindery, gravelly, gravelly-pebbly, gravelly-sandy and sandy ground; rocky-sandy loam, shaley-clayey loam, cobbly loam, gravelly loam, gravelly-sandy loam, sandy loam, sandy-clayey loam, clayey loam, silty loam and loam ground; rocky clay, gravelly clay, gravelly-sandy clay, sandy clay, loamy clay and clay ground; sandy silty and silty ground, and chalky ground, occurring from sea level to 9,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used for food, fodder and as a drug or medication. Russian Thistle is a host plant of the Beet Leafhopper which transmits the Curly Top Virus to Sugarbeets *Salsola tragus* is native to northern, central, eastern and southern Europe; Asia, and northern Africa. *5, 6, 15 (recorded as *Salsola iberica* Sennen & Pau), 16 (recorded as *Salsola iberica* Sennen & Pau), 28 (recorded as *Salsola iberica*, color photograph), 43 (070309), 44 (070611), 46 (recorded as *Salsola kali* L. and *Salsola kali* L. var. *tenuifolia* Tausch, Page 264), 58 (recorded as *Salsola iberica* Sennen & Pau), 63 (013010 - color presentation), 68 (of *Salsola kali* L. var. *tenuifolia* Tausch, "It is a host plant for the sugarbeet leafhopper which carries the virus causing curly top in beets. It is also the source of "blight" in other crop plants such as tomatoes, spinach and beans. ... May store toxic amounts of nitrates after periods of fast growth."), 77

(recorded as *Salsola australis* R. Br.), 80 (*Salsola kali* L. var. *tenuifolia* is listed as a Major Poisonous Range Plant. "Russian thistle is capable of storing up toxic quantities of nitrate, particularly during the flush period of growth. *Salsola* has also been suspected of causing oxalate poisoning in Australia. ... Large-scale control can best be accomplished through range improvement to replace the thistle with grass." See text for additional information.), **85** (070711 - color presentation, J.J. Thornber reported on August 8, 1913, that Russian Thistle (*Salsola kali* L.) was recently introduced and rapidly spreading at a population observed in the Rillito bottomlands east of Tucson,), 101 (recorded as *Salsola iberica* Sennen, color photograph), 115 (color presentation), 124 (070611), 127, 140 (Page 289)*

Convolvulaceae: The Morning-glory Family

***Ipomoea cristulata* H.G. Hallier: Trans-Pecos Morning-glory**

COMMON NAMES: Bi:bhiag (Uto-Aztecan: Tohono O'odham)[140]; Heguerilla (a name also applied to other species, Spanish)[140]; Kusáʔrupų (Uto-Aztecan: Ute)[140]; Redadera ("Twiner", Spanish: Mountain Pima)[140]; Scarlet Creeper; Scarlet Creeper [Morning-glory] (English)[140]; Scarlet Morning Glory; Scarlet Morning-glory; Situlyi <shiitulyi> (Uto-Aztecan: Mountain Pima)[140]; Star Glory Morning-glory; Tł'é' Godigáhá (Athapascan: Western Apache)[140]; Trans Pecos Morning-glory; Trans Pecos Morningglory; Trans-Pecos Morning-glory; Transpecos Morning Glory (English: New Mexico)[140]; Transpecos Morningglory. DESCRIPTION: Terrestrial annual forb/herb or vine (climbing and/or twining stems 8 inches to 11½ feet in length); the entire, 3 to 5 parted or palmately-lobed leaves are green or dark green; the trumpet-shaped flowers (to ¾ inch in width) may be bright orange, orange-red, dark pink, bright red, red, dark red, red-orange, reddish-orange or scarlet; the pistils are white; the stamens are yellow; flowering generally takes place between early August and late October (additional records: one for mid-November and two for late December). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; mesas; rocky canyons; canyon bottoms; chasms; crevices in rock; foothills; rocky hills; rocky, rocky-gravelly-loamy and rocky-clayey hillsides; rocky, gravelly, gravelly-loamy, sandy and clayey-loamy slopes; bajadas; amongst rocks; sandy lava flows; clayey-loamy flats; valley floors; along rocky and gravelly-loamy roadsides; sandy arroyos; bottoms of arroyos; sandy draws; within gullies; along and in rocky and rocky-sandy streambeds; along creeks; along and in rocky and sandy creekbeds; sandy soils along rivers; along and in sandy washes; within drainages; ciénegas; swampy areas; (sandy and silty) banks of creeks, rivers and washes; amongst creek bank shrubs; edges of washes; margins of arroyos; sandy terraces; bottomlands; floodplains; mesquite bosques; along ditches; along rocky, gravelly and sandy riparian areas, and disturbed areas growing in moist, damp and dry rocky, rocky-sandy, gravelly and sandy ground; rocky-gravelly loam, gravelly loam, gravelly-clayey loam and clayey loam ground; rocky clay ground, and silty ground, occurring from 100 to 9,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The flowers open about 10 AM. Butterflies and hummingbirds may visit the flowers. *Ipomoea cristulata* is native to southwest-central and southern North America. *5, 6, 18 (genus), 43 (071910 - no record of species), 44 (070911 - no record of genus (under Common Names listing) or species), 46 (no record of species), 48 (genus), 63 (071910), 77, **85** (070911 - color presentation), 86 (color photograph), 115 (color presentation), 124 (111910), 140 (Pages 119-120 & 289), **HR** (recorded as *Ipomoea coccinea*)*

Ipomoea hirsutula N.J. von Jacquin f. (see *Ipomoea purpurea*)

***Ipomoea purpurea* (C. Linnaeus) A.W. Roth: Tall Morning-glory**

SYNONYMY: *Ipomoea hirsutula* J.F. von Jacquin f. COMMON NAMES: Annual Morning Glory; Annual Morning-glory; Bejuco (Hispanic); Bindweed (a name also applied to other species and the genus *Ipomoea*); Carriuela; Common Morning Glory; Common Morning-glory; Common Morningglory; Entireleaf Morning-glory; Garden Morning-glory; Manto (Hispanic); Mexican Morning-glory; Morning Glory (a name also applied to other species and the genus *Ipomoea*); Morning-glory (a name also applied to other species and the genus *Ipomoea*); Platu Kak' Araku' (Purépecha); Purperwinde (Afrikaans); Quiebra Platos (Hispanic); Red Morning Glory (a name also applied to other species and the genus *Ipomoea*, southwest Missouri); Red Morning-glory (a name also applied to other species and the genus *Ipomoea*, southwest Missouri); Rope-wind; Ropewind; Tall Morning-glory; Tall Morningglory; Woolly Morning-glory. DESCRIPTION: Terrestrial annual forb/herb or vine (trailing and twining stems 1 to 30 feet in length); the heart-shaped entire to 3- to 5-lobed leaves are green; the flowers (1½ to 2½ inches in diameter) may be pale blue, blue, blue-purple, blue-violet, blue & white, lavender, magenta with pink or white throats, bright pink, pink, pink-purple, purple, dark purple with blue, purple-blue, purple & white, purple with a white throat, red, violet, violet-purple, white or white tinged with purple; flowering generally takes place between late June and mid-November (additional record: one for late April). HABITAT: Within the range of this species it has been reported from mountains; rocky cliffs; rocky canyons; canyon bottoms; gravelly ridgetops; meadows; foothills; hills; hillsides; rocky, rocky-gravelly, stony-clayey, gravelly, gravelly-loamy, clayey-loamy and loamy slopes; alluvial fans; amongst rocks; plains; rocky, rocky-clayey, stony-clayey, cobbly-sandy and clayey flats; valley floors; along gravelly-sandy, gravelly-loamy and sandy-loamy roadsides; within rocky arroyos; rocky-sandy bottoms of arroyos; seeps; along streams; along rocky streambeds; sandy creekbeds; along rivers; sandy riverbeds; along sandy washes; drainage ways; along sandy beaches; terraces; sandy floodplains; mesquite bosques; along fencelines; along ditches; banks of levees; gravelly-clayey-loamy riparian areas; waste places, and disturbed areas growing in moist, damp and dry rocky, rocky-gravelly, rocky-sandy, cobbly-sandy, gravelly, gravelly-sandy and sandy ground; gravelly loam, gravelly-sandy-clayey loam, gravelly-clayey loam, sandy loam, clayey loam and loam ground, and rocky clay, stony clay, sandy clay and clay

ground, occurring from sea level to 7,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant. *Ipomoea purpurea* is native to the tropical Americas. *5, 6, 15, 18 (genus), 28 (color photograph), 30, 43 (070409), 44 (070911 - no listing of Common Names under genus or species, color photograph), 46 (Page 678), 48 (genus), 58, 63 (013110 - color presentation), 68, 85 (070911 - color presentation of dried material), 86 (color photograph), 101 (color photograph), 124 (070911), 140 (page 122), **HR***

Cucurbitaceae: The Cucumber Family

Cucurbita foetidissima K.S. Kunth: Missouri Gourd

COMMON NAMES: American Colycinth; Arizona Gourd; Buffalo Gourd; Buffalo-gourd; Buffalogourd; Buffalogourd Pumpkin; Calabacilla Amarga (Spanish); Calabacilla Loca; Calabazilla (a name also applied to other species, Spanish: New Mexico, southern California); Calabazilla Loca; Calabrazilla; Chili Cojota (California); Chili Cojote; Chili Coyote; Chili-cojote; Chili-coyote; Chilicote (a name also applied to other species, Spanish); Feral Buffalo Gourd; Fetid Gourd; Fetid Wild Gourd; Fetid Wild Pumpkin; Foetid Gourd; Foetid Wild Pumpkin; Gourd (a name also applied to other species and the genus *Cucurbita*); Missouri Gourd; Mongkong Nikašiga ("Human Being Medicine", Osage); Mongkong Tongga ("Big Medicine", Osage); Niashiga Makan ("Human-being Medicine", Omaha-Ponca); Prairie Gourd; Prairie Gourd Vine; Stink Gourd; Stinking Cucumber; Stinking Gourd; Wagamun Pezhuta ("Pumpkin Medicine", Dakota); Wild Gourd (a name also applied to other species); Wild Pumpkin. DESCRIPTION: Terrestrial perennial forb/herb or vine (prostrate creeping, sprawling and/or trailing stems 40 inches to 20 feet in length); the large triangular leaves (to 12 inches in height on a stalk to 12 inches in height) are gray-green above and whitish beneath; the funnel-shaped flowers (2 to 3 inches in diameter) may be golden, orange, orange-yellow, purple (rarely reported - 1 record), yellow or yellow-orange; flowering generally takes place between mid-April and early October; the striped gourd-like fruits (3 to 4 inches in diameter) are light and dark green aging to lemon, lemon-yellow, pale yellow, yellow or tan. HABITAT: Within the range of this species it has been reported from mountains; plateaus; rocky cliffs; rocky canyons; rocky and sandy canyon bottoms; ridges; ridgetops; meadows; rocky and clayey-loamy hills; clayey hillsides; sandy bases of escarpments; rocky, rocky-sandy, sandy-loamy and silty-loamy slopes; rocky piedmonts; clayey breaks; sand dunes; prairies; plains; gravelly, sandy and clayey-loamy flats; basins; sandy valley floors; valley bottoms; railroad right-of-ways; along rocky, gravelly-sandy, gravelly-loamy and sandy roadsides; arroyos; draws; bottoms of draws; ravines; springs; sandy riverbeds; in sandy washes; along and in rocky-sandy drainages; clayey depressions; swales; (gravelly-sandy and sandy) banks of creeks and rivers; edges of ponds; along margins of arroyos and rivers; sandy and clayey benches; sandy terraces; sandy bottomlands; sandy floodplains; mesquite bosques; fence corners; along gravelly ditches; ditch banks; sandy riparian areas; waste places, and disturbed areas in wet, moist and dry rocky, rocky-sandy, shaley, cindery, gravelly, gravelly-sandy and sandy ground; gravelly loam, sandy loam, clayey loam and silty loam ground, and sandy clay and clay ground, occurring from sea level to 8,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, and may be useful as a ground cover; however, the foliage may be considered to be ill-scented. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, fiber, and/or dye crop; it was also noted as having been used as a ceremonial item, as musical instruments, toys and rattles, for cooking tools, as a drug or medication and as a commodity used in personal hygiene. The mature fruits of this plant may be slightly poisonous. *Cucurbita foetidissima* is native to south-central and southern North America. *5, 6, 15, 28 (color photograph 372), 43 (070409), 44 (071011 - color photograph), 46 (Page 822), 48 (genus), 58, 63 (070911 - color presentation), **85** (071011 - color presentation), 86 (color photograph), 115 (color presentation), 124 (071011), 127*

Euphorbiaceae: The Spurge Family

Chamaesyce S.F. Gray: Sandmat

COMMON NAME: Carpet-weed; Carpetweed; Chamaesyce; Ground Spurge; Mat Spurge; Mat-spurge; Matspurge; Sandmat; Prostrate Spurge; Prostrate-spurge; Spurge (a name also applied to the genus *Euphorbia*). *43 (042510), 44 (071111), 46 (Pages 513 & 518-520), 63 (042510), 85 (042510), 124 (071111), **WTK** (April 16, 2008)*

Chamaesyce arizonica (G. Engelmann) J.C. Arthur: Arizona Sandmat

SYNONYMY: *Euphorbia arizonica* G. Engelmann. COMMON NAMES: Arizona Broomspurge; Arizona Euphorbia; Arizona Sand Mat; Arizona Sand-mat; Arizona Sandmat; Arizona Spurge; Spurge (a name also applied to other species, the genus *Euphorbia* and to the Euphorbiaceae). DESCRIPTION: Terrestrial perennial forb/herb (prostrate, ascending and or erect stems 6 to 12 inches in height); the foliage appears reddish or reddish-purple; the leaves are green with red margins; the flower-like cups have maroon glands (centers) with pink or white petaloid appendages; flowering generally takes place between mid-January and early December. HABITAT: Within the range of this species it has been reported from bouldery mountains; rocky-sandy mountaintops; bouldery-rocky cliffs; bouldery and rocky canyons; rocky and gravelly canyon bottoms; scree; gravelly bases of cliffs; bluffs; rocky ledges; ridgetops; foothills; rocky hills; rocky hillsides; rocky and gravelly-loamy slopes; amongst boulders and rocks; boulder fields; plains; gravelly and sandy flats; valley floors; along sandy roadsides; along sandy arroyos; rocky bottoms of arroyos; gulches; sandy seeps; damp sand of seeping streams; along sandy streams; along and in rocky-gravelly

streambeds; along and in creeks; sandy creekbeds; along rivers; riverbeds; along and in bedrock, rocky, rocky-sandy, gravelly, gravelly-sandy and sandy washes; along and in drainages; swales; banks of washes; edges of creeks and washes; sandy-clayey bars; riparian areas, and disturbed areas growing in damp and dry bouldery, bouldery-rocky, rocky, rocky-gravelly, rocky-sandy, gravelly, gravelly-sandy and sandy ground; gravelly loam ground; sandy-clayey, and bouldery silty and silty ground, occurring from 100 to 5,000 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: The stems have a milky sap. *Chamaesyce arizonica* is native to southwest-central and southern North America. *5, 6, 18 ("All euphorbias have milky white sap that is irritating on contact or toxic, if ingested, (degree of irritation or toxicity varies, depending on the species)."), 43 (020310), 44 (071111), 46 (recorded as *Euphorbia arizonica* Engelm., Pages 519-520), 58, 63 (020310), 68 (see: Poisonous Properties of Spurges, Page 202), 77, 80 (Species of the genus *Euphorbia* are considered to be Secondary Poisonous Range Plants. "The milky juice of Spurge is considered poisonous. Plants may cause skin irritation, diarrhea, photosensitization, and cyanogenetic poisoning. Cattle, horses, sheep, and humans may be affected. The green plants are generally unpalatable but the dried plants in hay are more palatable and remain toxic. ... Poisoning may be prevented by keeping animals off areas heavily infested with spurge when other desirable feed is unavailable, and by not feeding contaminated hay. Range improvement will both reduce spurge infestations through grass competition, and decrease consumption by making more desirable forage available." See text for additional information.), **85** (071111 - color presentation of dried material), 86 ("Most members of the family (Euphorbiaceae) are poisonous, and their milky sap will irritate the membranes of the eyes and mouth."), 124 (071111 - no record of species; genus record), 140 (Page 291)*

***Chamaesyce hyssopifolia* (C. Linnaeus) J.K. Small: Hyssopleaf Sandmat**

SYNONYMY: *Euphorbia hyssopifolia* C. Linnaeus. COMMON NAMES: Burra Leitera ("Donkey's Milk", Portuguese: Brazil)[140]; Erva de Leite ("Milk Herb", Portuguese: Brazil)[140]; Erva de Santa Luzia ("St. Lucia's Herb", Portuguese: Brazil)[140]; Golondrina ("Swallow", Spanish: Mexico)[140]; Hyssop Spurge (English)[140]; Hyssopleaf Euphorbia; Hyssopleaf Sandmat; Hyssopleaf Spurge; Leafy Spurge (a name also applied to other species); Pau de Leite ("Milk Tree", Portuguese: Brazil)[140]; [Hyssop-leaf] Sandmat (English: Arizona, Florida, New Mexico)[140]; Vipgam ("It Has Much Milk", Uto-Aztecan: Onavas Pima)[140]; Wi:bkam ("It Has Much Milk", Uto-Aztecan: Tohono O'odham)[140]. DESCRIPTION: Terrestrial annual or perennial forb/herb (prostrate, ascending and/or erect stems 4 inches to 2 feet in height/length); the stems are red or reddish; the leaves are green; the inconspicuous flower-like cups have pink glands with pink, purplish reddish, white or white-pink petaloid appendages; flowering generally takes place between early July and mid-November (additional records: one for early January, one for mid-January, one for late January, one for mid-March, one for mid-April, one for early May, one for early June, one for mid-December and three for late December). HABITAT: Within the range of this species it has been reported from bouldery mountains; bases of mountains; rocky mesas; cliffs; rocky canyons; rocky canyon bottoms; gorges; pockets of soil in bedrock; ridges; rocky ridge crests; sandy-loamy meadows; rocky foothills; rocky hills; rocky hillsides; bouldery, rocky, gravelly, sandy, sandy-loamy and clayey slopes; alluvial fans; gravelly bajadas; bedrock and rocky outcrops; amongst boulders and rocks; bouldery-sandy, gravelly, sandy and clayey flats; sandy valley floors; along railroad right-of-ways; roadcuts; along rocky-sandy, gravelly, gravelly-sandy-loamy and gravelly-sandy-clayey-loamy roadsides; sandy soils along and in rocky-gravelly and sandy arroyos; sandy bottoms of arroyos; draws; gulches; gullies; ravines; gravelly seeps; springs; rocky soils along streams; along and in rocky, cobbly and gravelly-silty-loamy streambeds; in rocks along and in creeks; creekbeds; sandy-clayey soils along rivers; gravelly-sandy and sandy-clayey riverbeds; along and in rocky, stony, gravelly, gravelly-sandy, sandy and clayey washes; within drainages; along sandy drainage ways; playas; bogs; ciénegas; clayey swales; along (sandy and silty) banks of arroyos, streams, creeks, rivers and lakes; edges of washes; margins of streams; sand and sandy-clayey bars; rocky-sandy benches; rocky shelves; terraces; bottomlands; floodplains; bosques; bottoms of dry stock tanks (charcos); along and in sandy ditches; sandy-clayey ditch banks; gravelly and sandy riparian areas; waste places, and disturbed areas growing in wet, moist and dry (seasonally wet, reportedly this plant will soon wither and die as the soil dries out) bouldery, bouldery-sandy, rocky, rocky-gravelly, rocky-gravelly-sandy, rocky-sandy, stony, gravelly, gravelly-sandy and sandy ground; gravelly-sandy loam, gravelly-sandy-clayey loam, gravelly-silty loam and sandy loam ground, and sandy clay and clay ground, occurring from sea level to 7,700 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: The stems have a milky sap. *Chamaesyce hyssopifolia* is native to south-central (many sources report this plant as being native to areas outside of southern Florida in the continental United States) and southern North America and coastal islands in the Atlantic Ocean; Central America and coastal islands in the Caribbean Sea and North Atlantic Ocean, and northern, western, central and eastern South America. *5, 6, 15, 16 (recorded as *Euphorbia hyssopifolia* L.), 18 ("All euphorbias have milky white sap that is irritating on contact or toxic, if ingested, (degree of irritation or toxicity varies, depending on the species)."), 43 (070509), 44 (071111 - no record of species; genus record), 46 (recorded as *Euphorbia hyssopifolia* L., Page 518), 58, 63 (012811 - color presentation), 68 (recorded as *Euphorbia hyssopifolia* L. - see: Poisonous Properties of Spurges, Page 202), 77 (recorded as *Euphorbia hyssopifolia* L.), 80 (Species of the genus *Euphorbia* are considered to be Secondary Poisonous Range Plants. "The milky juice of Spurge is considered poisonous. Plants may cause skin irritation, diarrhea, photosensitization, and cyanogenetic poisoning. Cattle, horses, sheep, and humans may be affected. The green plants are generally unpalatable but the dried plants in hay are more palatable and remain toxic. ... Poisoning may be prevented by keeping animals off areas heavily infested with spurge when other desirable feed is unavailable, and by not feeding contaminated hay. Range improvement will both reduce spurge infestations through grass competition, and decrease consumption by making more desirable forage available." See text for additional information.), **85** (020410 - color presentation), 86 ("Most members of the family (Euphorbiaceae) are poisonous, and their milky sap will irritate the membranes of the eyes and mouth."), 115 (color presentation), 124 (071111 - redirected to *Chamaesyce nutans* (Lag.) Small, common names not included in this listing), 140 (Pages 134-135 & 291)*

***Chamaesyce polycarpa* (G. Bentham) C.F. Millspaugh ex S.B. Parish: Smallseed Sandmat**

SYNONYMY: *Chamaesyce polycarpa* (G. Bentham) C.F. Millspaugh ex S.B. Parish var. *hirtella* P.E. Boissier; *Euphorbia polycarpa* G. Bentham; *Euphorbia polycarpa* G. Bentham var. *hirtella* P.E. Boissier; *Euphorbia polycarpa* G. Bentham var. *polycarpa*. COMMON NAMES: Desert Spurge; Golondrina (a name also applied to other species); Koapa'im (Yaqui); Many-fruit Spurge; Manyfruit Spurge; Many-seeded Spurge; Qénxamal (Uto-Aztecan: Luiseño)[140]; Sentenac Spurge; Small Seed Sandmat; Small Seeded Spurge; Small-seed Sand-mat; Small-seed Sandmat; Small-seeded Sand Mat; Small-seeded Sandmat; Small-seeded Spurge; Smallseed Sandmat; Smallseed Spurge; Spurge (a name also applied to other species, the genus *Euphorbia* and to the Euphorbiaceae). DESCRIPTION: Terrestrial annual or perennial forb/herb (mat-forming, mounded and/or sprawling prostrate and/or ascending stems to 2¼ inches in height); the stems may be green, pink, red, reddish or tan; the leaves are green, green tinged with red-purple or reddish; the flower-like cups have black-purple, maroon, dark maroon, pink, purple, red, dark red-purple, or reddish glands (green and yellow glands were also reported) with pink or white petaloid appendages; the anthers are purple; the pollen is yellow; flowering generally takes place year-round between early January and late December. HABITAT: Within the range of this species it has been reported from mountains; gravelly and sandy mesas; plateaus; canyons; rocky, rocky-sandy, gravelly and sandy canyon bottoms; talus slopes; bluffs; clayey-loamy ridges; ridgetops; rims of craters; foothills; rocky and gravelly hills; rocky hillsides; bouldery, rocky, rocky-gravelly-loamy, rocky-sandy, rocky-loamy, rocky-clayey, sandy, sandy-silty and clayey-loamy slopes; rocky and rocky-sandy alluvial fans; gravelly bajadas; rocky outcrops; rocky mounds; amongst rocks; sand dunes; blow-sand deposits; outwash fans; berms; clay lenses; gravelly and sandy plains; gravelly-sandy, sandy and clayey flats; rocky-sandy valley floors; coastal plains; coastal terraces; beach dunes; roadbeds; along gravelly and sandy roadsides; arroyos; gravelly-sandy bottoms of arroyos; around streams; rocky riverbeds; along and in rocky, rocky-sandy, cobbly-gravelly-sandy, gravelly, gravelly-sandy, sandy and sandy-silty washes; along sandy drainages; silty depressions; swales; edges of ponds and lakes; along shores of lakes; mudflats; gravel and sand bars; benches, terraces; sandy bottomlands; sandy and clayey lowlands; margins of stock tanks; edges of canals; canal banks; canal walls; riparian areas; recently burned areas of scrub and grassland, and disturbed areas growing in shallow water; muddy, and wet, moist and dry desert pavement; bouldery, rocky, rocky-sandy, cobbly-gravelly-sandy, gravelly, gravelly-sandy and sandy ground; rocky loam and clayey loam ground; rocky clay and clay ground, and sandy silty and silty ground, occurring from sea level to 5,200 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. The stems have a milky sap. *Euphorbia polycarpa* is native to southwest-central and southern North America. *5, 6, 15, 18 ("All euphorbias have milky white sap that is irritating on contact or toxic, if ingested, (degree of irritation or toxicity varies, depending on the species)."), 43 (052310 - *Chamaesyce polycarpa* (Benth.) Millsp.), 44 (071211), 46 (recorded as *Euphorbia polycarpa* Benth., Page 519), 63 (052310), 68 (see: Poisonous Properties of Spurges, Page 202), 77, 80 (Species of the genus *Euphorbia* are considered to be Secondary Poisonous Range Plants. "The milky juice of Spurge is considered poisonous. Plants may cause skin irritation, diarrhea, photosensitization, and cyanogenetic poisoning. Cattle, horses, sheep, and humans may be affected. The green plants are generally unpalatable but the dried plants in hay are more palatable and remain toxic. ... Poisoning may be prevented by keeping animals off areas heavily infested with spurge when other desirable feed is unavailable, and by not feeding contaminated hay. Range improvement will both reduce spurge infestations through grass competition, and decrease consumption by making more desirable forage available." See text for additional information.), **85** (071211 - color presentation of dried material, also recorded as *Euphorbia polycarpa* G. Bentham var. *typica* Wheeler), 86 ("Most members of the family (Euphorbiaceae) are poisonous, and their milky sap will irritate the membranes of the eyes and mouth."), 115 (color presentation), 124 (071211 - no record of species; genus record), 127, 140 (Pages 133 & 291)*

Chamaesyce polycarpa var. *hirtella* (see *Chamaesyce polycarpa*)

***Chamaesyce setiloba* (G. Engelmann ex J. Torrey) J.B. Norton: Yuma Sandmat**

SYNONYMY: *Euphorbia setiloba* G. Engelmann ex J. Torrey. COMMON NAMES: Bristlelobe Sandmat; Bristle-lobed Sandmat; Bristlelobe Spurge; Fringed Spurge; Golondrina (a name also applied to other species); Spurge (a name also applied to other species, the genus *Euphorbia* and to the Euphorbiaceae); Yuma Broomspurge; Yuma Sandmat; Yuma Spurge. DESCRIPTION: Terrestrial annual forb/herb (prostrate to ascending stems 1½ to 20 inches in height); the foliage is pale green, green, reddish or yellow-green; the flower-like cups have maroon or red glands with light pink, pink, pinkish-white, white or white-pink petaloid appendages; flowering generally takes place between mid-January and mid-May and early August and late November (additional records: three for mid-December). HABITAT: Within the range of this species it has been reported from mountains; rocky mountaintops; mountainsides; mesas; rocky and sandy canyons; bouldery and rocky canyon bottoms; rocky talus; crevices in boulders; rocky foothills; bouldery and rocky hills; rocky and shaley hillsides; bouldery-rocky, rocky, rocky-gravelly, gravelly, sandy and sandy-silty slopes; cobbly-gravelly-sandy alluvial fans; gravelly-sandy and sandy bajadas; sand dunes; sandy plains; rocky, gravelly and sandy flats; basins; valley floors; valley bottoms; coastal plains; rocky-gravelly, rocky-sandy and gravelly roadsides; within sandy arroyos; rocky, gravelly and gravelly-sandy and sandy bottoms of arroyos; gravelly draws; within rocky gullies; along creeks; rocky, gravelly-sandy and sandy riverbeds; along and in rocky-sandy, cobbly, gravelly, gravelly-sandy, sandy and clayey washes; sandy-loamy drainage ways; waterholes; saltmarshes; banks of washes; along (gravelly, gravelly-silty and sandy) edges of arroyos, rivers and washes; along margins of pools; mudflats; gravel bars; sandy beaches; sandy deltas; terraces; gravelly, sandy and sandy-loamy floodplains; mesquite bosques; riparian areas, and disturbed areas growing in wet, moist and dry desert pavement; bouldery, bouldery-rocky, rocky, rocky-gravelly, rocky-sandy, shaley,

cobbly, cobbly-gravelly-sandy, gravelly, gravelly-sandy and sandy ground; sandy loam and loam ground; clay ground, and gravelly silty and sandy silty ground, occurring from sea level to 5,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: The stems have a milky sap. *Chamaesyce setiloba* is native to southwest-central and southern North America. *5, 6, 15, 16 (recorded as *Euphorbia setiloba* Engelm.), 18 ("All euphorbias have milky white sap that is irritating on contact or toxic, if ingested, (degree of irritation or toxicity varies, depending on the species)."), 43 (020510 - *Chamaesyce setiloba* (Engelm. ex Torr.) Millsp.), 44 (021511), 46 (recorded as *Euphorbia setiloba* Engelm., Page 520), 58, 63 (020510 - color presentation), 68 (see: Poisonous Properties of Spurges, Page 202), 77 (recorded as *Euphorbia setiloba* Engelm.), 80 (Species of the genus *Euphorbia* are considered to be Secondary Poisonous Range Plants. "The milky juice of Spurge is considered poisonous. Plants may cause skin irritation, diarrhea, photosensitization, and cyanogenetic poisoning. Cattle, horses, sheep, and humans may be affected. The green plants are generally unpalatable but the dried plants in hay are more palatable and remain toxic. ... Poisoning may be prevented by keeping animals off areas heavily infested with spurge when other desirable feed is unavailable, and by not feeding contaminated hay. Range improvement will both reduce spurge infestations through grass competition, and decrease consumption by making more desirable forage available." See text for additional information.), **85** (071211 - color presentation), 86 ("Most members of the family (Euphorbiaceae) are poisonous, and their milky sap will irritate the membranes of the eyes and mouth."), 124 (021511 - no record of species; genus record)*

***Croton californicus* J. Müller Argoviensis: California Croton**

COMMON NAME: California Croton; Desert Croton; El Barbasco. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (spreading prostrate, decumbent to erect stems 12 to 51 inches in height; one plant was observed and described as being 1 foot in height and 2 feet in width, plants were observed and described as being 32 inches in height and 40 inches in width, plants were observed and described as being 40 inches in height and width; one "colony" was described as being 5 feet in height and 13 feet in width); woody at the base with whitish bark; the older stems are reddish; the foliage is gray; the leaves may be gray-green or yellowish-gray-green; the flowers may be cream, green, white, whitish, pale yellow, yellow, yellow-green or yellowish; flowering generally takes place throughout the year between early January and late December. HABITAT: Within the range of this species it has been reported from mountains; mountainsides; bases of mountains; mesas; rocky and sandy canyons; sandy canyon bottoms; gorges; bluffs; bouldery-sandy ridgetops; openings in woodlands; hills; rocky peaks; gravelly hillsides; bases of hills; rocky-cobbly-sandy, cobbly-sandy, sandy and clayey slopes; bouldery-stony-gravelly-sandy and sandy alluvial fans; amongst boulders; sand hills; sand dunes; sand fields; banks; sandy plains; sandy flats; basins; gravelly-sandy hollows; along coasts; coastal sand dunes; coastal sand hummocks; along sandy roadsides; sandy arroyos; sandy draws; along creeks; along rivers; in rocky-sandy riverbeds; along and in sandy washes; freshwater marshes; alkali sinks; along (sandy) banks of creeks; rivers and washes; (sandy-silty) edges of bays; along margins of lakes; along (sandy) coastal shores; mudflats; sandy beaches; shell-mantled beach ridges; sandy benches; sandy terraces; gravelly-sandy and sandy floodplains; levees; bouldery riparian areas; recently burned areas of coastal sage scrub/chaparral, and disturbed areas growing in moist and dry bouldery, bouldery-stony-gravelly-sandy, bouldery-sandy, rocky, rocky-cobbly-sandy, rocky-sandy, cobbly-sandy, gravelly, gravelly-sandy and sandy ground; sandy loam ground; clay ground, and sandy silty ground, occurring from sea level to 5,000 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. *Croton californicus* is native to southwest-central and southern North America. *5, 6, 43 (101710), 44 (071211), 46 (Page 504), 63 (101710 - color presentation), **85** (071211 - color presentation of dried material), 124 (071211 - no record of species; genus record), 127*

Euphorbia arizonica (see *Chamaesyce arizonica*)

***Euphorbia heterophylla* C. Linnaeus: Mexican Fireplant**

SYNONYMY: *Poinsettia heterophylla* (C. Linnaeus) J.F. Klotzsch & C.A. Garcke. COMMON NAMES: Adeus-Brazil (Portuguese: Brazil); Amendoim-Bravo (Portuguese: Brazil); Caca Poule (French); Café-do-diabo (Portuguese: Brazil); Catalina; Fiddler's Spurge; Flor-do-poeta (Portuguese); Hierba de Leche (Spanish); Japanese Poinsettia; Leiteira (Portuguese: Brazil); Mexican Fireplant; Mexican-fireplant; Milkweed; Painted Euphorbia; Painted Leaf; Painted Spurge; Painted-leaf; Paintedleaf; Picachalih; Summer Poinsettia; Wild Poinsettia. DESCRIPTION: Terrestrial annual or perennial forb/herb (ascending and/or erect stems 8 inches to 5 feet in height); the stems are green; the leaves are green; the flowers are cream, light green, green, white or white & green; the glands are yellow without petaloid appendages; the floral bracts (below the flowering cluster) may be partly colored light green, pink, red, white or yellow; flowering generally takes place between early August and late October (additional records: one for early January, one for mid-January, one for mid-March and two for mid-July); the ripe fruits are reddish. HABITAT: Within the range of this species it has been reported from rocky mountains; mountainsides; rocky canyons; sandy canyon bottoms; ridges; bouldery-rocky and sandy-clayey meadows; foothills; hillsides; rocky, gravelly, sandy-clayey and clayey slopes; along rocky outcrops; amongst rocks and cobbles, bases of rocks; grassy plains; gravelly and clayey flats; valley floors; along roadsides; within sandy arroyos; bottoms of arroyos; gulches; ravines; along streams; cobbly and sandy streambeds; along creeks; sandy creekbeds; riverbeds; along and in washes; within drainage ways; cienegas; marshes; (sandy) banks of rivers and washes; edges of washes; margins of arroyos; terraces; bottomlands; floodplains; mesquite bosques; ditches; grassy riparian areas, and disturbed areas growing in wet, moist and dry bouldery-rocky, rocky, stony, cobbly, gravelly and sandy ground and sandy clay and clay ground, occurring from sea level to 7,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored

native habitat. This plant has a milky sap. *Euphorbia heterophylla* is native to south-central and southern North America and coastal islands in the Atlantic Ocean; Central America and coastal islands in the Caribbean Sea, and South America; however, the exact native range in the neotropics is obscure. *5, 6, 15, 16, 18 ("All euphorbias have milky white sap that is irritating on contact or toxic, if ingested, (degree of irritation or toxicity varies, depending on the species)."), 43 (012811 - *Poinsettia heterophylla* Klotzsch & Garcke), 44 (071311 - no records under Common Names; genus record), 46 (Page 519), 58, 63 (020510 - color presentation), 68 (see: Poisonous Properties of Spurges, Page 202), 77, 80 (Species of the genus *Euphorbia* are considered to be Secondary Poisonous Range Plants. "The milky juice of Spurge is considered poisonous. Plants may cause skin irritation, diarrhea, photosensitization, and cyanogenetic poisoning. Cattle, horses, sheep, and humans may be affected. The green plants are generally unpalatable but the dried plants in hay are more palatable and remain toxic. ... Poisoning may be prevented by keeping animals off areas heavily infested with spurge when other desirable feed is unavailable, and by not feeding contaminated hay. Range improvement will both reduce spurge infestations through grass competition, and decrease consumption by making more desirable forage available." See text for additional information.), **85** (071311 - color presentation), 86 ("Most members of the family (Euphorbiaceae) are poisonous, and their milky sap will irritate the membranes of the eyes and mouth."), 124 (071311 - redirected to *Euphorbia cyathophora* Murray), 140 (recorded as *Poinsettia heterophylla* (Linnaeus) Klotzsch & Garcke, Page 291)*

Euphorbia hyssopifolia (see *Chamaesyce hyssopifolia*)

Euphorbia polycarpa (see *Chamaesyce polycarpa*)

Euphorbia polycarpa var. *hirtella* (see *Chamaesyce polycarpa*)

Euphorbia polycarpa var. *polycarpa* (see *Chamaesyce polycarpa*)

Euphorbia polycarpa var. *typica* (see footnote 85 under *Chamaesyce polycarpa*)

Euphorbia setiloba (see *Chamaesyce setiloba*)

***Jatropha cardiophylla* (J. Torrey) J. Müller Argoviensis: Sangre de Cristo**

COMMON NAMES: Limberbush; Matacora; Nettlespurge; Sangre de Cristo; Sangre-de-Cristo; Sangre-de-drago; Sangregrado; Sangrengado; Sangringada; Torote. DESCRIPTION: Terrestrial perennial deciduous, semi-succulent shrub (erect stems 1 to 7 feet in height); the flexible stems are basally branches; the bark is reddish; the leaves shiny green; the small bell-shaped flowers may be cream-white, pink, white or yellow; flowering generally takes place between mid-July and late September. HABITAT: Within the range of this species it has been reported from mountains; mesas; rocky canyons; canyon bottoms; foothills; rocky hills; rocky hillsides; rocky slopes; rocky and gravelly bajadas; boulderfields; gravelly plains; gravelly-sandy flats; basins; valley floors; rocky roadsides; within sandy arroyos; bottoms of arroyos; cobbly and cobbly-gravelly-loamy draws; along and in sandy washes; margins of washes; floodplains; riparian areas, and disturbed areas growing in dry bouldery, rocky, cobbly, gravelly, gravelly-sandy and sandy ground and cobbly-gravelly loam and gravelly loam ground, occurring from 100 to 4,800 feet in elevation in the scrub, grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial fiber crop, the stems were used in the making of baskets. The shiny heart-shaped emerald green leaves appear around the time of the first rains and then provide color when the leaves turn gold in the fall. *Jatropha cardiophylla* is native to southwest-central and southern North America. *5, 6, 13 (Pages 113-114, color photograph: Plate M.1., Page 400), 15, 16, 43 (020510), 44 (071311 - no record of genus or species), 45 (color photograph), 46 (Page 509), 48, 58, 63 (020510), 77, 80 (Species of the genus *Jatropha* are considered to be Rarely Poisonous and Suspected Poisonous Range Plants. "Seeds of several species of *Jatropha* are toxic to humans and livestock but no poisoning has been reported from Arizona."), 85 (071311 - color presentation), 91 (Pages 244-245), 115 (color presentation), 124 (071311 - no record of genus or species), 127, 140 (Page 291), **HR***

Poinsettia heterophylla (see *Euphorbia heterophylla*)

Fabaceae (Leguminosae): The Pea Family

***Acacia constricta* G. Bentham: Whitethorn Acacia**

SYNONYMY: *Vachellia constricta* (G. Bentham) D.S. Seigler & J.E. Ebinger. COMMON NAMES: All-thorn Acacia; Chaparo Prieta; Chaparro Prieto; Common Whitethorn; Garabato; Gidag (Tohono O'odham); Gigantillo; Huisache; Largoncillo; Mescat Acacia; Twinthorn Acacia; Vara Prieta; Vinorama; White Thorn; White-thorn Acacia; Whitethorn Acacia; Yellow Cat Claw. DESCRIPTION: Terrestrial perennial cold- and drought-deciduous shrub or tree (1 to 20 feet in height with crowns to about the same in width; one plant was observed and described as being 8 feet in height with a crown 8 feet in width); the bark may be light gray, mahogany or nearly black; the stems may be red; the spines on the branches and stems are gray or white; the small pinnate leaves are green; the small flowers have been described as being golden, golden-yellow, orange-yellow,

light yellow, yellow or yellowish-orange; flowering generally takes place between late March and late October (additional records: two for early March and one for late December); the seedpods are brown, purple-red, reddish or rusty-brown. HABITAT: Within the range of this species it has been reported from mountains; mesas; cliffs; canyons; canyon sides; sandy canyon bottoms; sandy ridges; foothills; rocky and gravelly hills; bouldery hilltops; rocky and gravelly hillsides; escarpments; rocky, rocky-clayey-loamy and clayey-loamy slopes; gravelly bajadas; rocky outcrops; amongst boulders; sandy-loamy plains; gravelly flats; valley floors; coastal plains; along rocky, rocky-gravelly-loamy, rocky-gravelly-clayey loam, rocky-clayey-loamy, gravelly, gravelly-sandy, gravelly-sandy-loamy, gravelly-sandy-clayey-loamy, gravelly-loamy, gravelly-clayey loam and sandy roadsides; along and in rocky arroyos; bottoms of arroyos; rocky gulches; along streambeds; creeks; along and in sandy creekbeds; along rivers; along and in gravelly, gravelly-sandy, sandy and silty-clayey washes; drainages; swales; along (gravelly-sandy and sandy) banks of streams, creeks, rivers and washes; along edges of washes; (rocky) margins of arroyos and washes; mudflats; benches; alluvial terraces; sandy bottomlands; floodplains; mesquite bosques; riparian areas, and disturbed areas growing in dry bouldery, rocky, rocky-sandy, gravelly, gravelly-sandy and sandy ground; rocky-gravelly loam, rocky-gravelly-clayey loam, rocky-clayey loam, gravelly loam, gravelly-sandy loam, gravelly-sandy-clayey loam, gravelly-clayey loam, sandy loam, sandy-clayey loam, clayey loam and loam ground, and silty clay ground, occurring from 1,100 to 6,500 feet (infrequently as low as 500 feet and as high as 9,200 feet) in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, plants may live to be more than 72 years of age and the flowers may be fragrant. Whitethorn Acacia is used for food (but not extensively) by the Desert Mule Deer (*Odocoileus hemionus*) and Scaled Quail (*Callipepla squamata*), Merriam's Kangaroo Rats (*Dipodomys merriami*), Bailey's Pocket Mice (*Chaetodipus baileyi*) and Rock Pocket Mice (*Chaetodipus intermedius*) as well as a variety of other birds and mammals feed on the seeds. *Acacia constricta* is native to southwest-central and southern North America. *5, 6, 13 (Pages 226-228; color photograph: Plate R-1, Page 403), 15, 16, 18, 26 (color photograph), 28 (color photograph 83), 43 (080409), 44 (040211 - no record of species; genus record), 46 (Page 399), 48, 53 (note under *Acacia farnesiana*), 63 (020710 - color presentation), 68, 77, 80 (This species is listed as a Major Poisonous Range Plant. "The plants are high in cyanide forming-compounds and have been reported to cause death of cattle in Arizona. In general, the plants are not palatable to livestock although the pods are grazed. However, in the fall of the year at or near frost time, when the range grasses become less palatable, cattle may eat heavily of these plants and death is likely to result. ... Animals should be removed from heavily infested areas during the early frost period or considerable death losses may occur." See text for additional information.), 85 (071311 - color presentation), 91 (Pages 15-16), 115 (color presentation), 124 (040211 - no record of species; genus record), 134, 140 (Page 138), **WTK** (August 4, 2005)*

Acacia greggii A. Gray (var. *greggii* is the variety reported as occurring in Arizona): Catclaw Acacia

SYNONYMY: (for var. *greggii*: *Acacia greggii* A. Gray var. *arizonica* D. Isely). COMMON NAMES: Acacia (a name also applied to the genus *Acacia*); Algarroba (Spanish)[140]; Arizona Acacia (var. *greggii*); Cat Claw; Cat Claw Acacia; Catclaw; Cat Claw Acacia; Cat-claw Acacia; Catclaw Acacia; [Long-flower] Catclaw Acacia (English)[140]; Cat's Claw (a name also applied to other species); Cat's Claw Acacia; Cat's-claw (a name also applied to other species); Devil's Catclaw; Ch'il Yíjish <ch'il gotiza> (Athapascan: Western Apache)[140]; Devil's Claw (a name also applied to other species); Devil's Claw (English)[140]; Devil's Claw Acacia; Devil's-claw (a name also applied to other species); Devil's-claw Acacia; Devil'sclaw Acacia; Devilsclaw (a name also applied to other species); Di:s (Seri); Gatuño ("Cat Claw", Spanish: Chihuahua)[140]; Gregg Acacia; Gregg Cat-claw; Gregg Catclaw; Gregg Catclaw Acacia; Gregg's Acacia; Gregg's Cat-claw; Gregg's Catclaw; Gregg's Catclaw Acacia; Hu'upa Kek'ala (Uto-Aztecan: Yaqui)[140]; Ka'djása (Yuman: Havasupai)[140]; Kitcás[a] <gijes> (Yuman: Walapai)[140]; Long-flower Catclaw; Long-flower Catclaw Acacia; Long-flowered Catclaw; Patitos ("Little Feet", Spanish: New Mexico)[140]; Sichingily <sichingal, sichingil> (Uto-Aztecan: Cahuilla)[140]; Tear-blanket (English: California)[140]; Tearblanket; Tepame (Spanish: Mexico)[140]; Teso (Uto-Aztecan: Cahita)[140]; Tesota (a name also applied to other species); Tésoto [Tesota, Tésota] (Spanish: Sonora)[140]; Texas Catclaw; Texas Mimosa (a name also applied to other species); Texas-mimosa; Tis (Hokan: Seri)[140]; Tümippüh (Uto-Aztecan: Panamint)[140]; 'U:paḍ <'u:padh, uupat> (Uto-Aztecan: Hiá Ceḍ O'odham and Tohono O'odham)[140]; 'Uupaḍ (Uto-Aztecan: Akimel O'odham)[140]; Uña de Gato ("Cat's Claw", Spanish: New Mexico, Chihuahua)[140]; Wait-a-minute (a name also applied to other species); Wait-a-minute Bush (a name also applied to other species); Wright Acacia (var. *wrightii*). DESCRIPTION: Terrestrial perennial winter-deciduous shrub or tree (40 inches to 35 feet in height with a broad crown, one plant was reported as being 6½ feet in height with a crown 10 feet in width, one plant was reported as being 13 feet in height with a crown 16½ feet in width); the bark is gray-black or red-brown; the leaves are gray-green or green; the flowers may be cream, cream-white, cream-yellow, green, greenish-yellow, lemon-yellow, dull white, white, pale yellow, yellow, yellow-cream or yellow-green in catkins; flowering generally takes place between early March and early August (additional records: two for late August, one for mid-September, two for late September, one for early October, three for mid-October, one for early November, one for mid-November, one for early December and one for late December); the mature fruits (straight or twisted pods) are brown or brownish-red. HABITAT: Within the range of this species it has been reported from rocky mountains; mountainsides; gravelly mesas; rocky canyons; rocky and sandy canyon bottoms; gorges; rocky bluffs; rocky and sandy ridges; ridgetops; foothills; rocky hills; gravelly hilltops; rocky, gravelly and gravelly-loamy hillsides; bedrock, rocky, rocky-gravelly-loamy, gravelly, gravelly-sandy and sandy slopes; alluvial fans; bajadas; amongst boulders; debris flows; plains; sandy flats; basins; valley floors; loamy valley bottoms; coastal plains; along gravelly-sandy, gravelly-sandy-clayey-loamy and sandy roadsides; along and in arroyos; bottoms of arroyos; draws; ravines; seeps; springs; along streams; along creeks; along sandy and sandy-silty creekbeds; in sand along rivers; along and in rocky, rocky-sandy, gravelly, gravelly-sandy and sandy washes; within drainages; along drainage ways; bases of waterfalls; along (rocky, gravelly-sandy, gravelly-silty, sandy and sandy-silty) banks of arroyos,

streams, creeks, rivers and washes; along (sandy) edges of arroyos, creeks and washes; margins of washes; shorelines; sand bars; shelves; gravelly-sandy and sandy terraces; sandy bottomlands; lowlands; sandy-loamy floodplains; mesquite bosques; riparian areas, and disturbed areas growing in dry bouldery, rocky, rocky-sandy, gravelly, gravelly-sandy and sandy ground; rocky-gravelly loam, gravelly-sandy-clayey loam, gravelly loam, sandy loam, clayey loam and loam ground; gravelly clay, sandy clay and clay ground, and gravelly silty and sandy silty ground, occurring from slightly above sea level to 6,000 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat; the flowers are fragrant, it may live to be up to 120 years of age. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, fodder and/or fiber crop; it was also noted as having been used as a fuel, tool and in the making of perfumed sachets. The Catclaw Acacia provides food, shelter, protection, shade, nesting sites, roosting sites and nesting material for a wide variety of species of wildlife. It is a favored nesting site of the Verdin (*Auriparus flaviceps*). *Acacia greggii* is native to southwest-central and southern North America. *5, 6, 13 (Pages 223-224; color photograph: Plate R-1, Page 403), 15, 18, 26 (color photograph), 28 (color photograph 84), 43 (020710), 44 (071311), 46 ("This is probably the most heartily disliked plant in the state, the sharp, strong prickles tearing the cloths and lacerating the flesh.", Page 398), 48 ("A good honey plant but a poisonous weed on range lands."), 52, 53, 58, 63 (020710 - color presentation), 77, 80 (This species is listed as a Secondary Poisonous Range Plant. "Plants contain cyanide-forming compounds and symptoms are typical of cyanide poisoning. The new foliage is relished by cattle in the early spring. It also may be grazed considerably during dry seasons or drouth periods when other feed is short. Plants are most dangerous in the fall during first frosts. Cattle are most often poisoned, but losses in Arizona are not heavy. Poisoning may be prevented by deferring heavily infested areas during the early frost periods." See text for additional information.), **85** (071311 - color presentation), 91 (Pages 21-22), 115 (color presentation), 124 (071311 - no record of species; genus record), 140 (Pages 136-138 & 291)*

Acacia greggii var. *arizonica* (see *Acacia greggii* var. *greggii*)

***Acacia greggii* A. Gray var. *greggii*: Catclaw Acacia**

SYNONYMY: *Acacia greggii* A. Gray var. *arizonica* D. Isely. COMMON NAMES: Acacia (a name also applied to the species and the genus *Acacia*); Algarroba (a name applied to the species, Spanish; usually used for *Prosopis*)[140]; Arizona Acacia; Cat Claw (a name also applied to the species); Cat Claw Acacia (a name also applied to the species); Catclaw (a name also applied to the species); Catclaw Acacia (a name also applied to the species); [Long-flower] Catclaw Acacia (a name applied to the species, English)[140]; Cat's-claw (a name also applied to the species); Devil's Catclaw (a name also applied to the species); Ch'il Yíjish <ch'il gotiza> (a name applied to the species, Athapascan: Western Apache)[140]; Devil's Claw (a name also applied to the species); Devil's Claw (a name applied to the species, English)[140]; Devil's-claw (a name also applied to the species); Devil's-claw Acacia (a name also applied to the species); Devilsclaw (a name also applied to the species); Di:s (a name also applied to the species, Seri); Gatuño ("Cat Claw" a name applied to the species, Spanish: Chihuahua)[140]; Gregg Catclaw (a name also applied to the species); Gregg's Acacia (a name also applied to the species); Hu'upa Kek'ala (a name applied to the species, Uto-Aztecan: Yaqui)[140]; Ka'djása (a name applied to the species, Yuman: Havasupai)[140]; Kitcás[a] <gijes> (a name applied to the species, Yuman: Walapai)[140]; Long-flower Catclaw Acacia (a name also applied to the species); Patitos ("Little Feet" a name applied to the species, Spanish: New Mexico)[140]; Sichingily <sichingal, sichingil> (a name applied to the species, Uto-Aztecan: Cahuilla)[140]; Tear-blanket (a name applied to the species, English: California)[140]; Tearblanket (a name also applied to the species); Tepame (a name applied to the species, Spanish: Mexico)[140]; Teso (a name applied to the species, Uto-Aztecan: Cahita)[140]; Tesota (a name also applied to the species and to other species); Tesoto [Tesota, Tésota] (a name applied to the species, Spanish: Sonora)[140]; Texas Catclaw (a name also applied to the species); Texas Mimosa (a name also applied to the species and to other species); Texas-mimosa (a name also applied to the species); Tis (a name applied to the species, Hokan: Seri)[140]; Tümippüh (a name applied to the species, Uto-Aztecan: Panamint)[140]; 'U:paḍ <'u:padh, uupat> (a name applied to the species, Uto-Aztecan: Hiá Ceḍ O'odham and Tohono O'odham)[140]; 'Uupaḍ (a name applied to the species, Uto-Aztecan: Akimel O'odham)[140]; Uña de Gato ("Cat's Claw" a name applied to the species, Spanish: New Mexico, Chihuahua)[140]; Wait-a-minute (a name also applied to the species and to other species); Wait-a-minute Bush (a name also applied to the species and to other species). DESCRIPTION: Terrestrial perennial winter-deciduous shrub or tree (40 inches to 25 feet in height with a broad crown); the bark is gray-black or red-brown; the leaves are gray-green or green; the flowers may be cream, cream-white, cream-yellow, green, greenish-yellow, lemon-yellow, white, yellow, yellow-cream or yellow-green in catkins; flowering generally takes place between early March and mid-July (additional record: one for mid-October); the mature fruits (straight or twisted pods) are brown or brownish-red. HABITAT: Within the range of this species it has been reported from mountains; mountainsides; mesas; canyons; rocky and sandy canyon bottoms; rocky bluffs; rocky and sandy ridges; ridgetops; hillsides; rocky, rocky-clayey-loamy, sandy and loamy slopes; amongst boulders; alluvial fans; sandy flats; valley floors; gravelly-sandy-clayey-loamy and sandy roadsides; sandy edges of arroyos; draws; ravines; along streams; along creeks; along rivers; along gravelly and sandy washes; within drainages; along banks of rivers and washes; along edges of washes; margins of arroyos; floodplains; mesquite bosques, and riparian areas growing in dry bouldery, rocky, rocky-sandy, gravelly, gravelly-sandy and sandy ground; rocky-gravelly loam, rocky-clayey loam, gravelly-sandy-clayey loam, sandy loam and clayey loam ground, and gravelly clay ground, occurring from slightly above sea level to 5,300 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat; the flowers are fragrant, it may live to be up to 120 years of age. The species, *Acacia greggii*, was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, fodder and/or fiber crop; it was also noted

as having been used as a fuel, tool and in the making of perfumed sachets. The Catclaw Acacia provides food, shelter, protection, shade, nesting sites, roosting sites and nesting material for a wide variety of species of wildlife. It is a favored nesting site of the Verdin (*Auriparus flaviceps*). *Acacia greggii* var. *greggii* is native to southwest-central and southern North America. *5, 6, 13 (species, Pages 223-224; color photograph of species: Plate R-1, Page 403), 16 (recorded as *Acacia greggii* Gray var. *arizonica* Isely), 18 (species), 26 (species, color photograph of species), 28 (species, color photograph of species 84), 43 (020710), 44 (071311 - no listing provided under Common Names), 46 (species, "This is probably the most heartily disliked plant in the state, the sharp, strong prickles tearing the clothes and lacerating the flesh.", Page 398), 48 (species, "A good honey plant but a poisonous weed on range lands."), 52 (species) 53, (species), 63 (020710), 80 (The species is listed as a Secondary Poisonous Range Plant. "Plants contain cyanide-forming compounds and symptoms are typical of cyanide poisoning. The new foliage is relished by cattle in the early spring. It also may be grazed considerably during dry seasons or drouth periods when other feed is short. Plants are most dangerous in the fall during first frosts. Cattle are most often poisoned, but losses in Arizona are not heavy. Poisoning may be prevented by deferring heavily infested areas during the early frost periods." See text for additional information.), 85 (071311), 91 (species, Pages 21-22), 115 (color presentation of the species) 124 (071311 - no record of species/variety; genus record), 127 (species), 140 (species, Pages 136-138 & 291), **WTK** (August 4, 2005)*

***Astragalus allochrous* A. Gray var. *allochrous*: Halfmoon Milkvetch**

COMMON NAMES: Crazyweed (a name also applied to the species); Halfmoon Locoweed (a name also applied to the species); Halfmoon Milkvetch (a name also applied to the species); Loco (a name also applied to the species, other species and to the genus *Astragalus*); Loco Weed (a name also applied to the species, other species and to the genus *Astragalus*); Locoweed (a name also applied to the species, other species and to the genus *Astragalus*); Poisonvetch (a name also applied to the species and the genus *Astragalus*); Rattleweed (a name also applied to the species and the genus *Astragalus*). DESCRIPTION: Terrestrial annual or perennial forb/herb (1 to 2 feet in length); the leaves are dark gray-green; the flowers are purple or pale red-violet; flowering generally takes place between early March and late May (additional records: one for mid-June one for mid-October). HABITAT: Within the range of this species it has been reported from mountains; mesas; along rocky canyons; canyon bottoms; bluffs; bouldery ridges; sandy cinder cones; foothills; hills; rocky hilltops; bouldery-rocky and gravelly hillsides; rocky, gravelly clayey slopes; amongst rocks; lava flows; plains; flats; valley floors; valley bottoms; along rocky, gravelly and sandy roadsides; springs; around streams; along creeks; creekbeds; washes; sandy banks of streams and washes; floodplains, and riparian areas in dry bouldery, bouldery-rocky, rocky, gravelly and sandy ground; clay ground, and silty ground, occurring from 1,500 to 7,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: The species, *Astragalus allochrous*, was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication and as a ceremonial item. *Astragalus allochrous* var. *allochrous* is native to southwest-central and southern North America. *5, 6, 43 (020810), 44 (071411 - no record of variety; genus and species records), 46 (species, Page 463), 63 (020810), 68 (species), 80 (The species is listed as a Major Poisonous Range Plant. Poisonings by *Astragalus* and *Oxytropis* are similar and are of three types. "Some species cause typical loco poisoning. Others pick up poisonous minerals, such as selenium, and cause mineral poisoning. A third type of poisoning causes respiratory problems, in addition to other loco symptoms, and death by asphyxiation. The toxic principle of typical loco poisoning has never been specifically isolated, though an alkaloid-like substance given the name of "locoine" has been proven to cause typical symptoms. ... Animals ordinarily will not eat loco unless feed is scarce, but animals forced to eat the plants become addicted and will eat the loco plants even when good forage is available." See text for additional information.), **85** (071411 - color presentation of dried material), 124 (071411 - no record of species or variety; genus record), 127 (species)*

***Astragalus allochrous* A. Gray var. *playanus* (W. Jones) D. Isely: Halfmoon Milkvetch**

SYNONYMY: *Astragalus wootoni* (alternate spelling: *A. wootonii*) E.P. Sheldon; *Astragalus wootoni* E.P. Sheldon var. *typicus* R.C. Barneby. COMMON NAMES: Crazyweed; Halfmoon Milkvetch; Loco (a name also applied to the species, other species and to the genus *Astragalus*); Loco Milk Vetch; Loco Weed (a name also applied to the species, other species and to the genus *Astragalus*); Locoweed (a name also applied to the species, other species and to the genus *Astragalus*); Playa Milk Vetch; Playa Milk-vetch; Playa Milkvetch; Playanus Locoweed; Poisonvetch (a name also applied to the species, other species and to the genus *Astragalus*); Rattleweed (a name also applied to the species, other species and to the genus *Astragalus*); Western Loco; Wooton Loco; Wooton's Loco; Wooton's Milk-vetch. DESCRIPTION: Terrestrial annual or biennial forb/herb (12 to 16 inches in length)the stems may be reddish; ; the leaflets are gray or gray-green; the flowers are lavender-white, pink-lavender, purple, purplish & white, reddish, red-violet, reddish-violet, rose, violet or whitish; flowering generally takes place between late February and mid-June (additional records: one for early January, two for late July; August flowering has also been reported). HABITAT: Within the range of this species it has been reported from mountains; mesas; gravelly-sandy canyons; canyon bottoms; rocky-sandy ridges; meadows; cindery flanks of cinder cones; sandy foothills; hills; rocky and gravelly-clayey hillsides; bouldery-sandy-silty, rocky, cobbly-sandy, cindery, gravelly, gravelly-clayey, sandy and loamy slopes; gravelly-sandy pediments; rocky outcrops; sandy bajadas; plains; gravelly, sandy, sandy-loamy and sandy-clayey flats; basin bottoms; sandy valley floors; along railroad right-of-ways; along rocky, stony, gravelly, gravelly-sandy, gravelly-sandy-loamy, sandy and sandy-loamy roadsides; within sandy arroyos; sandy draws; seeps; along streams; sandy streambeds; along creeks; along rivers; riverbeds; along and in rocky and sandy washes; within drainage ways; (sandy) edges of arroyos; channel bars; terraces; sandy bottomlands; sandy floodplains; lowlands; mesquite bosques; along canals; within ditches; bouldery riparian areas; waste places, and disturbed areas growing in moist and dry bouldery, rocky, rocky-sandy, shaley, stony, cobbly-sandy, cindery, gravelly, gravelly-sandy and sandy ground; gravelly loam, gravelly-sandy loam, sandy loam and loam ground; gravelly clay, sandy clay

and clay ground, and bouldery-sandy silty and bouldery silty ground, occurring from 1,300 to 8,700 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: The species, *Astragalus allochrous*, was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication and as a ceremonial item. *Astragalus allochrous* var. *playanus* is native to southwest-central and southern North America. *5, 6, 16 (*Astragalus wootonii* Sheldon), 43 (020810), 44 (071411), 46 (*Astragalus wootoni* Sheldon, Page 463 and *Astragalus wootoni* Sheldon var. *typicus* Barneby, Page 463), 58, 63 (020810), 68, 77, 80 (The species is listed as a Major Poisonous Range Plant. "Poisonings by *Astragalus* and *Oxytropis* are similar and are of three types. Some species cause typical loco poisoning. Others pick up poisonous minerals, such as selenium, and cause mineral poisoning. A third type of poisoning causes respiratory problems, in addition to other loco symptoms, and death by asphyxiation. The toxic principle of typical loco poisoning has never been specifically isolated, though an alkaloid-like substance given the name of "locoine" has been proven to cause typical symptoms. ... Animals ordinarily will not eat loco unless feed is scarce, but animals forced to eat the plants become addicted and will eat the loco plants even when good forage is available." See text for additional information.), **85** (071511 - color presentation including habitat), 124 (071411), 127 (species), 140 (Page 291)*

***Astragalus lentiginosus* D. Douglas ex W.J. Hooker var. *australis* R.C. Barneby: Freckled Milkvetch**

COMMON NAMES: Freckled Milkvetch; Speckledpod Milkvetch. DESCRIPTION: Terrestrial perennial forb/herb (sprawling and spreading stems 2 to 3 feet in height); the flowers are blue-purple, lavender, red-purple sometimes with a white banner, violet flowers aging to turquoise or white; flowering generally takes place between late February and early May (additional records: one for late May and one for early June). HABITAT: Within the range of this species it has been reported from mountains; canyons; mesas; foothills; hillsides; slopes; bajadas; bases of bajadas; plains; sandy flats; river valleys; along sandy roadsides; in gravel along washes; riverbeds; drainages; depressions; beaches and bottomlands growing in damp and dry cindery, gravelly and sandy ground and silty ground, occurring from 1,500 to 4,800 feet in elevation in the woodland, grassland and desertscrub ecological formations. NOTE: *Astragalus lentiginosus* var. *australis* is native to southwest-central and southern North America. *5, 6, 43 (082710 - *Astragalus lentiginosus* var. *australis* Barneby), 44 (071711 - no record of species; genus record), 46 (Pages 465-467), 63 (082710), 77 (color photograph #78 labeled *Astragalus lentiginosus*), **85** (071711), 124 (071711 - no record of species; genus record), 140 (species, Page 291)*

Astragalus wootoni (see *Astragalus allochrous* var. *playanus*)

Astragalus wootonii (see *Astragalus allochrous* var. *playanus*)

Astragalus wootoni var. *typicus* (see *Astragalus allochrous* var. *playanus*)

***Calliandra eriophylla* G. Bentham: Fairyduster**

SYNONYMY: *Calliandra eriophylla* G. Bentham var. *eriophylla*. COMMON NAMES: Bastard Catclaw; Bastard Mesquite; Brasilillo ("Little Brazil-wood", Spanish: New Mexico, Chihuahua)[140]; Cabellito [Cabellos, Pelo de Ángel] ("Little [Angel] Hair", Spanish: Mexico)[140]; Cabeza [de] Ángel ("Angel Head", Spanish: Baja California)[140]; Cabelleto de Angel; Charresquillo ("Little Thicket", Spanish: San Louis Potosí)[140]; Cósahui [del Norte] (Spanish: Sonora)[140]; Cu:wĭ Wuipo <cu:wi wu:pui> ("Jack-rabbit Eyes", Uto-Aztecan: Tohono O'odham)[140]; Desert Fairy Duster; Desert Fairy-duster; Desert Fairyduster; Fairy Duster (a name also applied to the genus *Calliandra*); Fairy Duster [Fairy-duster] (English)[140]; Fairy Duster False Mesquite; Fairy-duster (a name also applied to the genus *Calliandra*); Fairy-duster False-mesquite; Fairy-duster Mesquitilla; Fairyduster (a name also applied to the genus *Calliandra*); Fairyduster Mesquitilla; False Catclaw; False Mesquite; False [Bastard, Mock] Mesquite [Catclaw] (English)[140]; False Mesquite Calliandra (a name also applied to other species); False-mesquite Calliandra; Guajillo; Hairy-leafed Calliandra; Hairy-leaved Calliandra; Haxz Iztim ("Dog's Hipbone", Hokan: Seri)[140]; Huajillo <guajillo> (Spanish: Mexico)[140]; Mautillo; Mesquitella (Spanish); Mesquitilla (a name also applied to other species); Mezquitilla ("Little Mesquite", Spanish: Mexico)[140]; Mock Catclaw; Mock Mesquite (a name also applied to the genus *Calliandra*); Pink Fairy Duster; Pink Fairy-duster; Pink Fairyduster; Pink False Mesquite; Plumita ("Little Plume", Spanish: Mexico)[140]; Taaseyueylalá <ta-a-sey-ueylalá> (Uto-Aztecan: Guarijío)[140]. DESCRIPTION: Terrestrial perennial deciduous subshrub or shrub (4 inches to 5 feet in height; one plant was observed and described as being 40 inches in height with a crown 80 inches in width); the stems may be bluish, light gray, gray, whitish or white-gray; the leaves may be grayish, dark green or red; the flowers are cream-white, pink, pink-red, pink-white, pinkish, purple, red, red and white, reddish-purple, rose, violet-red or white; flowering generally takes place between early February and mid-June (additional records: two for mid-January, one for early July, four for mid-August, three for late August, one for early September, one for mid-September, one for early October, four for mid-October, four for late October, two for early November, one for mid-November, three for late November, one for early December, one for mid-December and two for late December). HABITAT: Within the range of this species it has been reported from mountains; rocky peaks; mesas; plateaus; rocky canyons; along rocky canyon bottoms; buttes; knolls; bedrock and sandy ridges; rocky ridgetops; rocky, shaley-sandy and gravelly-clayey-loamy foothills; rocky hills; hilltops; rocky hillsides; along bedrock, bouldery, rocky, rocky-loamy, rocky-clayey, gravelly, gravelly-sandy, gravelly-sandy-loamy and gravelly-loamy slopes; gravelly bajadas; rocky outcrops; amongst boulders and rocks; boulderfields; lava hills; interior dunes; stony banks; plains; rocky, gravelly, sandy and clayey-loamy flats; basins; valley floors; along rocky, gravelly-sandy and sandy roadsides; along rocky-sandy and sandy arroyos; within gullies; around seeps; around springs; around seeping streams; streambeds; along and in gravelly and sandy washes; drainages; within bouldery drainage ways; along watercourses; (rocky) banks of arroyos and

lakes; edges of washes and drainage ways; shores of lakes; gravelly terraces; bottomlands; ditches; riparian areas, and disturbed areas growing in dry desert pavement; bouldery, rocky, rocky-sandy, shaley-sandy, stony, gravelly and sandy ground; rocky loam, gravelly loam, gravelly-sandy loam, gravelly-clayey loam, pebbly-clayey loam, sandy loam and clayey loam ground, and rocky clay ground, occurring from sea level to 6,900 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat and is sold as an ornamental; it is considered to be a soil binder. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. Hummingbirds and White-lined Sphinx Moths (*Hyles lineata*) have been observed visiting the flowers, the plant is browsed by wildlife with Mule Deer (*Odocoileus hemionus*) and White-tailed Deer (*Odocoileus virginianus*) finding it highly palatable, and birds may feed on the seeds. *Calliandra eriophylla* is native to southwest-central and southern North America. *5, 6, 13 (Pages 230-231), 15, 16, 18, 28 (color photograph 653), 43 (080409), 44 (071611 - color photograph), 46 (Page 397), 48, 58, 63 (020910 - color presentation), 77 (color photograph #32), **85** (071611 - color presentation), 86 (color photograph), 91 (Pages 142-143), 115 (color presentation), 124 (071611 - no record of genus or species), 127, 140 (Pages 138-139 & 292)*

Calliandra eriophylla var. *eriophylla* (see *Calliandra eriophylla*)

Cassia covesii (see *Senna covesii*)

Cercidium floridum (see *Parkinsonia florida*)

Cercidium floridum subsp. *floridum* (see *Parkinsonia florida*)

Cercidium microphyllum (see *Parkinsonia microphylla*)

***Lupinus sparsiflorus* G. Bentham: Coulter's Lupine**

COMMON NAMES: Arizona Lupine; Coulter Lupin; Coulter Lupine; Coulter's Lupin; Coulter's Lupine; Desert Lupine (a name also applied to other species); Few-flowered Lupine; Loose-flowered Lupine (a name also applied to other species); Loose-flowered Annual Lupine; Loosely-flowered Annual Lupine; Lupine (a name also applied to other species and the genus *Lupinus*); Mojave Lupine (a name also applied to other species); Tash Mahad (or possibly Tash Mahot - River Pima); Sparse-flowered Lupine. DESCRIPTION: Terrestrial annual forb/herb (6 to 32 inches in height; one plant was observed and described as being 11 inches in height and 12 inches in width); the leaves are dark green; the flowers may be light blue-lavender-white, blue, dark blue, blue-lavender, blue-lavender-reddish, blue-lilac, blue-purple, blue-violet, blue & white, magenta-pink, magenta-pink with a yellow spot on the banner, magenta & purple, pinkish, pinkish-lavender, light purple, purple, purplish-blue, violet, deep violet, violet-blue or white; flowering generally takes place between early January and late June (additional records: three for early September, one for early October and one for early November). HABITAT: Within the range of this species it has been reported from mountains; sandy mesas; sandy rims of canyons; cliffs; rocky, rocky-gravelly and stony canyons; along sandy-loamy canyon bottoms; scree; talus slopes; buttes; rocky and sandy ridges; ridgetops; clearings in forests; sandy meadows; gravelly-sandy and sandy foothills; rocky hills; bases of hills; rocky hilltops; rocky and sandy hillsides; rocky, rocky-clayey-loamy, stony, cobbly-sandy-loamy, gravelly, gravelly-loamy, sandy, sandy-loamy and sandy-clayey slopes; rocky alluvial fans; gravelly bajadas; gravel slides; rocky outcrops; amongst rocks; shelves; gravelly plains; gravelly and sandy flats; basins; sandy hollows; sandy valley floors; along railroad right-of-ways; along rocky, rocky-sandy, gravelly, gravelly-sandy, sandy and clayey roadsides; within arroyos; in gravelly-silty draws; along gravelly-loamy ravines; springs; along streams; rocky-sandy streambeds; along creeks; along and in gravelly-sandy creekbeds; along rivers; sandy riverbeds; along and in bouldery-sandy, rocky, cobbly, gravelly, gravelly-sandy and sandy washes; drainages; within cobbly, gravelly, sandy and sandy-loamy drainage ways; along (sandy and sandy-clayey) banks of arroyos, streams, rivers and drainage ways; (rocky) edges of rivulets, rivers and washes; margins of washes; sand bars; gravelly benches; gravelly and sandy terraces; sandy and loamy bottomlands; cobbly and cobbly-sandy floodplains; ditches; bouldery, rocky-clayey, gravelly-sandy and sandy riparian areas, and disturbed areas growing in dry desert pavement; bouldery, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, stony, cobbly, cobbly-sandy, gravelly, gravelly-sandy and sandy ground; rocky-clayey loam, cobbly-sandy loam, gravelly loam, gravelly-clayey loam, sandy loam, clayey loam and loam ground; rocky clay, sandy clay and clay ground, and gravelly-sandy silty and gravelly silty ground, occurring from 100 to 8,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Lupinus sparsiflorus* is native to southwest-central and southern North America. *5, 6, 16, 18 (genus), 28 (color photograph 767), 43 (071409), 44 (071711 - color photograph), 46 (Page 416), 48 (genus), 58, 63 (021210 - color presentation), 77 (color photograph #81), 80 (This species is listed as a Secondary Poisonous Range Plant. "The lupines contain numerous poisonous alkaloids. They are mostly dangerous to sheep but cattle, goats, horses, hogs and deer have also been poisoned. The seeds and pods are most poisonous but both young and dried plants may be dangerous. However, not all species are poisonous and some may furnish moderately palatable and nutritious forage for sheep. ... Animals will seldom eat a toxic dose if desirable forage is available. Losses can generally be avoided by good range management to improve forage, by keeping animals away from dense lupine patches (particularly in late summer or on the trail), or by grazing with cattle." See text for additional information.), **85** (071711 - color presentation), 86 (color photograph), 115 (color presentation), 124 (071711 - no record of species; genus record), 140 (Page 293)*

Melilotus indica (see *Melilotus indicus*)

***Melilotus indicus* (C. Linnaeus) C. Allioni: Annual Yellow Sweetclover**

SYNONYMY: *Melilotus indica* (C. Linnaeus) C. Allioni, orth. var. COMMON NAMES: Alfalfilla; Annual Melilot; Annual Yellow Melitot; Annual Yellow Sweet Clover; Annual Yellow Sweet-clover; Annual Yellow Sweetclover; Haacoz (Seri); Hethamscent; India Melilot; India Sweet-clover; India Sweetclover; Indian Melilot; Indian Sweet Clover; Indian Sweet-clover; Indian Sweetclover; King Island Clover; King Island Melilot; King-Island Clover; King-Island Melilot; Kleinblütiger Steinklee (German); Ko-shinagawa-hagi (Japanese - Rōmaji); Mélilot de l' Indes (French); Mélilot des Indes (French); Senji (India); Small Melilot; Small-flowered Yellow Sweet Clover; Sour Clover (a name also applied to other species); Sour-clover (a name also applied to other species); Sourclover; Sweetclover (a name also applied to other species and the genus *Melilotus*); Trevo-de-cheiro (Portuguese); Yellow Sweet-clover (a name also applied to other species); Yin du Cao Mu Xi (transcribed Chinese). DESCRIPTION: Terrestrial annual forb/herb (spreading and/or erect 4 inches to 3 feet in height); the flowers are white or yellow fading to pink; flowering generally takes place between late January and mid-August (additional records: two for late September, two for early October, one for late October and one for late December). HABITAT: Within the range of this species it has been reported from mountains; mesas; rocky canyons; bouldery-gravelly-sandy canyon bottoms; clayey ridgetops; meadows; bouldery, rocky and sandy hillsides; bouldery-sandy, gravelly-loamy, sandy-clayey-loamy and clayey slopes; rocky outcrops; bouldery and clayey flats; sandy basin bottoms; valley floors; coastal dunes; along sandy roadsides; gravelly-sandy arroyos; bottoms of arroyos; bottoms of draws; within gullies; along bottoms of gullies; seeps; springs; along streams; streambeds; along creeks; rocky and loamy creekbeds; along rivers; sandy riverbeds; along and in washes; bouldery-rocky drainages; ponds; boggy areas; cienegas; clayey freshwater and saltwater marshes; depressions; sandy banks of streams and lakes, rivers and lakes; along sandy edges of creeks and washes; margins of washes; along shores of lakes and lagoons; cobbly and sandy terraces; loamy bottomlands; along sandy floodplains; lowlands; along canals; along and in ditches; ditch banks; bouldery-gravelly-sandy and sandy riparian areas; waste places, and disturbed areas growing in muddy and wet, moist and damp bouldery, bouldery-rocky, bouldery-gravelly-sandy, bouldery-sandy, rocky, shaley, cobbly, gravelly, gravelly-sandy and sandy ground; gravelly loam, sandy-clayey loam and loam ground, and clay ground, occurring from sea level to 7,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a toy or in games, as a drug or medication and as an insecticide (used in beds as a bed bug repellent). *Melilotus indica* is native to southern Europe; western, central and southern Asia, and northern Africa. *5, 6, 16, 43 (021310), 44 (071711), 46 (genus, no species record, Page 420), 58, 63 (021310 - color presentation), 68, 77, 80 (Species in the genus *Melilotus* are considered to be Poisonous Cropland and Garden Plant. "Moldy, and sometimes non-moldy, hay of this legume may reduce the ability of the blood to clot and animals may die of internal or external hemorrhage."), **85** (071711), 101 (note under *Melilotus officinalis*), 115 (color presentation), 124 (071711 - no record of species; genus record), 127*

***Parkinsonia aculeata* C. Linnaeus: Jerusalem Thorn**

COMMON NAMES: Acacia de los Masones; Arrêtenègre (French); Bacapore; Bagota; Bagote; Barbados Flowerfence (a name also applied to other species); Cina-cina (a name also applied to other species, Portuguese: Brazil); Espinheiro-de-Jerusalém (Portuguese); Espinho-de-jerusalém (Portuguese: Brazil); Espinillo (Spanish); Guacóporo; Horse Bean (a name also applied to other species); Horse-bean (a name also applied to other species); Horsebean (a name also applied to other species); Jelly Bean Tree; Jellybean Tree; Jerusalem Thorn (a name also applied to other species); Jerusalem-thorn (a name also applied to other species); Jerusalemdorn (German); Junco; Long-leaf Paloverde; Mexican Palo Verde; Mexican Palo-verde; Mexican Paloverde; Mezquite Verde; Palo de Rayo (Spanish); Palo Verde Mejicano (Spanish); Palo Verde Mexicano; Ratama; Retaima; Retama (a name also applied to other species); Rosa-da-turquia (Portuguese: Brazil); Sessaban (transliterated Arabic); Turco (Portuguese: Brazil). DESCRIPTION: Terrestrial perennial drought- and possibly cold-deciduous shrub or tree (10 to 40 feet in height); the older bark is brown or gray; the younger bark, branches and twigs are green or yellow-green; the leaves are green; the flowers (¾ to 1 inch in width) are golden-yellow, orange, yellow, yellow with orange or red spots or golden-yellow; flowering generally takes place between mid-February and early July (additional records: two for late July, four for early August, one for mid-August, two for late August, one for mid-September, two for late September, one for mid-October, three for late October, one for mid-September, one for early October, one for late October, one for early November, one for mid-November and one for late November) with the bloom generally lasting 3 to 4 weeks; the mature seedpods (2 to 4 inches in length) are brown. HABITAT: Within the range of this species it has been reported from mountains; mesas; rocky and gravelly canyons; canyon bottoms; foothills; bouldery hills; rocky hillsides; rocky, rocky-gravelly-sandy-clayey-loamy slopes; bajadas; gravelly and sandy alluvial fans; sand hummocks; sandy plains; gravelly uplands; sandy flats; basin bottoms; sandy valley floors; coastal flats; railroad right-of-ways; along rocky-gravelly, gravelly and sandy-loamy roadsides; along sandy-silty arroyos; gravelly bottoms of arroyos; along streams; along rocky streambeds; along rivers; along rocky-cobbly-sandy and sandy riverbeds; along and in sandy and silty washes; along watercourses; clayey pondbeds; banks of creeks and rivers; (sandy) edges of rivers, ponds and lakes; shores of rivers; beaches; terraces; bottomlands; gravelly-sandy and sandy-silty-clayey floodplains; mesquite bosques; along canals; along canal banks; along ditches; riparian areas; waste places, and disturbed areas growing in moist and dry bouldery, rocky-cobbly, rocky-cobbly-sandy, rocky-gravelly, gravelly, gravelly-sandy and sandy ground; rocky-gravelly-sandy-clayey loam, rocky-sandy loam and sandy loam ground; sandy-silty clay and clay ground, and sandy silty and silty ground, occurring from sea level to 4,100 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was observed as an escaped and naturalized ornamental. This plant was reported to have been utilized by

native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. This plant may be an attractive component of a restored native habitat; however, outside of its native range it may become weedy, especially so in riparian areas and along roadsides. In Arizona, the Jerusalem Thorn is native to the Castle Dome Mountains in Yuma County and the foothills of the Baboquivari, Coyote and Quinlan Mountains in Pima County. The foliage and pods are browsed by wildlife. *Parkinsonia aculeata* is native to southwest-central and southern North America. *5, 6, 13 (Pages 245-246), 16, 18, 26 (color photograph), 28 (color photograph 93), 43 (021310), 44 (071711 - color photograph), 46 (Page 407), 48, 52 (color photograph), 53, 58, 63 (021310 - color presentation), 77, 80 (This species is listed as a Poisonous Cropland and Garden Plant. "This ornamental shrub or small tree has been reported to accumulate toxic levels of nitrate."), **85** (071711 - color presentation), 91 (Pages 309-311), 115 (color presentation), 124 (071711 - no record of genus or species), 127, 140 (Page 293)*

***Parkinsonia florida* (G. Bentham ex A. Gray) S. Watson: Blue Paloverde**

SYNONYMY: *Cercidium floridum* G. Bentham; *Cercidium floridum* G. Bentham var. *floridum*. COMMON NAMES: Blue Palo Verde; Blue Palo-verde; Blue Paloverde; Caro (Mayo); Palo Verde (a name also applied to other species and the genus *Parkinsonia*, Spanish for Green Pole, Green Stick or Green Tree); Paloverde (a name also applied to other species and the genus *Parkinsonia*); Stedak U'us (Pima); Studuk U'us (Bajo Pima). DESCRIPTION: Terrestrial perennial deciduous shrub or tree (40 inches to 40 feet in height); the bark may be blue-green, green, yellow or yellow-green, and gray on the older trunks; the leaves are blue-green; the flowers (¾ to 1 inch in width) are yellow or white (rarely); flowering generally takes place between early March and mid-June (additional records: two for early February, one for late July, two for mid-August, two for early September, one for late September, one for early October, two for mid-October, one for late October, two for early November, one for mid-November and one for early December); the mature fruits (1½ to 4 inches in length) are light brown. HABITAT: Within the range of this species it has been reported from mountains; mountainsides; mesas; along rocky canyons; canyon walls; rocky and sandy canyon bottoms; buttes; gravelly-clayey ridges; rocky ridgetops; foothills; rocky, rocky-sandy, gravelly, gravelly-loamy and sandy hills; rocky, rocky-sandy, gravelly-clayey-loamy, sandy, sandy-loamy and clayey slopes; bajadas; sand hills; sand dunes; benchlands; plains; rocky-sandy, cindery, sandy and sandy-silty flats; valley floors; valley bottoms; coastal slopes; along rocky-gravelly-sandy, gravelly-sandy and sandy roadsides; along gravelly arroyos; along gravelly and sandy bottoms of arroyos; rocky draws; seeps; streambeds; creekbeds; along rivers; along riverbeds; along and in rocky, rocky-sandy, gravelly, gravelly-sandy and sandy washes; drainages; watercourses; around ponds; playas; along (rocky and sandy) banks of arroyos, rivers and washes; edges of draws and washes; margins of rivers and washes; gravelly-sand bars; benches; gravelly terraces; loamy bottomlands; sandy-loamy floodplains; clayey lowlands; mesquite bosques; fencerows; catchments; stock tanks; along canals; along canal banks; gravelly-sandy riparian areas, and disturbed areas growing in dry rocky, rocky-gravelly-sandy, rocky-sandy, cindery, gravelly, gravelly-sandy and sandy ground; gravelly loam, gravelly-clayey loam, sandy loam and loam ground; gravelly clay and clay ground, and sandy silty ground, occurring from sea level to 5,000 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, it has a very showy display of yellow flowers in very showy in late March and April. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop; it was also noted as having been used for shelter and for tools. The Blue Paloverde may be useful in controlling erosion. Bighorn Sheep (*Ovis canadensis*), Mule Deer (*Odocoileus hemionus*) and other wildlife browse the fruits, leaves and twigs and the seeds are eaten by birds and rodents and used by Bruchid Beetles. *Parkinsonia florida* is native to southwest-central and southern North America. *5, 6, 13 (recorded as *Cercidium floridum* Bentham, Pages 246-247, color photograph including habitat: Plate S.2., Page 404), 15, 16 (recorded as *Cercidium floridum* Benth.), 18, 26 (recorded as *Cercidium floridum*, color photograph), 28 (recorded as *Cercidium floridum*, color photograph 91), 43 (021310 - *Cercidium floridum* Benth. ex A. Gray, *Parkinsonia florida* S. Watson), 44 (071711 - color photograph), 46 (recorded as *Cercidium floridum* Benth., Page 407), 48, 52 (recorded as *Cercidium floridum* Benth. ex Gray, color photograph), 53 (recorded as *Cercidium floridum* Benth.), 58, 63 (021310 - color presentation), 77 (recorded as *Cercidium floridum* Benth.), 85 (071811 - color presentation including habitat), 86 (recorded as *Cercidium floridum*, color photograph), 91 (recorded as *Cercidium floridum* Benth., Pages 156-157), 115 (color presentation), 124 (071711 - no record of genus or species), 127, 140 (Page 293), **WTK** (August 4, 2005)*

***Parkinsonia microphylla* J. Torrey: Yellow Paloverde**

SYNONYMY: *Cercidium microphyllum* (J. Torrey) J.N. Rose & I.M. Johnston. COMMON NAMES: Dipua; Foothill Palo Verde; Foothill Palo-verde; Foothill Paloverde; Foothills Palo Verde; Foothills Palo-verde; Foothills Paloverde; Hillside Palo Verde; Hillside Palo-verde; Hillside Paloverde; Horsebean (a name also applied to other species); Kuk Cehedagi (Tohono O'odham); Little Horsebean; Little Leaf Paloverde; Little-leaf Horse-bean; Little-leaf Horsebean; Little-leaf Palo Verde; Little-leaf Palo-verde; Little-leaf Paloverde; Little-leaved Palo Verde (a name also applied to other species and the genus *Parkinsonia*); Littleleaf Horsebean; Littleleaf Palo Verde; Littleleaf Paloverde; Male Palo Verde; Mesa Palo Verde; Mesa Palo-verde; Mesa Paloverde; Palo Verde (Spanish for Green Pole, Green Stick or Green Tree); Palo-verde; Paloverde; Small-leaf Palo Verde; Small-leaf Paloverde; Small-leaved Palo Verde; Smallleaf Palo Verde; Yellow Palo Verde; Yellow Palo-verde; Yellow Paloverde. DESCRIPTION: Terrestrial perennial drought deciduous shrub or tree (40 inches to 26 feet in height; one plant was observed and described as being 6 feet in height and 7 feet in width, one plant was observed and described as being 9 feet in height and width, one plant was observed and described as being 16 feet in height and width); the bark is green, olive-green or yellow-green, and gray on older trunks; the ends of the leafy branchlets are spine-like; the small leaflets are green, greenish-gray

or yellow-green; the flowers (½ inch in width) are lemon-yellow, whitish & yellow, yellow, yellow-green or yellow & white; the styles are pale yellow or pale yellow-green; the filaments are pale yellow or pale yellow-green; the anthers are orange; flowering generally takes place between mid-March and mid-June (additional records: one for mid-August and one for mid-October); the mature seedpods (2 to 3 inches in length) are light brown or tan. HABITAT: Within the range of this species it has been reported from mountains; rocky mountaintops; mesas; cliffs; rocky walls; rocky canyons; canyon walls; canyon bottoms; bluffs; buttes; ledges; ridges; rocky ridgetops; bouldery and rocky foothills; bases of foothills; rocky hills; rocky hillsides; rocky, gravelly and sandy slopes; alluvial fans; rocky, gravelly and gravelly-silty bajadas; boulder fields; bouldery and rocky outcrops; plains; gravelly and sandy flats; valley floors; sandy valley bottoms; along rocky and gravelly roadsides; along and in gravelly-sandy and sandy arroyos; sandy bottoms of arroyos; along and in rocky, gravelly, gravelly-sandy and sandy washes; drainages; (rocky-sandy) banks of arroyos and rivers; along edges of washes; margins of arroyos and washes; rocky sand bars; coves; gravelly terraces; floodplains; ditches; riparian areas, and disturbed areas growing in dry desert pavement; bouldery, rocky, gravelly, gravelly-sandy and sandy ground; sandy loam, clay loam and loam ground; clay ground, and gravelly silty ground, occurring from sea level to 4,000 feet in elevation in the grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat and may live to be more than 400 years of age. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. To reduce water loss during extended periods of drought a tree may undergo a natural drought-pruning process where entire branches die back The Foothill Paloverde is a common "nurse plant" of the Saguaro or Giant Cactus (*Carnegiea gigantea*) and provides a sheltered microhabitat in which other desert plants are able to become established. Bighorn Sheep (*Ovis canadensis*), Mule Deer (*Odocoileus hemionus*), jackrabbits and other small mammals browse the fruits, leaves and twigs; the Collard Peccary (*Peccari tajacu*) feed on the fruit, and the seeds are used by Bruchid Beetles. The Foothill Paloverde is considered a significant foraging site for birds; it is used as a nesting site by the Black-tailed Gnatcatcher (*Polioptila melanura*) and Verdins, and as a roosting site by Gambel's Quail (*Callipepla gambelii* subsp. *gambelii*). The Costa's Hummingbird (*Calypte costae*) has been observed visiting the flowers. *Parkinsonia microphylla* is native to southwest-central and southern North America. *5, 6, 10, 13 (recorded as *Cercidium microphyllum* (Torrey) Rose & Johnston, Pages 247-248, color photograph including habitat: Plate T.1., Page 405), 15, 16 (recorded as *Cercidium microphyllum* (Torr.) Rose & Johnst.), 18, 26 (recorded as *Cercidium microphyllum*, color photograph), 28 (recorded as *Cercidium microphyllum*, color photograph 92), 43 (021410 - *Cercidium microphyllum* Rose & I.M. Johnst.), 44 (071811 - color photograph), 46 (recorded as *Cercidium microphyllum* (Torr.) Rose & Johnston, Page 407), 48, 52 (recorded as *Cercidium microphyllum* (Torr.) Rose & I.M. Johnst., color photograph), 53 (recorded as *Cercidium microphyllum* (Torr.) Rose & Johnst.), 63 (021410 - color presentation), 77 (recorded as *Cercidium microphyllum* (Torr.) Rose & Johnst.), **85** (071811 - color presentation including habitat), 86 (note under *Cercidium floridum*), 91 (recorded as *Cercidium microphyllum* (Torr.) Rose & I.M. Johnston, Pages 157-159), 115 (color presentation), 124 (071811 - no record of genus or species), 127, 134, 140 (Page 293), **WTK** (August 4, 2005)*

Prosopis juliflora var. *velutina* (see *Prosopis velutina*)

***Prosopis velutina* E.O. Wooton: Velvet Mesquite**

SYNONYMY: *Prosopis juliflora* (O. Swartz) A.P. de Candolle var. *velutina* (E.O. Wooton) C.S. Sargent. COMMON NAMES: Algarroba <algoroba> (Spanish: Texas, Colima)[140]; Ana'l$_y$ (Yuman: Maricopa)[140]; Anáhl (Yuman: Kumiai)[140]; ^{a}Nāl^{a} <anāl^{e}, na:l> (Yuman: Walapai)[140]; Arizona Mesquite; Arizona Velvet Mesquite; Ava (Yuman: Mohave)[140]; Chachaca; Chachaka <chúcata> (Spanish: Michoacán)[140]; ʾÉ:-la (Uto-Aztecan: Luiseño)[140]; Eva^{c} (Yuman: Yuma)[140]; Fluweelprosopis (Afrikaans); Haas <ʾaas> (Hokan: Seri)[140]; Hu'upa (Uto-Aztecan: Yaqui)[140]; Iyáa (Yuman: Havasupai)[140]; Iyah <iiyáá> ("The Pod", Athapascan: Western Apache)[140]; Kui (Uto-Aztecan: Akimel O'odham, Hiá Ceḍ O'odham, Tohono O'odham)[140]; Kui <k'ui> (Uto-Aztecan: Onavas Pima)[140]; Kwayúły <anyal> (Yuman: Cocopa)[140]; Meskít (Uto-Aztecan: Mountain Pima)[140]; Mesquite (a name also applied to other species and the genus *Prosopis*); Mesquite (English)[140]; Mezquite (a name also applied to other species and the genus *Prosopis*); Mezquite (Spanish: Sonora)[140]; Mizquitl; Nastane <natase> ("That Which Lies About", Athapascan: Chiricahua and Mescalero Apache)[140]; Ohpimpü (Uto-Aztecan: Panamint)[140]; Opi(m)bɨ (Uto-Aztecan: Kawaiisu)[140]; Péchita (Spanish: Arizona, Chihuahua, Sonora)[140]; Quiot (Uto-Aztecan: Ópata, Sonora)[140]; Sako (Uto-Aztecan: Mountain Pima)[140]; Tají (Oto-Manguean: Otomí)[140]; Tziritzecua (Tarascan: Purépecha)[140]; Uhpalá (Uto-Aztecan: Guarijío)[140]; Upárai (Uto-Aztecan: Northern Tepehuan)[140]; Velvet Mesquite. DESCRIPTION: Terrestrial perennial deciduous shrub or tree (2 to 56 feet in height; one plant was observed and described as being 6½ feet in height with a canopy 6½ feet in width, one plant was observed and described as being 13 feet in height with a canopy 16½ feet in width, one tree was observed and described as being 20 feet in height with a crown 40 feet in width); the bark on the trunk and older branches is dark brown, dark brownish-green or dark gray; the leaves are gray-green; the flowers (cylindrical spikes 2 to 5 inches in length) may be cream, cream-white, cream-yellow, green-yellow, greenish-white, pale yellow, yellow, yellow-green, pale yellowish or yellowish-green; flowering generally takes place between mid-March and early September (additional records: one for early October and one for early November); the mature seedpods (3 to 8 inches in length) are red, tan, yellow or mottled. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; mesas; plateaus; rocky canyons; along rocky and sandy canyon bottoms; rocky bases of cliffs; buttes; bedrock, rocky and sandy ridges; rocky ridgetops; foothills; rocky hills; rocky hillsides; rocky, rocky-loamy, gravelly, gravelly-sandy, gravelly-loamy, gravelly-clayey-loamy, sandy, sandy-loamy and clayey slopes; alluvial fans; gravelly bajadas; rocky outcrops; rocky and cobbly plains; gravelly, gravelly-sandy, sandy and sandy-loamy flats; sandy valley floors; valley bottoms; along rocky-gravelly-loamy, gravelly-clayey-sandy-loamy and silty-clayey roadsides; along and in rocky, gravelly and sandy arroyos; rocky and sandy bottoms of arroyos; rocky-gravelly-loamy draws; seeps; springs; around seeping

streams; along streams; along rocky streambeds; along creeks; creekbeds; along rivers; along rocky-sandy riverbeds; along and in rocky, cobbly, gravelly-sandy and sandy washes; along drainages; within drainage ways; around ponds; playas; ciénegas; (sandy) banks of streams, creeks, rivers and washes; (gravelly and sandy) edges of rivers, washes and ponds; sandy-loamy benches; gravelly and gravelly-sandy terraces; bottomlands; rocky-gravelly floodplains; mesquite bosques; along fencelines; around stock tanks (represos); around reservoirs; along canals; canal banks; ditches; along ditch banks; riparian areas, and disturbed areas growing in dry rocky, rocky-gravelly, rocky-sandy, cobbly, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-gravelly loam, gravelly loam, gravelly-sandy-clayey loam, gravelly-clayey loam, sandy loam, clayey loam and loam ground; silty clay and clay ground, and sandy silty, clayey silty and silty ground, occurring from sea level to 6,300 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, it may live to be more than several hundred years of age. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, beverage, fiber and/or dye or paint (boiled resin used as a pottery paint) crop; it was also noted as having been used as fuel, as a tool, as toys, as a drug or medication and as a guide for determining a planting season. The Velvet Mesquite is a common "nurse plant" of the Saguaro or Giant Cactus (*Carnegiea gigantea*). The flowers are pollinated by native bees. The Velvet Mesquite provides food and shelter for many species of wildlife. The plant is a food source for quail, Desert Mule Deer (*Odocoileus hemionus crooki*) and Desert Bighorn Sheep (*Ovis canadensis mexicana*). The Giant Mesquite Bug (*Thassus acutangulus*) feeds on the sap. Coyotes (*Canis latrans*), Desert Cottontails (*Sylvilagus audubonii*), Round-tailed Ground Squirrels (*Spermophilus tereticaudus*) and many other wild animals feed on the seed pods. Velvet Mesquite is the host for a Drywood Termite (*Incisitermes banksi*). Bruchid Beetles feed on the fruits and seeds. Much of the mesquite forest (bosques) originally found along the desert water courses have been lost to fuel wood cutting and clearing for agricultural fields and commercial and residential development. Velvet Mesquite Bosques were small, open, park-like woodlands with the Velvet Mesquite often occurring in nearly pure stands and interspersed with other common species such as the Netleaf Hackberry (*Celtis laevigata* var. *reticulata*), Catclaw Acacia (*Acacia greggii* var. *greggii*), Mexican Elder (*Sambucus nigra* subsp. *canadensis*), Desert Hackberry (*Celtis ehrenbergiana*), Greythorn (*Ziziphus obtusifolia* var. *canescens*), Wolfberry (*Lycium* spp.), Four-wing Salt-bush (*Atriplex canescens*) and Vine Mesquite Grass (*Panicum obtusum*). *Prosopis velutina* is native to southwest-central and southern North America. *5, 6, 13 (recorded as *Prosopis juliflora* (Swartz) DC. var. *velutina* (Wooton) Sarg., Pages 238-240, color photograph: Plate R.2., Page 403), 15, 16, 18, 26 (color photograph), 28 (color photograph 90), 43 (071609), 44 (040211), 46 (recorded as *Prosopis juliflora* (Swartz) DC. var. *velutina* (Wooton) Sarg., Page 402), 48, 52 (color photograph), 53 (species: recorded as *Prosopis juliflora* (Sw.) DC.), 58, 63 (021610), 68, 77, 80 (This species is listed as a Rarely Poisonous and Suspected Poisonous Range Plant. "Heavy, long-continued consumption of pods and leaves of these common desert shrubs may cause rumen impaction and poisoning."), **85** (071911 - color presentation including habitat), 91 (Pages 330-333), 115 (color presentation), 124 (040211 - no record of genus or species), 127, 134, 140 (Pages 146-147 & 293), ADS (Arizona Daily Star, Sunday, July 26, 2009, Tucson & Region, B1: Mesquite Pods are of Consuming Interest), **WTK** (August 4, 2005)*

***Senna covesii* (A. Gray) H.S. Irwin & R.C. Barneby: Coues' Cassia**

SYNONYMY: *Cassia covesii* A. Gray. COMMON NAMES: Coues Cassia; Coues Senna; Coues' Cassia; Coues' Senna; Coues's Cassia; Coues's Senna; Coves (error) Cassia; Coves' (error) Cassia; Cove (error) Senna; Coves (error) Senna; Coves' (error) Senna; ; Coves's (error) Senna; Dais; Daisillo; Desert Senna (a name also applied to other species); Hojasen; Kau Ohasen (Yaqui); Rosemaria; Rattlebox; Rattlebox Senna; Rattleweed; Senna (a name applied to other species and the genus *Senna*). DESCRIPTION: Terrestrial perennial forb/herb or subshrub (10 to 32 inches in height); the leaves are gray or gray-green; the flowers (½ to 1 inch in width) golden, orange-yellow, rusty-yellow, pale yellow, yellow, yellow-orange or yellow with reddish veins; flowering generally takes place between early March and early December (additional records: one for early February and two for mid-February); the mature seedpods (1 to 2 inches in length) are brown. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; mesas; canyons; canyonsides; rocky and gravelly canyon bottoms; along rocky and rocky-sandy ridges; rocky ridgetops; foothills; rocky hills; rocky and sandy hillsides; along rocky, rocky-gravelly, rocky-clayey and gravelly slopes; alluvial fans; gravelly bajadas; amongst grasses; sandy-loamy plains; gravelly, sandy and silty flats; basins; valley floors; along rocky, gravelly, gravelly-sandy and sandy roadsides; rocky and gravelly arroyos; sandy bottoms of arroyos; gulches; along streams; within streambeds; creeks; sandy creekbeds; along rivers; sandy riverbeds; along and in bouldery, rocky, rocky-sandy, gravelly, gravelly-sandy and sandy washes; gravelly drainage ways; waterholes; around ponds; (gravelly and gravelly-sandy) banks of rivers, washes and lakes; margins of washes; (gravelly) shores of lakes; gravel bars; sandy beaches; sandy loamy benches; gravelly terraces; sandy, sandy-loamy, loamy and silty floodplains; mesquite bosques; gravelly and sandy riparian areas, and disturbed areas growing in dry bouldery, rocky, rocky-gravelly, rocky-sandy, gravelly, gravelly-sandy and sandy ground; rocky-clayey loam, sandy loam, sandy-clayey loam and loam ground; rocky clay ground, and silty ground, occurring from sea level to 6,700 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The Cove Cassia is a larval food plant of the Cloudless Sulfur (*Phoebis sennae*) and Sleepy Orange (*Eurema nicippe*) and is used for food by Gambel's Quail (*Callipepla gambelii gambelii*). *Senna covesii* is native to southwest-central and southern North America. *5, 6, 15, 16, 28 (recorded as *Cassia covesii*, color photograph 501), 43 (021710), 44 (071911), 46 (recorded as *Cassia covesii* Gray, Page 406), 63 (021710), 68, 77, 82, **85** (071911 - color presentation), 115 (color presentation), 124 (071911 - no record of species; genus record)*

Vachellia constricta (see *Acacia constricta*)

Vicia exigua (see *Vicia ludoviciana*)

***Vicia ludoviciana* T. Nuttall subsp. *ludoviciana*: Louisiana Vetch**

SYNONYMY: *Vicia exigua* T. Nuttall. COMMON NAMES: Deer-pea Vetch; Deerpea Vetch; Leavenworth's Vetch; Louisiana Vetch; Slender Vetch; Slim Vetch; Texas Vetch; Vetch (a name applied to the species, other species and to the genus *Vicia*); White Vetch. DESCRIPTION: Terrestrial annual forb/herb or vine (sprawling or twining stems 4 inches to 3 feet in height/length); the flowers may be pale blue, pale blue & white, blue, bluish-purple, bluish-white, blue & white, cream, cream & purple, light lavender, lavender, lavender-white, pink, pinkish; pinkish-purple, pinkish, pinkish-white, pale purple, purplish-blue, sky blue, violet, violet & white, white, white & blue-lavender or white-lavender; flowering generally takes place between early March and late May (additional records: one for early February, one for early July, two for mid-July, one for mid-August and one for mid- September). HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; rocky mesas; rock cliffs; bases of cliffs; canyons; bouldery, rocky and gravelly-sandy canyon bottoms; talus slopes; crevices in lava flows; grassy bluffs; buttes; knolls; ledges; rocky ridgetops; foothills; rocky hills; bouldery, rocky, rocky-gravelly and rocky-clayey hillsides; rocky escarpments; rocky, rocky-gravelly, rocky-gravelly-loamy, rocky-loamy, rocky-clayey, stony, gravelly, gravelly-loamy, sandy, loamy and clayey slopes; rocky outcrops; amongst boulders and rocks; sandy lava flows; lava fields; gravelly-sandy prairies; loamy and clayey flats; basins; valley floors; railroad right-of-ways; along rocky-gravelly-loamy, rocky-loamy, rocky-sandy, gravelly, sandy-loamy and clayey-loamy roadsides; within rocky and sandy arroyos; gullies; seeps; along sandy streams; along and in streambeds; along creeks; along rivers; along sandy-loamy riverbeds; along and in rocky, rocky-gravelly, rocky-loamy, gravelly-loamy and sandy washes; within sandy drainage ways; in rocks around ponds; swampy areas; sandy-silty and silty depressions; banks of streams and washes; edges of washes; bottomlands; loamy floodplains; mesquite bosques; sandy riparian areas, and disturbed areas growing in moist and dry bouldery, rocky, rocky-gravelly, rocky-sandy, stony, cobbly, gravelly, gravelly-sandy and sandy ground; rocky loam, gravelly loam, sandy loam, clayey loam and loam ground; rocky clay and clay ground, and sandy silty and silty ground, occurring from 300 to 8,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Vicia ludoviciana* subsp. *ludoviciana* is native to south-central and southern North America. *5, 6, 15, 43 (021810), 44 (071911 - Common Names recorded under *Vicia ludoviciana* var. *ludoviciana*), 46 (*Vicia exigua* Nutt., Page 477), 48 (genus), 58 (recorded as *Vicia ludoviciana* Nutt. [*V. exigua* Nutt. in "Arizona Flora"]), 63 (021810 - color presentation of seed), 77 (recorded as *Vicia ludoviciana* Nutt. [*V. exigua* Nutt.]), 80 (Species of the genus *Vicia* are considered to be Rarely Poisonous and Suspected Poisonous Range Plants. "Cultivated species of Vetch may cause liver damage, cyanide poisoning, and photosensitization, but native species have not been incriminated." and also Poisonous Cropland and Garden Plants. "Species of Vetch occasionally develop lethal concentrations of cyanogenetic glycosides or produce photosensitization but are rarely responsible for deaths."), **85** (071911 - color presentation), 124 (071911), 140 (records for both *Vicia exigua* Nuttall and *Vicia ludoviciana* Nuttall, Page 293) *

Fouquieriaceae: The Ocotillo Family

***Fouquieria splendens* G. Engelmann: Ocotillo**

SYNONYMY: *Fouquieria splendens* G. Engelmann subsp. *splendens* G. Engelmann. COMMON NAMES: Albarda <barda> ("Pack Saddle", Spanish: Coahuila, Sonora, Zacatecas)[140]; Apache Whipping Stick (English)[140]; Barba ("Beard", Spanish: Coahuila)[140]; Barda; Candle Bush (English)[140]; Candlewood (English: Texas)[140]; Chimuchi Chuwara <simuchi chuwara> (Uto-Aztecan: Tarahumara)[140]; Chumari (Spanish: Sonora)[140], Chunari (Uto-Aztecan: Cahita); Cirio ("Wax Candle", Spanish: Baja California)[140]; Coach Whip (a name also applied to the genus *Fouquieria*); Coach-whip (a name also applied to the genus *Fouquieria*); Coach-whip (English: Arizona)[140]; Coach-whip Cactus; Coach-whip Ocotillo; Coachwhip (a name also applied to the genus *Fouquieria*); Coachwhip Cactus; Coachwhip Ocotillo; Colorín Cimmarón ("Wild Red One", Spanish: Mexico)[140]; Cunuri (Uto-Aztecan: Guarijío)[140]; Flamingsword; Í'i'qimie <igamye> (Yuman: Walapai)[140]; I'ikumadhí (Yuman: Maricopa)[140]; ʔI:nʸáy (Yuman: Cocopa)[140]; Jacob's Staff [Wand] (English)[140]; Jacob's Wand; Melhog <mïrok, mïro'k> (Uto-Aztecan: Hiá Ceḍ O'odham, Tohono O'odham)[140]; Merihog <nuri'og> (Uto-Aztecan: Onavas Pima; probably for *Fouquieria macdougalii*)[140]; Monkey-tail; Mureo (Uto-Aztecan: Yaqui)[140]; Ocotillo (a name also applied to the genus *Fouquieria*); Ocotillo [de Corral] ("[Corral] Little Torch", Spanish: New Mexico, Texas, Baja California, Chihuahua, Coahuila, Sonora, Zacatecas)[140]; Ocotillo del Corral; Palo de Adán ("Adam's Tree", Spanish: Baja California)[140]; Saar (Uto-Aztecan: Mountain Pima)[140]; Slimwood (English: Arizona)[140]; Tarákovara (Uto-Aztecan: Northern Tepehuan)[140]; T'iis Ts'ǫz <ges choze> (Athapascan: Western Apache)[140]; Utush <otosh> (Uto-Aztecan: Cahuilla)[140]; Vine Cactus; Vine-cactus (English)[140]; Xomxéziz <xeshish> (Hokan: Seri)[140]; Wolf's Candles; Xong (Hokan: Seri)[140]. DESCRIPTION: Terrestrial perennial cold- and drought-deciduous semi- and stem-succulent shrub (sinuously-ascending or erect stems 5 to 33 feet in height with a crown width of 5 to 15 feet); the stems (wand-like and branching from the base in clusters of up to 5 to 100) are gray, gray & dark gray, gray-green or green; the leaves are green; the flowers (in 2 to 10 inch long clusters at the tips of the stems) may be coral-red, cream, cream-white, orange, orange-red, pinkish-purple, red, reddish-orange, red & yellow, salmon, scarlet, scarlet-coral, white or yellow; flowering generally takes place over a period of 50 to 60 days between early February and early August (additional records: two for late August, two for mid-September, one for late September, one for mid-October, two for late October, two for early November and two for early December); the mature fruits are capsules containing winged seeds. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; rocky, gravelly-sandy and sandy mesas; crags; canyon rims; cliffs; bouldery and

rocky canyons; rocky canyon bottoms; crevices in rocks; bedrock and gravelly ridges; rocky ridgetops; ridgelines; rocky foothills; rocky and rocky-sandy hills; rocky hilltops; rocky and gravelly hillsides; bedrock, bouldery-cobbly, rocky, rocky-gravelly, shaley-sandy, stony, gravelly, gravelly-sandy and gravelly-loamy slopes; alluvial fans; rocky and sandy bajadas; rocky outcrops; amongst boulders; lava flows; sand hills; sand dunes; dune swales; gravelly outwash fans; gravelly and sandy plains; gravelly and gravelly-sandy flats; basins; rocky and sandy valley floors; valley bottoms; along gravelly roadsides; within rocky arroyos; gullies; along rivers; riverbeds; along cobbly and sandy washes; within gravelly drainages; (bedrock, bouldery-cobbly and sandy) banks of rivers and washes; (rocky-sandy) shores of lakes; benches; along floodplains and riparian areas growing in dry desert pavement; bouldery, bouldery-cobbly, rocky, rocky-gravelly, rocky-sandy, shaley-sandy, stony, cobbly, gravelly, gravelly-sandy and sandy ground; gravelly loam ground, and clay ground, occurring from sea level to 8,100 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, beverage and/or fiber crop; it was also noted as having been used as a fuel, tool, drug or medication, ceremonial item and as an ornamental landscape plant. Older plants may be 150 to 200 years of age. This "vase-shaped" plant has been described by Benson and Darrow as being "one of the most distinctive shrubs in the Southwestern Deserts, and it is one of the plants giving outstanding character to the flora of the region". Desert Bighorn Sheep (*Ovis canadensis* subsp. *mexicana*), Mule Deer (*Odocoileus hemionus*) and White-tailed Deer (*Odocoileus virginianus* subsp. *couesi*) browse this plant. Solitary Bees, Butterflies, Carpenter Bees (*Xylocopa californica*), House Finches (*Carpodacus mexicanus*), Lesser Goldfinches (*Carduelis psaltria*), Syrphid Flies, Broad-billed Hummingbirds (*Cynanthus latirostris*), Costa's Hummingbirds (*Calypte costae*), Rufous Hummingbirds (*Selasphorus rufus*), Hooded Orioles (*Icterus cucullatus*), Scott's Orioles (*Icterus parisorum*), Pyrrhuloxias (*Cardinalis sinuatus*), Verdins (*Auriparus flaviceps*), and Warblers have been observed visiting the flowers. The Ocotillo is a preferred food plant of the Costa's Hummingbird. *Fouquieria splendens* is native to southwest-central and southern North America. *5, 6, 10, 13 (Pages 178-179, color photograph: Plate N., Page 401), 15, 16, 18, 26 (color photograph), 28 (color photograph 553 A&B), 43 (080309), 44 (071911 - color photograph), 45 (color photograph), 46 (Page 640), 48, 58, 63 (021810 - color presentation), 77 (color photograph #27), 85 (021810 - color presentation), 86 (color photograph), 91 (Pages 224-226), 106 (021810 - color presentation), 107, 115 (color presentation), 124 (071911 - no record of genus or species), 127, 140 (recorded as *Fouquieria splendens* Engelmann subsp. *splendens*, Pages 152-153 & 293), **WTK** (August 4, 2005)*

Fouquieria splendens subsp. *splendens* (see *Fouquieria splendens*)

Fumariaceae: The Fumitory Family

Corydalis aurea subsp. *occidentalis* (see *Corydalis curvisiliqua* subsp. *occidentalis*)

Corydalis aurea var. *occidentalis* (see *Corydalis curvisiliqua* subsp. *occidentalis*)

Corydalis curvisiliqua **G. Engelmann ex A. Gray subsp. *occidentalis* (G. Engelmann ex A. Gray) W.A. Weber: Curvepod Fumewort**

SYNONYMY: *Corydalis aurea* C.L. von Willdenow subsp. *occidentalis* (G. Engelmann ex A. Gray) G.B. Ownbey; *Corydalis aurea* C.L. von Willdenow var. *occidentalis* G. Engelmann ex A. Gray. COMMON NAMES: Bílátah Łitso Tsoh <bilátah łcoi coh> (Athapascan: Navajo)[140]; Chooyin 'Azee' <co'in ʾazéʾ> ("Menstruation Medicine", Athapascan: Navajo)[140]; Colic Weed (English)[140]; Corídale (Spanish: Mexico)[140]; Curvepod Corydalis; Curve-pod Fumewort; Curvepod Fumewort; Fumaria (Spanish: Mexico)[140]; Gáagii Binát'oh <gâgi binát'oh> ("Raven's Tobacco", Athapascan: Navajo)[140]; Gold Smoke (English)[140]; Golden Corydalis (a name also applied to other species); Golden Corydalis (English)[140]; Hasbídídą́ą́' <hasbididáʾ> (Athapascan: Navajo)[140]; Nikookáá' Łitso <naxokáʾ łoci> (Athapascan: Navajo)[140]; Mountain Corydalis; Scrambled-eggs (English: Arizona, New Mexico)[140]; Squirrel-corn; Tązhii Halchiin Ałts'íísígíí <tązilčin ʾałc'ísí, tazhii yilchiin ałts'íísígíí > (Athapascan: Navajo)[140]; Ts'yaa Tł'ohdeeí <ciyahɬ' oh de> (Athapascan: Navajo)[140]. DESCRIPTION: Terrestrial annual or biennial forb/herb (decumbent to ascending stems 5 to 20 inches in height); the flowers are yellow; flowering generally takes place between late February and late August. HABITAT: Within the range of this species it has been reported from mountains; mesas; sandy plateaus; canyon rims; canyons; gravelly slides; talus slopes; pockets of soil in bedrock; sandy bluffs; rocky ridges; openings in woodlands; meadows; foothills; rocky hills; rocky hilltops; gravelly hillsides; bedrock, rocky, rocky-sandy, rocky-clayey, cindery, gravelly, sandy, sandy-loamy, sandy-clayey, loamy and humusy slopes; bajadas; rock outcrops; sand hills; sandy banks; breaks; uplands; sandy prairies; plains; gravelly and sandy flats; grassy basins; valley floors; along railroad right-of-ways; roadcuts; along gravelly, sandy and loamy roadsides; sandy draws; stony bottoms of gullies; gulches; gullies; rocky ravines; along streams; along bouldery, rocky and sandy streambeds; along creeks; cobbly creekbeds; along rivers; riverbeds; along and in rocky and sandy washes; within drainages; ciénegas; sandy and clayey depressions; along (bouldery and sandy) banks of gulches, washes, streams, creeks and lakes; edges of ciénegas; along margins of streams, rivers and washes; shores of lakes; benches; terraces; sandy bottomlands; sandy floodplains; mesquite bosques; shorelines of reservoirs; along canals; ditches; riparian areas, and disturbed areas growing in wet, moist, damp and dry bouldery, rocky, rocky-sandy, shaley, stony, cobbly, cindery, gravelly, gravelly-sandy and sandy ground; rocky-sandy loam, sandy loam, clayey loam and loam ground; rocky clay, sandy clay and clay ground, and humusy ground, occurring from 900 to 10,800 feet in elevation in the forest, woodland, scrub, grassland, desertscrub

and wetland ecological formations. NOTE: *Corydalis curvisiliqua* subsp. *occidentalis* is native to south-central and southern North America. *5, 6, 15 (*Corydalis aurea* Willd. subsp. *occidentalis* (Engelm.) G.B. Ownbey placed in the Papaveraceae), 28 (color photograph of *Corydalis aurea*), 43 (021910), 44 (071911 - no record of species; genus record), 46 (*Corydalis aurea* Willd. subsp. *occidentalis* (Engelm.) G.B. Ownbey placed in the Papaveraceae, Page 325), 63 (021910), 68 (*Corydalis aurea*), 80 (The species, *Corydalis aurea*, is listed as a Secondary Poisonous Range Plant. "Golden Corydalis has been reported to contain up to 10 alkaloids. The plant is relished by sheep and perhaps as little as 2% of the animal's weight will cause symptoms, and less than 5% can be fatal. Cattle and horses also may be poisoned. This plant probably causes some losses in Arizona to both livestock and game." See text for additional information.), **85** (072011 - color presentation of dried material), 86 (color photograph of *Corydalis aurea*), 124 (071911), 140 (recorded as *Corydalis aurea* Willdenow subsp. *occidentalis* (Engelmann ex A. Gray) G.B. Ownbey, Pages 185-187 & 294)*

Gentianaceae: The Gentian Family

***Centaurium arizonicum* (A. Gray) A.A. Heller: Arizona Centaury**

SYNONYMY: *Centaurium calycosum* (S.B. Buckley) M.L. Fernald (var. *arizonicum* (A. Gray) I. Tidestrøm is the variety reported as occurring in Arizona). COMMON NAMES: Arizona Centaury; Buckley's Centaury; Canchalagua; Centaury (a name also applied to the genus *Centaurium*); Rosita. DESCRIPTION: Terrestrial annual or biennial forb/herb (5 to 32 inches in height, plants 12 inches in height and 8 inches in width were observed and recorded); the leaves are light green or yellow-green; the flowers (to 1 inch in diameter) may be cerise-pink, lavender, magenta, magenta-purple with a white throat, orangish-dark pink, pink, pink-purple, pink & white, pink & yellow, pinkish-purple, purple-pink, rose-pink, rose-purple & yellow, scarlet, violet or white (rarely), the anthers are yellow; flowering generally takes place between late March and late October (additional records: one for early January, one for mid-February, one for mid-November and one for mid-December, flowering year-round in favorable locations has also been reported). HABITAT: Within the range of this species it has been reported from mountains; bases of cliffs; rocky canyons; canyon bottoms; ridges; meadows; hills; hillsides; slopes; bases of slopes; amongst rocks; prairies; flats; along rocky-sandy-loamy roadsides; sandy draws; within gulches; silty ravines; bottoms of ravines; within seeps; around and in springs; in sand along streams; along and in sandy streambeds; in gravel along creeks; within rocky-gravelly creekbeds; along rivers; riverbeds; along and in gravelly and sandy washes; along sandy drainages; around pools; ciénegas; within marshy areas; along (sandy-loamy) banks of streams, streambeds and rivers; along edges of seeps, creeks, rivers and ponds; margins of creeks; shores of rivers; sand bars; mud banks; rocky beaches; grassy bottomlands; sandy floodplains; along ditches; stock tanks; riparian areas, and disturbed areas growing in muddy and wet, moist, damp and dry rocky, rocky-gravelly, gravelly and sandy ground; rocky-sandy loam, sandy loam and loam ground; silty clay ground, and silty ground, occurring from 150 to 8,700 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. Variety *arizonicum* is the variety of *Centaurium calycosum* reported as occurring in Arizona. *Centaurium arizonicum* is native to southwest-central and southern North America. *5, 6, 15 (recorded as *Centaurium calycosum* (Buckl.) Fern.), 28 (recorded as *Centaurium calycosum*, color photograph 602), 43 (081810 - *Centaurium calycosum* Fernald), 44 (072011 - no record of species; genus record), 46 (recorded as *Centaurium calycosum* (Buckl.) Fern., Page 646), 63 (081810), 77 (recorded as *Centaurium calycosum* (Buckl.) Fern., color photograph #28), 85 (072011 - color presentation), 86, 124 (072011 - no record of species; genus record), 140 (recorded as *Centaurium calycosum* (Buckley) Fernald, Page 294)*

Centaurium calycosum (see NOTES and footnote 140 under *Centaurium arizonicum*)

Centaurium calycosum var. *arizonicum* (see *Centaurium arizonicum*)

Geraniaceae: The Geranium Family

***Erodium cicutarium* (C. Linnaeus) C.L. L'Héritier de Brutelle ex W. Aiton (subsp. *cicutarium* is the subspecies reported as occurring in Arizona): Redstem Stork's Bill**

COMMON NAMES: Afilaree; Aguaje del Pastor ("Shepherd's Needle", Spanish: Mexico)[140]; Agujitas ("Little Needle", Spanish: Sonora)[140]; Alfilaree (a name also applied to the genus *Erodium*); Alfilaria (a name also applied to the genus *Erodium*); Alfilaria (a name also applied to the genus *Erodium*, Spanish); Alfilaria [Alfilario, de Pastor] ("[Shepherd's] Little Needle" a name also applied to the genus *Erodium*, Spanish: California, New Mexico to Edo. México, Guerrero)[140]; Alfilarilla (a name also applied to the genus *Erodium*, Spanish); Alfileres [Alfileritos] ("[Little] Needles", Spanish: Spain)[140]; Alfileria (Spanish); Alfilerilla (a name also applied to the genus *Erodium*, Spanish); Alfillarilla (a name also applied to the genus *Erodium*, Spanish); Alfirerillo (Hispanic); Alfiliria (a name also applied to the genus *Erodium*, Spanish); Arete (Hispanic); California Filaree (a name also applied to other species); Chikwi (Chumash: Barbareño Chumash)[140]; Chooyin 'azee' <čoyn ʾazeʾ> (Athapascan: Navajo)[140]; Clocks; Coastal Heron's Bill; Coastal Heron's-bill; Common Heron's Bill; Common Heron's-bill; Common Herons Bill; Common Herons-bill; Common Heronsbill; Common Stork's Bill (a name also applied to other species); Common Stork's-bill (a name also applied to other species); Crane's Bill (a name also applied to other species and the genus *Erodium*); Crane's Bill (English)[140]; Cranesbill (a name also applied to other species); Cut-leaf Filaree; Cutleaf Filaree; Dah

Yiitíhídą́ą́' <dahitíhídą́'> ("Hummingbird's Food", Athapascan: Navajo)[140]; Dzílí Bíláshgaan <tzílí pilackaan> (Athapascan: Navajo)[140]; Filaree (a name also applied to the genus *Erodium*, Spanish); [Red-stem] Filaree (English)[140]; Filaria; Fileree (a name also applied to the genus *Erodium*, Spanish); Filerie (a name also applied to the genus *Erodium*, Spanish); Hawañ Ta:tad (Uto-Aztecan: Tohono O'odham)[140]; Hemlock Geranium; Hemlock Heron's Bill; Hemlock Heron's-bill; Hemlock Stork's Bill; Hemlock Stork's-bill; Hemlock Storksbill; Herba de la Coralina ("Little Pink Herb", Spanish: Mexico)[140]; Heron Bill (a name also applied to the genus *Erodium*); Heron's Bill (a name also applied to the genus *Erodium*); Heron-bill (a name also applied to the genus *Erodium*); Heron's-bill (a name also applied to the genus *Erodium*); Heronbill (a name also applied to the genus *Erodium*); Hierba de Chuparrosa [Yerba de Chuparrosa] ("Hummingbird Herb", Spanish: Chihuahua)[140]; Hoho'ibaḍ (Uto-Aztecan: Akimel O'odham, Hiá Ceḍ O'odham, Tohono O'odham)[140]; Ko:koḍ Oipij (Uto-Aztecan: Tohono O'odham)[140]; Kwł'łn (Chumash: Ventureño Chumash)[140]; Min^{a}m^{é}n'yá' <min'min'ya> (Yuman: Walapai)[140]; Muutanav+ziv+ [Muutanamuzuv+] ("Hummingbird Beak", Uto-Aztecan: Kawaiisu)[140]; Pa'boiäts (Uto-Aztecan: Ute)[140]; Pakhanat (Uto-Aztecan: Cahuilla)[140]; Piene de Bruja ("Witch's Comb", Spanish: Edo. México)[140]; Pico de Cigüeña ("Crane's Bill", Spanish: Mexico)[140]; Pikuku Jasi (Purépecha); Pin Grass (a name also applied to other species and the genus *Erodium*); Pin Weed (a name also applied to other species); Pin-clover (a name also applied to the genus *Erodium*); Pin-clover (English)[140]; Pin-grass (a name also applied to other species and the genus *Erodium*); Pin-weed (a name also applied to other species); Pinclover; Pine-needle; Pingrass; Pink Filaree; Pink Needle; Pink-needle; Pinweed; Powk-needle; Purple Filaree; Red Alfilaree; Red Stem Alfilaree; Red Stemmed Filaree; Red Stemmed Stork's Bill; Red-stem (English)[140]; Red-stem Alfilaree; Red-stem Filaree; Red-stem Stork's Bill; Red-stem Stork's-bill; Red-stemmed Filaree; Red-stemmed Filarel; Red-stemmed Stork's Bill; Red-stemmed Stork's-bill Filaree; Redstem Alfilaree; Redstem Filaree; Redstem Filaria; Redstem Stork's Bill; Redstem Stork's-bill; Redstem Storksbill; S'u'wlima' (Chumash: Ineseño Chumash)[140]; Semuči (Uto-Aztecan: Tarahumara)[140]; Semuchi (Hispanic); Small-flowered Stork's Bill; Small-flowered Stork's-bill; Stick-pile; Stork's Bill (a name also applied to the genus *Erodium*); [Red-stem] Stork's Bill [Storkbill] (a name also applied to the genus *Erodium*, English)[140]; Stork's-bill (a name also applied to the genus *Erodium*); Storks' Bill (a name also applied to the genus *Erodium*); Storksbill (a name also applied to the genus *Erodium*); Tenedorcitos ("Little Forks", Spanish: Spain)[140]; Tsís'ná dáá' ("Bee Food", Athapascan: Navajo)[140]; Wild Musk; Yam'pagwanûp (Uto-Aztecan: Shoshoni)[140]. DESCRIPTION: Terrestrial annual or biennial forb/herb (prostrate, decumbent and/or erect 2 to over 32 inches in height/length); the flowers may be blue, blue-violet, fuchsia, lavender, lavender-pink, lilac, magenta, magenta-lavender, magenta-rose, pink, dark pink, pink-lavender, pink-magenta, pink-purple, pinkish-violet, purple, purple-pink, red-lavender, rose-lavender or violet; flowering generally takes place between late December and mid-October (additional record: one for early November). HABITAT: Within the range of this species it has been reported from rocky mountains; bouldery mountainsides; gravelly, gravelly-sandy and sandy mesas; sandy bases of mesas; plateaus; cliffs; rocky walls; along and in rocky and sandy canyons; bouldery-gravelly-sandy and sandy canyon bottoms; clayey-cindery talus slopes; buttes; knolls; rocky ledges; bouldery, rocky and gravelly ridges; shaley ridgetops; meadows; cinder cones; rocky and sandy foothills; bouldery, rocky and sandy hills; bases of hills; rocky-gravelly hilltops; bouldery, rocky, rocky-gravelly, gravelly and loamy hillsides; bouldery, rocky, rocky-pebbly-clayey-loamy, rocky-sandy-loamy, rocky-loamy, rocky-loamy-clayey, rocky-clayey, rocky-clayey-loamy, shaley, shaley-gravelly, stony, stony-cobbly, cindery, gravelly, gravelly-sandy, gravelly-loamy, gravelly-clayey, sandy, sandy-clayey, sandy-clayey-loamy, loamy, clayey, clayey-loamy, silty-loamy and humusy slopes; rocky alluvial fans; sandy bases of alluvial fans; rocky and gravelly bajadas; rocky outcrops; amongst rocks; lava flows; sand and sandy-clayey dunes; rocky banks; benchlands; breaks; steppes; prairies; plains; gravelly, gravelly-sandy, sandy, sandy-loamy, sandy-clayey and loamy flats; uplands; rocky and sandy basins; valley floors; valley bottoms; coastal plains; along cindery railroad right-of-ways; rocky roadbeds; roadcuts; along rocky, gravelly, gravelly-sandy-clayey-loamy, sandy and sandy-loamy roadsides; along rocky-sandy and sandy arroyos; along bottoms of arroyos; gravelly and sandy draws; rocky gulches; sandy bottoms of gulches; rocky ravines; seeps; springs; along streams; streambeds; along creeks; along sandy creekbeds; sandy riverbeds; along and in rocky, rocky-sandy, gravelly, gravelly-sandy and sandy washes; along and in sandy and silty drainages; in rocks around ponds; silty lakebeds; gravelly depressions; swales; along (gravelly-sandy) banks of streams, creeks and rivers, ponds and lakes; (rocky, sandy and muddy) edges of springs and washes, salt marshes and washes; shores of lakes; cobbly and sandy beaches; rocky-sandy, stony-loamy and sandy benches; rocky terraces; sandy and loamy bottomlands; cobbly-silty and sandy floodplains, mesquite bosques; margins of stock tanks; receding shorelines of reservoirs; along ditches; recently burned areas; riparian areas; waste places, and disturbed areas growing in moist, damp and dry rimrock pavement; cryptogamic; bouldery, bouldery-gravelly-sandy, rocky, rocky-gravelly, rocky-sandy, shaley, shaley-gravelly, stony, stony-cobbly, cobbly, cindery, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-pebbly-clayey loam, rocky-sandy loam, rocky-clayey loam, stony loam, gravelly loam, gravelly-sandy loam, gravelly-sandy-clayey loam, sandy loam, sandy-clayey loam, clayey loam, silty-clayey loam, silty loam and loam ground; rocky clay, rocky-loamy clay, shaley clay, gravelly clay, sandy clay and clay ground; cobbly silty and silty ground, and humusy ground, occurring from sea level to 9,400 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant that poses a significant threat to our native biotic communities. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used for food, as fodder, for protection (dried and powdered plant parts were mixed with watermelon seeds during storage and planting to prevent disease), as a drug or medication and as a ceremonial item. The fruits are collected by Harvester Ants. *Erodium cicutarium* is native to northern, central, eastern and southern Europe; northern, western, central and southern Asia, and northern Africa. *5, 6, 15, 16, 22 (color photograph), 28 (color photograph 593), 30, 43 (021910 - *Erodium cicutarium* (L.) L'Hér. ex Aiton), 44 (072111), 46 (Page 486), 58, 63 (021910 - color presentation), 77, 80 (This species is listed as a Secondary Poisonous Range Plant. "Filaree is a valuable forage plant that furnishes good forage in both the green and dry state. However, plants occasionally develop high concentrations of nitrate that may cause loss of livestock. In Arizona, there have been several instances of heavy death loss in cattle showing typical symptoms

of nitrate poisoning that have been associated with high nitrate content in Filaree plants. ... Danger is highest during the flush period of growth. ... Control of Filaree is not generally desirable because of its forage value, therefore, animals may need to be moved to less dangerous pastures during the critical period." See text for additional information.), **85** (072111 - C.H. Bowen reported the following in a collection record dated May 13, 1920: "This plant is a native of the Mediterranean region having spread from there over large portions of Europe, Asia, Africa and North and South America. It is believed to have been introduced into the western hemisphere by the early Spanish explorers either in Mexico or Central America and later in California from whence it has spread over considerable areas principally in California, Nevada, Utah, Arizona and New Mexico. It seems to thrive best between elevations of 1500 and 4500 feet and where abundant is often considered to double the spring carrying capacity of the range. Relished by all classes of stock especially by sheep.", color presentation), 86 (color photograph), 101 (color photograph), 115 (color presentation), 124 (072011), 127, 140 (Pages 153-155 & 294)*

Hydrophyllaceae: The Waterleaf Family

***Eucrypta micrantha* (J. Torrey) A.A. Heller: Dainty Desert Hideseed**

COMMON NAMES: Dainty Desert Hideseed; Desert Eucrypta; Desert Hideseed; Peluda; Small-flower Eucrypta; Smallflower Eucrypta; Small-flower Eucrypta; Small Flowered Eucrypta; Small-flowered Eucrypta. DESCRIPTION: Terrestrial annual forb/herb (2 inches to 1 foot in height); the stems may appear to be vining; the leaves are dark green; the cup-shaped flowers may be pale blue-purple, blue, blue-magenta, blue-purple, pale lavender, pale pink-lavender, purple, reddish-purple with a yellow throat, pale violet, violet or white; the anthers are blue; flowering generally takes place between mid-January and mid-June (additional record: one for late October). HABITAT: Within the range of this species it has been reported from mountains; gravelly mesas; cliffs; bases of cliffs; along canyons; rocky canyon walls; bouldery, rocky and sandy canyon bottoms; crevices in rocks; knolls; ledges; rocky ridges; bouldery ridgetops; cinder cones; foothills; rocky and gravelly-sandy hills; rocky and sandy-loamy hillsides; bases of hillsides; bouldery, bouldery-gravelly, rocky, rocky-stony, rocky-gravelly, rocky-sandy, rocky-clayey, gravelly, gravelly-loamy, gravelly-silty and sandy slopes; alluvial fans; sandy bajadas; amongst boulders and rocks; bases of rocks; lava flows; sand hills; sand dunes; sandy plains; gravelly flats; basins; valley floors; along railroad right-of-ways; along gravelly roadsides; within rocky, rocky-sandy and sandy arroyos; along draws; gulches; ravines; along streams; along rivers; along and in rocky, rocky-sandy, rocky-silty, cobbly-silty-loamy, gravelly, gravelly-sandy and sandy washes; along drainages; lakebeds; sandy and clayey depressions; along (gravelly-sandy and sandy) banks of rivers and washes; edges of washes and lakes; shores of lakes; sand bars; benches; gravelly terraces; sandy bottomlands; floodplains; riparian areas, and disturbed areas growing in dry desert pavement; bouldery, bouldery-gravelly, rocky, rocky-stony, rocky-gravelly, rocky-sandy, shaley, cindery, gravelly, gravelly-sandy and sandy ground; bouldery-sandy-clayey loam, cobbly-silty loam, gravelly loam, sandy loam, sandy-clayey loam and silty loam ground; rocky-clayey and clayey ground, and rocky silty, gravelly-sandy silty and gravelly silty ground often n the shade of boulders, rocks, shrubs and trees, occurring from 100 to 8,300 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Eucrypta micrantha* is native to southwest-central and southern North America. *5, 6, 15, 16, 28 (color photograph 696), 43 (022110), 44 (072211), 46 (Page 697), 58, 63 (022110 - color presentation), 77, **85** (072211 - color presentation), 115 (color presentation), 124 (072211 - no record of genus or species), 140 (Page 294)*

***Nama hispidum* A. Gray: Bristly Nama**

SYNONYMY: *Nama hispidum* A. Gray var. *mentzelii* A. Brand; *Nama hispidum* A. Gray var. *revolutum* W.L. Jepson; *Nama hispidum* A. Gray var. *spathulatum* (J. Torrey) C.L. Hitchcock. COMMON NAMES: Bristly Nama; Bristly Purple Mat; Curled Nama; Hairy Nama; Hispid Nama; Hispid Purple Mat; Hohr-oohit (Seri); Morada; Purple Mat (a name also applied to the genus *Nama*); Purple Roll Leaf; Purple Roll-leaf; Rough Fiddleleaf; Rough Nama; Rough Purple Mat; Sand Bells (Oklahoma, Texas); Sand Bells; Sand-bell; Sand-bells; Sandbell; Sandbells (Oklahoma, Texas). DESCRIPTION: Terrestrial annual forb/herb (2 inches to 1 foot in height and up to 16 inches in width; plants were observed and described as being 3½ inches in height and 7 inches in width, plants were observed and described as being 3 inches in height and 9½ inches in width, plants were observed and described as being 4 inches in height and width, plants were observed and described as being 4 inches in height and 8 inches in width,, one plant was observed and described as being 6 inches in height and 3½ inches in width, one plant was observed and described as being 10 inches in height and 12 inches in width); the leaves are pale green or white; the flowers may be blue, blue-purple, dark blue, pale lavender, lavender, lavender-pink, magenta, pink-purple, pinkish-lavender, pinkish-magenta, pinkish-purple, purple, purple-magenta; purple-white, red-purple, rose, rose-magenta, violet, violet-blue or white; flowering generally takes place between late January and early November (additional records: two for mid-December). HABITAT: Within the range of this species it has been reported from mountains; cobbly-gravelly-loamy mountainsides; gravelly-sandy-loamy and sandy mesas; plateaus; rocky canyons; rocky canyon walls; sandy canyon bottoms; talus slopes; knolls; sandy foothills; sandy hills; rocky-sandy hilltops; escarpments; bedrock, rocky, sandy, sandy-loamy, sandy-clayey, and sandy-clayey-loamy slopes; gravelly and sandy alluvial fans; sandy bajadas; lava flows; lava beds; sand hills; sand dunes; sand hummocks; stony tablelands; sandy-clayey prairies; sandy plains; gravelly, gravelly-loamy, sandy, sandy-clayey and sandy-clayey-loamy flats; sandy valley floors; coastal plains; beach dunes; along gravelly, gravelly-sandy, gravelly-loamy, gravelly-sandy-loamy, sandy, sandy-loamy and clayey roadsides; rocky, sandy and sandy-loamy arroyos; sandy bottoms of arroyos; rocky, gravelly and sandy draws; sandy bottoms of draws; ravines; along streams; along sandy streambeds; along creeks; along rivers; rocky-cobbly-sandy and sandy riverbeds; along and in rocky-sandy, gravelly, gravelly-sandy, gravelly-sandy-silty, sandy and clayey washes; sandy-silty playas;

swales; along (sandy and silty) banks of streams, rivers and washes; along (gravelly-sandy) edges of streams and playas; (rocky-sandy) shores of lakes; sandy beaches; benches; terraces, sandy bottomlands; lowlands; cobbly, cobbly-silty, sandy, clayey and silty floodplains; margins of stock tanks; canal walls; along ditches; ditch banks; sandy riparian areas, and disturbed areas growing in dry desert pavement; rocky, rocky-cobbly-sandy, rocky-gravelly, rocky-sandy, stony, cobbly, gravelly, gravelly-sandy and sandy ground; cobbly-gravelly loam, gravelly loam, gravelly-sandy loam, gravelly-sandy-clayey loam, sandy loam, sandy-clayey loam and loam ground; sandy clay, silty clay and clay ground; cobbly silty, gravelly-sandy silty, sandy silty and silty ground, and silty powdery ground, occurring from sea level to 7,000 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. *Nama hispidum* is native to southwest-central and southern North America. *5, 6, 15, 16, 43 (022110 - *Nama hispida* A. Gray, *Nama hispida* A. Gray var. *mentzelii* Brand, *Nama hispidum* A. Gray var. *revoluta* Jepson and *Nama hispida* A. Gray var. *spathulata* (Torr.) C.L. Hitchc.), 44 (072311), 46 (Page 706), 58, 63 (022110 - color presentation), 77, **85** (072311 - color presentation), 115 (color presentation), 124 (072311), 127, 140 (Page 294), **WTK** (April 16, 2008)*

Nama hispidum var. *mentzelii* (see *Nama hispidum*)

Nama hispidum var. *revolutum* (see *Nama hispidum*)

Nama hispidum var. *spathulatum* (see *Nama hispidum*)

Phacelia ambigua (see *Phacelia crenulata* var. *ambigua*)

Phacelia ambigua var. *ambigua* (see footnote 85 under *Phacelia crenulata* var. *ambigua*)

***Phacelia arizonica* A. Gray: Arizona Phacelia**

SYNONYMY: *Phacelia popei* J. Torrey & A. Gray var. *arizonica* (A. Gray) J.W. Voss. COMMON NAMES: Arizona Phacelia; Arizona Scorpion-weed; Arizona Scorpionweed; Caterpillar Weed (a name also applied to other species). DESCRIPTION: Terrestrial perennial forb/herb (1 to 16 inches in height); the flowers may be light blue, pale bluish-purple, blue-purple, blue-purplish, pale lavender, lavender, lavender-white, pale pink-lavender, pink, pale purple, pale purplish, purple, dusty rose, pale violet, white, whitish, white with a lavender tinge or white with a pale maroon center; the filaments are mauve; the anthers are blue; flowering generally takes place between late February and early June (additional records: one for early February, two for mid-July, three for early September and one for mid-September). HABITAT: Within the range of this species it has been reported from mountains; sandy mesas; rocky and gravelly canyons; sandy canyon bottoms; ledges; foothills; rocky hills; hilltops; rocky, gravelly and gravelly-loamy slopes; rocky-sandy and sandy alluvial fans; sandy bajadas; amongst grasses; lava flows; plains; sandy flats; valley floors; along rocky-sandy, gravelly, gravelly-sandy, gravelly-sandy-silty, sandy and loamy roadsides; gravelly bottoms of arroyos; gravelly streambeds; along creeks; along rivers; riverbeds; along rocky-gravelly, gravelly and sandy washes; drainages; cobbly-sandy-loamy swales; (sandy) banks of washes; gravel bars; terraces; along sandy floodplains; lowlands; sandy mesquite woodlands; sandy riparian areas; waste places, and disturbed areas growing in dry rocky, rocky-gravelly, rocky-sandy, gravelly, gravelly-sandy and sandy ground; cobbly-sandy loam, gravelly loam, clayey loam and loam ground, and gravelly-sandy silty ground, occurring from 1,500 to 8,000 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Phacelia arizonica* is native to southwest-central and southern North America. *5, 6, 15, 16, 43 (072209), 44 (072311 - no record of species; genus record), 46 (Page 703), 58, 63 (022210 - color presentation), 77, **85** (072311 - color presentation), 124 (072311 - no record of species; genus record), 140 (Page 294)*

***Phacelia campanularia* A. Gray (var. *campanularia* is the variety reported as occurring in Arizona): Desertbells**

COMMON NAMES: Annual Desert Bluebell; Bell-flowered Phacelia; California Bell-flower Phacelia; California Bluebell; California Desert Blue-bell; California Desert Blue-bells; California Desert Blue-bell; Desert Blue Bell; Desert Blue Bells; Desert Blue-bell; Desert Blue-bells; Desert Bluebell; Desert Bluebells; California Desert Bluebells; Campanulata Phacelia; Campanulate Phacelia; Charlotte's Phacelia; Desertbells; Desert Canterbury Bell; Desert Canterbury Bells; Desert Canterbury-bell; Desert Canterbury-bells; Desert Bell; Desert Bells; Desert-bell; Desert-bells; Desertbells; Desert Scorpion-weed; Desert Scorpionweed. DESCRIPTION: Terrestrial annual forb/herb (2 to 30 inches in height and about the same in width); the leaves are gray-green; the bell-shaped flowers are blue, blue-purple, blue-violet, dark blue, deep blue-violet, bluish-purple, indigo, purple-cream, dark purple, violet or deep violet; flowering generally takes place between early March and early June (additional records: one for late January, four for mid-February, one for late June, two fro early October and two for early November). HABITAT: Within the range of this species it has been reported from mountains; rocky canyons; gravelly-sandy canyon bottoms; rocky talus slopes; crevices in rocks; ridges; foothills; bouldery hills; rocky hillsides; bases of hills; bedrock, bouldery-rocky-gravelly-sandy, bouldery-gravelly-sandy, rocky, gravelly and sandy slopes; gravelly and sandy alluvial fans; bajadas; rocky outcrops; amongst rocks; bases of rocks; blow-sand deposits; rocky-sandy outwash fans; rocky-sandy debris flows; gravelly flats; sandy valley floors; along sandy roadsides; along sandy creekbeds; along and in bouldery, bouldery-rocky-gravelly-sandy, bouldery-gravelly-sandy, rocky, rocky-sandy, gravelly-sandy and sandy washes, and disturbed areas growing in dry gravelly

desert pavement; bouldery, bouldery-gravelly-sandy, rocky, rocky-sandy, gravelly, gravelly-sandy and sandy ground, occurring from 1,000 to 5,200 feet in elevation in the woodland, scrub and desertscrub ecological formations. NOTES: EXOTIC Plant. *Phacelia campanularia* is native to southwest-central (California) North America. *18, 28, 43 (022310), 44 (072411 - color photograph), 46 (no record of species; genus, Pages 698-704), 63 (022310 - color presentation), 77, **85** (072411 - color presentation of dried materials), 86 (color photograph), 115 (color presentation), 124 (072411 - no record of species; genus record)*

***Phacelia crenulata* J. Torrey ex S. Watson var. *ambigua* (M.E. Jones) J.F. Macbride: Purplestem Phacelia**

SYNONYMY: *Phacelia ambigua* M.E. Jones. COMMON NAMES: Caterpillar Plant; Caterpillar Weed (a name also applied to this species and other species); Caterpillar-weed (a name also applied to this species and other species); Jone's (error) Phacelia; Jones' Phacelia; Notch-leaf Phacelia; Notch-leaved Phacelia; Phacelia (a name applied to the species, other species and to the genus *Phacelia*); Purple-stem Caterpillar-weed; Purple-stem Phacelia; Purple-stem Scorpion-weed; Purple-stem Scorpionweed; Purplestem Caterpillarweed; Purplestem Phacelia; Purplestem Scorpionweed; Scorpion-weed (a name applied to this species and the genus *Phacelia*); Wild Heliotrope (a name also applied to this species and other species); Wild-heliotrope (a name also applied to this species and other species); Ytamoosh-oohit (Desert Tortoise Food). DESCRIPTION: Terrestrial annual forb/herb (4 to 40 inches in height); the foliage may be yellow-green; the flowers may be blue, blue-lavender, blue-purple, blue-violet, lavender, lavender-blue, purple or violet; flowering generally takes place between early January and early June (additional records: one for early September, one for late November, one for early December and three for mid-December). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; rocky and gravelly mesas; bases of cliffs; canyons; along gravelly canyon bottoms; crevices in rocks; ledges; ridges; craters; foothills; silty hills; rocky, rocky-gravelly and gravelly hillsides; rocky, rocky-gravelly-sandy, rocky-loamy and gravelly slopes; rocky and sandy alluvial fans; bajadas, gravelly-sandy pediments; amongst rocks; sandy lava fields; sand dunes; breaks; plains; rocky-gravelly-sandy, gravelly, sandy and loamy flats; basins; stony valley floors; along rocky, gravelly, gravelly-sandy and sandy roadsides; arroyos; rocky draws; gulches; gravelly springs; along creeks; sandy riverbeds; along and in rocky, gravelly, gravelly-sandy and sandy washes; drainages; (gravelly, gravelly-sandy and sandy) banks of rivers and washes; edges of washes; along shores of lakes; gravelly sand bars; benches; rocky shelves; along edges and banks of canals; riparian areas, and disturbed areas growing in dry desert pavement; rocky, rocky-gravelly, rocky-gravelly-sandy, rocky-sandy, shaley, stony, gravelly, gravelly-sandy and sandy ground; rocky loam, gravelly loam, clayey loam ground; sandy clay ground, and sandy silty and silty ground, occurring from sea level to 7,000 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The species, *Phacelia crenulata*, was reported to have been utilized by native peoples of North America; it was also noted as having been used as a veterinary aid. *Phacelia crenulata* var. *ambigua* is native to southwest-central and southern North America. *5, 6, 28 (color photograph of the species 712), 43 (022410), 44 (072411), 46 (Page 704), 63 (022410 - color presentation), 80 (Phacelia (*Phacelia crenulata* and *Phacelia pedicellata*) is listed as a Rarely Poisonous and Suspected Poisonous Range Plant. "These annual forbs have caused liver damage in horses, hogs and cattle. Also their glandular hairs may cause severe dermatitis to susceptible persons."), **85** (072411 - color presentation), 115 (color presentation of the species), 124 (072411 - no record of species; genus record), 127 (species)*

***Phacelia distans* G. Bentham: Distant Phacelia**

SYNONYMY: *Phacelia distans* G. Bentham var. *australis* A. Brand. COMMON NAMES: Blue Phacelia; Blue-eyed Phacelia; Blue-eyed Scorpionweed; Caterpillar Phacelia; Caterpillar Weed (a name also applied to other species); Distant Phacelia; Distant Scorpion Weed; Distant Scorpion-weed; Distant Scorpionweed; Fern Phacelia; Fern-leaf Phacelia; Fern-phacelia; Scorpion-weed (a name also applied to other species and the genus *Phacelia*); Wild Heliotrope (a name also applied to other species). DESCRIPTION: Terrestrial annual or perennial forb/herb (decumbent to erect stems 3 to 40 inches in height; one plant was observed and described as being 20 inches in height and width); the fern-like leaves are green, the flowers may be light blue, light blue-purple, blue, blue-lavender, blue-lavender-purple, blue-pink, blue-purple, blue-violet, bluish-lavender, bluish-white, pale lavender, lavender, lavender-blue, lavender-pink, light purple, purple, purple-blue, purplish-blue, dark purplish-blue, pale violet, violet-blue, white or whitish; flowering generally takes place between mid-January and late June (additional records: one for mid-July, one for late July, one for early August, one for early September, two for early November, one for mid-November and two for late November). HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; bases of mountains; gravelly-loamy mesas; sandy plateaus; bases of cliffs; rocky and rocky-silty canyons; bouldery, rocky, rocky-sandy, gravelly, gravelly-sandy and sandy canyon bottoms; chasms; scree; rocky knobs; rocky ridges; sandy ridgetops; meadows; foothills; bouldery and rocky hills; hilltops; bouldery and rocky hillsides; bouldery, rocky, rocky-gravelly, rocky-sandy, rocky-clayey-loamy, gravelly, gravelly-sandy-loamy, gravelly-loamy, sandy, clayey and silty-clayey slopes; rocky, rocky-gravelly, rocky-sandy and rocky-sandy-loamy alluvial fans; rocky, gravelly, gravelly-sandy and sandy bajadas; bouldery and rocky outcrops; amongst boulders and rocks; bases of rocks; sand dunes; sandy-loamy plains; gravelly, gravelly-sandy, sandy and clayey flats; basins; rocky, gravelly and sandy valley floors; coastal plains; sandy coastal strands; sandy railroad right-of-ways; along gravelly and sandy roadsides; along sandy arroyos; along bottoms of arroyos; rocky draws; ravines; seeps; springs; along streams; sandy streambeds; along creeks; creekbeds; along and in bouldery-gravelly-sandy, rocky, rocky-sandy, gravelly, gravelly-sandy and sandy washes; in gravelly-sandy and sandy drainages; sandy lakebeds; ponds; bogs; rocky-sandy depressions; (sandy) banks of arroyos, streams, creeks, rivers and washes; along (gravelly-sandy) edges of streams and washes; margins of washes; along rocky-sandy and rocky-loamy benches; sandy and silty-loamy terraces; loamy bottomlands; sandy floodplains; along canals; bouldery-sandy and sandy riparian areas; recently burned areas of woodland,

chamise chaparral and sage scrub, and disturbed areas growing in moist and dry desert pavement; bouldery, bouldery-gravelly-sandy bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-sandy loam, rocky-clayey loam, gravelly loam, gravelly-sandy loam, sandy loam, silty loam and loam ground; silty clay and clay ground, and rocky silty ground often in the shade of boulders, shrubs and trees, occurring from sea level to 7,100 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. *Phacelia distans* is native to southwest-central and southern North America. *5, 6, 15, 16, 28 (color photograph 713), 43 (022410 - *Phacelia distans* var. *australis* Brand), 44 (072411), 46 (Page 703), 58, 63 (022410 - color presentation), 77 (color photograph 29), **85** (072411 - color presentation), 86 (color photograph), 115 (color presentation), 124 (072411 - no record of species; genus record), 127, 140 (Page 294)*

Phacelia distans var. *australis* (see *Phacelia distans*)

Phacelia distans var. *australis* (see *Phacelia distans*)

Phacelia popei var. *arizonica* (see *Phacelia arizonica*)

Juglandaceae: The Walnut Family

***Juglans major* (J. Torrey) A.A. Heller: Arizona Walnut**

SYNONYMY: *Juglans microcarpa* J.L. Berlandier var. *major* (J. Torrey) L.D. Benson; *Juglans rupestris* G. Engelmann ex J. Torrey var. *major* J. Torrey. COMMON NAMES: Arizona Black Walnut; Arizona Walnut; Ch'iłdiiyé [Ch'iłniiyé] <ch'il niyé> (Athapascan: Western Apache)[140]; Ha'ałtsédii <xa'ałtsyétiih> ("That Which is Cracked", Athapascan: Navajo)[140]; Hałsede <hałtsede> ("That Which is Cracked", Athapascan: Chiricahua and Mescalero Apache)[140]; Ïpïvï <ïpokai> (Uto-Aztecan: Northern Tepehuan)[140]; Ïpïvï <uupï> (Uto-Aztecan: Onavas Pima; probably Epeve or Upuvụ)[140]; Kemtcutek[a] <gamjudk> (Yuman: Walapai)[140]; Lačí (Uto-Aztecan: Tarahumara)[140]; Mụrụkátụvụáci (Uto-Aztecan: Ute)[140]; New Mexico Walnut; Noga'al U'sh (Uto-Aztecan: Mountain Pima)[140]; Nogal (a name also applied to the genus *Juglans*, the small nut is known in Spanish as "nogales"); Nogal (Spanish: Chihuahua, Sonora)[140]; Nogal Cimarrón (Hispanic); Nogal Encarcelado (Hispanic); Nogal Silvestre ("Wild Walnut", Spanish: Chihuahua, Sonora, Texas)[140]; Súhūvi (Uto-Aztecan: Comanche)[140]; U:pio (Uto-Aztecan: Tohono O'odham)[140]; Uup [Uupio] (Uto-Aztecan: Mountain Pima)[140]; Uupai (Uto-Aztecan: Northern Tepehuan)[140]; Uupio (Uto-Aztecan: Akimel O'odham)[140]; Walnut (a name also applied to the genus *Juglans* and the Juglandaceae); [Arizona] Walnut (English)[140]. DESCRIPTION: Terrestrial perennial deciduous tree (5 to 66 feet in height with a rounded crown that may be of about the same width as the height of the tree; one tree was observed and described as being 5 feet in height with a crown 4 feet in width, one tree was observed and described as being 7 feet in height with a crown 5 feet in width, one tree was observed and described as being 23 feet in height with a crown 26 feet in width); the trunk may be up to 4 feet in diameter; the older bark is gray, dark gray, grayish-brown or dark gray-brown; the young stems may be light to dark brown; the pinnately compound leaves (7 to 14 inches in length) are green or yellow-green; the flowers (male and female flowers born on separate catkins or spikes) are greenish or yellowish; flowering generally takes place between mid-March and late June (additional records: one for mid-July, one for late July, one for early September and one for mid-September); the mature fruits (1 to 1½ inches in diameter) are rusty-green or yellow-green and ripen between July and September. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; plateaus; cliffs; sandy bases of cliffs; along and in bouldery, rocky and gravelly-sandy canyons; rocky canyonsides; along bouldery and cobbly canyon bottoms; ledges; rocky ridges; foothills; hills; hilltops; rocky hillsides; rocky escarpments; bouldery, bouldery-loamy, rocky, gravelly-loamy, loamy and silty slopes; amongst boulders and rocks; flats; glens; along valley bottoms; along rocky, rocky-sandy and gravelly roadsides; rocky and sandy arroyos; sandy bottoms of arroyos; within draws; gulches; ravines; springs; along streams; bouldery, bouldery-loamy and rocky streambeds; along creeks; along and in sandy creekbeds; along rivers; along riverbeds; along rocky, stony and sandy washes; drainages; along watercourses; ciénegas; (silty) banks of streams, creeks and rivers; (gravelly) edges of streambeds, washes and drainage ways; shores of lakes; sand bars; sandy benches; terraces; rocky bottomlands; along gravelly-sandy floodplains; mesquite bosques; along ditches; bouldery, gravelly, gravelly-sandy and sandy riparian areas, and disturbed areas growing in well drained moist and dry bouldery, rocky, stony, cobbly, cindery, gravelly, gravelly-sandy and sandy ground; bouldery loam, cobbly-sandy loam, gravelly loam and loam ground; silty ground, and humusy ground, occurring from 900 to 8,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat and is considered to be a valuable shade tree. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, beverage, fiber (building materials) and/or dye (brown) and paint (black) crop. Consider using the Arizona Walnut as a specimen plant in a large area and in the re-vegetation of riparian areas. Once past the seedling stage the Arizona Walnut has a growth rate of about one foot per year and may live to be 400 years of age. Note that the Arizona Walnut requires deep soil and moderate water but not as much water as other riparian trees such as the Alder, Ash, Cottonwood, Sycamore and Willow Trees. Walnut trees are susceptible to aphid infestations that produce considerable amounts of honeydew. Birds, squirrels and other wildlife eat the fruits and the tree provides habitat for wildlife including cavities that are used by the

Acorn Woodpecker (*Melanerpes formicivorus*). When restoring the floodplains of the major river systems in this township consider including the following plants in the mix: Inland Saltgrass (*Distichlis spicata*), Vine Mesquite Grass (*Panicum obtusum*), Indian Rushpea (*Hoffmannseggia glauca*), Little Snapdragon Vine (*Maurandella antirrhiniflora*), Schott Yellowhood (*Nissolia schottii*), Fingerleaf Gourd (*Cucurbita digitata*), Red Sprangletop (*Leptochloa panicea* subsp. *brachiata*), Whiplash Pappusgrass (*Pappophorum vaginatum*), Alkali Sacaton (*Sporobolus airoides*), Big Sacaton (*Sporobolus wrightii*), Hartweg Twinevine (*Funastrum cynanchoides*), Hartweg Twinevine (*Funastrum cynanchoides* subsp. *heterophyllum*), Virginia Creeper (*Parthenocissus quinquefolia*), Canyon Grape (*Vitis arizonica*), Drummond Clematis (*Clematis drummondii*), Mojave Seablite (*Suaeda moquinii*), Prairie Acacia (*Acacia angustissima*), Allthorn (*Koeberlinia spinosa* var. *spinosa*), Desert Saltbush (*Atriplex polycarpa*), Fourwing Saltbush (*Atriplex canescens*), Wright Lycium (*Lycium andersonii* var. *wrightii*), Torrey Lycium (*Lycium torreyi*), Arrowweed (*Pluchea sericea*), Fremont Lycium (*Lycium fremontii*), Creosote Bush (*Larrea tridentata* var. *tridentata*), Greythorn (*Ziziphus obtusifolia* var. *canescens*), Southern Cattail (*Typha domingensis*), Seep Willow (*Baccharis salicifolia*), Whitethorn Acacia (*Acacia constricta*), Desert Hackberry (*Celtis ehrenbergiana*), Catclaw Acacia (*Acacia greggii* var. *greggii*), Soaptree Yucca (*Yucca elata*), Coyote Willow (*Salix exigua*), Screwbean Mesquite (*Prosopis pubescens*), Common Cottonbush (*Cephalanthus occidentalis*), Desert Elderberry (*Sambucus nigra* ssp. *canadensis*), Blue Paloverde (*Parkinsonia florida*), Western Soapberry (*Sapindus saponaria* var. *drummondii*), Netleaf Hackberry (*Celtis laevigata* var. *reticulata*), Velvet Mesquite (*Prosopis velutina*), Western Black Willow (*Salix gooddingii*), Velvet Ash (*Fraxinus velutina*), Arizona Black Walnut (*Juglans major*), Fremont Cottonwood (*Populus fremontii* subsp. *fremontii*). *Juglans major* is native to southwest-central and southern North America. *5, 6, 13 (recorded as *Juglans microcarpa* Berlandier var. *major* (Torrey) L. Benson), 15, 18, 28 (color photograph 94), 30, 43 (080409), 44 (072411 - no record of species; genus record), 46, 48, 52 (color photograph), 53, 58, 63 (022610 - color presentation), **85** (072411 - color presentation), 124 (072411 - no record of species; genus record), 127, 140 (Pages 156-157 & 294)*

Juglans microcarpa var. *major* (see *Juglans major*)

Juglans rupestris var. *major* (see *Juglans major*)

Lamiaceae (Labiatae): The Mint Family

***Hyptis emoryi* J. Torrey: Desert Lavender**

COMMON NAMES: Bee Sage (a name also applied to other species); Bee-sage (Bee Sage is a name that is also applied to other species); "Chia" (a name given to the seeds of this plant, and also to the seeds and plants of several species of *Salvia*); Desert Lavender; Desert-lavender; Desertlavender; Emory Bee Sage; Emory Bee-sage; Emory's Bee Sage; Emory's Bee-sage; Lavender; Mariola (Yaqui, a name also applied to other species); Salvia (a name also applied to other species). DESCRIPTION: Terrestrial perennial evergreen shrub (8 inches to 15 feet in height; one plant was observed and described as being 8 feet in height and 8 feet in width); the leaves are gray, gray-green, grayish-white or green-gray; the flowers may be blue, blue-lavender, blue-purple, blue-violet, dark blue, lavender, pink-purple, purple, purple-indigo, violet, violet-blue or white; the styles are purple; the filaments are white; the anthers are purple; flowering generally takes place between mid-January and mid-June and between early September and mid-June (additional records: one for early July, one for mid-July and two for mid-August). HABITAT: Within the range of this species it has been reported from rocky mountains; rocky mountainsides; bouldery-clayey-loamy mesas; bases of cliffs; along and in bouldery, rocky and rocky-sandy canyons; along rocky, gravelly and sandy canyon bottoms; rocky talus slopes; crevices in rocks; buttes; ledges; rocky and gravelly ridges; bouldery ridgetops; rocky foothills; bases of foothills; rocky hills; bouldery, rocky, rocky-gravelly and gravelly hillsides; bouldery, bouldery-rocky, rocky, rocky-gravelly-loamy, stony and sandy slopes; rocky alluvial fans, bajadas; rocky outcrops; amongst boulders and rocks; sand dunes; tablelands; rocky-gravelly and sandy plains; gravelly flats; coastal plains; coast lines; along roadsides; rocky and rocky-gravelly arroyos; along rocky and gravelly bottoms of arroyos; troughs; along seepage streams; along streambeds; bouldery-rocky-sandy creekbeds; along and in bouldery, bouldery-gravelly, bouldery-gravelly-sandy, rocky, gravelly, gravelly-sandy and sandy washes; within rocky and rocky-gravelly drainages; (rocky) banks of streams and washes; along (sandy) edges of washes; along margins of washes and drainage ways; (gravelly) shores; floodplains; bouldery-cobbly-sandy riparian areas, and disturbed areas growing in dry desert pavement; bouldery, bouldery-rocky-sandy, bouldery-cobbly-sandy, bouldery-gravelly, bouldery-gravelly-sandy, rocky, rocky-gravelly, rocky-sandy, stony, gravelly, gravelly-sandy and sandy ground; bouldery-clayey loam, rocky-gravelly loam, rocky-sandy loam, sandy loam and clayey loam ground, and rocky clay and clay ground, occurring from sea level to 6,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, but is sensitive to frosts. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. The foliage is fragrant, having the odor of lavender or turpentine. Native bees and hummingbirds visit the flowers and the seeds provide food for wildlife. *Hyptis emoryi* is native to southwest-central and southern North America. *5, 6, 13 (Pages 211-212), 16, 18, 28 (color photograph 773), 43 (022710), 44 (072511), 46 (Page 748), 48, 63 (113010 - color presentation), 77 (color photograph #31), 85 (072511 - color presentation), 91 (Pages 239-241), 115 (color presentation), 124 (072611 - no record of genus or species), 127, 140 (Page 294), **HR***

***Salvia columbariae* G. Bentham (var. *columbariae* is the variety reported as occurring in Arizona): Chia**

COMMON NAMES: California Chia; California Chia Sage; California Chia Salvia; California Sage; Chia (a name given to the seeds of this plant, and also to the seeds and plants of several species of *Salvia*); Desert Chia; Desert Sage; Golden Chia; Sage (a name also applied to the genus *Salvia*); Western Chia. DESCRIPTION: Terrestrial annual forb/herb (4 to 40 inches in height); the stems are square; flowers may be blue, blue-purple, blue-violet, dark blue, bluish, bluish-lavender, lavender, purple, dark purple, purplish, purplish-blue, royal blue, violet or white; flowering generally takes place between late January and late July (additional records: one for mid-August, one for late August and one for mid-November). HABITAT: Within the range of this species it has been reported from mountains; bouldery mountainsides; rocky-sandy and sandy mesas; rocky plateaus; along rocky cliffs; along rocky canyons; rocky canyon bottoms; rocky bluffs; buttes; rocky and clayey-loamy ridges; rocky-gravelly-loamy ridgetops; meadows; foothills; bedrock, bouldery, rocky, rocky-loamy-clayey, gravelly, sandy and clayey hills; clayey hilltops; bouldery, bouldery-sandy, rocky, rocky-sandy and sandy hillsides; bouldery, rocky, rocky-gravelly-loamy, rocky-sandy, rocky-loamy, rocky-clayey, shaley, cobbly-gravelly-sandy, gravelly, gravelly-sandy, sandy, sandy-loamy, clayey, clayey-loamy and silty slopes; rocky and rocky-sandy alluvial fans; gravelly, gravelly-sandy and silty bajadas; rocky outcrops; amongst boulders and rocks; sand dunes; blow-sand deposits; rocky-sandy outwash fans; plains; bouldery-sandy, rocky, gravelly and sandy flats; bouldery-sandy valley floors; sandy bases of coastal bluffs; coastlines; along rocky, rocky-gravelly-loamy, gravelly and sandy roadsides; along arroyos; within draws; along streams; along creeks; along gravelly-sandy creekbeds; sandy riverbeds; along and in rocky, rocky-sandy, rocky-clayey, stony-sandy-silty, gravelly, gravelly-sandy, pebbly-sandy, sandy and silty washes; sandy drainages; in bouldery and sandy drainage ways; around pools; silty depressions; gravelly and sandy banks of arroyos, streams, creeks, rivers and washes; sandy edges of arroyos and washes; along margins of washes; gravel bars; sandy benches; gravelly and sandy terraces; sandy and loamy bottomlands; floodplains; silty impoundments; gravelly-sandy and sandy-silty riparian areas; recently burned areas in woodlands, chaparral and coastal sage scrub, and disturbed areas growing in moist and dry bouldery, bouldery-sandy, rocky, rocky-sandy, shaley, cobbly-gravelly-sandy, gravelly, gravelly-sandy, pebbly-sandy and sandy ground; rocky loam, rocky-gravelly loam, sandy loam, clayey loam and loam ground; rocky-loamy clay, rocky clay and clay ground, stony-sandy silty, sandy silty, silty and powdery silty ground, occurring from sea level to 7,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formation. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or food, beverage, spice and/or fiber crop; it was also noted as having been used as a drug or medication. The foliage has a strong, pleasant, sweet odor of sage. *Salvia columbariae* is native to southwest-central and southern North America. *5, 6, 15, 16, 18 (genus), 28 (color photograph), 43 (022710), 44 (072511 - color photograph), 46 (Page 741), 48 (genus), 63 (022710 - color presentation), 77, **85** (072511 - color presentation), 86 (color photograph), 115 (color presentation), 124 (072511 - no record of species; genus record), 127, 140 (Page 295), **WTK** (April 16, 2008)*

Stachys coccinea C.G. de Ortega: Scarlet Hedgenettle

COMMON NAMES: Betónica (Spanish)[140]; Betony (a name also applied to the genus *Stachys*); [Scarlet, Texas] Betony (English)[140]; Bishish Hióskem <bispshi hioshgama> (Uto-Aztecan: Mountain Pima)[140]; Flor de Chuparosa ("Hummingbird Flower", Spanish: Mountain Pima)[140]; Hedge Nettle (a name also applied to the genus *Stachys*); [Scarlet] Hedge Nettle (English)[140]; Mbarejnatr'eje (Oto-Manguean: Mazahua)[140]; Mirto (Hispanic); Red Mint; Scarlet Hedgenettle; Scarlet Sage; Texas Betony. DESCRIPTION: Terrestrial perennial forb/herb (prostrate or erect stems 12 to over 40 inches in height/length; plants were observed and recorded as being 12 to 18 inches in height and width, one plant was observed and recorded as being 1½ feet in height and 2½ feet in width); the leaves are grayish-green or dark green; the tubular flowers (¾ to 1¼ inch in length) may be orange, orange-red, pink, pinkish-white, purple, light red, red, deep red, red-orange, rose, salmon with whitish markings, scarlet, deep scarlet, scarlet-red or tomato-red; flowering generally takes place between early March and late November (additional records: one for early January, one for late January, one for early February, one for mid-February, two for mid-December and one for late December). HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; rocky cliffs; bases of cliffs; rock walls; along bouldery-rocky and rocky canyons; rocky and humusy canyon walls; rocky canyon bottoms; rocky spurs; talus slopes; shaded crevices in rocks; rocky bluffs; rocky ledges; rocky ridges; meadows; foothills; rocky and gravelly hills; rocky hillsides; bouldery, bouldery-rocky, rocky, rocky-gravelly, stony, gravelly, gravelly-sandy, loamy, clayey and silty-loamy slopes; rocky outcrops; amongst boulders and rocks; bases of boulders and slabs of rock; along banks; gravelly plains; clayey flats; gravelly valley floors; along roadsides; arroyos; bottoms of arroyos; within bouldery and rocky ravines; seeps; springs; along bouldery streams; within bouldery-sandy, rocky and gravelly streambeds; along bouldery creeks; along and in rocky and rocky-sandy creekbeds; riverbeds; along and in bouldery-sandy, rocky, rocky-sandy and gravelly washes; along and in drainages; bases of waterfalls; gravelly bedrock plunge pools; boggy areas; ciénegas; banks of arroyos and creeks; along (rocky) margins of streambeds; silty-loamy terraces; floodplains; dense thickets; ditches; sandy riparian areas, and disturbed areas growing in wet, moist and dry bouldery, bouldery-rocky, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, stony, gravelly, gravelly-sandy and sandy ground; rocky-gravelly-sandy loam, rocky-clayey loam, gravelly-sandy-clayey loam, silty loam and loam ground; clay ground, and humusy ground often reported in moist shaded areas, occurring from 200 to 8,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. Hummingbirds, including the Broad-billed Hummingbird (*Cynanthus latirostris*), have been observed visiting the flowers. *Stachys coccinea* is native to southwest-central and southern North America and Central America. *5, 6, 15, 18, 28 (color photographs 557 A&B), 30, 43 (080610), 44 (072511 - no record of species; genus record), 46 (Page 740), 48, 58, 63 (080610 - color presentation), **85** (072511 - color presentation), 86 (color photograph), 115 (color presentation), 124 (072511 - no record of species; genus record), 140 (Pages 163-164 & 295)*

***Mentzelia* C. Linnaeus: Blazingstar**

COMMON NAME: Blazing Star (a name also applied to the Loasaceae); Blazing-star (a name also applied to the Loasaceae); Blazingstar (a name also applied to the Loasaceae); Mentzelia; Prairie Lily; Prairie-lily; Sand Lily; Sand-lily; Stick-leaf; Stickleaf. *43 (070910), 44 (072511), 46 (Pages 564-567), 63 (032707), 124 (072511), **HR***

***Mentzelia multiflora* (T. Nuttall) A. Gray: Adonis Blazingstar**

COMMON NAMES: Adonis Blazing Star; Adonis Blazing-star; Adonis Blazingstar; Adonis Stickleaf; Blazing Star (a name also applied to other species, the genus *Mentzelia* and to the Loasaceae); Blazingstar (a name also applied to other species, the genus *Mentzelia* and to the Loasaceae); Desert Blazing Star; Desert Blazingstar; Desert Mentzelia; Desert Stickleaf; Many Flowered Mentzelia; Many-flowered Blazing-star; Many-flowered Blazingstar; Many-flowered Mentzelia; Manyflowered Mentzelia; Many Flowered Stickleaf; Stickleaf (a name also applied to other species, the genus *Mentzelia* and to the Loasaceae). DESCRIPTION: Terrestrial biennial or perennial forb/herb (erect stems 6 to 40 inches in height; one plant was observed and described as being 6 inches in height with a crown 9 inches in width, plants were observed and described as being 8 inches in height and 4 inches in width); the stems are gray-green, white or whitish; the leaves are gray-green, green, silvery-white or yellow-green; the flowers may be cream, lemon-yellow, orange-yellow, white-yellow, pale yellow, yellow or yellow-white; flowering generally takes place between late February and mid-December (additional records: one for mid-January and two for late January). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; cindery flanks of mountains; rocky-gravelly, gravelly and sandy mesas; plateaus; cliffs; sandy soil in hanging gardens; bases of cliffs; rocky walls; rims of gorges; rocky, rocky-sandy, shaley and sandy canyons; rocky canyon walls; sandy canyon bottoms; rocky gorges; scree; shaley slides; cindery and chalky talus slopes; crevices in rocks; rims of bluffs; rocky and sandy bluffs; buttes; rocky, shaley-clayey, sandy and clayey knolls; along rocky, shaley-stony and stony-sandy ridges; meadows; cinder cones; sandy crater floors; gravelly foothills; rocky, cindery, sandy and clayey hills; hilltops; rocky, gravelly and clayey hillsides; sandy escarpments; rocky, rocky-gravelly, rocky-sandy, rocky-silty-clayey, shaley, shaley-gravelly, stony-sandy, cindery, gravelly, gravelly-sandy, gravelly-loamy, sandy, sandy-loamy and clayey slopes; alluvial fans; bajadas; rocky outcrops; sandy lava flows; lava fields; sand hills; sand dunes; sand hummocks; gypsum dunes; sandy banks; rocky and sandy breaks; rocky-sandy and sandy steppes; sandy, sandy-clayey and clayey prairies; gravelly and sandy plains; cindery, gravelly, gravelly-sandy, gravelly-loamy, sandy, sandy-clayey, clayey and silty flats; sandy-silty basins; sandy and clayey valley floors; along railroad right-of-ways; clayey roadcuts; along rocky, stony, cindery, gravelly, gravelly-sandy, gravelly-sandy-loamy, gravelly-loamy, gravelly-clayey, sandy, sandy-loamy, sandy-clayey and clayey roadsides; stony arroyos; rocky and sandy bottoms of arroyos; within draws; gravelly gulches; gullies; within ravines; springs; along streams; along and in rocky and sandy streambeds; along and in creeks; rocky-sandy and gravelly-sandy creekbeds; along rivers; rocky, rocky-sandy and sandy riverbeds; along and in rocky-sandy, gravelly, gravelly-sandy, gravelly-sandy-silty and sandy washes; within rocky and rocky-sandy drainages; along drainage ways; along (gravelly, sandy, sandy-silty and clayey) banks of streams, creeks, rivers and washes; (sandy) edges of washes; along (sandy) shores of rivers; rocky-sand, stony-cobbly-gravel, gravel and sand bars; sandy benches; terraces; rocky, rocky-sandy and sandy bottomlands; gravelly-sandy-silty and sandy floodplains; mesquite bosques; fencerows; along canals; sandy-loamy ditches; gravelly, gravelly-sandy, gravelly-sandy-silty, sandy and sandy humus riparian areas; waste places, and disturbed areas growing in dry bouldery-rocky-gravelly, rocky, rocky-gravelly, rocky-sandy, shaley, shaley-stony, shaley-gravelly, stony, stony-cobbly-gravelly, stony-sandy, cindery, gravelly, gravelly-sandy and sandy ground; gravelly loam, gravelly-sandy loam, sandy loam, silty loam and loam ground; bouldery-gravelly-sandy clay, rocky-silty clay, gravelly clay, sandy clay, silty clay and clay ground; gravelly-sandy silty, sandy silty, powdery silty and silty ground; sandy humusy ground, and chalky ground, occurring from 100 to 9,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop; it was also noted as having been used as a drug or medication and as a commodity used as a ceremonial item. *Mentzelia multiflora* is native to southwest-central and southern North America. *5, 6, 16, 18 (genus), 43 (072209), 44 (072611), 46 (recorded as *Mentzelia pumila* (Nutt.) Torr. & Gray, Page 566; *Mentzelia pumila* (Nutt.) Torr. & Gray var. *integra* Jones, Page 566 and *Mentzelia pumila* (Nutt.) Torr. & Gray var. *multiflora* (Nut.) Urban & Gilg, Page 566), 48 (genus), 63 (030210 - color presentation), **85** (072611 - color presentation), 115 (color presentation), 124 (072611), 127, 140 (recorded as *Mentzelia pumila* Nuttall ex Torrey & A. Gray, Page 295)*

Mentzelia pumila (see footnotes 46 and 140 under *Mentzelia multiflora*)

***Petalonyx thurberi* A. Gray subsp. *thurberi*: Thurber's Sandpaper Plant**

COMMON NAMES: Common Sandpaper Plant (a name also applied to the species); Common Sandpaper-plant (a name also applied to the species); Sand-paper Plant (a name also applied to the species and the genus *Petalonyx*); Sandpaper Plant (a name also applied to the species and the genus *Petalonyx*); Thurber Sandpaper Plant (a name also applied to the species); Thurber Sandpaper-plant (a name also applied to the species); Thurber Sandpaperplant (a name also applied to the species); Thurber's Sandpaper Plant (a name also applied to the species); Thurber's Sandpaper-plant (a name also applied to the species); Thurber's Sandpaperplant (a name also applied to the species). DESCRIPTION: Terrestrial perennial subshrub or shrub (1 to 6½

feet in height; one plant was observed and described as being 12 inches in height and 20 inches in width); the foliage is gray-green; the flowers may be light cream, greenish-cream, white, whitish or yellowish-white; flowering generally takes place between early May and mid-October. HABITAT: Within the range of this species it has been reported from mountains; canyons; hills; rocky hillsides; slopes; sand dunes; gravelly-sandy banks; plains; flats; silty valley floors; roadsides; arroyos; sandy arroyo bottoms; sandy riverbeds; along and in gravelly, gravelly-sandy and sandy washes; drainages; depressions; (gravelly) banks of rivers; benches; sandy terraces; rocky-sandy and sandy floodplains; sandy lowlands; riparian areas, and disturbed areas growing in dry rocky, rocky-sandy, gravelly, gravelly-sandy and sandy ground; clay ground, and sandy silty and silty ground, occurring from sea level to 5,000 feet in elevation in the grassland and desertscrub ecological formations. NOTES: The flowers are reported to be fragrant, peak flowering may take place in May and June. *Petalonyx thurberi* subsp. *thurberi* is native southwest-central and southern North America. *5, 6, 13, 43 (062510), 44 (072611), 46 (species, Page 564), 63 (062510), **85** (072611 - also recorded as *Petalonyx thurberi* var. *thurberi*), 91 (species, Pages 314-315), 124 (072611 - no record of genus, species or subspecies)*

Malvaceae: The Mallow Family

***Abutilon incanum* (J.H. Link) R. Sweet: Pelotazo**

SYNONYMY: *Abutilon incanum* (J.H. Link) R. Sweet subsp. *incanum* (J.H. Link) R. Sweet; *Abutilon incanum* (J.H. Link) R. Sweet subsp. *pringlei* (B.P. Hochreutiner) R.S. Felger & R.T. Lowe; *Abutilon pringlei* B.P. Hochreutiner. COMMON NAMES: Caatc Ipápl ("What Grasshoppers Are Strung With", Hokan: Seri)[140]; Escoba Malva ("Broom Mallow", Spanish: Sonora)[140]; Hasla an Ihoon ("Ear Is Its Place", Hokan: Seri)[140]; Hoary Abutilon; Hoary Indian Mallow; Indian Mallow (a name also applied to other species and the genus *Abutilon*, Texas); Indian Mallow (English)[140]; Indianmallow Abutilon; Jíchiquia To'ora Cojuya ("Ash Broom", Uto-Aztecan: Mayo)[140]; Malva ("Mallow", Spanish: Sonora)[140]; Pelotazo [Chico] ("[Little] Hairy One", Spanish: Sinaloa)[140]; Pelotazo Chico; Pringle Abutilon; Pringle's Abutilon; Pringle Indian Mallow; Shrubby Indian Mallow; Tosaporo (Uto-Aztecan: Guarijío)[140]; Tronadora (Spanish: northern Mexico to Oaxaca)[140]. DESCRIPTION: Terrestrial perennial evergreen forb/herb or subshrub (stems usually 8 inches to 7 feet in height, rarely to 13 feet in height; one plant was observed and described as being 8 inches in height with a crown 8 inches in width, one plant was observed and described as being 12 inches in height with a crown 16 inches in width, one plant was observed and described as being 30 inches in height with a crown 30 inches in width); the stems are gray, the leaves are grayish or gray-green; the flowers may be cream, cream & red, lavender, pale orange, orange, orange spotted with maroon, orange-red, orange-yellow, orange-yellowish, peach & maroon, light pink, pink, pink with a red center, dark red, salmon, white, white & pink, yellow-orange, yellowish-pink, yellow, yellow-gold or yellow-salmon sometimes with dark crimson, maroon, deep maroon, purple, red dark red centers (basal spots); flowering is generally described as taking place throughout the year (between early January and late December) with the principal flowering period reported as being October through November. HABITAT: Within the range of this species it has been reported from bouldery and rocky mountains; mountaintops; bases and lower slopes of mountains; rocky crags; rocky mesas; rocky cliffs; rocky canyons; along bouldery, bouldery-sandy and rocky canyon bottoms; rocky and clayey-loamy talus slopes; crevices in rocks; buttes; knolls; rocky ridgetops; rocky ridgelines; openings in desertscrub; foothills; rocky and stony hills; rocky and gravelly hillsides; bouldery-rocky-sandy, rocky, rocky-sandy, gravelly, gravelly-sandy, gravelly-loamy, gravelly-clayey and loamy slopes; rocky bajadas; rocky outcrops; amongst boulders; volcanic plugs; cobbly and gravelly plains; gravelly and sandy flats; basins; valley floors; coastal plains; along gravelly and loamy roadsides; along rocky and sandy arroyos; rocky bottoms of arroyos; around seeping streams; along and in rocky streambeds; along and in gravelly, sandy and clayey-loamy washes; within drainages; swales; banks of lakes; beaches; benches; mesquite bosques; around represos; riparian areas, and disturbed areas growing in wet and dry bouldery, bouldery-rocky-sandy, bouldery-sandy, rocky, rocky-sandy, stony, cobbly, gravelly, pebbly, gravelly, gravelly-sandy and sandy ground; gravelly loam, gravelly-sandy loam, clayey loam and loam ground, and rocky clay, gravelly clay and clay ground, occurring from sea level to 6,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. *Abutilon incanum* is native to southwest-central and southern North America and North-central Pacific Islands. *5, 6, 13 (recorded as *Abutilon pringlei* Hochreutiner, Pages 100-101), 15, 16 (recorded as *Abutilon incanum* (Link.) Sweet subsp. *pringlei* (Hochr.) Felger & Lowe), 18 (genus), 28 (color photograph 534), 43 (030410 - *Abutilon incanum* subsp. *pringlei* (Hochr.) Felger), 44 (072711 - no record of species; genus record), 46 (recorded as *Abutilon pringlei* Hochr., Page 539 and *Abutilon incanum* (Link) Sweet, Page 539), 63 (030410 - color presentation), 77 (recorded as *Abutilon incanum* (Link.) Sweet ssp. *pringlei* (Hochr.) Felger & Lowe), **85** (072711 - color presentation), 91 (Page 11), 115 (color presentation), 124 (072711), 127, 140 (Pages (167-168 & 295)*

Abutilon incanum subsp. *incanum* (see *Abutilon incanum*)

Abutilon incanum subsp. *pringlei* (see *Abutilon incanum*)

***Abutilon parishii* S. Watson: Parish's Indian Mallow**

COMMON NAMES: Indian Mallow (a name also applied to other species and the genus *Abutilon*); Parish Indian Mallow; Parish's Abutilon; Parish's Indian Mallow; Pima Indian Mallow; Tucson Indian Mallow. DESCRIPTION: Terrestrial

perennial forb/herb, subshrub or shrub (erect stems 8 to 75 inches in height), the leaves are dark green or yellow-green with a paler underside; the flowers may be golden, light orange, pale orange-yellow, orange-yellow, yellow or yellow-orange; flowering generally takes place between early April and early May and between early August and late September (additional records: one for early January, one for late January, one for early March, one for late May, three for mid-October, two for late October, two for early November, one for mid-November, one for early December and one for late December). HABITAT: Within the range of this species it has been reported from mountains; rocky bases of cliffs; bouldery and rocky canyons; bouldery canyon walls; canyon bottoms; talus slopes; ledges; rocky ridges; bouldery-rocky and rocky hillsides; rocky slopes; bajadas; amongst boulders and rocks; bases of rocks; drainage ways; shores of lakes; terraces and riparian areas growing in dry bouldery, bouldery-rocky and rocky ground, occurring from 300 to 4.900 feet in elevation in the scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. It has been reported that the Parish Indian-mallow may live up to 5 to 10 years of age, the flowers open between mid- to late-afternoon. Deer and rabbits may browse this plant. *Abutilon parishii* is native to southwest-central and southern North America. *5, 6, **8**, 9, 18 (genus), 43 (062610), 44 (072711 - no record of species; genus record), 46 (incorrectly shown as being a synonym of *Abutilon palmeri* Gray, Page 539, Supplement Page 1060), 63 (062610), 77 (color photograph #84), 85 (072711 - color presentation of dried material), 124 (072711 - no record of species; genus record), 140 (Page 295)*

Abutilon parvulum A. Gray: Dwarf Indian Mallow

COMMON NAMES: Dwarf Abutilon; Indian Mallow (not recommended, a name also applied to other species and the genus *Abutilon*); Dwarf Indian Mallow (not recommended); Little Abutilon; Littleleaf Abutilon; Small Leaf Indian Mallow; Small Leaf Abutilon; Small-leaf Abutilon; Small-leaved Abutilon. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (trailing stems 6 to 24 inches in length; one plant was observed and described as being 12 inches in height and 20 inches in width; sometimes prostrate); the leaves are gray-green; the flowers may be golden, pale orange, orange, orange-peach, orange-red, orange-salmon, orange-yellow, orange-yellow-brown, pink, salmon, golden yellow or yellow-orange, flowering generally takes place between early April and late October (additional records: one for mid-March and one for mid-November; it was also noted that flowering may take place throughout the year). HABITAT: Within the range of this species it has been reported from mountains; mesas; canyons; canyon walls; crevices in rocks; rocky knolls; ledges; ridges; foothills; hills; gravelly hillsides; rocky, rocky-cobbly-gravelly and loamy slopes; bajadas; rocky outcrops; amongst boulders, rocks and gravels; plains; gravelly flats; roadsides; gulches; creeks; along rocky and gravelly washes; gravelly terraces; bottomlands; floodplains; riparian areas, and disturbed areas growing in dry bouldery, rocky, rocky-cobbly-gravelly, rocky-gravelly, rocky-sandy, gravelly, gravelly-sandy and sandy ground and gravelly loam, sandy loam and loam ground, occurring from 1,500 to 5,700 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Abutilon parvulum* is native to southwest-central and southern North America. *5, 6, 15, 18 (genus), 43 (072010), 44 (072711 - color photograph), 46 (Page 539), 58, 63 (072010), 77, **85** (072711 - color presentation), 124 (072711 - no record of species; genus record)*

Abutilon pringlei (see *Abutilon incanum*)

Anoda cristata (C. Linnaeus) D.F. von Schlechtendal: Crested Anoda

COMMON NAMES: Aguatosa (Spanish: Oaxaca)[140]; Alache (Spanish); Alachi (Oto-Manguean: Mixtec, Distrito, Federal, to Guerrero, Puebla)[140]; Altea (Spanish: Puebla)[140]; Amapola [Amapolita] [del Campo, Morada] ("[Little, Wild, Purple] Poppy", Spanish: Chiapas, Veracruz, Distrito, Federal, Edo. México, Jalisco, Puebla)[140]; Amapolita Morada (Hispanic); Anoda Weed; Balanche (Mayan: Maya)[140]; Crested Anoda; Crested [Spurred] Anoda (English: Arizona, New Mexico)[140]; Halache <halanche> (Spanish: Puebla)[140]; Huinarillo (Hispanic); Itsucua Tsipata (Purépecha); Malva [Chica, de Castilla] ("[Little, Spanish] Mallow", Spanish: Aguascalientes, Guanajuato, Guerrero, Michoacán, Morelos, Jalisco, Sonora)[140]; Malva Chica (Hispanic); Malva de Castilla Spanish); Malva Morada (Hispanic); Malvavisco (Hispanic); Pax'tamac (Totonacan: Totonac)[140]; Pie de Gallo (Spanish); Pax'tamac (Totonacan: Totonac); Pintapán (Spanish: Sonora)[140]; Quesitos ("Little Cheese", Spanish: Hidalgo, Sonora)[140]; Rehué (Uto-Aztecan: Tarahumara)[140]; Requesón (Hispanic); Rewé (Hispanic); Reweque (Hispanic); Shiipugi (Uto-Aztecan: Mountain Pima)[140]; Sinianoda; Snowcup; Spurred Anoda; Tlachpahuatla (Uto-Aztecan: Náhuatl, San Luis Potosi)[140]; Tsayaltsay <tzalyaltzai> (Spanish: Yucatán)[140]; Tsitsiki Uekutini (Purépecha); Tusi (Uto-Aztecan: Mountain Pima)[140]; Violeta [del Campo] ("[Wild] Violet", Spanish: Edo. México, Veracruz to Oaxaca)[140]; Violeta de Campo (Hispanic); Violeta del País (Hispanic); Violeta Silvestre ("Wild Violet", Spanish: Sinaloa)[140]; Violettas; Violetilla; Wild Cotton (a name also applied to other species); Xihuitl ("Herb", Uto-Aztecan: Náhuatl, Mexico)[140]; Yiwa Tio (Mixteco). DESCRIPTION: Terrestrial annual forb/herb (decumbent, suberect and/or erect stems 3 to 42 inches in height or length); the leaves are green; the flowers may be blue, blue-purple, blue-violet, lavender, lavender-blue, lavender-pink, lavender-white, lilac, pink, light purple, purple, purplish-blue, purplish-pink, purplish-red, violet or white (rarely); the anthers are white; flowering generally takes place between early August and early November (additional records: one for early January, one for early February, two for mid-March, one for early May, one for mid-May, one for late May, two for mid-July and two for early December). HABITAT: Within the range of this species it has been reported from mountains; mountaintops; bouldery-rocky, rocky and sandy-loamy canyons; canyon bottoms; sandy meadows; foothills; rocky hills; rocky and gravelly-clayey hillsides; rocky-sandy, sandy-loamy, clayey and clayey-loamy slopes; alluvial fans; bajadas; rock outcrops; breaks; clayey and clayey-loamy flats; basins; valley floors; along gravelly-loamy and sandy roadsides; arroyos; gulches; seeps; along streams; along streambeds; along creeks; creekbeds; along rivers; along and in gravelly-sandy sandy washes; drainage ways; along lakes; ciénegas; marshes; (silty) banks of creeks; along edges of creeks; gravelly benches; terraces; floodplains; mesquite bosques; along fencelines; along and in ditches; along canal

banks; riparian areas; waste places, and disturbed areas growing in moist and dry bouldery-rocky, rocky, rocky-sandy, gravelly, gravelly-sandy and sandy ground; gravelly loam, sandy loam and clayey loam ground; gravelly clay, silty clay and clay ground, and silty ground, occurring from 600 to 8,400 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Anoda cristata* is native to southwest-central and southern North America; Central America and coastal islands in the Caribbean Sea, and South America. *5, 6, 15, 30, 43 (072409), 44 (072811), 46 (Pages 551-552), 58, 63 (030410 - color presentation of seed), 68, **85** (030410 - color presentation), 101 (color photograph), 124 (072811), 140 (Pages 165-167 & 296)*

***Malva parviflora* C. Linnaeus: Cheeseweed Mallow**

COMMON NAMES: Cheeseweed (a name also applied to the genus *Malva*); Cheeseweed Mallow (a name also applied to other species); Egyptian Mallow; Hidden-flower Cheeseweed; Hidden-flower Mallow; Kleinblütige Malve (German); Least Mallow; Little Cheeseweed; Little Mallow; Malva (a name also applied to the genus *Malva*, Portuguese); Malva de Campo (Spanish); Malva de Castilla (Spanish); Mauve d'Egypte (French); Mauve à Petites Fleurs (French); Myllymalva; Quesillo (Spanish); Quesitos (Spanish); Small Flowered Mallow; Small Whorl Mallow; Small Whorled Cheeseweed; Small-flower Mallow; Small-flower Marshmallow; Small-flowered Cheeseweed; Small-flowered Cheese-weed; Small-flowered Mallow; Small-flowered Malva; Small-flowered Marshmallow; Small-fruit Mallow; Small-fruited Mallow; Small-whorl Mallow; Small-whorled Cheeseweed; Smallflower Mallow; Smallflowered Mallow; Malva Loca; Small-whorl Mallow. DESCRIPTION: Terrestrial annual, biennial or perennial forb/herb (trailing, prostrate or ascending stems 4 to 50 inches in height/length, one plant was reported to be 4 inches in height and 20 inches in width); the leaves are dark green; the flowers (petals about ¼ inch in length) may be blue, cream, pale lavender, pinkish, purple, white or white with a lavender-pink fringe; flowering generally takes place between early February and late June (additional records: one for mid-January, one for mid-July, four for late July, one for early August, three for mid-August, one for late August, three for early September, five for late September, one for early October and one for late November; it has been reported that flowering may take place through most of the year). HABITAT: Within the range of this species it has been reported from mountains; sandy mesas; rocky canyons; canyon bottoms; gorges; bluffs; clayey meadows; rocky hills; hillsides; bouldery, gravelly-clayey, sandy-loamy and clayey slopes; lava beds; sand hummocks; plains; sandy, clayey and clayey-loamy flats; sandy valley floors; coastal dunes; roadbeds; along shaley, sandy and clayey-loamy roadsides; along arroyos; springs; along streams; along creeks; along creekbeds; along rivers; along and in rocky and sandy washes; cobbly-sandy and sandy drainages; saltwater marshes; depressions; banks of streams, creeks and rivers; edges of washes and lakes; margins of ponds; rocky strands; terraces; loamy bottomlands; sandy and sandy-silty floodplains; mesquite bosques; fencelines; margins stock tanks (represos); along and in ditches; clayey ditch banks; along canals; sandy riparian areas; waste places; recently burned areas of chaparral, and disturbed areas growing in muddy and wet, moist and dry bouldery, rocky, shaley, cobbly-sandy, gravelly, gravelly-sandy and sandy ground; gravelly loam, sandy loam, clayey loam and loam ground; gravelly clay and clay ground, and sandy silty and silty ground, occurring from sea level to 8,300 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a forage (hogs fed on the seeds), as a drug or medication and as a commodity used in personal hygiene. Cheeseweed Mallow is very similar to the exotic Common Mallow (*Malva neglecta* C.F. Wallroth) which is native to Europe; western, central and southern Asia, and northern Africa and which has spreading or nearly prostrate stems, flower petals that are 1/3 to 2/3 inches in length and curled lobes on the fruit. *Malva parviflora* is native to southwestern Europe; western and central Asia, and northern Africa. *5, 6, 16, 28 (color photograph), 43 (030510), 44 (072811), 46 (Page 549), 58, 63 (061910 - color presentation), 68, 77, 80 (This species is listed as a Rarely Poisonous and Suspected Poisonous Range Plant. "Consumption of large amounts of this common introduced annual forb within a few days has caused death in livestock."), 85 (072811 - color presentation of dried material), 101 (note), 106 (030510 - color presentation), 115 (color presentation), 124 (072811), 127, 140 (Page 296), **HR***

***Rhynchosida physocalyx* (A. Gray) P.A. Fryxell: Buffpetal**

SYNONYMY: *Sida physocalyx* A. Gray. COMMON NAMES: Buff Petal; Buffpetal; Spearleaf Sida; Tuberous Rhynchosida; Tuberous Sida. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (trailing, sprawling and/or ascending stems 4 inches to 3 feet in height/length); the flowers (¾ inch in width) are cream, cream-yellow, light orange, orange, orange-yellow, peach, pale yellow, yellow or yellow-orange; flowering generally takes place between late March and late October (additional record: one for mid-November, it has been reported that flowering may take place throughout the year). HABITAT: Within the range of this species it has been reported from mountains; mesas; canyons; meadows; foothills; hills; rocky hillsides; gravelly and sandy-loamy slopes; gravelly alluvial fans; gravelly bajadas; clayey flats; valley floors; along gravelly-sandy-clayey-loamy roadsides; bottoms of arroyos; ravines; along creeks; along and in sandy washes; drainages; along watercourses; banks of washes; edges of washes; benches; terraces; sandy-clayey floodplains; mesquite bosques; clayey catch basins; levees; stock tanks; riparian areas, and disturbed areas growing in dry rocky, gravelly and sandy ground; gravelly-sandy-clayey loam and sandy loam ground, and sandy clay and clay ground often reported from under shrubs or trees, occurring from 100 to 5,400 feet in elevation in the grassland, desertscrub and wetland ecological formations. NOTE: *Rhynchosida physocalyx* is native to southwest-central and southern North America and South America. *5, 6, 15, 16, 43 (0305100, 44 (072811 - no record of genus or species), 46 (*Sida physocalyx* Gray, Page 550), 58, 63 (030510), 68 (*Sida physocalyx* Gray), 77 (*Sida physocalyx* Gray), **85** (072811 - color presentation), 115 (color presentation), 124 (072811), 140 (Page 296)*

Sida physocalyx (see *Rhynchosida physocalyx*)

***Sphaeralcea coulteri* (S. Watson) A. Gray: Coulter's Globemallow**

COMMON NAMES: Annual Globe Mallow; Annual Globe-mallow; Annual Globemallow; Coulter Desert Mallow; Coulter Desert-mallow; Coulter Globe Mallow; Coulter Globe-mallow; Coulter Globemallow; Coulter's Desert Mallow; Coulter's Desert-mallow; Coulter's Globe Mallow; Coulter's Globe-mallow; Coulter's Globemallow; Hadamdak (Tohono O'odham); Sevoa'ara (Yaqui); Xcóa (Seri). DESCRIPTION: Terrestrial annual forb/herb or subshrub (6 inches to 6 feet in height); the leaves are grayish; the flowers may be apricot, light blue, coral-apricot, light orange, orange, deep orange, pinkish, red-orange, reddish-apricot, salmon, salmon-orange, white or yellow-orange; flowering generally takes place between late December and late April (additional records: one for mid-May, one for late May, one for early June, two for late August, one for mid-September, one for early November, two for late November and one for early December). HABITAT: Within the range of this species it has been reported from bouldery mountains; flanks of mountains; mesas; sandy canyons; rocky sides of buttes; clayey ridges; ridgetops; sandy inside rims of craters; rocky hills; rocky hillsides; rocky and rocky-sandy slopes; bajadas; rocky outcrops; amongst boulders and rocks; sand dunes; sand hummocks; sandy plains; gravelly and sandy flats; valley floors; coastal plains; beach heads; sandy tidal flats; rocky, gravelly, sandy and sandy-loamy roadsides; sandy arroyos; along rivers; gravelly-sandy riverbeds; along and in rocky, rocky-sandy, gravelly-sandy and sandy washes; clayey playas; periphery of playas; depressions; silty swales; (sandy and silty) banks of rivers and washes; (sandy-clayey) edges of washes and playas; gravelly beaches; bottomlands; sandy floodplains; mesquite bosques; along canals; ditches; riparian areas; waste places, and disturbed areas growing in damp and dry desert pavement; bouldery, rocky, rocky-sandy, gravelly, gravelly-sandy and sandy ground; gravelly-sandy loam, sandy loam and loam ground; sandy clay and clay ground, and silty ground, occurring from sea level to 3,300 feet in elevation in the scrub, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Sphaeralcea coulteri* is native to southwest-central and southern North America. *5, 6, 16, 18 (genus), 43 (030710), 44 (072811), 46 (Page 542), 48 (genus), 63 (030710 - color presentation), 68 (genus), 77, **85** (072811 - color presentation of dried material, also recorded as *Sphaeralcea coulteri* var. *coulteri* S. Wats., color presentation including habitat), 86 (color photograph), 124 (072811 - no record of species; genus record)*

Sphaeralcea coulteri var. *coulteri* (see footnote 85 under *Sphaeralcea coulteri*)

***Sphaeralcea laxa* E.O. Wooton & P.C. Standley: Caliche Globemallow**

COMMON NAMES: Caliche Globe Mallow; Caliche Globemallow; Globemallow (a name also applied to the genus *Sphaeralcea*); Mal de Ojo. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (12 to 28 inches in height); the leaves may be gray, gray-green, green or dark green; the flowers may be bluish-pink, grenadine, orange, orange-pink, peach-orange, pink-orange, red, red-orange or deep salmon; the anthers are dark purple; flowering generally takes place between early February and late November (additional record: one for mid-December). HABITAT: Within the range of this species it has been reported from rocky mountains; rocky-gravelly mesas; cliffs; rocky canyons; sandy canyon bottoms; talus slopes; ledges; rocky-sandy ridges; rocky-gravelly ridgelines; rocky-sandy rims of craters; foothills; hills; rocky-gravelly hilltops; rocky, gravelly-sandy-loamy and sandy hillsides; bases of hills; rocky, gravelly and silty-clayey slopes; alluvial fans; rocky and gravelly bajadas; rocky outcrops; amongst boulders, rocks and gravels; sandy and sandy-loamy plains; gravelly and sandy flats; basins; valley floors; along railroad right-of-ways; roadcuts; roadsides; sandy arroyos; clayey bottoms of arroyos; draws; springs; riverbeds; along and in gravelly and sandy washes; along drainages; along (sandy-silty) banks of rivers; along (gravelly) edges of streambeds and washes; margins of rivers and washes; gravel bars; bottomlands; floodplains; sandy lowlands; mesquite bosques; riparian areas, and disturbed areas growing in dry bouldery, rocky, rocky-gravelly, rocky-sandy, gravelly, pebbly and sandy ground; gravelly-sandy loam and sandy loam ground, and silty clay ground, occurring from 1,200 to 7,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Sphaeralcea laxa* is native to southwest-central and southern North America. *5, 6, 15, 16, 18 (genus), 43 (030810), 44 (072811 - no record of species; genus record), 46 (Page 543), 48 (genus), 63 (030810 - color presentation), 68, 77 (color photograph #40), 85 (072811 - color presentation), 115 (color presentation), 124 (072811 - no record of species; genus record), **HR***

Molluginaceae: The Carpetweed Family
(the genus Mollugo was formerly placed in the Aizoaceae)

***Mollugo cerviana* (C. Linnaeus) N.C. Seringe: Threadstem Carpetweed**

COMMON NAME: Indian Chickweed (a name also applied to other species and the genus *Mollugo*); Slender Carpet-weed (a name also applied to other species); Slender Carpetweed (a name also applied to other species); Thread Stem Carpet Weed; Thread-stem Carpet Weed; Thread-stem Carpet-weed; Thread-stem Carpetweed; Threadstem Carpet Weed; Threadstem Carpet-weed; Threadstem Carpetweed; Xian Ye Su Mi Cao (transcribed Chinese). DESCRIPTION: Terrestrial annual forb/herb (erect stems 1 to 8 inches in height); the flowers are green, green-white, pink, pinkish-white or white; flowering generally takes place between late July and mid-October (additional records: one for mid-May and one for early June). HABITAT: Within the range of this species it has been reported from mountains; cindery-sandy mountainsides; mesas; rocky canyons; gravelly-sandy canyon bottoms; cinder cones; foothills; bouldery hills; rocky hillsides; bouldery, rocky-sandy, cindery, gravelly, sandy, sandy-loamy and sandy-silty slopes; rocky alluvial fans; rocky and sandy bajadas; cindery lava flows; sand hills; sand dunes; plains;

cindery, gravelly, gravelly-loamy and sandy flats; basins; valley floors; along roadsides; sandy bottoms of arroyos; along gullies; streambeds; creekbeds; along and in gravelly and sandy washes; drainages; banks of creeks and washes; gravelly and sandy terraces; sandy floodplains; sandy riparian areas, and disturbed areas growing in dry bouldery, rocky, rocky-sandy, cindery, cindery-sandy, gravelly, gravelly-sandy and sandy ground; gravelly loam and sandy loam ground, gravelly clay ground, and sandy silty ground, occurring from near sea level to 7,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant. *Mollugo cerviana* is native to eastern and southern Europe; western, central and southern Asia; Africa, and Australia. *5, 6, 15, 43 (030910), 44 (072911 - color photograph), 46 (Page 280), 63 (030910), 77, **85** (072911 - color presentation of dried material), 124 (072911 - no record of species; genus record), 140 (Page 296)*

Nyctaginaceae: The Four-o'clock Family

Allionia incarnata C. Linnaeus: Trailing Windmills

COMMON NAMES: Allionia (a name also applied to the genus *Allionia*); Crested Windmills; Guapile (Spanish: Sonora)[140]; Hamíp Cmaam ("Female Spiderling", Hokan: Seri)[140]; Hierba de la Golpe ("Bruise Herb", Spanish: Sonora)[140]; Hierba de la Hormiga [Mosca] ("Ant [Fly] Herb", Spanish: Durango, Nuevo León, Zacatecas)[140]; 'Ilt'ąą' <ʔilt'ąʔí> ("Leaves Like Rock Tea", Athapascan: Navajo)[140]; Juan Ematilli (Spanish: Onavas Pima)[140]; 'Okup'e (Kiowa Tanoan: Tewa)[140]; Pink Three-flower (English: Arizona)[140]; Pink Three-flower Allionia; Pink Windmills (a name also applied to other species); Totopwuvàapi <totópwuvápi> (Uto-Aztecan: Hopi)[140]; Trailing Allionia; Trailing Four O'clock (a name also applied to the genus *Allionia*); Trailing Four O'clock (English)[140]; Trailing Four-o'clock (a name also applied to the genus *Allionia*); Trailing Umbrella-wort; Trailing Windmills; Tsét'ąą' Ts'ósí <cedide.h c'o's> ("Leaves Like Rock Tea", Athapascan: Navajo)[140]; Umbrella Wort (a name also applied to other species and the genus *Allionia*); Umbrella-wort (a name also applied to other species and the genus *Allionia*); Umbrella-wort (English)[140]; [Trailing] Wind-mills (English: Arizona, New Mexico)[140]; Windmills (a name also applied to the genus *Allionia*). DESCRIPTION: Terrestrial annual or perennial forb/herb (prostrate, trailing stems 4 to 14 inches in height and 4 inches to 10 feet in length; one plant was observed and described as being 4 inches in height and 12 by 20 inches in width); the stems may be reddish; the sticky foliage has been described as being gray-green or green above and silvery beneath; the flowers may be blue, fuchsia; lavender, lavender-pink, lavender-rose, magenta, deep magenta, magenta-pink, magenta-rose, pink, deep pink, pink-lavender, pink-purple, pink-violet, purple, purple-blue, purplish-pink, red-violet, reddish-purple, rose, rose-pink, rose-purple, violet, violet-magenta, violet-pink or white (rarely); flowering generally takes place between mid-January and mid-December. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; rocky and rocky-sandy mesas; rims of canyons; cliffs; rocky and shaley canyons; along gravelly canyon bottoms; lava flow talus; buttes; knolls; shaley ridges; rocky ridgetops; sandy foothills; rocky, rocky-sandy, gravelly and sandy hills; rocky-gravelly hilltops; rocky and gravelly hillsides; along bedrock, rocky, rocky-gravelly, rocky-gravelly-sandy, rocky-sandy, rocky-loamy, shaley, gravelly, gravelly-sandy, gravelly-loamy, sandy, sandy-loamy, sandy-clayey, sandy-silty and silty slopes; rocky alluvial fans; rocky and gravelly-sandy bajadas; clayey outcrops; amongst boulders and rocks; lava hills; sandy lava flows; sand hills; sand dunes; sand hummocks; debris fans; banks; llanos; sandy and clayey-loamy plains; rocky-sandy, rocky-loamy, gravelly, gravelly-sandy and sandy flats; silty basin floors; gravelly-sandy valley floors; sandy roadbeds; along rocky, rocky-gravelly-sandy, rocky-gravelly-loamy, stony, gravelly, gravelly-sandy-loamy, sandy and sandy-loamy roadsides; within rocky, rocky-gravelly-sandy and sandy arroyos; rocky bottoms of arroyos; within draws; within rocky ravines; streambeds; along and in rocky and gravelly-sandy creekbeds; along rivers; along and in riverbeds; along and in bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, cobbly-gravelly-sandy, cobbly-pebbly, gravelly and sandy washes; silty lakebeds; marshy areas; ciénegas; sandy-silty depressions; along (clayey) banks of arroyos, rivers and washes; edges of rivers and washes; (rocky) margins of arroyos; sandy benches; shelves; gravelly terraces; sandy bottomlands; sandy floodplains; lowlands; sandy mesquite bosques; edges of levees; along canals; canal banks; around stock tanks (represos); gravelly-sandy and sandy riparian areas; waste places, and disturbed areas growing in dry sandy desert pavement; bouldery, bouldery-sandy, rocky, rocky-gravelly, rocky-gravelly-sandy, rocky-sandy, shaley, stony, cobbly-gravelly-sandy, cobbly-pebbly, cindery; gravelly, gravelly-sandy, pebbly and sandy ground; rocky loam, rocky-gravelly loam, gravelly loam, gravelly-sandy loam, sandy loam and clay loam ground; rocky clay, sandy clay and clay ground, and gravelly-sandy silty, sandy silty and silty ground, occurring from sea level to 8,300 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. Merriam's Kangaroo Rat (*Dipodomys merriami*), Arizona Pocket Mouse (*Perognathus amplus*), Bailey's Pocket Mouse (*Chaetodipus baileyi*) and the Rock Pocket Mouse (*Chaetodipus intermedius*) collect the seed of this plant. *Allionia incarnata* is native to southwest-central and southern North America; Central America; South America, and coastal islands in the Caribbean Sea. *5, 6, 15, 16, 28 (color photograph 652), 43 (031010), 44 (073011 - color photograph), 46 (Page 274), 58, 63 (031010 - color presentation), 68, 77 (color photographs #41 and #86), **85** (073011 - color presentation), 86 (color photograph), 115 (color presentation), 124 (073011), 127, 140 (recorded as *Allionia incarnata* Linnaeus [*Allionia incarnata* Linnaeus var. *nudata* (Standley) Munz, *Allionia incarnata* Linnaeus var. *villosa* (Standley) B.L. Turner], Pages 175-176 & 296)*

Allionia incarnata C. Linnaeus var. *villosa* (P.C. Standley) B.L. Turner: Trailing Windmills

COMMON NAMES: Allionia (a name also applied to the species and the genus *Allionia*); Trailing Allionia (a name also applied to the species); Trailing Four O'clock (a name also applied to the species and the genus *Allionia*); Trailing Four-

o'clock (a name also applied to the species and the genus *Allionia*); Trailing Windmills (a name also applied to the species); Windmills (a name also applied to the species and the genus *Allionia*). DESCRIPTION: Terrestrial annual or perennial forb/herb (prostrate with trailing stems 4 to 14 inches in height and 4 inches to 10 feet in length); the flowers are magenta, pink, pinkish-purple, rd-violet, rose-pink or white; flowering generally takes place between mid-March and early October (flowering year-round has also been reported). HABITAT: Within the range of this species it has been reported from mountains; mesas; canyons; hills; hillsides; rocky, rocky-gravelly, gravelly and gravelly-loamy slopes; basins; valley floors; along rocky-gravelly-loamy and gravelly roadsides; gravelly arroyos; ravines; sandy riverbeds; along washes; drainages; sandy floodplains; mesquite bosques; gravelly-clayey banks of levees, and disturbed areas growing in dry rocky, rocky-gravelly, cindery; gravelly and sandy ground; rocky-gravelly loam and gravelly loam ground, and gravelly clay and sandy clay ground, occurring from 100 to 5,200 feet in elevation in the scrub, grassland and desertscrub ecological formations. NOTES: The species, *Allionia incarnata*, was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. *Allionia incarnata* var. *villosa* is native to southwest-central and southern North America. *5, 6, 28 (species, color photograph of the species 652), 43 (031010), 44 (073011), 46 (species, Page 274), 63 (011109), 68 (species), **85** (073011), 86 (species, color photograph of the species), 115 (color presentation of the species), 124 (073011 - no record of this variety; genus and species records), 127 (species)*

Boerhavia coccinea P. Miller: Scarlet Spiderling

COMMON NAMES: Common Boerhavia; Hierba de la Hormiga (a name also applied to other species, Spanish); Hierba del Cancer (a name also applied to other species, Spanish); Hogweed (a name also applied to other species); Indian Boerhavia (English)[140]; Jaunilipin (Spanish: Sonora)[140]; Mata Pavo (Spanish); Juana Huipili (Uto-Aztecan: Mayo, Sonora)[140]; Mochi(s) (Spanish: Sonora)[140]; Mochiná (Uto-Aztecan: Guarijío)[140]; Na'ashjé'ii Dáą́' <na'asje'i dá'> (Athapascan: Navajo)[140]; Red Boerhavia; Red Boerhaavia; Red Spiderling (a name also applied to other species); Red [Scarlet] Spiderling (English)[140]; Scarlet Boerhavia; Scarlet Spiderling (a name also applied to other species); Tostón (Spanish); Wine-flower (Wineflower is a name applied to the genus *Boerhavia*); Wine-flower (English)[140]; Yerba de Puerco (Spanish). DESCRIPTION: Terrestrial perennial forb/herb (sprawling, spreading or trailing prostrate, decumbent, ascending and/or erect stems up to 1 to 8 feet in height/length); the stems are pale green; the leaves are dark green tinged with purple; the tiny flowers may be blood-red, blue, magenta, maroon, maroon-red, ochre-yellow, pink, pink-magenta, pink-purple, purple, purple-maroon, purple-red, dark red, red, red-maroon, red-purple, red-violet, dark red, dark reddish-purple, rose-pink, violet-red, white (rarely), wine-red or yellow (rarely); the stigma is pale green or lavender; flowering generally takes place between mid-March and mid-November (additional record: one for late December). HABITAT: Within the range of this species it has been reported from mountains; mesas; rocky cliffs; bases of cliffs; rocky canyons; rocky-sandy and gravelly-sandy canyon bottoms; gorges; talus; crevices in rocks; rocky-sandy bluffs; foothills; rocky and rocky-clayey hillsides; bedrock, bouldery, bouldery-gravelly-sandy, rocky, gravelly, gravelly-sandy, gravelly-loamy, sandy-loamy and clayey-loamy slopes; gravelly alluvial fans; gravelly bajadas; amongst boulders and rocks; sandy-loamy plains; gravelly, sandy, sandy-silty and clayey flats; valley floors; valley bottoms; roadbeds; along rocky, gravelly, gravelly-sandy, gravelly-sandy-loamy, gravelly loam and sandy roadsides; within stony and sandy arroyos; along bottoms of arroyos; gulches; seeps; around seeping streams; along streams; along streambeds; along creeks; along rocky-gravelly-sandy, cobbly-sandy and sandy creekbeds; along rivers; bouldery-cobbly-sandy and rocky-cobbly riverbeds; along and in gravelly, gravelly-sandy and sandy washes; sandy drainages; watercourses; ciénegas; (rocky) banks of streams; (sandy) edges of rivers and washes; gravel bars; beaches; sandy benches; sandy terraces; bottomlands; sandy and sandy-loam floodplains; mesquite bosques; around stock tanks; ditch banks; bouldery-cobbly-sandy, gravelly and gravelly-sandy riparian areas; waste places, and disturbed areas growing in dry desert pavement; bouldery-cobbly-sandy, bouldery-gravelly-sandy, rocky, rocky-cobbly, rocky-gravelly-sandy, rocky-sandy, stony, cobbly-sandy, gravelly, gravelly-sandy and sandy ground; gravelly loam, gravelly-sandy loam, sandy loam, sandy-clayey loam, clayey loam and loam ground; rocky clay, gravelly clay and clay ground, and sandy-silty ground, occurring from sea level to 7,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: Bumblebees of the genus *Bombus* sip nectar from the flowers, and the larva of the White-lined Sphinx (*Hyles lineata*) feed on the leaves. *Boerhavia coccinea* is native to south-central and southern North America; Central America and coastal islands in the Caribbean Sea; northern and western South America; Australia; southern Asia, and Africa. *5, 6, 15, 16, 28 (color photograph 736), 43 (072409), 44 (073011), 46 (Note alternate spelling: *Boerhaavia*, Page 276), 58, 63 (031110 - color presentation), 68, 77 (color photograph #42), **85** (073011 - color presentation), 115 (color presentation), 124 (073011 - no record of species; genus record), 140 (Pages 176-178 & 296)*

Mirabilis longiflora C. Linnaeus: Sweet Four O'clock

COMMON NAMES: Acxoyatic <acsoyate, atzayatl> (Uto-Aztecan: Náhuatl)[140]; Four-o-clock (a name also applied to the genus *Mirabilis* and the family Nyctaginaceae); [Sweet] Four-o-clock [O'clock] (English)[140]; Long-flowered Four O'clock; Longtube Four O'clock; Maravii (Uto-Aztecan: Mountain Pima)[140]; Maravilla [de Jardin, del Cerro] ("Garden, Wild] Marvel, Wonderful", Spanish: Mexico)[140]; Pebete ("Little Child", Spanish: Oaxaca)[140]; Puhu (Kiowa Tanoan: Tewa)[140]; Suspiro ("Sigh", Spanish: Jalisco)[140]; Sweet Four O'clock; Taṣ Ma:had [Tash Mahhad] ("Raised by Hand", Uto-Aztecan: Tohono O'odham)[140]; Tłé'iigáhí <y'e-'gahi> ("White at Night", Athapascan: Navajo)[140]; Xpak-u-pa ("Sticks a Little", Mayan: Maya)[140]. DESCRIPTION: Terrestrial perennial forb/herb (erect stems 16 inches to 6½ feet in height; one plant was observed and described as being 2 to 3 feet in height and 3 feet in width); the stems may be red; the leaves are green; the trumpet-shaped flowers (3 to 7 inches in length) may be magenta (less often), pale pink (less often), pink (less often), pinkish (less often), pale violet (less often), white or yellow (less often) with a long and slender perianth tube that is possibly blushed with green or purple); flowering

generally takes place between early July and early October (additional record: one for late October). HABITAT: Within the range of this species it has been reported from mountains; rocky cliffs; along bases of cliffs; rocky canyons; rocky canyon walls; canyonsides; canyon bottoms; crevices in boulders; rocky knolls; clearings in forests; open woodlands; meadows; foothills; rocky hillsides; bouldery-rocky, rocky, rocky-gravelly, gravelly, loamy and clayey-loamy slopes; amongst boulders; grassy plains; clayey-loamy flats; gravelly-sandy and loamy valley floors; along rocky, gravelly and gravelly-loamy roadsides; bottoms of arroyos; ravines; seeps; springs; within sandy streambeds; along creeks; along and in creekbeds; along rivers; within riverbeds; along washes; along lakes; ciénegas; swampy areas; banks of creeks; (sandy) edges of streams and washes; benches; bottomlands; sandy floodplains; mesquite bosques; along ditches, and gravelly-sandy-silty-loamy riparian areas growing in wet and moist bouldery, rocky, rocky-gravelly, gravelly, gravelly-sandy and sandy ground and gravelly loam, gravelly-sandy-silty loam, clayey loam and loam ground, occurring from 2,300 to 8,900 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, the flowers are fragrant. The leaves are eaten by a Forrester-moth (*Alypiodes geronimo*), the flowers may possibly attract moths including the Sphinx Moths. *Mirabilis longiflora* is native to southwest-central and southern North America and Central America. *5, 6, 15, 18 (genus), 43 (073009), 44 (073111 - no listing of Common Names under species), 46 (Pages 272-273), 58, 63 (073009), **85** (073111 - color presentation), 86 (color photograph), 115 (color presentation), 124 (073111 - no record of species; genus record), 140 (Pages 178-179 & 297)*

***Mirabilis longiflora* C. Linnaeus var. *wrightiana* (A. Gray ex N.L. Britton & T.H. Kearney) T.H. Kearney & R.H. Peebles: Sweet Four O'clock**

COMMON NAME: Sweet Four O'clock (a name also applied to the species). DESCRIPTION: Terrestrial perennial fob/herb herb (erect stems 2 to 6½ feet in height); the stems may be red; the leaves are green; the trumpet-shaped flowers (3 to 7 inches in length) are pale pink, pinkish, pale violet, white or yellow with a long and slender perianth tube that is possibly blushed with green or purple); flowering generally takes place between early August and early October. HABITAT: Within the range of this species it has been reported from mountains; along canyons; canyonsides; canyon bottoms; meadows; slopes; benchlands; valley floors; gravelly-sandy-clayey-loamy roadsides; along creeks; along rivers; along washes; along banks of streams; benches, and riparian areas growing in wet and moist rocky-gravelly ground and gravelly-sandy-clayey loam and loam ground, occurring from 2,300 to 8,200 feet in elevation in the forest, woodland, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Mirabilis longiflora* var. *wrightiana* is native to southwest-central and southern North America. *5, 6, 43 (073009), 44 (073111 - no record of variety; no listing of Common Names under species), 46 (Pages 272-273), 58 (sp.), 63 (073009), **85** (073009), 86 (species, color photograph of species), 115 (color presentation), 124 (073011 - no record of species or variety; genus record)*

Oleaceae: The Olive Family

Fraxinus pennsylvanica var. *velutina* (see *Fraxinus velutina*)

***Fraxinus velutina* J. Torrey: Velvet Ash**

SYNONYMY: *Fraxinus pennsylvanica* H. Marshall var. *velutina* (J. Torrey) G.S. Miller; *Fraxinus velutina* J. Torrey var. *coriacea* (S. Watson) A. Rehder; *Fraxinus velutina* J. Torrey var. *glabra* A. Rehder; *Fraxinus velutina* J. Torrey var. *toumeyi* (N.L. Britton) A. Rehder. COMMON NAMES: Arizona [Desert, Toumey, Velvet] Ash (English)[140]; Arizona Velvet Ash; Arizona-esche (German); Bitoi <pitoi> (Uto-Aztecan: Akimel O'odham, Hiá Ceḍ O'odham, Tohono O'odham); Botavaras (Spanish: Sonora)[140]; Dahba' <dabbaʔ> (Athapascan: Navajo)[140]; Desert Ash (a name also applied to other species); Fresno; Fresno ("Ash" a name also applied to the genus *Fraxinus*, Spanish); Fresno [Terciopelo] ("[Velvet] Ash", Spanish: Arizona, New Mexico, Texas, Mexico)[140]; Im'val (Yuman: Walapai)[140]; Leather Leaf Ash; Leather-leaf Ash; Leather-leaved Ash; Leatherleaf Ash; MωRc (Yuman: Maricopa)[140]; Pávlas (Uto-Aztecan: Luiseño)[140]; Piichai (Uto-Aztecan: Mountain Pima)[140]; Pimaráakârâ (Uto-Aztecan: Comanche)[140]; Pitai <potoi> (Uto-Aztecan: Nevome); Pítai <petai> (Uto-Aztecan: Northern Tepehuan)[140]; Smooth Ash; Terciopelo Fresno ("Velvet Ash", Spanish: Arizona, New Mexico, Texas, Mexico); Toumey Ash; Uré (Uto-Aztecan: Tarahumara)[140]; Velvet Arizona Ash; Velvet Ash; Western Ash. DESCRIPTION: Terrestrial perennial deciduous tree (40 inches to 65 feet in height with a rounded crown of up to 30 to 40 feet in width, one plant was reported to be 40 inches in height with a crown about 40 inches in width, one plant was reported to be 8 feet in height with a crown 8 feet in width, one plant was reported to be 26 feet in height with a crown 26 feet in width); the bark is pale gray or gray; the leaves are green or yellow-green turning yellow in the fall; female (green or greenish) and male (yellow) flower parts are born on separate trees and appear before the leaves; flowering generally takes place between late February and early June (additional records: one for early July, two for mid-July, one for early August, one for mid-August, two for early October and two for early November); the oblong-ovate fruits (¾ to 1¼ inch in length) are winged samaras. HABITAT: Within the range of this species it has been reported from reported from mountains; rocky mountainsides; hanging gardens; rocky, sandy and loamy canyons; rocky, gravelly and sandy canyon bottoms; chasms; gorges; clayey and silty-clayey soils on talus slopes; rockslides; rocky ledges; ridges; gravelly-loamy meadows; clayey-loamy foothills; rocky hills; along hillsides; rocky, rocky-gravelly, rocky-loamy, rocky-clayey-loamy, gravelly, gravelly-sandy, gravelly-loamy and loamy slopes; amongst rocks; flats; basins; valley floors; gravelly-loamy roadsides; within rocky arroyos; along arroyo bottoms; draws; rocky gulches; within bouldery ravines; bottoms of ravines; seeps; around and in springs; sandy soils along streams; along and in rocky-sandy-loamy, gravelly-sandy and sandy-loamy streambeds; along creeks; along and in

rocky and gravelly-sandy creekbeds; along rivers; along bouldery-cobbly-sandy and sandy riverbeds; along and in cobbly, gravelly and sandy washes; along and in drainages; along and in drainage ways; along watercourses; around pools; ciénegas; along (bouldery, rocky, gravelly-loamy and sandy) banks of streams, creeks, rivers and drainages; edges of streams, creeks, creekbeds, rivers, washes and drainage ways; shores of rivers; sandy benches; terraces; rocky-sandy-loamy and sandy bottomlands; sandy floodplains; edges of reservoirs; bouldery-cobbly-sandy, gravelly-sandy and sandy riparian areas, and disturbed areas growing in moist, damp and dry (seasonally wet) bouldery, bouldery-cobbly-sandy, rocky, rocky-gravelly, rocky-sandy, cobbly, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-sandy loam, rocky-clayey loam, gravelly loam, sandy loam, clayey loam and loam ground, and silty clay and clay ground, occurring from 400 to 9,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used in the making of tools and bows. The Yggdrasill is an evergreen ash tree which is believed to be the "world tree" of the Norse. Use as a specimen plant in a large area and as a re-vegetation plant for the areas immediately adjacent to the main channel of streams, creeks and rivers, requires regular watering. Birds and other wildlife feed on the seeds. Native Velvet Ash trees are indicators of permanent near surface water or areas of historical near surface water. When restoring the floodplains of major river systems consider including the following plants in the mix if they have been recorded from this township: Inland Saltgrass (*Distichlis spicata*), Vine Mesquite Grass (*Panicum obtusum*), Indian Rushpea (*Hoffmannseggia glauca*), Little Snapdragon Vine (*Maurandella antirrhiniflora*), Schott Yellowhood (*Nissolia schottii*), Fingerleaf Gourd (*Cucurbita digitata*), Red Sprangletop (*Leptochloa panicea* subsp. *brachiata*), Whiplash Pappusgrass (*Pappophorum vaginatum*), Alkali Sacaton (*Sporobolus airoides*), Big Sacaton (*Sporobolus wrightii*), Hartweg Twinevine (*Funastrum cynanchoides*), Hartweg Twinevine (*Funastrum cynanchoides* subsp. *heterophyllum*), Virginia Creeper (*Parthenocissus quinquefolia*), Canyon Grape (*Vitis arizonica*), Drummond Clematis (*Clematis drummondii*), Mojave Seablite (*Suaeda moquinii*), Prairie Acacia (*Acacia angustissima*), Allthorn (*Koeberlinia spinosa* var. *spinosa*), Desert Saltbush (*Atriplex polycarpa*), Fourwing Saltbush (*Atriplex canescens*), Wright Lycium (*Lycium andersonii* var. *wrightii*), Torrey Lycium (*Lycium torreyi*), Arrowweed (*Pluchea sericea*), Fremont Lycium (*Lycium fremontii*), Creosote Bush (*Larrea tridentata* var. *tridentata*), Greythorn (*Ziziphus obtusifolia* var. *canescens*), Southern Cattail (*Typha domingensis*), Seep Willow (*Baccharis salicifolia*), Whitethorn Acacia (*Acacia constricta*), Desert Hackberry (*Celtis ehrenbergiana*), Catclaw Acacia (*Acacia greggii* var. *greggii*), Soaptree Yucca (*Yucca elata*), Coyote Willow (*Salix exigua*), Screwbean Mesquite (*Prosopis pubescens*), Common Cottonbush (*Cephalanthus occidentalis*), Desert Elderberry (*Sambucus nigra* ssp. *canadensis*), Blue Paloverde (*Parkinsonia florida*), Western Soapberry (*Sapindus saponaria* var. *drummondii*), Netleaf Hackberry (*Celtis laevigata* var. *reticulata*), Velvet Mesquite (*Prosopis velutina*), Western Black Willow (*Salix gooddingii*), Velvet Ash (*Fraxinus velutina*), Arizona Black Walnut (*Juglans major*) and Fremont Cottonwood (*Populus fremontii* subsp. *fremontii*). *Fraxinus velutina* is native to southwest-central and southern North America. *5, 6, 13, 15, 18, 26 (color photograph), 28 (recorded as *Fraxinus pennsylvanica* ssp. *velutina*, color photograph), 30, 43 (072609), 44 (090211), 46 (recorded as *Fraxinus velutina* Torr. var. *coriacea* (Wats.) A. Rehder, Page 642; *Fraxinus velutina* Torr. var. *glabra* Rehder, Page 642, and *Fraxinus velutina* Torr. var. *toumeyi* (Britton) Rehder, Page 642), 48, 52 (color photograph), 53, 58, 63 (031210 - color presentation), 85 (090211 - color presentation), 115 (color presentation), 124 (090211 - no record of species; genus record), 127, 140 (Pages 180-181 & 297), **WTK** (The Velvet Ash has not been reported from this township; however, I have observed it in T13S - R13E on the banks of the Rillito Creek and at the confluence of the Rillito Creek and Santa Cruz River west of Interstate 10; it has also been reported from east of this township along the Bear Canyon Wash, Pantano Wash, Sabino Creek and Tanque Verde Creek.)*

Fraxinus velutina var. *coriacea* (see *Fraxinus velutina*)

Fraxinus velutina var. *glabra* (see *Fraxinus velutina*)

Fraxinus velutina var. *toumeyi* (see *Fraxinus velutina*)

Onagraceae: The Evening-primrose Family

***Camissonia chamaenerioides* (A. Gray) P.H. Raven: Longcapsule Suncup**

SYNONYMY: *Oenothera chamaenerioides* A. Gray. COMMON NAMES: Desert Evening Primrose; Long-capsule Suncup; Longcapsule Suncup; Long-capsuled Primrose; Long-fruit Suncup; Willow-herb Primrose; Willowherb Suncup. DESCRIPTION: Terrestrial annual forb/herb (erect stems 4 to 16 inches in height); the stems are pink or red; the leaves are green (with red spots or tipped with red), purple, red or reddish; the tiny flowers may be cream, pink, pink-white, purple, white, white-cream, white-pink, whitish-yellow or yellow; flowering generally takes place between early February and early June (additional record: one for late December). HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; rocky mesas; rock walls; bases of cliffs; rocky canyons; rocky canyon bottoms; gorges; rocky and shaley talus slopes; crevices in boulders and rocks; knolls; rocky ledges; gravelly ridges; rocky ridgetops; gravelly-clayey-loamy foothills; gravelly hills; rocky hillsides; rocky, rocky-stony, gravelly and sandy slopes; bouldery-rocky-cobbly alluvial fans; bajadas; rocky and rocky-shaley outcrops; bases of boulders; along lava slides; breaks; gravelly and sandy flats; basins; along gravelly and sandy roadsides; rocky arroyos; rocky draws; gulches; springs; along streams; in gravel and sand along creeks; along rivers; riverbeds; along and in bouldery, rocky, rocky-sandy, gravelly, gravelly-sandy and sandy washes; drainages; silty depressions; (cobbly and

sandy) banks of streams and washes; (cobbly) edges of washes; margins of washes; gravelly benches; shelves; sandy floodplains; gravelly-sandy and silty-loamy riparian areas, and disturbed areas growing in dry desert pavement; bouldery, bouldery-rocky-cobbly, rocky, rocky-shaley, rocky-stony, rocky-sandy, shaley, cobbly, gravelly, gravelly-sandy, gravelly-sandy-silty and sandy ground; gravelly-clayey loam and silty loam ground, and gravelly-sandy silty and silty ground, occurring from sea level to 6,300 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Camissonia chamaenerioides* is native to southwest-central and southern North America. *5, 6, 15, 16, 43 (031310), 44 (073111 - no records listed und Common Names; genus record), 46 (recorded as *Oenothera chamaenerioides* Gray, Page 600), 48 (genus, *Oenothera* spp.), 63 (031310), 77, **85** (080111 - color presentation), 124 (073111 - no record of genus or species), 140 (Page 297)*

***Camissonia claviformis* [also *clavaeformis*] (J. Torrey & J.C. Frémont) P.H. Raven subsp. *peeblesii* (P.A. Munz) P.H. Raven: Peebles' Browneyes**

SYNONYMY: *Oenothera claviformis* (also *clavaeformis*) J. Torrey & J.C. Frémont var. *peeblesii* P.A. Munz. COMMON NAMES: Browneyes; Peeble Browneyes; Peebles' Browneyes. DESCRIPTION: Terrestrial annual forb/herb (8 to 24 inches in height); the flowers may be creamy, creamy-white, creamy-yellow, pink, white, white tinged with pink, white or yellowish aging pink; flowering generally takes place between late December and mid-May (additional record: one for early December). HABITAT: Within the range of this species it has been reported from mountains; mesas; sandy canyons; rocky hillsides; rocky, cobbly, gravelly and sandy slopes; bajadas; amongst boulders; sand hills; sand dunes; gravelly and sandy plains; sandy flats; valley floors; along railroad right-of-ways, roadcuts; along gravelly and sandy roadsides; sandy draws; sandy-clayey-loamy riverbeds; along and in gravelly, gravelly-sandy and sandy washes; gravelly depressions; along banks of drainage ways; bottomlands; floodplains; ditches; gravelly-sandy riparian areas, and disturbed areas growing in dry bouldery, bouldery-rocky-gravelly, rocky, cobbly, gravelly, gravelly-sandy and sandy ground and bouldery-sandy-clayey loam, sandy-clayey loam, clayey loam and loam ground, occurring from 400 to 4,500 feet in elevation in the woodland, desertscrub and wetland ecological formations. NOTE: *Camissonia claviformis* subsp. *peeblesii* is native to southwest-central and southern North America. *5, 6, 43 (031410 - *Oenothera claviformis* Torr. & Frém. var. *peeblesii* Munz), 44 (080111 - no record of subspecies; no listing under Common Names for the species; genus record), 46 (note alternate spelling: recorded as *Oenothera clavaeformis* Torr. & Frém. var. *peeblesii* Munz, Pages 601-602), 48 (genus, recorded as *Oenothera* spp.), 63 (031410), **85** (080111), 124 (080111 - no record of genus, species or subspecies), 140 (Page 297)*

***Gaura mollis* T.P. James: Velvetweed**

SYNONYMY: *Gaura parviflora* D. Douglas ex J.G. Lehmann; *Gaura parviflora* D. Douglas ex J.G. Lehmann var. *lachnocarpa* C.A. Weatherby; *Gaura parviflora* D. Douglas ex J.G. Lehmann var. *typica* P.A. Munz. COMMON NAMES: Butterfly Weed (a name also applied to the genus *Gaura*); Downy Gaura; Lizard Tail; Lizard-tail; Lizard's Tail; Lizardtail; Lizardtail Gaura; Small-flower Gaura; Small-flowered Gaura; Smallflower Gaura; Smallflowered Gaura; Tall Gaura; Velvet Leaf Gaura; Velvet-leaf Gaura; Velvet Leaved Gaura; Velvet Weed; Velvetweed; Velvety Gaura; Willow Gaura; Willow-weed. DESCRIPTION: Terrestrial annual forb/herb (erect stems 1 to 10 feet in height); the leaves are dark green; the tiny flowers (on a spikelike raceme 8 to 12 inches in length) may be cream, creamy-white, lavender, maroon, pink, pink-orange, purple, dark red, reddish or whitish-pink; flowering generally takes place between mid-March and early November (additional records: one for early January and one for late January). HABITAT: Within the range of this species it has been reported from mountains; mountaintops; sandy canyons; rocky canyon walls; canyon bottoms; meadows; foothills; sand hills; hillsides; slopes; prairies; plains; alkali flats; basins; valley floors; valley bottoms; along railroad right-of-ways; along rocky, gravelly, gravelly-sandy and gravelly-loamy roadsides; sandy arroyos; sandy bottoms of arroyos; gulches; springs; hot springs; along streams; along creeks; creekbeds; along rivers; riverbeds; along and in sandy washes; within rocky drainages; along lakes; silty playas; ciénegas; marshes; swampy areas; swales; along banks of rivers; along margins of rivers and washes; (sandy) shores of rivers and lakes; benches; gravelly, sandy and loamy terraces; sandy bottomlands; clayey floodplains; lowlands; mesquite bosques; along fencerows; along canals; along canal banks; along ditches; clayey-loamy ditch banks; clayey riparian areas; waste places, and disturbed areas growing in wet, moist, damp and dry rocky, gravelly, gravelly-sandy and sandy ground; gravelly loam, gravelly-clayey loam, clayey loam and loam ground; clay ground, and sandy-silty and silty ground, occurring from sea level to 7,800 feet in elevation in the forest, woodland, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop; it was also noted as having been used as a dug or medication and for protection (during the Fire Dance at the Mountain Chant). *Gaura mollis* is native to south-central and southern North America. *5, 6, 15 (recorded as *Gaura parviflora* Doug.), 28 (recorded as *Gaura parviflora*, color photograph 582), 43 (031410), 44 (080111 - no listing under Common Names for the genus or species), 46 (recorded as *Gaura parviflora* Doug., Page 603), 58 (recorded as *Gaura parviflora* Doug.), 63 (031410 - color presentation), 68 (recorded as *Gaura parviflora* Doug.), 77 (recorded as *Gaura parviflora* Doug.), **85** (080111 - color presentation), 101 (recorded as *Gaura parviflora* Doug. ex Lehm., color photograph), 106 (031410), 115 (color presentation), 124 (080111), 127*

Gaura parviflora (see *Gaura mollis*)

Gaura parviflora var. *lachnocarpa* (see *Gaura mollis*)

Gaura parviflora var. *typica* (see *Gaura mollis*)

Oenothera chamaenerioides (see *Camissonia chamaenerioides*)

Oenothera claviformis var. *peeblesii* (see *Camissonia claviformis* subsp. *peeblesii*)

Oenothera primiveris A. Gray var. *caulescens* (see *Oenothera primiveris* subsp. *primiveris*)

***Oenothera primiveris* A. Gray subsp. *primiveris*: Desert Evening-primrose**

SYNONYMY: *Oenothera primiveris* A. Gray var. *caulescens* P.A. Munz. COMMON NAMES: Bottle Evening Primrose (a name also applied to the species); Desert Evening-primrose (a name also applied to the species and to other species); Evening Primrose (a name also applied to the species, the genus *Oenothera* and to the Onagraceae); Large Yellow Desert Primrose (a name also applied to the species); Sun-drops; Sundrop (a name also applied to the species); Yellow Desert Evening-primrose (a name also applied to the species); Yellow Desert Primrose (a name also applied to the species and other species). DESCRIPTION: Terrestrial annual forb/herb (to 4 inches in height); the flowers are cream-yellowish, white or yellow; flowering generally takes place between early February and early May (additional records: two for mid-January and one for early June). HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; mesas; bases of cliffs; rocky canyons; bluffs; gravelly foothills; rocky, sandy and sandy-loamy hillsides; rocky and gravelly slopes; gravelly bajadas; sandy lava flows; sand dunes; sandy banks; plains; rocky, gravelly and sandy flats; valley bottoms; along railroad right-of-ways; along sandy roadsides, along draws; along streams; along creeks; along rivers; sandy riverbeds; along sandy washes; (sandy) edges of creeks and riverbeds; gravelly terraces; sandy-clayey bottomlands, and disturbed areas growing in dry rocky, gravelly and sandy ground and gravelly loam, sandy loam and loam ground, occurring from 200 to 5,400 feet in elevation in the grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The species, *Oenothera primiveris*, was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. *Oenothera primiveris* subsp. *primiveris* is native to southwest-central and southern North America. *5, 6, 18 (genus), 28 (species, color photograph of the species), 43 (031510 - *Oenothera primiveris* var. *caulescens* Munz), 44 (080111 - no listings under Common Names for subspecies; genus and species records), 46 (*Oenothera primiveris* Gray var. *caulescens* Munz, Page 598), 48 (genus, *Oenothera* spp.), 63 (031510 - color presentation), **85** (080111), 115 (color presentation of the species), 124 (080111 - no record of species; genus record), 127 (species)*

Oenothera primiveris var. *caulescens* (see *Oenothera primiveris* subsp. *primiveris*)

***Oenothera rosea* C.L. L'Héritier de Brutelle ex W. Aiton: Rose Evening Primrose**

COMMON NAMES: Amapola de Campo (Hispanic); Arnica (Hispanic); Cáncer Lisa (Hispanic); Clamería (Hispanic); Cruz-de-malta (Portuguese: Brazil); Evening Primrose (a name also applied to other species, the genus *Oenothera* and to the Onagraceae); Hierba Cólica (Hispanic); Hierba de Flor Rojiza; Hierba del Golpe (Hispanic); Hierba del Orín (Hispanic); Hierba Para la Diarrea (Hispanic); Lindo Atardecer (Hispanic); Mexican Pink Evening-primrose; Manuelita (Hispanic); Oo li' Lo Tii (Hispanic); Pink Evening-primrose (a name also applied to other species); Pink Nagblom (Afrikaans); Platillo (Hispanic); Rose Evening Primrose; Rose Evening-primrose; Rose Eveningprimrose; Rose of Mexico; Rose Sundrops; Rosy Evening-primrose; Sinvergüenza (Hispanic); Tapacola (Hispanic); Tarapeni (Hispanic); Trskuan Bey (Zapoteca); Xukuhi Atakurhikuri (Purépecha); Yerba Cólico (Hispanic); Yerba del Golpe (Hispanic); Zapotillo (Hispanic); Zapotito (Hispanic). DESCRIPTION: Terrestrial perennial forb/herb (3 to 39 inches in height); the leaves are green or yellow-green; the flowers may be magenta, pink, dark pink, pink-rose, pinkish-red, purple, purple-pink, red, rose, rose-pink, dark rose-pink, rose-purple or rose-red; the stigmas are cream-white or purple-pink; the anthers are creamy-white; flowering generally takes place between early April and late October (additional record: one for late December). HABITAT: Within the range of this species it has been reported from mountains; cliffs; rocky canyons; rocky canyon bottoms; meadows; bluffs; foothills; rocky slopes; valley floors; rocky roadsides; arroyos; ravines; seeps; springs; along and in streams; along creeks; creekbeds; in silt along rivers; riverbeds; rocky-sandy washes; drainages; ciénegas; marshy areas; depressions; (sandy) banks of arroyos, streams, creeks and rivers; edges of rivers; (muddy) shores of lakes; terraces; floodplains; along ditches; ditch banks; riparian areas, and disturbed areas growing in shallow water; muddy, and wet, moist and damp rocky, rocky-sandy and sandy ground; shaley clay ground, and silty ground, occurring from 1,000 to 8,700 feet in elevation in the woodland, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Oenothera rosea* is native to southwest-central and southern North America; Central America, and northwestern South America. *5, 6, 18 (genus), 30, 43 (031510 - *Oenothera rosea* Aiton), 44 (080111 - color photograph), 46 (Page 599), 48 (genus, *Oenothera* spp.), 58, 63 (031510), **85** (080111 - color presentation), 106 (012209), 124 (080111 - no record of species; genus record)*

Papaveraceae: The Poppy Family

Argemone mexicana var. *ochroleuca* (see *Argemone ochroleuca*)

***Argemone ochroleuca* R. Sweet: Pale Mexican Pricklypoppy**

SYNONYMY: *Argemone mexicana* C. Linnaeus var. *ochroleuca* (R. Sweet) J. Lindley. COMMON NAMES: Cardo; Chicalote (a name also applied to other species and the genus *Argemone*, Spanish); Mexican-poppy; Pale Mexican-poppy; Pale Mexican Pricklypoppy; Pa'ratĭtsĭnbogop (Uto-Aztecan: Shoshoni, questionably applied); Prickle Poppy (a name also applied to other species and the genus *Argemone*); To:ta Heosig (Uto-Aztecan: Tohono O'odham); White-flower Mexican Poppy; Witblom-bloudissel (Afrikaans); Yellow Pricklepoppy; Yellow Prickly Poppy. DESCRIPTION: Terrestrial annual or perennial forb/herb (12 to 40 inches in height); the flowers may be canary yellow, cream, pale lemon-yellow, lemon-yellow, light yellow, pale yellow-cream or dark yellow (rarely); the anthers are yellow; based on few flowering records located, flowering generally takes place between mid-March and late July (additional records: one for mid-January, one for mid-February and one for mid-October). HABITAT: Within the range of this species it has been reported from mountains; rocky canyons; rocky slopes; bajadas; embankments; plains; sandy flats; coastal plains; railroad right-of-ways; roadsides; rocky and sandy arroyos; bottoms of arroyos; streambeds; riverbeds; washes; (loamy) banks of river; benches; bottomlands; mesquite bosques; gravelly-sandy riparian areas, and disturbed areas growing in wet, moist and dry rocky, gravelly, gravelly-sandy and sandy ground and loam ground, occurring from sea level to 8,200 feet in elevation in the forest, woodland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant. This plant has an orange or yellow sap. *Argemone ochroleuca* is native to southern North America. *5, 6, 18 (genus), 43 (072210 - *Argemone mexicana* var. *ochroleuca* (Sweet) Lind.), 44 (080211 - no record of species; genus record), 46 (no record of species), 48 (genus), 63 (080211), 68 (genus), 77, 80 (Species of the genus *Argemone* are considered to be Rarely Poisonous and Suspected Poisonous Range Plants, "These distasteful, spiny, perennial forbs contain alkaloids that could prove toxic if eaten in sufficient amounts."), **85** (080211 - color presentation of dried material), 124 (080111 - no record of species; genus record), 140 (Pages 184 & 185)*

***Argemone pleiacantha* E.L. Greene subsp. *pleiacantha*: Southwestern Pricklypoppy**

COMMON NAMES: Bluestem Pricklepoppy (a name also applied to the species); Cardo (a name also applied to the species and other species, Spanish); Cardo (Spanish: Sonora)[140]; Chicalote (a name also applied to other species and the genus *Argemone*, Spanish), Chicalote <chilazotl, chichilotl, xicólotl> (Spanish: Sonora)[140], Chicolote; Cowboy's [Fried] Eggs (English: Arizona)[140]; Cowboys' Fried Eggs (a name also applied to the species); Hipigdum (Uto-Aztecan: Onavas Pima)[140]; Prickly Poppy (a name also applied to the species); [Southwestern] Prickly [Thistle] Poppy (English)[140]; Southwestern Pricklypoppy (a name also applied to the species); Thistle Poppy (a name also applied to the species and the genus *Argemone*); To:ta Heosig (Uto-Aztecan: Tohono O'odham)[140]; Xazácoz (Hokan: Seri)[140]. DESCRIPTION: Terrestrial perennial forb/herb (erect stem 20 inches to 4 feet in height); the stems may be purplish; the leaves are blue-green, gray or grayish-green; the flowers (4 to 6 inches in width) are white with a bright orange center; flowering generally takes place between mid-April and mid-October. HABITAT: Within the range of this species it has been reported from mountains; mesas; canyons; bouldery and sandy canyon bottoms; ridgelines; meadows; foothills; hills; hillsides; sandy and loamy slopes; amongst boulders; gravelly prairies; gravelly plains; rocky, gravelly and gravelly-loamy flats; basins; valley floors; railroad right-of-ways; along rocky-gravelly, gravelly-sandy-clayey-loamy, sandy and clayey roadsides; arroyos; streams; along rivers; in gravelly and sandy washes; drainages; drainage ways; (silty) banks of streams and creeks; terraces; bottomlands; floodplains; along ditches; gravelly riparian areas, and disturbed areas growing in dry rocky, rocky-gravelly, gravelly, gravelly-sandy and sandy ground; gravelly-sandy-clayey loam, gravelly loam, gravelly-clayey loam and loam ground, and silty ground, occurring from 1,700 to 7,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food dye crop. The flowers are visited by Sphinx Moths, including the Five-lined Sphinx Moth (*Hyles lineata*), and Mourning Doves (*Zenaida macroura*) feed on the seed. *Argemone pleiacantha* subsp. *pleiacantha* is native to southwest-central and southern North America. *5, 6, 16, 18 (genus), 28 (species, color photograph of the species), 43 (072509), 44 (080211 - no record of species; genus record), 46 (Supplement Page 1050), 48 (genus), 58, 63 (031610), 68 (genus), 80 (Species of the genus *Argemone* are considered to be Rarely Poisonous and Suspected Poisonous Range Plants, "These distasteful, spiny, perennial forbs contain alkaloids that could prove toxic if eaten in sufficient amounts."), **85** (080211 - color presentation), 115 (color presentation of the species), 124 (080211 - no record of species; genus record), 127, 140 (recorded as *Argemone pleiacantha* Greene subsp. *pleiacantha*, Pages 184-185 & 297)*

Pedaliaceae (Martyniaceae): The Sesame Family

Martynia althaeifolia (see *Proboscidea althaeifolia*)

Martynia arenaria (see *Proboscidea althaeifolia*)

***Proboscidea althaeifolia* (G. Bentham) J. Decaisne: Desert Unicorn-plant**

SYNONYMY: *Martynia althaeifolia* G. Bentham; *Martynia arenaria* G. Engelmann; *Proboscidea arenaria* (G. Engelmann) J. Decaisne. COMMON NAMES: aBan Ihugga (Tohono O'odham); Aguaro Con Camote (Devil's Claw With A Sweet Potato, Sonora)[140]; Ban Ihugga (Akimel O'odham)[140]; Campanita (Little Bell)[140]; Cuernito (Little Horn, Sonora)[140]; Cuernitos; Cuernos [Espuela] del Diablo (Devil's Horns, Sonora)[140]; Desert Devil's Claw; Desert Devil's-claw; Desert Devilsclaw; Desert Unicorn Plant[140]; Desert Unicorn-plant; Devil's Claw (a name also applied to other species and to the genus *Proboscidea*); Devils Claw (a name also applied to other species); Devil's-horn; Devil'shorn; Devilshorn; Gato (Cat, Sonora)[140];

Golden Devil's Claw; Golden Devil's-claw; Golden Devils Claw; Golden Devil'sclaw; Elephant Tusks (a name also applied to the genus *Proboscidea*); Guernito; Hollyhock Devil's-claw; Red Devil's Claw; Roundbrack Devil's Claw; Sand Devil's Claw; Straighttube Devilsclaw; Straight-tube Devilsclaw; Torito (Little Bull, Sonora)[140]; Tumo'ala (Hopi)[140]; Uña de Gato (Cat's Claw, Sonora)[140]; Uña del Diablo (Devil's Claw)[140]; Unicorn Plant (a name also applied to other species and to the genus *Proboscidea*); Yellow-flowered Perennial Devil's Claw; Yellow-flowered Perennial Devil's-claw. DESCRIPTION: Terrestrial perennial forb/herb (spreading decumbent stems 7 to 12 inches in height and up to 3 to 6½ feet in width); the leaves are dark green; the flowers may be copper-yellow, golden, dirty orange, golden-yellow, orange-yellow, yellow or yellow-orange with brown-purple, maroon, orange, orange-brown, purple or red markings; flowering generally takes place between late June and mid-November (additional records: one for mid-January, one for late February, one for mid-March, one for early May, one for late May, four for early June , two for mid-December and one for late December). HABITAT: Within the range of this species it has been reported from sandy mesas; cliffs; canyons; canyonsides; canyon bottoms; buttes; stony and sandy foothills; hillsides; escarpments; gravelly and sandy slopes; alluvial fans; gravelly-sandy and sandy bajadas; rocky outcrops; sand hills; sand dunes; sandy hummocks; gravelly and sandy plains; gravelly and sandy flats; sandy valley floors; coastal dunes; along sandy roadsides; arroyos; bottoms of ravines; gravelly-sandy riverbeds; along and in gravelly and sandy washes; drainages; sandy depressions; (sandy) banks of washes; (sandy) margins of washes; sandy beaches; benches; sandy strands; terraces; loamy bottomlands; sandy floodplains; sandy low spots; sandy ditches, and disturbed areas growing in dry rocky, stony, gravelly, gravelly-sandy and sandy ground and gravelly loam, gravelly-sandy loam, sandy loam and loam ground, occurring from sea level to 4,600 feet (one record for 8,005 feet) in elevation in the woodland, scrub, grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, the flowers are fragrant. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food and/or fiber crop; it was also noted as having been used as a tool, and/or as a drug or medication. The flowers are pollinated by a (Miner) Bee, *Pérdita hurdii*. *Proboscidea althaeifolia* is native to southwest-central and southern North America and possibly to Peru in southwestern South America. *5, 6, 15 (placed in the Martyniaceae), 16 (placed in the Martyniaceae), 43 (031710 - *Proboscidea althaeifolia* Decne., *Proboscidea arenaria* Decne.), 44 (080411 - color photograph), 46 (alternate spelling recorded as *Proboscidea altheaefolia*, Page 796), 58 (placed in the Martyniaceae), 63 (031710 - color presentation), 77, 85 (080411 - color presentation), 86 (color photograph), 115 (color presentation), 124 (080411 - no record of species; genus record), 127, 140 (Page 173, placed in the Martyniaceae, Page 296), **HR***

Proboscidea altheaefolia (see footnote 46 under *Proboscidea althaeifolia*)

Proboscidea arenaria (see *Proboscidea althaeifolia*)

***Proboscidea parviflora* (E.O. Wooton) E.O. Wooton & P.C. Standley: Doubleclaw**

COMMON NAMES: Aguaro (Spanish: Chihuahua, Sonora)[140]; Akawat (Uto-Aztecan: Cahuilla)[140]; 'Akéshgaan ("Claw", Athapascan: Navajo)[140]; Ban Ihugga <ban 'ihugga, ihu'k> ("Coyote's Devil's Claw", Uto-Aztecan: Akimel O'odham, Tohono O'odham)[140]; Ban Shu:shk ("Coyote's Sandals", Uto-Aztecan: Tohono O'odham)[140]; Catachio (Spanish: Guerrero to Oaxaca)[140]; Chogołshahé <chugoséhe, idághadé, itághadé> (Athapascan: Western Apache)[140]; Čorí [čoríkari] (Uto-Aztecan: Tarahumara)[140]; Cuernitos [Cuernatos] ("Little Horns", Spanish: Sonora to central mesa of Mexico)[140]; Daa'*Y*adebitabizaye ("Devil's Claw With Small Leaves", Athapascan: Chiricahua and Mescalero Apache)[140]; Devil's Claw (a name also applied to the genus *Proboscidea*); Devil's Claw (English)[140]; Devilsclaw (a name also applied to the genus *Proboscidea*); Double-claw (English: Arizona, New Mexico)[140]; Doubleclaw; Elephant Tusks (a name also applied to the genus *Proboscidea*); Espuelito del Diablo ("Devil's Little Spur", Spanish: Baja California)[140]; Garambullo (a name also applied to other species, Spanish: Chihuahua)[140]; Gatito ("Little Cat", Spanish: Sonora)[140]; Guernito; Gwóxtón (Yuman: Maricopa)[140]; Halák[A] (Yuman: Havasupai)[140]; ʔI:cúc (Yuman: Cocopa)[140]; 'Ihug ("Devil's Claw", Uto-Aztecan: Hiá Ceḍ O'odham)[140]; Mak Ḍuny (Yuman: Walapai)[140]; New Mexico Devil's Claw; Perritos ("Little Dogs", Spanish: Sonora)[140]; <sahoobinump> (Uto-Aztecan: Southern Paiute)[140]; Small-flowered Devil's-claw; Red Devil's Claw; Small-flowered Unicorn Plant; Tamko'okochi (Uto-Aztecan: Yaqui)[140]; Tankokochi <tancocochi> (Uto-Aztecan: Guarijío?)[140]; T̠voʔon̠b̠ [T̠v̠ʔon̠b̠] (Uto-Aztecan: Kawaiisu)[140]; Torito[s] ("Little Bull[s]", Spanish: Sonora to central mesa of Mexico)[140]; Toro ("Bull", Spanish: Sonora)[140]; Tümuippüh (Uto-Aztecan: Panamint)[140]; Tumo'ala <tumó'alá > (Uto-Aztecan: Hopi)[140]; Uña de Gato [Gatuño] ("Cat's Claw", Spanish: Sonora)[140]; Unicorn Plant (a name also applied to the genus *Proboscidea*). DESCRIPTION: Terrestrial annual forb/herb (spreading, ascending and/or erect stems 6 inches to 5 feet in height and up to 4 to 8 feet in width; one plant was observed and described as being 2 feet in height and 4 feet in width); the leaves are dark green; the flowers may be pale cream with purple and yellow markings, magenta, magenta-pink-white, peach, light pink, pink, pink-lavender, pink & white, pink-yellow, pink/yellow-cream, light purple, pale purple with dark purple margins, purple, purple-orangish-yellow, purple-white, purple & white & yellow, purplish, purplish-pink, violet, violet-pink, white or white-lavender; flowering generally takes place between mid-July and mid-November (additional records: one for early January, one for mid-January, two for early February, one for late May, one for late May and one for early December, flowering beginning as early as April has also been reported). HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; mesas; rocky and rocky-sandy-loamy canyons; canyon bottoms; ridges; meadows; foothills; rocky hillsides; rocky, gravelly, gravelly-loamy, sandy and sandy-loamy slopes; rocky outcrops; bajadas; sandy steppes; cobbly plains; gravelly and sandy flats; sandy valley floors; coastal beaches; along railroad right-of-ways; along gravelly, gravelly-loamy, sandy-loamy and sandy roadsides; within gravelly and sandy arroyos; gravelly-sandy and sandy bottoms of arroyos; draws; gulches; bottoms of gulches; sandy ravines; bottoms of ravines; springs; along streams; along rocky-

gravelly streambeds; sandy creekbeds; sandy riverbeds; along and in rocky, gravelly and sandy washes; along sandy drainages; oases; depressions; sandy-clayey swales; along (sandy) banks in canyons; along (rocky, gravelly and gravelly-sandy-silty) edges of creeks, rivers and washes; sand and gravel bars; sandy beaches; sandy terraces; sandy bottomlands; along sandy floodplains; lowlands; mesquite bosques; fencelines; bouldery-cobbly-sandy and gravelly riparian areas; waste places, and disturbed areas growing in wet (seasonally) and dry bouldery-cobbly-sandy, rocky, cobbly, gravelly, gravelly-sandy and sandy ground; rocky-sandy loam, gravelly loam and sandy loam ground; sandy clay and clay ground, and gravelly-sandy silty ground, occurring from sea level to 6,900 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food and/or fiber (used in basketry) crop; it was also noted as having been used as a drug or medication. The species, *Proboscidea parviflora*, is native to southwest-central and southern North America. *5, 6, 16, 28 (color photograph 676 A&B), 43 (031710 - *Proboscidea parviflora* Wooton & Standl.), 44 (080511 - no records listed under Common Names; genus record), 46 (Page 795), 58, 63 (031710 - color presentation), 77, **85** (080511 - color presentation), 115 (color presentation), 124 (080511 - no record of species; genus record), 127, 140 (Pages 172-173, placed in the Martyniaceae, Page 296)*

Polemoniaceae: The Phlox Family

Gilia bigelovii (see *Linanthus bigelovii*)

***Eriastrum diffusum* (A. Gray) H.L. Mason: Miniature Woollystar**

COMMON NAMES: Blue Star (a name also applied to other species); Diffuse Eriastrum; Diffuse Woolstar; Miniature Eriastrum; Miniature Starflower; Miniature Wool Star; Miniature Wool-star; Miniature Woolly-star; Miniature Wooly-star; Miniature Woollystar; Miniature Woolstar; Miniature Woolystar; Prickly Stars; Spreading Eriastrum; Spreading Woollystar; Spreading Woolstar; Starflower (a name also applied to other species); Woollystar (a name also applied to the genus *Eriastrum*). DESCRIPTION: Terrestrial annual forb/herb (erect stems 1½ to 14 inches in height); the stems are reddish-brown; the foliage is grayish-green; the flowers may be pale blue, light blue & yellow, blue, blue-lavender, cream, pale lavender, lavender, purple, purple-blue, pale violet, violet or white; flowering generally takes place between mid-February and mid-July (additional record: two for mid-August). HABITAT: Within the range of this species it has been reported from mountains; sandy mesas; plateaus; rocky canyon rims; cliffs; rocky canyons; rocky-gravelly-sandy and sandy canyon bottoms; buttes; rocky knolls, rocky ledges; sandy ridges; rocky-sandy and gravelly ridgetops; sandy clearings in woodlands; meadows; sandy foothills; bouldery, rocky and sandy hills; hilltops; rocky hillsides; bedrock, rocky, rocky-sandy, rocky-sandy-loamy, gravelly-sandy, sandy and sandy-loamy slopes; rocky-sandy alluvial fans; rocky and gravelly bajadas; rocky outcrops; sand hills; sandy dunes; benches; plains; stony, gravelly, gravelly-sandy-clayey, sandy and sandy-clayey flats; basins; valley floors; valley bottoms; along stony, gravelly, gravelly-sandy-clayey-loamy, gravelly-clayey, sandy and clayey roadsides; sandy arroyos; draws; gulches; springs; along creeks; along rivers; sandy riverbeds; along and in rocky, stony-gravelly, gravelly, gravelly-sandy and sandy washes; rocky-sandy and gravelly drainages; along and in rocky-sandy, gravelly and gravelly-sandy drainage ways; sandy-silty playas; banks of creeks, rivers, riverbeds and washes; among clumps of grasses at the (sandy) edges of arroyos; channel bars; benches; shelves; terraces; bottomlands; sandy floodplains; silty-loamy stock tanks; along canals; sandy riparian areas, and disturbed areas growing in dry desert pavement; bouldery, rocky, rocky-gravelly-sandy, rocky-sandy, stony, stony-gravelly, gravelly, gravelly-sandy and sandy ground; rocky-sandy loam, gravelly-sandy loam, gravelly-sandy-clayey loam, gravelly-silty-clayey loam, sandy loam, clayey loam and silty loam ground; rocky clay, gravelly-sandy clay, gravelly clay and sandy clay ground, and sandy silty ground, occurring from 400 to 7,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Eriastrum diffusum* is native to southwest-central and southern North America. *5, 6, 15, 16, 28 (color photograph 693), 43 (072609), 44 (080611 - color photograph), 46 (Page 685), 58, 63 (031810 - color presentation), 77 (color photograph #49), **85** (080611 - color presentation), 115 (color presentation), 124 (080611 - no record of genus or species), 140 (Page 302)*

***Linanthus bigelovii* (A. Gray) E.L. Greene: Bigelow's Linanthus**

SYNONYMY: *Gilia bigelovii* A. Gray. COMMON NAMES: Bigelow Desert Trumpet; Bigelow Desert-gold; Bigelow Desert-trumpet; Bigelow Desert-trumpets; Bigelow Deserttrumpets; Bigelow Gilia; Bigelow Linanthus; Bigelow's Desert Trumpet; Bigelow's Desert-gold; Bigelow's Desert-trumpet; Bigelow's Deserttrumpets; Bigelow's Linanthus. DESCRIPTION: Terrestrial annual forb/herb (erect stems 2 inches to 1 foot in height); the flowers may be bluish, cream, cream-white, lavender-blue, mahogany-tinged cream, cream-white, lavender-blue, white, white-blue-lavender, white-lavender or white-pink; flowering generally takes place between early February and late May. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; gravelly and sandy mesas; plateaus; cliffs; rocky canyons; canyon bottoms; ledges; ridgetops; rocky-sandy meadows; along gravelly cinder cones; rocky foothills; rocky hills; rocky hillsides; along cinder cones; bouldery-gravelly, bouldery-sandy, rocky, rocky-gravelly, shaley, cobbly, gravelly, gravelly-loamy and sandy slopes; rocky-sandy alluvial fans; gravelly bajadas; rocky outcrops; amongst boulders, rocks and gravels; lava flows; lava fields; sand dunes; cobbly and gravelly-loamy breaks; benchlands; rocky-sandy plains; rocky, gravelly and sandy flats; basins; cindery and sandy valley floors; valley bottoms; along gravelly, gravelly-sandy and sandy roadsides; draws; gulches; around seeping streams; along streams; along creeks; along and in rocky, rocky-sandy, gravelly, gravelly-sandy and sandy washes; within sandy drainages;

bouldery, rocky-sandy and gravelly-sandy benches; sandy terraces; loamy bottomlands; sandy riparian areas, and disturbed areas growing in dry bouldery, bouldery-gravelly, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, shaley, cobbly, cindery, gravelly, gravelly-sandy and sandy ground; gravelly loam, gravelly-clayey loam and loam ground, and gravelly-sandy silty ground, occurring from 200 to 6,100 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Linanthus bigelovii* is native to southwest-central and southern North America. *5, 6, 15, 16, 43 (080611 - *Linanthus bigelovii* Greene), 44 (080611), 46 (Page 687), 63 (032010), 77, **85** (080611 - color presentation), 124 (080611 - no record of genus or species), 140 (Page 302)*

Polygonaceae: The Buckwheat Family

Eriogonum densum (see *Eriogonum polycladon*)

***Eriogonum maculatum* A.A. Heller: Spotted Buckwheat**

COMMON NAMES: Angle-stemmed Buckwheat (a name also applied to other species); Anglestem Buckwheat (a name also applied to other species); Skeleton Weed (a name also applied to other species); Spotted Buckwheat; Spotted Wild Buckwheat; Spotted Wild-buckwheat. DESCRIPTION: Terrestrial annual forb/herb (spreading and/or erect stems 4 to 12 inches in height); the foliage is greenish to reddish; the flowers are cream, pink, red, rose-pink, rose-red, white, white-pink, white & pink, white & dark pink, white-purple, white-red, yellow, yellow-green or yellowish-white; flowering generally takes place between mid-March and early July (additional records: one for late July, two for mid-August, one for early September, one for late September, two for early October, one for mid-October, one for early November and one for late November). HABITAT: Within the range of this species it has been reported from mountains; mesas; sandy bases of cliffs; rocky canyons; canyon sides; sandy canyon bottoms; talus slopes; bluffs; ledges; gravelly ridges; ridgetops; gravelly foothills; bouldery, rocky, gravelly and gravelly-clayey hills; hilltops; rocky and gravelly hillsides; bedrock, bouldery, rocky, rocky-sandy, gravelly, sandy, clayey and silty slopes; alluvial fans; gravelly bajadas; rocky outcrops; amongst boulders; boulder fields; sandy lava flows; sand dunes; sandy banks; plains; gravelly, gravelly-sandy, sandy and clayey flats; sandy basins; sandy valley floors; sandy valley bottoms; along gravelly and sandy roadsides; springs; along creeks; along rivers; along and in gravelly-sandy riverbeds; along and in rocky, rocky-sandy, gravelly, gravelly-sandy and sandy washes; sandy depressions; (sandy) banks of rivers; edges of dry lakes; sandy benches; floodplains; shores of reservoirs; sandy riparian areas, and disturbed areas growing in dry bouldery, rocky, rocky-sandy, gravelly, gravelly-sandy and sandy ground; gravelly clay and clay ground, and bouldery silty and silty ground, occurring from 300 to 8,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Eriogonum maculatum* is native to southwest-central and southern North America. *5, 6, 16, 18 (genus), 43 (032310), 44 (080711), 46 (Pages 236-237), 48 (genus), 63 (032310 - color presentation), 77, **85** (080711 - color presentation of dried material), 124 (080711 - no record of species; genus record)*

***Eriogonum polycladon* G. Bentham: Sorrel Buckwheat**

SYNONYMY: *Eriogonum densum* E.L. Greene. COMMON NAMES: Buckwheat (a name also applied to other species and the genus *Eriogonum*); Redroot Buckwheat; Skeleton Weed (a name also applied to other species); Sorrel Buckwheat; Sorrel Eriogonum; Sorrel Wild Buckwheat; Wild Buckwheat (a name also applied to other species and the genus *Eriogonum*). DESCRIPTION: Terrestrial annual forb/herb (erect stems 2 inches to 4 feet in height; plants were observed and described as being 2 to 28 inches in height and 10 inches in width); the stems are bluish-green, gray, gray-green, grayish or whitish; the flowers may be cream, cream-pink, cream-white, pale pink, pink, pinkish-white, red, reddish-pink, reddish-white, russet, white, white becoming pink or red, white-green-yellow or white tinged pink; flowering generally takes place between late July and mid-November (additional records: one for mid-February, one for late May and one for late June; flowering has also been reported as possibly occurring year-round). HABITAT: Within the range of this species it has been reported from rocky mountains; rocky and gravelly-sandy-clayey-loamy mesas; rocky canyons; rocky knolls; ridges; cindery and sandy clearings in forests and woodlands; meadows; foothills; sandy hills; hillsides; rocky, gravelly, gravelly-sandy, gravelly-loamy and sandy slopes; gravelly-sandy bajadas; cindery lava flows; prairies; cindery, gravelly, gravelly-sandy and sandy flats; basins; gravelly-sandy valley floors; cobbly-gravelly, gravelly, gravelly-sandy, gravelly-loamy, sandy and clayey roadsides; along sandy arroyos; sandy bottoms of arroyos; within sandy-loamy draws; bottoms of gullies; within sandy ravines; springs; along streambeds; along creeks; along and in rocky-sandy creekbeds; bouldery-cobbly-sandy riverbeds; along and in gravelly, gravelly-sandy, sandy and clayey washes; sandy drainages; gravelly drainage ways; ciénegas; (sandy) banks of arroyos, creeks and washes; (rocky-sandy) shores of lakes; sand bars; sandy benches; gravelly-sandy and sandy terraces; gravelly and sandy bottomlands; sandy and silty floodplains; around stock tanks; ditches; sandy riparian areas, and disturbed areas growing in dry bouldery-cobbly-sandy, rocky, rocky-sandy, cobbly-gravelly, cindery, gravelly, gravelly-sandy and sandy ground; gravelly-sandy-clayey loam, gravelly loam and sandy loam ground; bouldery clay and clay ground, and silty ground, occurring from 600 to 8,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Eriogonum polycladon* is native to southwest-central and southern North America. *5, 6, 15, 16, 18 (genus), 43 (072609), 44 (080711 - no species records listed under Common Names; genus records), 46 (*Eriogonum densum* Greene, Page 236 and *Eriogonum polycladon* Benth., Page 236), 48 (genus), 58, 63 (032310), 77, **85** (080711 - color presentation), 115 (color presentation), 124 (080711), 140 (Page 302)*

Persicaria lapathifolia (see *Polygonum lapathifolium*)

***Polygonum lapathifolium* C. Linnaeus: Curlytop Knotweed**

SYNONYMY: *Persicaria lapathifolia* (C. Linnaeus) A. Gray. COMMON NAMES: Bulbous Persicaria; Curl-top Lady's-thumb; Curl-top Smartweed; Curl-topped Lady's Thumb; Curltop Lady's Thumb; Curltop Ladysthumb; Curltop Ladysthumb Smartweed; Curltop Smartweed; Curly Top Lady's Thumb; Curly-top Knotweed; Curly-top Lady's-thumb; Curly-top Smartweed; Curlytop Buckwheat; Curlytop Knot-weed; Curlytop Knotweed; Curlytop Ladysthumb; Curlytop Smartweed; Dock Leaf Smartweed; Dock Leaved Knotweed; Dock Leaved Persicaria; Dock Leaved Polygonum; Dock Leaved Smartweed; Dock-leaf Persicaria; Dock-leaf Knotweed; Dock-leaf Smartweed; Dock-leafed Knotweed; Dock-leaved Heart's-ease; Dock-leaved Persicaria; Dock-leaved Polygonum; Dock-leaved Smart-weed; Dock-leaved Smartweed; Dockleaf Knotweed; Dockleaf Smartweed; Erva-de-bicho-pruinosa (Portuguese: Brazil); Green Smartweed; Heart's Ease (a name also applied to other species, Iowa and a name also applied to the genus *Polygonum* in Erie County, Pennsylvania); Heart's-ease (a name also applied to other species, Iowa and a name also applied to the genus *Polygonum* in Erie County, Pennsylvania); Heartsease (a name also applied to other species, Iowa and a name also applied to the genus *Polygonum* in Erie County, Pennsylvania); Knodding Knotweed; Knodding Smartweed; Knotted Persicaria; Ladysthumb; Ma Liao (transcribed Chinese); Nodding Smartweed (a name also applied to other species, Iowa); Pale Heart's Ease; Pale Knotweed; Pale Persicaria; Pale Red Persicaria; Pale Polygonum; Pale Smartweed; Pale Willow Weed; Pale Willow-weed; Pale Willowweed; Persicaria major lapathi foliis calyce floris purpureo; Pink Nodding Smartweed (Iowa); Pink Persicaria (a name also applied to other species, Iowa); Pink Smartweed (a name also applied to other species, Iowa); Renouée à Feuilles de Patience (French); Rough Heartsease; Smart Weed (a name also applied to other species and the genus *Polygonum*); Smart-weed (a name also applied to other species and the genus *Polygonum*); Smartweed (a name also applied to other species and the genus *Polygonum*); Upland Heart's-ease (Nebraska); Upland Heartsease (Nebraska); Willow Knotweed; Willow Smartweed (a name also applied to other species); Willow-knotweed; Woolly Smartweed. DESCRIPTION: Terrestrial (and/or semi-aquatic) annual forb/herb (ascending and/or erect stems 2 inches to 6½ feet inches in height); the flowers may be cream-pink, greenish-white, pink, pink-white, white or white-pink; the anthers are pink or red; flowering generally takes place between mid-April and early December. HABITAT: Within the range of this species it has been reported from mountains; sandy mesas; cliffs; rocky and sandy canyons; bouldery-gravelly-sandy, rocky, gravelly-sandy and sandy canyon bottoms; crevices in rocks; loamy and silty-loamy meadows; foothills; rocky-sandy hillsides; mucky, sandy, loamy, clayey and silty slopes; bouldery-stony-gravelly-sandy alluvial fans, prairies; uplands; muddy, sandy, sandy-loamy and silty flats; basins; valley floors; coastal plains; railroad beds; along roadsides; arroyos; sandy bottoms of arroyos; draws; gulches; gullies; bottoms of ravines; along sandy seeps; along springs; along and in streams; along and in streambeds; in mud and gravel along and in creeks; along rocky, gravelly-sandy and loamy creekbeds; along rivers; along and in rocky, rocky-sandy, rocky-clayey, cobbly, sandy, sandy-clayey and silty-clayey riverbeds; in rocky and sandy washes; along silty-clayey and clayey drainages; along waterways; in pools; along ponds; gravelly pondbeds; along and in lakes; muddy lakebeds; ciénegas; (loamy) freshwater and saltwater marshes; swampy areas; sloughs; swales; along (muddy, muddy-sandy, rocky-sandy, gravelly, gravelly-sandy, gravelly-loamy, sandy, sandy-clayey and clayey) banks of streams, streambeds; creeks, rivers, riverbeds and ponds; (sandy, sandy-loamy and clayey) edges of springs, streams, creeks, rivers, pools, ponds, lakes and marshes; along (mucky, muddy and cobbly) margins of streams, creeks, pools, ponds and lakes; along (sandy) shorelines of ponds and lakes; mudflats; on draw-down mud; rocky-sand, stony-sand, gravel, gravelly-sand, sand and sandy-clayey-sand bars; gravelly-sandy and sandy beaches; benches; rocky fords; hummocks; oxbows; sandy terraces; muddy, rocky, rocky-clayey, sandy-clayey, loamy and clayey bottomlands; cobbly, gravelly, gravelly-sandy, sandy and silty floodplains; on dams; stock tanks; rocky-muddy and clayey edges and shorelines of reservoirs; along canals; along canal banks; along and in muddy ditches; clayey-loamy ditch banks; cobbly, gravelly-loamy, sandy and clayey-muddy riparian areas; waste places, and disturbed areas growing in shallow water; mucky; muddy, and wet, moist, damp and dry (seasonally wet) rimrock pavement; bouldery-stony-gravelly-sandy, bouldery-gravelly-sandy, rocky, rocky-sandy, cobbly, gravelly, gravelly-sandy and sandy ground; gravelly loam, sandy loam, clayey loam, silty loam and loam ground; rocky clay, sandy clay, silty clay and clay ground, and sandy silty and silty ground, occurring from sea level to 10,400 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant that poses a significant threat to our native biotic communities. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. *Polygonum lapathifolium* is native to Europe and coastal islands in the North Atlantic Ocean; Asia, and northern Africa; however, the exact native range is obscure. *5, 6, 43 (080711 - *Persicaria lapathifolia* (L.) Gray), 44 (080711 - recorded as *Persicaria lapathifolia* L.), 46 (Page 248), 58, 63 (032410 - color presentation), 80 (Species of the genus *Polygonum* are considered to be Rarely Poisonous and Suspected Poisonous Range Plants. "These forbs cause skin irritation and gastritis and are suspected of causing nitrate poisoning and photosensitization in livestock."), **85** (080811 - color presentation), 101 (color photograph, 124 (080711), 127*

***Rumex crispus* C. Linnaeus (subsp. *crispus* is the subspecies reported as occurring in Arizona): Curly Dock**

COMMON NAMES: Aingappawaia (Uto-Aztecan: Shoshoni)[140]; Coffee-weed (a name also applied to other species); Coffeeweed (a name also applied to other species); Common Curled Dock; Curl Dock; Curl Leaved Dock; Curled Dock; Curled Leaf Dock; Curled Leafed Dock; Curled Leaved Dock; Curley Dock; Curly Dock; Curly Leaf Dock; Curly Leafed Dock; Curly Leafed Dock Sorrel; Curly Leaved Dock; Curl-leaf Dock; Curl-leafed Dock; Curled-leafed Dock; Curley-leaf Dock; Curly-leaf Dock; Curled-leaved Dock; Curly-leafed Dock; Curly-leafed Dock Sorrel; Curl-leaved Dock; Curly-leaf Dock; Curly-leafed Dock; Curly-leaved Dock; Curlyleaf Dock; Dock (a name also applied to other species and to the genus *Rumex*); Eviloriva (Tarahumara); Garden Patience (a name also applied to other species); Ginoje'wûkûn ("Pike Plant", Chippewa); Indian Tobacco;

ɬtsākānᵛᵅ (Uto-Aztecan: Northern Paiute)[140]; Ketamba Aukasiri (Purépecha); Krauser Ampfer (German); Krultongblaar (Afrikaans); Kwimi Shipba ("Root Sour", Zuni); Labaça-crespa (Portuguese: Brazil); Labaça-selvagem (Portuguese: Brazil); Lengua de Vaca (Hispanic); Lingua-de-vaca (Portuguese: Brazil); Narrow Dock; Narrowdock; Narrowleaf Dock (a name also applied to other species); Out-sting; Oza'widji'bik ("Yellow Root", Chippewa); Paciência (Portuguese: Brazil); Patience Crépue (French); Patience Friseé (French); Reguette (French); Rumex (a name also applied to other species and to the genus *Rumex*); Rumex Crépu; Sharp Pointed Dock; Sharp-point Dock; Sharp-pointed Dock; Shiakipi (Dakota); Sour Dock (misapplied, a name also applied to other species and to the genus *Rumex*); Weeblaar (Afrikaans); Winter Dock; Yaller Dock; Yellow Dock (a name also applied to other species); Yellowed Tail; Zhou Ye Suan Mo (transcribed Chinese). DESCRIPTION: Terrestrial (or semi-aquatic) perennial forb/herb (erect stems 14 inches to 6 feet in height); the flowers are green, green-yellow or yellowish-green becoming rosy to reddish-brown; flowering generally takes place between early February and mid-October (additional record: one for mid-December). HABITAT: Within the range of this species it has been reported from mountains; rocky mountaintops; gravelly-loamy mesas; cliffs; bases of cliffs; rocky canyons; bouldery-gravelly-sandy and rocky canyon bottoms; talus slopes; bluffs; knolls; ledges; shaley ridges; gravelly ridgetops; stony, sandy-loamy, loamy and clayey meadows; foothills; clayey-loamy hills; rocky hillsides; rocky, rocky-sandy, rocky-loamy, rocky-loamy-clayey, gravelly, gravelly-silty-loamy, sandy, sandy-loamy, sandy-clayey-loamy, sandy-silty, loamy, clayey and clayey-loamy slopes; rocky outcrops; amongst rocks; bases of boulders; sand dunes; clayey shelves; prairies; sandy plains; uplands; rocky, cobbly-loam, gravelly, sandy, sandy-loamy, sandy-clayey, sandy-clayey-loamy, clayey, clayey-loamy and loamy flats; basins; valley floors; valley bottoms; coastal plains; along sandy railroad right-of-ways; roadcuts; sandy roadbeds; along rocky-sandy, gravelly and gravelly-sandy roadsides; arroyos; within loamy and loamy-clayey draws; bottoms of draws; gulches; gullies; within ravines; seeps; seepbeds; around springs; rocky and sandy soils along and in streams; along rocky and sandy streambeds; rocks, sand and clay along and in creeks; along and in muddy and rocky-sandy creekbeds; in sand along rivers; rocky-cobbly-sandy riverbeds; along and in rocky, gravelly and sandy washes; along and in rocky, sandy-loamy and clayey-loamy drainages; along waterways; around and in pools; vernal pools; around and in ponds; vernal ponds; around and in lakes; silty lakebeds; sandy-loamy playas; boggy areas; ciénegas; freshwater and saltwater marshes; swamps; depressions; sloughs; along (muddy, rocky, gravelly, gravelly-sandy, sandy and loamy) banks of springs, streams, creeks, rivers, drainages and ponds; along (rocky and clayey) edges of streams, creeks, rivers, vernal pools, ponds, lakes and marshes; along (rocky and sandy) margins of creeks, creekbeds, pools, ponds and lakes; (muddy, muddy-rocky, gravelly-sandy and sandy) shorelines of rivers, ponds and lakes; gravel, gravelly-sand and sand bars; rocky, gravelly-sandy and sandy beaches; cobbly-sandy and sandy benches; coves; moist hummock fields; gravelly-sandy and sandy-loamy terraces; bottomlands; mucky-clayey, rocky-sandy-clayey, stony, cobbly, gravelly-sandy, clayey and silty floodplains; sandy-clayey lowlands; along fencelines; dams; around stock tanks; shores of reservoirs; along canals; along and in ditches; along ditch banks; muddy, rocky, gravelly and sandy riparian areas; waste places, and disturbed areas growing in shallow water; mucky; muddy, and wet, moist, damp and dry (usually seasonally wet) rimrock pavement; bouldery-gravelly-sandy, rocky, rocky-stony-sandy, rocky-cobbly-sandy, rocky-sandy, shaley, shaley-sandy, stony, cobbly, cobbly-sandy, gravelly, gravelly-sandy and sandy ground; rocky loam, cobbly loam, gravelly loam, gravelly-silty loam, sandy loam, sandy-clayey loam, clayey loam and loam ground; rocky-sandy clay, rocky-loamy clay, gravelly-sandy clay, sandy clay, loamy clay, silty clay and clay ground, and sandy silty and silty ground, occurring from sea level to 10,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used for food, as a dye (yellow) and widely used as a drug or medication. *Rumex crispu*s is native to Europe; Asia, and northern Africa and coastal islands in the North Atlantic Ocean. *5, 6, 15, 28 (color photograph), 30, 43 (032410), 44 (080911), 46 (Page 245), 58, 63 (032410 - color presentation), 68, 80 (Species of the genus Rumex are considered to be Rarely Poisonous and Suspected Poisonous Range Plants. "Poisoning by oxalates in these forbs has been reported in other countries but not in the United States. Plants also accumulate toxic levels of nitrate."), **85** (081211 - color presentation), 101 (color photograph), 124 (080911), 127, 140 (Page 224)*

Rumex hymenosepalus J. Torrey: Canaigre Dock

COMMON NAMES: Abanal (Uto-Aztecan: Tübatulabal)[140]; Alaqpɬi (Chumash: Ventureño Chumash)[140]; Akyés (Yuman: Maricopa, Yuma)[140]; Akyésa (Yuman: Mohave)[140]; Arizona Dock (a name also applied to other species); 'Asdzą́ą́ Nádleehébishéé <ʔasʒą́ná~~ʔ~~chébižéʔ> (Athapascan: Navajo)[140]; Avaanarɬbɬ (Uto-Aztecan: Kawaiisu)[140]; Cañagria (Spanish)[140]; Canaigre; Canaigre Dock; Chaad'iniih <chaat'inii, ča'ťíní, tchąat'iniih> (Athapascan: Navajo)[140]; Ch'ilt'ozhé <jiɬ dozhe> (Athapascan: Western Apache)[140]; Conaigre; Desert Ginseng; Desert Rhubarb; Dock (a name also applied to the genus *Rumex*); Ganagra; Gerbampfer (German); Hierba Colorada ("Red Herb", Spanish: Baja California, Sonora)[140]; Hierba de la Mula ("Mule Herb", Spanish: Coahuila)[140]; Kahts-pirakari (or Kahts-pilakari "medicine with many children", Pawnee); Ki:š <kíš> (Yuman: Cocopa)[140]; Maalval (Uto-Aztecan: Cahuilla)[140], Pawai (Uto-Aztecan: Northern Paiute)[140]; Raíz Colorada ("Red Root", Spanish: Sonora)[140]; Raíz del Indio ("Indian Root", Spanish: Chihuahua, Coahuila)[140]; Red Desert Ginseng; Red Dock (a name also applied to other species); Sand Dock (a name also applied to other species); Sayávi (Uto-Aztecan: Hopi)[140]; Sha'w (Chumash: Barbareño Chumash, Ineseño Chumash)[140]; Sivijlt (Pima); Sivijuls (Uto-Aztecan: Akimel O'odham)[140]; Siwidculis <s-hiwiculs, siwidculs> (Uto-Aztecan: Tohono O'odham)[140]; Sorrel (a name also applied to other species and the genus *Rumex*); Tanner's Dock; Tanners Dock; Thi'hach (Yuman: Walapai)[140]; Tjiɬt'oo'íh <jilt'o'í, jil't'o'í> (Athapascan: Navajo)[140]; Wakondam (Uto-Aztecan: Tohono O'odham)[140]; Wild Pie Plant (a name also applied to other species); Wild Pie-plant; Wild Red Desert Ginseng; Wild Rhubarb (a name also applied to other species); Wild-rhubarb (a name also applied to other species). DESCRIPTION: Terrestrial perennial forb/herb (ascending and/or erect stems 10 to 52 inches in height; one plant was observed and described as being 40 inches in height and 40 inches in width); the leaves are gray-green or dark green; the flowers may be green, greenish,

greenish-purple, greenish-red, pale pink, pink, pinkish, pinkish-green or yellow; flowering generally takes place between mid-February and late June (additional records: two for mid-July, one for early August and one for late September); the winged seed capsules are pinkish or reddish. HABITAT: Within the range of this species it has been reported from mountains; shaley mountaintops; pebbly-sandy-silty and sandy mesas; hanging gardens; sandy canyons; along rocky, gravelly-sandy-loamy and sandy canyon bottoms; gravelly, sandy and clayey ridgetops; edges of meadows; gravelly and sandy hills; along rocky, stony-cobbly-clayey, sandy and sandy-clayey hillsides; sandy bases of escarpments; bouldery-rocky-gravelly, rocky, shaley-clayey, sandy, sandy-loamy, sandy-silty, loamy, clayey, silty and silty-clayey slopes; rocky-sandy and sandy alluvial fans; amongst rocks; sandy lava flows; sand dunes; deposits of wind-blown sand; sandy hummocks; plains; rocky, shaley-clayey, gravelly-loamy, sandy and clayey flats; basin bottoms; sandy valley floors; sandy valley bottoms; along sandy roadsides; along sandy arroyos; bottoms of arroyos; grassy draws; springs; along rocky-sandy, gravelly-sandy and sandy streambeds; along creeks; sandy creekbeds; along rivers; along sandy and silty riverbeds; along and in rocky, rocky-sandy, gravelly, gravelly-sandy, sandy and clayey washes; sandy drainages; stagnant pools; along (gravelly-sandy and sandy) banks of streams, creeks, rivers and washes; (sandy) edges of streams; sand bars; benches; cobbly-sandy terraces; sandy bottomlands; floodplains; mesquite bosques; edges of stock tanks; sandy culverts; ditches; ditch banks; sandy riparian areas, and disturbed areas growing in dry bouldery-rocky-gravelly, rocky, rocky-sandy, shaley, cobbly-sandy, gravelly, gravelly-pebbly-sandy, gravelly-sandy and sandy ground; gravelly loam, gravelly-sandy loam, sandy loam and loam ground; shaley clay, stony-cobbly clay, sandy clay, silty clay and clay ground, and sandy silty and silty ground, occurring from sea level to 9,300 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, beverage and/or dye (brown, gold, green, orange and red) crop; it was also noted as having been used as a tool and/or as a drug or medication. *Rumex hymenosepalus* is native to southwest-central and southern North America. *5, 6, 15, 28 (color photograph 802), 43 (032510), 44 (081211), 46 (Page 245), 48, 58, 63 (032510 - color presentation), 68, 80 (Species of the genus Rumex are considered to be Rarely Poisonous and Suspected Poisonous Range Plants. "Poisoning by oxalates in these forbs has been reported in other countries but not in the United States. Plants also accumulate toxic levels of nitrate."), **85** (081211 - color presentation), 86 (note), 115 (color presentation), 124 (081211), 127, 140 (Pages 223-225 & 302)*

Ranunculaceae: The Buttercup Family

Clematis drummondii J. Torrey & A. Gray: Drummond's Clematis

COMMON NAMES: Barba de Chivato [Chivo] ("Goat's Beard", Spanish: Chihuahua, Coahuila, San Luis Potosí, Sonora, Tamaulipas, Zacatecas)[140]; Barba de Viejo (Spanish); Barbas de Chivato (Spanish); Ch'ił Na'atł'oii [Ts'oh, Ts'ósí] <č'il naʾaƛ'óʾi ałc'ósí, c'il naʾar-ʾóʾi [coh, c'o's]> (Athapascan: Navajo)[140]; Chililllo (Spanish)[140]; Chiva'ato Himsita Saila ("Brother of Goat's Moustache", Yaqui); Clematis (a name also applied to the genus *Clematis*); Drummond Clematis; Drummond's Clematis (New Mexico); Hierba de los Averos ("Herb of the Disgraceful Ones", Spanish: San Luis Potosí)[140]; Kava Vopar <kaava boporo> (Uto-Aztecan: Mountain Pima)[140]; Keli Ciñwo (Uto-Aztecan: Tohono O'odham)[140]; Keri Tenvo <kuri tunvo> ("Old Man's Whiskers", Uto-Aztecan: Onavas Pima, Sonora)[140]; Nanisdiz (Athapascan: Western Apache)[140]; Old Man's Beard; Old-man's-beard; Pipe-stem (Pipe Stem is a name also applied to the genus *Clematis*); Pog^{w}itina Hɬapiina ("Grizzly Bear's Trap", Uto-Aztecan: Kawaiisu)[140]; Redadura de Nopal ("Wraps Around Cactus", Spanish: Mountain Pima)[140]; Texas-virgin Bower; Texas Virgin Bower; Texas Virgin's Bower; Virgin's Bower (a name also applied to the genus *Clematis*). DESCRIPTION: Terrestrial perennial deciduous vine (scrambling and/or climbing stems 10 to 40 feet in length); the trifoliate leaves are grayish-green or medium green; the flowers may be cream, cream-white, green & yellow-green, white, yellow, yellow-white, yellowish-green-white or yellowish-white; flowering generally takes place between early March and late October (additional records: one for early January, one for late January and two for early December). HABITAT: Within the range of this species it has been reported from mountains; cliffs; rocky canyons; rocky canyon bottoms; chasms; bases of cliffs; crevices; bluffs; foothills; rocky hills; rocky hillsides; rocky, sandy and clayey slopes; bajadas; rocky outcrops; amongst boulders and rocks; sandy lava flows; lava beds; plains; sandy flats; basins; valley floors; railroad right-of-ways; along roadsides; within bouldery and gravelly-sandy and sandy arroyos; rocky bottoms of arroyos; around springs; along streams; along streambeds; along creeks; along creekbeds; along rivers; riverbeds; along and in gravelly, gravelly-sandy and sandy washes; drainages; within sandy drainage ways; around ponds; around lakes; along (rocky and gravelly-sandy) banks of creeks, rivers and washes; edges of creeks, washes and lakes; terraces; bottomlands; floodplains; mesquite bosques; fencerows; edges of stock tanks (charcos); along canals; riparian areas, and disturbed areas growing in moist, damp and dry bouldery, rocky, gravelly, gravelly-sandy and sandy ground; gravelly loam ground; clay ground, and sandy silty and silty ground often reported as growing in shrubs and trees, occurring from sea level to 7,300 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This woody vine may be an attractive component of a restored native habitat. *Clematis drummondii* is native to southwest-central and southern North America. *5, 6, 13 (Page 88), 15, 16, 18 (genus), 28 (color photograph 149), 43 (042010), 44 (081211 - no listings recorded under Common Names; genus record), 46 (Page 312), 58, 63 (042010 - color presentation), 77, 80 (Species in the genus *Clematis* are considered to be Rarely Poisonous and Suspected Poisonous Range Plants. "These climbing, perennial forbs contain toxins that have been suspected of causing losses in other countries but none have been reported in the United States. Some species do cause dermatitis."), **85** (081211 - color presentation), 115 (color presentation), 124 (081211 - no record of species; genus record), 140 (Pages 235-236 & 303)*

Resedaceae: The Mignonette Family

***Oligomeris linifolia* (M.H. Vahl) J.F. Macbride: Lineleaf Whitepuff**

COMMON NAMES: Cambess; Desert Cambess; Line Leaf Whitepuff; Line-leaf Oligomeris; Line-leaf Whitepuff; Linear-leaf Cambess; Linearleaf Cambess; Linear-leaved Cambess; Linear-leaved Oligomeris; Lineleaf Whitepuff; Narrow-leaf Oligomeris; Narrow-leaved Oligomeris; Narrowleaf Oligomeris; Oligomeris (a name also applied to the genus *Oligomeris*); Slender-leaf Cambess; Xamassa (Seri). DESCRIPTION: Terrestrial annual (rarely perennial) forb/herb (erect stems 3 to 18 inches in height; one plant was reported to be 15 inches in height and width); the stems may be orange; the leaves may be green or yellow-green, and turn red before dying; the tiny flowers are cream, greenish, white or whitish; flowering generally takes place between late December and early June (additional record: one for late June). HABITAT: Within the range of this species it has been reported from mountains; mesas; plateaus; cliffs; rocky bases of cliffs; canyons; canyon sides; canyon bottoms; gravelly talus; sandy-clayey bluffs; sandy knolls; ledges; rocky ridges; ridgelines; crater walls; crater floors; rocky foothills; gravelly-loamy hills; rocky hillsides; rocky, rocky-sandy, gravelly, sandy, clayey and silty slopes; rocky and rocky-sandy and silty-clayey alluvial fans; gravelly bajadas; amongst rocks; sandy lava flows; sand dunes; sandy breaks; gravelly-loamy and sandy plains; rocky, gravelly, gravelly-sandy, sandy, clayey and silty flats; basins; sandy valley floors; beach dunes; sandy-silty coastal plains; sandy coastlines, along gravelly-sandy-loamy and sandy roadsides; rocky-gravelly draws; along rocky gullies; seeps; springs; around seeping streams; in clay around springs; along streams; sandy riverbeds; along and in gravelly, gravelly-sandy and sandy washes; sandy and silty lakebeds; clayey and silty playas; silty depressions; (gravelly) banks of rivers, washes and drainages; (cobbly and sandy) edges of lakes and playas; margins of ciénegas; shores of lakes; mudflats; channel bars; sandy beaches; benches; gravelly terraces; clayey bottomlands; sandy floodplains; along sandy-clayey canals; canal banks; along ditches; gravelly-sandy riparian areas; waste places, and disturbed areas growing in dry desert pavement; rocky, rocky-gravelly, rocky-sandy, shaley, cobbly, gravelly, gravelly-sandy and sandy ground; gravelly loam and gravelly-sandy loam ground; sandy clay, silty clay and clay ground, and sandy silty and silty ground, occurring from below sea level to 4,600 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: The stems and leaves are semi-succulent. This plant may be toxic to cattle. *Oligomeris linifolia* is native to southwest-central and southern North America; southern Europe; central and southwestern Asia, and northern Africa and coastal islands in the North Atlantic Ocean. *5, 6, 16, 43 (042210 - *Oligomeris linifolia* J.F. Macbr.), 44 (081211), 46 (Page 358), 63 (042210), 77, **85** (042210 - color presentation of dried material), 106 - 081211 - color presentation), 124 (081211 - no record of genus or species)*

Rhamnaceae: The Buckthorn Family

Condalia lycioides var. *canescens* (see *Ziziphus obtusifolia* var. *canescens*)

Condalia spathulata (see footnote 46 under *Condalia warnockii* var. *kearneyana*)

***Condalia warnockii* M.C. Johnston var. *kearneyana* M.C. Johnston: Kearney's Snakewood**

COMMON NAMES: <balchata> (Uto-Aztecan: Onavas Pima)[140]; Bindó (Spanish: San Luis Potosí)[140]; [Mexican] Buck-thorn (English)[140]; Buckthorn (a name also applied to the Rhamnaceae); Crucillo (a name also applied to the species); Guichutilla (Spanish: Sonora)[140]; Kearney Condalia; Kearney Snakewood; Kearney's Snakewood; Lote-bush (a name also applied to other species); Mexican Buckthorn; Mexican Crucillo (English)[140]; [Warnock's] Snakewood (English: New Mexico)[140]; Squaw-bush (English: Arizona, New Mexico)[140]; Squawbush (a name also applied to the species); Teconblate [Tecomblate] (Spanish: New Mexico)[140]; U:sbaḍ <'u:padh, u'usbaḍ, u:spa't> (Uto-Aztecan: Tohono O'odham)[140]; Warnock's Snakewood (a name also applied to the species). DESCRIPTION: Terrestrial perennial deciduous (considered evergreen except during periods of severe drought) shrub (20 inches to 13 feet in height; one plant was observed and described as being 6½ feet in height with a crown 10 feet in width, one plant was observed and described as being 10 feet in height with a crown 10 feet width); the leaves are dark green; the minute flowers may be yellow-green or are yellowish; based on few records located, flowering generally takes place between mid-February and mid-September (flowering records: one for mid-February, one for early August, one for mid-August, one for late August and one for mid-September; however, flowering taking place throughout the year has also been reported); the fruits are black, dark purple, red or reddish-black. HABITAT: Within the range of this species it has been reported from mountains; gravelly and sandy mesas; cliff faces; canyons; canyon bottoms; rocky ledges; ridges; edges of meadows; foothills; hills; rocky, gravelly and sandy slopes; rocky and gravelly bajadas; amongst boulders; gravelly and sandy flats; basins; valley floors; rocky arroyos; gulches; along rocky washes; along and in drainages; banks of creeks; (gravelly) edges of washes and drainages; terraces; floodplains, and around gravelly-sandy stock tanks growing in dry bouldery, rocky, gravelly, gravelly-sandy and sandy ground, occurring from 200 to 5,600 feet in elevation in the grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Condalia warnockii* var. *kearneyana* is native to southwest-central and southern North America. *5, 6, 13 (Page 149), 15, 16, 28 (color photograph 843), 43 (042210), 44 (081211 - no record of species; genus record), 46 (recorded as *Condalia spathulata* A. Gray, Page 530), 58, 63 (042210), 77, 85 (081211 - color presentation of dried material), 91 (Pages 166-167), 124 (081211 - no

record of genus or species), 140 (recorded as *Condalia warnockii* M.C. Johnston [*Condalia spathulata* of authors, not A. Gray], Pages 239-240 & 304), **WTK** (April 16, 2008)*

***Ziziphus obtusifolia* (W.J. Hooker ex J. Torrey & A. Gray) A. Gray var. *canescens* (A. Gray) M.C. Johnston: Lotebush**

SYNONYMY: *Condalia lycioides* (A. Gray) A. Weberbauer var. *canescens* (A. Gray) W. Trelease. COMMON NAMES: Abrojo (Spanish: Mexico)[140]; Bachata (Spanish: Sonora)[140]; Barabachatas ("Dearest Bearded One", Spanish: Sonora)[140]; Buchthorn; Ch'il Ńłdzig <chi gatoiłjit> (Athapascan: Western Apache)[140]; Chaparro (a name also applied to other species); Chaparro Prieto ("Black Thicket", Spanish: Tamaulipas)[140]; Ciruela de Monte ("Wild Cherry", Spanish: Sonora)[140]; Clepe (a name also applied to the species); Crucillo Blanco ("Little White Cross", Spanish: Sonora)[140]; Garambullo ("Spiny Plant", Spanish: Mayo, Sonora)[140]; Garrapata ("Tick", Spanish: Mexico)[140]; Gray Crucillo; Gray Thorn (a name also applied to the species); Gray-leaf Condalia; Gray-leafed Abrojo (a name also applied to the species); Gray-leaved Abrojo (a name also applied to the species); Grayleaf Condalia; Gray-thorn (a name also applied to the species); Graythorn (a name also applied to the species); Graythorn Abrojo (a name also applied to the species); Graythorn Aborojo (a name also applied to the species); Graythorn Lotebush (a name also applied to the species); Grey Thorn (a name also applied to the species); Grey-leaved Abrojo; Grey-thorn (a name also applied to the species); Greythorn (a name also applied to the species); Gumdrop Tree (a name also applied to the species, Texas); Gumdrop Tree (English: Texas)[140]; Huichilame (Uto-Aztecan: Mayo)[140]; Hutki <jutuqui> (Uto-Aztecan: Mayo)[140]; Jeweḍbaḍu:s <duwastbaḍ uus> ("Tall, Dead-looking Bush", Uto-Aztecan: Onavas Pima)[140]; Jó'otoro (Uto-Aztecan: Mayo)[140]; Lote Bush (a name also applied to the species and to the genus *Ziziphus*); Lote-bush (a name also applied to the species and to the genus *Ziziphus*); Lotebush (a name also applied to the species and to the genus *Ziziphus*); Lotebush (English)[140]; Lotebrush (a name also applied to the species); Lotibush (a name also applied to the species); Oschuvapat (Pima); Palo Blanco ("White Tree", Spanish: Mexico)[140]; Southwestern Condalia (a name also applied to the species); Thorn (English: Arizona)[140]; U:s Jeweḍbaḍ <'us jewedhpadh, u:s tcui'tpa't> (Uto-Aztecan: Tohono O'odham)[140]; U:spaḍ <'uspaḍ> (Uto-Aztecan: Tohono O'odham)[140]; U'us Chevaḍbaḍ <ositc u'wutpat, u-us dji-wuht-paht> (Uto-Aztecan: Akimel O'odham)[140]; 'U:spaḍ <u:supaḍ> (Uto-Aztecan: Hiá Ceḍ O'odham)[140]; 'Us Jeveḍpaḍ (Uto-Aztecan: Hiá Ceḍ O'odham)[140]; Uwé (Yuman: Maricopa)[140]; White Crucillo (English)[140]; White Crucillo (a name also applied to the species). DESCRIPTION: Terrestrial perennial drought deciduous shrub or tree (3 to 13 feet in height; one plant was observed and described as being 40 inches in height with a crown 18 inches in width, one plant was observed and described as being 7 feet in height with a crown 7 feet in width, one plant was observed and described as being 10 feet in height with a crown 10 feet in width, one plant was observed and described as being 13 feet in height with a crown 13 feet in width); the stems are bluish, gray, gray-green, green or whitish with the twigs ending in stout thorns; the leaves are gray-green, green or yellow-green, the inconspicuous flowers are cream, green, greenish-white, yellow, yellow-green or whitish-green; flowering generally takes place between mid-May and late November (additional records: one for late January, one for mid-March, one for late March, one for mid-April and one for late April); the ripe fruits are black, blue-purple, dark blue or purple. HABITAT: Within range of this species it has been reported from mountains; mesas; rocky canyons; along canyon bottoms; scree; talus slopes; bases of cliffs; crevices in rocks; buttes; ridges; ridgelines; foothills; rocky hills; hilltops; rocky hillsides; rocky and gravelly slopes; rocky alluvial fans; gravelly bajadas; amongst boulders, rocks and gravels; sandy-silty plains; rocky and gravelly flats; basins; rocky valley floors; gravelly and gravelly-loamy roadsides; arroyos; bottoms of arroyos; gulches; ravines; bouldery bottoms of ravines; seeps; in clay around springs; rivulets; along streams; along rocky streambeds; along creeks; along gravelly-sandy creekbeds; along gravelly and gravelly-sandy rivers; riverbeds; along and in rocky and sandy washes; drainages; marshes; along (rocky) banks of streams, creeks, rivers and washes; (gravelly-sandy) edges of arroyos and creeks; beaches; sandy benches; terraces; bottomlands; floodplains; mesquite bosques; along fencerows; along canals; gravelly-sandy riparian areas, and disturbed areas growing in dry desert pavement; bouldery, bouldery-sandy, rocky, rocky-gravelly, rocky-gravelly-sandy, gravelly, gravelly-sandy and sandy ground; cobbly-gravelly loam, gravelly loam and gravelly-clayey loam ground; sandy clay and clay ground, and sandy silty ground, occurring from sea level to 5,500 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, fodder and/or beverage (*Ziziphus obtusifolia*) crop; it was also noted as having been used as a tool, as a drug or medication and as a commodity used in personal hygiene. The flowers are visited by orange-winged Spider Wasps. Gray Foxes (*Urocyon cinereoargenteus*), Raccoons (*Procyon lotor*), Ringtails (*Bassariscus astutus*), Gambel's Quail (*Callipepla gambelii*), Scaled Quail (*Callipepla squamata*), Mockingbirds (*Mimus polyglottos*), Northern Orioles (*Icterus bullockii*), Phainopeplas (*Phainopepla nitens*), Band-tailed Pigeons (*Columba fasciata*), White-necked Ravens (*Corvus cryptoleucus*), Curved-billed Thrashers (*Toxostoma curvirostre*), Golden-fronted Woodpeckers (*Melanerpes aurifrons*), White-winged Doves (*Zenaida asiatica*) and other birds feed on the fruit. The plants numerous spines provide an impenetrable refuge for birds and many species of birds make use of the Lotebush as a preferred nesting site. *Ziziphus obtusifolia* var. *canescens* is native to southwest-central and southern North America. *5, 6, 13 (Page 147, color photograph: Plate M.2., Page 400), 15, 16, 28 (species, color photograph of species 848), 43 (042210), 44 (040211), 46 (recorded as *Condalia lycioides* (Gray) Weberb. var. *canescens* (Gray) Trel., Page 530), 58, 63 (042210), 77, 85 (081211 - color presentation), 91 (species, Pages 421-422), 124 (040211 - no record of variety; genus and species records), 127, 140 (reported as *Ziziphus obtusifolia* (Hooker ex Torrey & A. Gray) A. Gray var. *canescens* (A. Gray) M.C. Johnston [*Condalia lycioides* (A. Gray) Weberbauer var. *canescens* (A. Gray) Trelease], Pages 243-244 & 304), **WTK** (April 16, 2008)*

Rubiaceae: The Madder Family

***Cephalanthus occidentalis* C. Linnaeus: Common Buttonbush**

SYNONYMY: *Cephalanthus occidentalis* C. Linnaeus var. *californicus* G. Bentham. COMMON NAMES: Americansiche Weissball (German); Bois Bouton (a name also applied to the genus *Cephalanthus*, French); Bois de Marais (French: Louisiana); Bois de Plomb (French); Box (a name also applied to other species, misapplied); Buck Brush (misapplied); Buckbrush (misapplied); Button Bush (a name also applied to other species and the genus *Cephalanthus*); Button Tree (a name also applied to other species and the genus *Cephalanthus*, misapplied); Button Willow; Button Wood (a name also applied to other species); Button-bush (a name also applied to other species and the genus *Cephalanthus*); Button-tree (a name also applied to other species, misapplied); Button-willow; Button-wood Shrub (a name also applied to other species); Buttonball (a name also applied to other species); Buttonbush (a name also applied to other species and the genus *Cephalanthus*); Buttonwillow; Buttonwood (a name also applied to other species); Buttonwood Shrub (a name also applied to other species); California Button Bush (var. *californicus*); California Button Willow (var. *californicus*); California Button-bush (var. *californicus*); California Button-willow (var. *californicus*); California Buttonbush (var. *californicus*); California Buttonwillow (var. *californicus*); Céphalante d'Occident (French); Cephalanthe d'Amerique (French); Cephalanthus Cortex; Common Button Bush; Common Button-bush; Common Buttonbush; Common Cottonbush; Crane Willow; Crane-willow; Crooked-wood (a name also applied to other species); Crookedwood (a name also applied to other species); Crouper; Crouper Brush; Crouper Bush (Ferrisburgh, Vermont); Crouper-brush; Crouper-bush (Ferrisburgh, Vermont); Crouperbrush; Eastern Buttonbush; Elbow-bush (a name also applied to other species); Elbowbush (a name also applied to other species); Globe Flower (a name also applied to other species); Globe-flower; Globe-flowers; Globeflower (a name also applied to other species); Honey-ball; Honey-balls (a name also applied to other species); Honey-bells (a name also applied to other species); Honeyballs; Knopfbusch (German); Little Snow-ball; Little Snowball; Mountain Globe Flower (a name also applied to other species); Mountain Globe-flower (a name also applied to other species); Mountain Globeflower (a name also applied to other species); Pin Ball; Pin-ball; Pinball (a name also applied to other species); Pond Buttonwood (Ferrisburgh, Vermont); Pond Dog Wood; Pond Dog-wood; Pond Dogwood; Pond-dogwood; River Bush (a name also applied to other species); River-bush (a name also applied to other species); Riverbush; Rosa de Juan; Snowball; Southern Buttonbush; Spanish Pin-cushion; Spanish Pincushion; Swamp Dogwood; Swamp Wood (a name also applied to other species); Swamp-wood (a name also applied to other species); Swampwood (a name also applied to other species); Western Buttonbush; White Ball (a name also applied to other species); Whiteball (a name also applied to other species). DESCRIPTION: Terrestrial perennial deciduous shrub or tree (3 to 33 feet in height and width); the bark is brown, gray or gray-brown; the twigs are reddish-brown; the leaves are bright green or yellow-green; the tiny flowers (clustered in balls 1 to 1½ inches in diameter) may be cream, creamy-white, white, white fading to rust, whitish or yellowish; flowering generally takes place between early June and early October; the mature button-like balls fruit (¾ to1 inch in diameter) are made up of many brown or reddish-brown nutlets (¼ inch in length). HABITAT: Within the range of this species it has been reported from mountains; stony canyons; along rocky and sandy canyon bottoms; foothills; hillsides; amongst boulders and rocks; basins; valley floors; along roadsides; along streams; along and in bouldery and rocky streambeds; along creeks; along and in rocky and clayey creekbeds; riverbeds; along and in sandy washes; around lakes; along bogs; ciénegas; along marshes; along swamps; sloughs; along banks of creeks, rivers, drainage ways and lakes; along edges of rivulets, creeks, rivers and lakes; margins of lakes; along shores of lakes; terraces; bottomlands; stony and cobbly floodplains; along ditches, and sandy riparian areas growing in wet, moist or damp bouldery, rocky, stony, cobbly and sandy ground; sandy loam and loam ground; clay ground, and silty ground, occurring from sea level to 7,000 feet in elevation in the forest, woodland, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America; it was also noted as having been used as a drug or medication and the wood was made into game sticks. The flowers are fragrant, the foliage is poisonous. White-tailed Deer (*Odocoileus virginianus*) browse this plant; the flowers attract bees and butterflies, and water-birds and shore-birds feed on the seeds. *Cephalanthus occidentalis* is native to northeast-central, south-central and southern North America. *5, 6, 13 (recorded as *Cephalanthus occidentalis* L. var. *californicus* Benth.), 15, 18, 28 (color photograph), 43 (042310), 44 (081311 - color photograph of *Cephalanthus occidentalis* var. *californicus*), 46 (recorded as *Cephalanthus occidentalis* L. var. *californicus* Benth., Page 807), 52 (color photograph), 63 (042310 - color presentation), 80 (This species is listed as a Rarely Poisonous and Suspected Poisonous Range Plant. "This stream-bottom shrub contains a bitter glycoside and has been suspected of causing poisoning in cattle."), **85** (081411 - color presentation), 115 (color presentation), 124 (081311), 127*

Cephalanthus occidentalis var. *californicus* (see *Cephalanthus occidentalis*)

Salicaceae: The Willow Family

Populus arizonica (see *Populus fremontii* subsp. *fremontii* and/or *Populus fremontii* subsp. *mesetae*)

***Populus fremontii* S. Watson subsp. *fremontii*: Frémont Cottonwood**

SYNONYMY: *Populus arizonica* C.S. Sargent; *Populus fremontii* S. Watson var. *arizonica* (C.S. Sargent) W.L. Jepson; *Populus fremontii* S. Watson var. *macdougalii* (J.N. Rose) W.L. Jepson; *Populus fremontii* S. Watson var. *pubescens*

C.S. Sargent; *Populus fremontii* S. Watson var. *thornberi* C.S. Sargent; *Populus fremontii* S. Watson var. *toumeyi* C.S. Sargent. COMMON NAMES: Alamo (a name also applied to the species, other species and the genus *Populus*, Spanish); Alamo Cottonwood (a name also applied to the species and other species); Arizona Cottonwood (a name also applied to the species); Cordate-leaved Cottonwood; Cottonwood (a name also applied to the species, other species, the genus *Populus* and to the Salicaceae); Fremont Alamo (typical, a name also applied to the species); Frémont Alamo (typical, a name also applied to the species); Fremont Cottonwood (typical, a name also applied to the species); Frémont Cottonwood (typical, a name also applied to the species); Fremont Poplar (typical, a name also applied to the species); Frémont Poplar (typical, a name also applied to the species); Fremont Western Cottonwood (typical, a name also applied to the species); Frémont Western Cottonwood (typical, a name also applied to the species); Fremont's Alamo (typical, a name also applied to the species); Frémont's Alamo (typical, a name also applied to the species); Fremont's Cottonwood (typical, a name also applied to the species); Frémont's Cottonwood (typical, a name also applied to the species); Fremont's Poplar (typical, a name also applied to the species); Frémont's Poplar (typical, a name also applied to the species); Fremont's Western Cottonwood (typical, a name also applied to the species); Frémont's Western Cottonwood (typical, a name also applied to the species); Rio Grande Cottonwood (a name also applied to the species); Riparian Forest Cottonwood (typical, a name also applied to the species); Western Cottonwood (a name also applied to the species and other species). DESCRIPTION: Terrestrial perennial deciduous tree (10 to 112 feet in height with a wide and flat-topped crown); the older bark may be brownish, gray, gray-brown, grayish-white, pale tan or whitish; the branches are gray-brown to reddish-brown; the twigs are yellow before turning a bone-white, pale gray, tan or tannish-white; the leaves are a shiny bright green or yellow-green turning golden-yellow or lemon-yellow in autumn; the flowers (catkins with the male (1 to 3¼ inches in length) and female (2 to 5 inches in length) on separate trees) may be greenish-yellow, reddish or yellowish-green; flowering generally takes place between early February and early May; the cottony seeds are fuzzy and white. HABITAT: Within the range of this species it has been reported from mountains; mesas; plateaus; along canyons; canyon bottoms; foothills; along bouldery hills; bouldery-loamy and rocky slopes; gravelly and clayey flats; basins; valley floors; springs; along streams; streambeds; along creeks; sandy-loamy creekbeds; along rivers; sandy-clayey-loamy riverbeds; along washes; drainages; waterholes; oases; ciénegas; along banks of streams, creeks and rivers; edges of ponds and lakes; margins of playas; along shores of lakes; gravel and sand bars; terraces; bottomlands; floodplains; mesquite bosques; stock tanks; edges of reservoirs; along ditches; bouldery-gravelly-sandy riparian areas, and disturbed areas growing in areas where subsurface water is available in bouldery, bouldery-gravelly-sandy, bouldery-loamy, rocky, gravelly and sandy ground; sandy loam and sandy-clayey loam ground; clay ground, and sandy silty ground, occurring from below sea level to 9,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The species, *Populus fremontii*, was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food and/or fiber crop; it was also noted as having been used as an indicator of planting seasons; as tools; as musical instruments, fuel and as a drug or medication. The Frémont Cottonwood may have a life span of more than 130 year of age. It reaches reproductive maturity in 5 to 10 years. Use as a specimen plant in a large area and as a re-vegetation plant for the areas immediately adjacent to the main channel of streams, creeks, and rivers. Consider planting male trees if the "cotton" produced by female trees is objectionable. The cottonwood provides food for Beavers, Elk, Deer, and squirrels, and the Golden Eagle (*Aquila chrysaetos*), Swainson's Hawk (*Buteo swainsoni*), Red-tailed Hawk (*Buteo jamaicensis*), Bell's Vireo (*Vireo bellii*) build nests in the crown. Cottonwood bark is a principle food of the American Beaver (*Castor canadensis*), and the stems of poplars are used in the construction of their dams. The trees are sometimes parasitized by the Yellow (or Colorado Desert) Mistletoe (*Phoradendron macrophyllum* subsp. *macrophyllum*). Native stands of Cottonwood Trees have been decimated due to the altering of natural water flows, the clearing and development of the flood plains, stream channelization and the loss of suitable recruitment sites. *Populus fremontii* subsp. *fremontii* intergrades with *Populus fremontii* subsp. *mesetae*. When restoring the floodplains of the major river systems in this township consider including the following plants in the mix: Inland Saltgrass (*Distichlis spicata*), Vine Mesquite Grass (*Panicum obtusum*), Indian Rushpea (*Hoffmannseggia glauca*), Little Snapdragon Vine (*Maurandella antirrhiniflora*), Schott Yellowhood (*Nissolia schottii*), Fingerleaf Gourd (*Cucurbita digitata*), Red Sprangletop (*Leptochloa panicea* subsp. *brachiata*), Whiplash Pappusgrass (*Pappophorum vaginatum*), Alkali Sacaton (*Sporobolus airoides*), Big Sacaton (*Sporobolus wrightii*), Hartweg Twinevine (*Funastrum cynanchoides*), Hartweg Twinevine (*Funastrum cynanchoides* subsp. *heterophyllum*), Virginia Creeper (*Parthenocissus quinquefolia*), Canyon Grape (*Vitis arizonica*), Drummond Clematis (*Clematis drummondii*), Mojave Seablite (*Suaeda moquinii*), Prairie Acacia (*Acacia angustissima*), Allthorn (*Koeberlinia spinosa* var. *spinosa*), Desert Saltbush (*Atriplex polycarpa*), Fourwing Saltbush (*Atriplex canescens*), Wright Lycium (*Lycium andersonii* var. *wrightii*), Torrey Lycium (*Lycium torreyi*), Arrowweed (*Pluchea sericea*), Fremont Lycium (*Lycium fremontii*), Creosote Bush (*Larrea tridentata* var. *tridentata*), Greythorn (*Ziziphus obtusifolia* var. *canescens*), Southern Cattail (*Typha domingensis*), Seep Willow (*Baccharis salicifolia*), Whitethorn Acacia (*Acacia constricta*), Desert Hackberry (*Celtis ehrenbergiana*), Catclaw Acacia (*Acacia greggii* var. *greggii*), Soaptree Yucca (*Yucca elata*), Coyote Willow (*Salix exigua*), Screwbean Mesquite (*Prosopis pubescens*), Common Cottonbush (*Cephalanthus occidentalis*), Desert Elderberry (*Sambucus nigra* ssp. *canadensis*), Blue Paloverde (*Parkinsonia florida*), Western Soapberry (*Sapindus saponaria* var. *drummondii*), Netleaf Hackberry (*Celtis laevigata* var. *reticulata*), Velvet Mesquite (*Prosopis velutina*), Western Black Willow (*Salix gooddingii*), Velvet Ash (*Fraxinus velutina*), Arizona Black Walnut (*Juglans major*), Fremont Cottonwood (*Populus fremontii* subsp. *fremontii*). *Populus fremontii* subsp. *fremontii* is native to southwest-central and southern North America. *5, 6, 13, 15, 18 (species), 26 (species, color photograph of species), 28 (species, color photograph of the species 57), 43 (042410), 44 (081411), 46 (Pages 208-209), 48 (species), 52 (species, color photograph of the species), 53 (species), 58 (species), 63 (042410 - color presentation of bark), 85 (081411), 115 (color presentation of the species), 124 (081411 - no record of species or subspecies; genus record), 127 (species), 140 (Page 304), **HR***

Populus fremontii var. *arizonica* (see *Populus fremontii* subsp. *fremontii*)

Populus fremontii var. *macdougalii* (see *Populus fremontii* subsp. *fremontii*)

Populus fremontii var. *pubescens* (see *Populus fremontii* subsp. *fremontii*)

Populus fremontii var. *thornberi* (see *Populus fremontii* subsp. *fremontii*)

Populus fremontii var. *toumeyi* (see *Populus fremontii* subsp. *fremontii*)

***Salix gooddingii* C.R. Ball: Goodding's Willow**

SYNONYMY: *Salix gooddingii* C.R. Ball var. *variabilis* C.R. Ball; *Salix nigra* H. Marshall var. *vallicola* W.R. Dudley. COMMON NAMES: Black Willow (a name also applied to other species); Dudley Willow; Dudley Willow's; Goodding Black Willow; Goodding Willow; Goodding's Black Willow; Goodding's Willow; Gooding's Willow (error); Goodings Willow (error); Southwestern Willow; Valley Willow (a name also applied to other species); Western Black Willow (a name also applied to other species). DESCRIPTION: Terrestrial perennial deciduous tree (4 to 98 feet in height with a broad rounded crown); the older bark is gray and deeply furrowed; the branches are gray-brown to yellow-brown; the twigs are brown, pale gray, gray-tan, yellow or yellow-brown; the leaves (2 to 4 inches in length) are green, yellow or yellowish-green; the flowers (male catkins (1½ to 3 inches in length) and female catkins (1 to 2½ inches in length) are on separate trees) are cream, green, yellow or yellow-green; flowering generally takes place between mid-December and late June (additional records: one for mid-July and one for early mid-August); the seeds are cottony. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; rocky mesas; plateaus; hanging gardens; along rocky canyons; along bedrock, bouldery-gravelly-sandy, rocky and silty canyon bottoms; meadows; foothills; rocky hillsides; rocky, rocky-sandy, sandy, clayey-loamy and silty slopes; amongst boulders and rocks; bouldery niches; gravelly, sandy, clayey and silty flats; basins; valley floors; along bouldery-sandy valley bottoms; along railroad right-of-ways; roadsides; along and in arroyos; rocky bottoms of arroyos; along and in rocky draws; gullies; gravelly-clayey-loamy ravines; in sand and silt about seeps; in gravel and sand around springs; in sand along and in streams; sandy streambeds; in sand along creeks; along and in bouldery-sandy-silty, rocky, cobbly-gravelly-silty, sandy and silty creekbeds; in gravel and sand along rivers; along and in bouldery, sandy and silty riverbeds; along and in gravelly-sandy washes; along sandy drainages; along and in rocky, gravelly and silty-clayey drainage ways; along rocky-sandy-clayey-loamy watercourses; around and in pools; boggy areas; ciénegas; freshwater marshes; depressions; along (bouldery-stony-gravelly-sandy, bouldery-gravelly-sandy, gravelly-clayey, sandy and loamy) banks of streams, creeks, rivers and washes; along (muddy, sandy and sandy-clayey) edges of gullies, seeps, streams, creeks, ponds, playas, freshwater marshes and sloughs; (muddy, rocky and sandy) margins of rivers, ponds, pools, lakes, lakebeds and marshes; along shores of rivers and lakes; mudflats; gravel and sand bars; sandy beaches; silty benches; sandy terraces; bottomlands; along boulder-stony-gravelly-sandy-silty, bouldery-gravelly-sandy-loamy, rocky, cobbly-gravelly, gravelly, gravelly-sandy, gravelly-silty, sandy and silty floodplains; willow thickets; mesquite woodlands; along fencelines; along dikes; rocky edges and beds of stock tanks; banks of reservoirs; along canals; canal banks; along and in cindery and sandy ditches; along ditch banks; rocky, gravelly, gravelly-sandy, gravelly-sandy-silty, sandy, sandy-clayey and silty riparian areas, and disturbed areas growing in shallow water; muddy, and wet or moist bouldery, bouldery-stony-gravelly-sandy, bouldery-gravelly-sandy, bouldery-sandy, rocky, rocky-sandy, cobbly-gravelly, cindery, gravelly, gravelly-sandy and sandy ground; bouldery-gravelly-sandy loam, rocky-sandy-clayey loam, gravelly-sandy loam, gravelly-clayey loam, sandy loam, clayey loam and loam ground; gravelly clay, sandy clay, silty clay and clay ground, and bouldery-stony-gravelly-sandy silty, cobbly-gravelly-silty, gravelly silty, gravelly-sandy silty and silty ground, occurring from below sea level to 8,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat and useful in the re-vegetating of disturbed riparian areas. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, beverage and/or fiber crop; it was also noted as having been used as a tool and as a drug or medication. This plant is important in stream bank protection and in controlling erosion and provides valuable shade for fish and other wildlife. The Goodding Willow provides cover and browse for wildlife, and the bark is eaten by beavers. This plant is a preferred food plant of the American Beaver (*Castor canadensis*) and is used in the building of their lodges and dens. When restoring the floodplains of the major river systems in this township consider including the following plants in the mix: Inland Saltgrass (*Distichlis spicata*), Vine Mesquite Grass (*Panicum obtusum*), Indian Rushpea (*Hoffmannseggia glauca*), Little Snapdragon Vine (*Maurandella antirrhiniflora*), Schott Yellowhood (*Nissolia schottii*), Fingerleaf Gourd (*Cucurbita digitata*), Red Sprangletop (*Leptochloa panicea* subsp. *brachiata*), Whiplash Pappusgrass (*Pappophorum vaginatum*), Alkali Sacaton (*Sporobolus airoides*), Big Sacaton (*Sporobolus wrightii*), Hartweg Twinevine (*Funastrum cynanchoides*), Hartweg Twinevine (*Funastrum cynanchoides* subsp. *heterophyllum*), Virginia Creeper (*Parthenocissus quinquefolia*), Canyon Grape (*Vitis arizonica*), Drummond Clematis (*Clematis drummondii*), Mojave Seablite (*Suaeda moquinii*), Prairie Acacia (*Acacia angustissima*), Allthorn (*Koeberlinia spinosa* var. *spinosa*), Desert Saltbush (*Atriplex polycarpa*), Fourwing Saltbush (*Atriplex canescens*), Wright Lycium (*Lycium andersonii* var. *wrightii*), Torrey Lycium (*Lycium torreyi*), Arrowweed (*Pluchea sericea*), Fremont Lycium (*Lycium fremontii*), Creosote Bush (*Larrea tridentata* var. *tridentata*), Greythorn (*Ziziphus obtusifolia* var. *canescens*), Southern Cattail (*Typha domingensis*), Seep Willow (*Baccharis salicifolia*), Whitethorn Acacia (*Acacia constricta*), Desert Hackberry (*Celtis ehrenbergiana*), Catclaw Acacia (*Acacia greggii* var. *greggii*),

Soaptree Yucca (*Yucca elata*), Coyote Willow (*Salix exigua*), Screwbean Mesquite (*Prosopis pubescens*), Common Cottonbush (*Cephalanthus occidentalis*), Desert Elderberry (*Sambucus nigra* ssp. *canadensis*), Blue Paloverde (*Parkinsonia florida*), Western Soapberry (*Sapindus saponaria* var. *drummondii*), Netleaf Hackberry (*Celtis laevigata* var. *reticulata*), Velvet Mesquite (*Prosopis velutina*), Western Black Willow (*Salix gooddingii*), Velvet Ash (*Fraxinus velutina*), Arizona Black Walnut (*Juglans major*), Fremont Cottonwood (*Populus fremontii* subsp. *fremontii*). *Salix gooddingii* is native to southwest-central and southern North America. *5, 6, 13 (recorded as *Salix nigra* Marsh. var. *vallicola* Dudley), 15, 18 (genus), 28 (color photograph 62), 43 (042610), 44 (081411), 46 (Page 212), 48 (genus), 52 ("Goodding Willow" listed as a common name under *Salix nigra* Marsh), 53, 58, 63 (042610 - color presentation), 77, **85** (081411 - color presentation), 115 (color presentation), 124 (081411), 127, 140 (Page 304)*

Salix gooddingii var. *variabilis* (see *Salix gooddingii*)

Salix nigra var. *vallicola* (see *Salix gooddingii*)

Scrophulariaceae: The Figwort Family

***Mimulus guttatus* A.P. de Candolle: Seep Monkeyflower**

COMMON NAMES: Almizcle Amarillo (Spanish: Mexico)[140]; Antapittsehkwana (Uto-Aztecan: Shoshoni)[140]; Baseró (Uto-Aztecan: Tarahumara, Chihuahua)[140]; Berro (Portuguese: Brazil); Berro ("Water Cress", Spanish: Chihuahua, Sonora)[140]; Common Large Monkey-flower; Common Large Monkeyflower; Common Monkey Flower (a name also applied to other species); Common Monkey-flower (a name also applied to other species); Common Monkeyflower (a name also applied to other species); Common [Round-leaf, Seep, Spring, Spotted, Yellow] Monkey-flower (English)[140]; Common Stream Monkeyflower; Common Streamside Monkeyflower; Common Yellow Monkey Flower; Common Yellow Monkey-flower; Common Yellow Monkeyflower; Creek Monkey Flower; Creek Monkey-flower; Creek Monkeyflower; Creekside Monkeyflower; Golden Monkey Flower; Golden Monkey-flower; Golden Monkeyflower; Lama ("Mud", Spanish: Chihuahua, Sonora); Langsdorff's Yellow Monkey Flower; Langsdorff's Yellow Monkey-flower; Large Common Monkey-flower; Large Yellow Monkey-flower; Llantén <lantén> Cimmarón ("Wild *Plantago*", Spanish: Chihuahua)[140]; Mim Gut; Mim-gut; Mimgut; Mimulo (Spanish: Mexico)[140]; Monkey Flower (a name also applied to the genus *Mimulus* and the Phrymaceae); Monkey-flower (a name also applied to the genus *Mimulus* and the Phrymaceae); Monkeyflower (a name also applied to the genus *Mimulus* and the Phrymaceae); Paakor~~ɨ~~b~~ɨ~~ (Uto-Aztecan: Kawaiisu)[140]; Parish's Monkeyflower; Seep Monkey-flower (a name also applied to other species); Seep Monkeyflower (a name also applied to other species); Seep Spring Mimulus; Seep Spring Monkey Flower; Seep-spring Mimulus; Seep-spring Monkey Flower; Seep-spring Monkeyflower; Spotted Monkey Flower; Spring Seep Mimulus; Spring-seep Monkey-flower; Spring-seep Monkeyflower; Spring-seep Mimulus; Stream Mimulus; Stream Monkey Flower; Stream Monkey-flower; Stream Monkeyflower; Streamside Monkey Flower; Parish's Monkeyflower; Streamside Monkey-flower; Streamside Monkeyflower; Suugádi Mamaradï (Uto-Aztecan: Northern Tepehuan, Chihuahua)[140]; Tocasoiahui (Uto-Aztecan: Guarijío)[140]; Tokaṣoiawi (Uto-Aztecan: Mayo)[140]; Yellow Common Monkeyflower; Yellow Creek Monkeyflower; Yellow Monkey Flower (a name also applied to other species); Yellow Monkey-flower (a name also applied to other species); Yellow Stream Monkeyflower; Yellow-stream Monkeyflower. DESCRIPTION: Terrestrial (or semi-aquatic) annual or perennial forb/herb (decumbent and/or erect stems 2 inches to 5 feet in height); the leaves are dark green; the flowers are bright orange-yellow, pale yellow, yellow or yellow with brown-red, golden, maroon, orange, orange-brown, orange-red, red, red-brown, reddish, reddish-brown or reddish-orange spots; flowering generally takes place between mid-February and early October (additional records: one for early January, one for mid-January, one for late January, one for late October, one for early November, one for mid-November and one for early December; flowering has also been reported as having infrequent flowering in October, November and December). HABITAT: Within the range of this species it has been reported from bouldery mountains; mountaintops; rocky and gravelly-loamy mountainsides; sandy and sandy-clayey mesas; rocky plateaus; rock walls; rocky cliffs; hanging gardens; rocky bases of cliffs; rocky canyons; along bedrock, rocky, rocky-sandy, gravelly-loamy, sandy and loamy-clayey canyon bottoms; rocky talus slopes; crevices in rocks; bluffs; rocky ledges; ridges; rocky clearings in forests and woodlands; gravelly-loamy, sandy-loamy, clayey and clayey-loamy meadows; rocky foothills; bouldery and rocky hills; hilltops; bouldery, rocky, rocky-loamy-clayey, rocky-clayey, shaley, shaley-gravelly and clayey hillsides; bouldery, bouldery-rocky, rocky, rocky-gravelly, rocky-gravelly-sandy, gravelly, gravelly-loamy, sandy, sandy-loamy, sandy-clayey, loamy, clayey-loamy and peaty-sandy slopes; alluvial fans; bajadas; bedrock, bouldery, rocky and clayey outcrops; along and amongst boulders and rocks; on boulders and rocks; felsenmeer; sand dunes; alcoves; prairies; sandy and loamy flats; uplands; rocky-gravelly-loamy basins; sandy valley floors; valley bottoms; along coastal beaches; coastal bluffs; coastal terraces; roadcuts; along rocky, gravelly and sandy roadsides; along and in bedrock and sandy-loamy arroyos; rocky bottoms of arroyos; muddy draws; bottoms of draws; gullies; along gulches; ravines; bottoms of ravines; gravelly-sandy-clayey-loamy and sandy soils around and in seeps; seeping springs; mucky, rocky-sandy, gravelly, sandy-silty and loamy soils around and in springs; geysers; around seeping streams; along streamlets; bouldery, rocky, gravelly, sandy and silty soils along and in streams; rocky, rocky-sandy, gravelly and sandy streambeds; along brooks; muddy, gravelly, sandy and loamy soils along and in creeks; along and in bouldery, rocky-sandy, cobbly, gravelly, gravelly-sandy and sandy creekbeds; along and in rivers; along and in gravelly and sandy riverbeds; along and in bedrock, rocky, rocky-sandy, stony, cobbly-gravelly, gravelly and sandy washes; within bouldery, rocky, cobbly-loamy and loamy drainages; within drainage ways; along rocky and sandy watercourses; at waterfalls; oases; around and in pools; vernal

pools; around ponds; along lakes; lakebeds; sandy bogs; ciénegas; in freshwater marshes; rocky-sandy marshy areas; gravelly-clayey-loamy swampy areas; bedrock depressions; along (muddy, rocky, stony, gravelly-sandy-clayey-loamy, sandy, sandy-clayey, clayey-loamy and loamy) banks of arroyos, springs, rivulets, streams, creeks, creekbeds, rivers, pools and lakes; along and in (muddy, rocky-sandy, gravelly, gravelly-sandy, sandy and sandy-silty) edges of springs, rivulets, streams, creeks, rivers, washes, pools, ponds, lakes and bogs; (gravelly and sandy) margins of springs, streams, creeks and ponds; along (muddy and sandy) shores of rivers and lakes; mudflats; draw-down areas; along mud, rocky-sand, gravel, gravelly-sand and sand bars; cobbly-sandy benches; coves; hummock fields; shelves; sandy and silty-loamy terraces; along bouldery, sandy and loamy bottomlands; gravelly-sandy and sandy floodplains; clayey lowlands; dams; along beaver dams; gravelly shores of beaver ponds; edges of stock tanks; canals; edges of canals; along and in ditches; ditch banks; rocky-sandy, gravelly, gravelly-sandy, gravelly-sandy-loamy and sandy riparian areas, and disturbed areas growing in shallow water; mucky; muddy, and wet, moist, damp and dry bouldery, bouldery-rocky, rocky, rocky-gravelly, rocky-gravelly-sandy, rocky-sandy, shaley, shaley-gravelly, stony, cobbly, cobbly-gravelly, cobbly-sandy, gravelly, gravelly-sandy, sandy and peaty-sandy ground; rocky-gravelly loam, cobbly loam, gravelly loam, gravelly-sandy loam, gravelly-sandy-clayey loam, gravelly-clayey loam, sandy loam, clayey loam, silty loam, silty-clayey loam and loam ground; rocky-loamy clay, rocky clay, sandy clay, loamy clay and clay ground, and sandy silty and silty ground, occurring from sea level to 13,000 (14,300?) feet in elevation in the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, consider planting with native mosses, sedges and violets. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop; it was also noted as having been used as a drug or medication. *Mimulus guttatus* is native to northwestern, northern, west-central and southern North America. *5, 6, 15, 28 (color photograph 516), 43 (042810), 44 (), 46 (Page 781), 48 (genus), 58, 63 (081411 - color presentation including habitat), 77 (color photograph #52), **85** (081811 - color presentation), 86 (color photograph), 115 (color presentation), 124 (081411), 127, 140 (placed in the Phrymaceae, Pages 261-262 & 298)*

***Penstemon parryi* (A. Gray) A. Gray: Parry's Beardtongue**

COMMON NAMES: Desert Penstemon; Parry Beardtongue; Parry's Beardtongue; Parry Penstemon; Parry's Penstemon; Pichelitos; Varita de San Jose; Wind's Flower. DESCRIPTION: Terrestrial perennial forb/herb (2 to 5 feet in height and 1 to 3 feet in width); the foliage is gray-green; the flowers may be lavender, magenta, pink, pinkish-lavender, pinkish-purple, purple, purple-magenta, pink, red, rose-magenta, rose-pink or scarlet; flowering generally takes place between mid-February and late June (additional records: one for mid-July, one for late July and one for early August). HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; mesas; bases of cliffs; rocky canyons; rocky canyon bottoms; rocky ridgetops; meadows; foothills; rocky hills; rocky, rocky-gravelly and gravelly hillsides; rocky slopes; bajadas; rocky outcrops; amongst rocks; alpine fell fields; plains; gravelly flats; basins; railroad right-of-ways; along rocky, gravelly, gravelly-sandy, sandy and clayey roadsides; rocky and sandy arroyos; gullies; seeps; around streams; streambeds; sandy creekbeds; along and in rocky and sandy washes; within drainages; along banks of rivers and washes; margins of rivers; benches; floodplains; riparian areas, and disturbed areas growing in dry rocky, rocky-gravelly, gravelly, gravelly-sandy and sandy ground; gravelly-sandy loam and clayey loam ground, and clay ground, occurring from 900 to 11,500 feet in elevation in the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The Broad-billed Hummingbird (*Cynanthus latirostris*) and Costa's Hummingbird (*Calypte costae*) have been observed visiting the flowers. *Penstemon parryi* is native to southwest-central and southern North America. *5, 6, 10, 15, 16, 18, 28 (color photograph 673), 43 (072909), 44 (081811 - no record of species; genus record), 46 (Page 773), 48 (genus), 58, 63 (042810 - color presentation), 77 (color photograph #95), 80 (Species of the genus *Penstemon* are considered to be Rarely Poisonous and Suspected Poisonous Range Plants. "Species of Penstemon are facultative or secondary selenium absorbers."), **85** (081811 - color presentation), 86 (color photograph), 115 (color presentation), 124 (081811 - no record of species; genus record), 140 (placed in the Plantaginaceae, Page 298)*

Stemodia arizonica (see *Stemodia durantifolia*)

***Stemodia durantifolia* (C. Linnaeus) O. Swartz: Whitewoolly Twintip**

SYNONYMY: *Stemodia arizonica* F.W. Pennell. COMMON NAMES: Arizona Stemodia; Blue Stemwort; Blue Streamwort; Purple Stemodia; White Woolly Stemodia; White Woolly Twintip; White-woolly Stemodia; White-woolly Twintip; White-wooly Twintip; Whitewoolly Twintip; Whitewooly Twintip. DESCRIPTION: Terrestrial annual forb/herb (decumbent and/or erect stems 12 to 28 inches in height); the foliage may be pale green or green; the flowers may be blue, blue with a yellow throat, dark blue, blue-purple with a white throat, lavender, purple, dark purple, purple with a yellow throat, purple-blue, dark violet with a white throat, violet-blue or white; flowering generally takes place between early January and late October (additional records: one for mid-November, one for late November, one for early December and two for late December). HABITAT: Within the range of this species it has been reported from mountains; rock cliffs; rock walls; bases of cliffs; rocky and gravelly canyons; along rocky and sandy canyon bottoms; crevices in boulders and rocks; limestone ridges; hills; hillsides; rocky and sandy slopes; amongst rocks; barrens; sandy flats; rocky, stony, gravelly and sandy arroyos; bottoms of ravines; rocky seeps; sandy springs; streamlets over bedrock; in rock, gravel and sand along streams; bouldery, bouldery-sandy, rocky and sandy streambeds; creekbeds; in sand along rivers; bouldery-sandy, rocky-sandy, gravelly and sandy riverbeds; in bouldery, rocky-sandy and sandy washes; within drainages; waterholes; oases; marshes; along (muddy and sandy) banks of arroyos, streams, streambeds, creeks, rivers and pools; (rocky and sandy) edges of arroyos; streams, rivers, washes, waterholes and pools; margins

of rivers; rocky-sandy benches; rocky-sandy bottomlands; floodplains; lowlands; rocky and gravelly-sandy riparian areas, and disturbed areas growing in shallow water; muddy, and wet, moist, damp and dry (rarely reported, seasonally wet) bouldery, bouldery-sandy, rocky, rocky-sandy, stony, gravelly, gravelly-sandy and sandy ground, occurring from sea level to 4,100 (one record at 7,900) feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Stemodia durantifolia* is native to south-central and southern North America; (and possibly Central America though no records were located) coastal islands in the Caribbean Sea, and South America. *5, 6, 15, 43 (041312), 44 (041312), 46 (Page 782), 63 (041312), 77, **85** (041312 - color presentation), 106 (041312), 115 (041312 - color presentation), 124 (041312 - no record of species or genus), 140 (Page 298 - placed in the Plantaginaceae)*

***Veronica peregrina* C. Linnaeus (subsp. *xalapensis* (K.S. Kunth) F.W. Pennell is the subspecies reported as occurring in Arizona): Neckweed**

SYNONYMY: (for subsp. *xalapensis*: *Veronica peregrina* C. Linnaeus var. *xalapensis* (K.S. Kunth) F.W. Pennell). COMMON NAMES: American Speedwell; Annual Smooth Speedwell; Hairy Purslane Speedwell; Jalapa Speedwell; Mushikusa (transcribed Japanese); Necklace Speedwell; Necklace Weed; Necklaceweed; Neckweed; Peregrine Veronica; Purselane Speedwell; Pursland Speedwell; Purslane-speedwell; Purslane Speedwell; Speedwell (a name also applied to the genus *Veronica*); Veronica-de-xalapa (for *V.p.* subsp. *xalapensis*, Portuguese); Wandering Speedwell; Wandering Veronica; Wen Mu Cao (transcribed Chinese); Western Purslane Speedwell. DESCRIPTION: Aquatic or terrestrial annual forb/herb (4 to 14 inches in height); the leaves are yellow-green; the tiny flowers may be blue, pale lavender, pink-white, purple, purple-blue, white, white-blue or white-light pink; flowering generally takes place between early February and mid-October (additional record: one for early November); the heart-shaped fruits are reddish. HABITAT: Within the range of this species it has been reported from mountains; grassy mesas; plateaus; bases of cliffs; along bouldery and rocky canyons; bedrock and bouldery canyon bottoms; bluffs; buttes; ledges; ridges; rocky ridgetops; openings in forests; clayey, clayey-loamy and silty meadows; bouldery hills; sandy hilltops; bouldery and rocky hillsides; bouldery, rocky-gravelly, shaley, gravelly-sandy, gravelly-clayey, gravelly-silty-loamy, sandy and silty slopes; rocky-sandy-loamy and gravelly-sandy alluvial fans; bouldery and rocky outcrops; amongst rocks; sand dunes; clayey-loamy prairies; plains; gravelly-clayey and loamy flats; uplands; sandy hollows; valley floors; muddy valley bottoms; coastal plains; roadcuts; along gravelly and gravelly-sandy roadsides; within bedrock arroyos; draws; bottoms of draws; gulches; grassy ravines; within muddy seeps; around springs; in muddy and clayey soils along streams; along and in bouldery-sandy and sandy streambeds; along creeks; along rocky-sandy, cobbly, gravelly-sandy and sandy creekbeds; along rivers; sandy riverbeds; along and in muddy, rocky, rocky-clayey, rocky-silty, gravelly and sandy washes; along rocky, rocky-sandy and rocky-silty drainages; within drainage ways; along waterways; waterholes; around and in clayey and clayey-loamy pools; vernal pools; silty-clayey poolbeds; in rocks around silty ponds; pondbeds; in lakes; lakebeds; playas; around and in lagoons; boggy areas; ciénegas; silty marshes; mud holes; loamy-clayey depressions; along and in clayey swales; along (muddy, rocky, sandy, sandy-loamy, sandy-silty and loamy) banks of streams, creeks, rivers, pools, ponds and lakes; along (muddy and sandy) edges of streams, rivers, washes, pools, ponds, lakes and swamps; along (muddy, gravelly and clayey) margins of streamlets, streams, creeks, rivers, pools, ponds and lakes; along (mucky, muddy and sandy) shorelines of ponds and lakes; muddy draw-down areas; gravelly-silty-loamy mudflats; rocky-sand, gravel, gravelly-sand and sand bars; rocky-sandy and sandy beaches; benches; clayey hummocks; sandy terraces; bottomlands; silty-clayey floodplains; lowlands; dams; below dikes; in silty-clayey stock tanks; sandy, muddy and silty soils around and in stock tanks (charcos, represos); muddy-rocky edges and shorelines of reservoirs; along ditches; silty trenches; rocky, cobbly, gravelly-sandy, sandy and sandy-clayey riparian areas; waste places, and disturbed areas growing in shallow water; mucky; muddy, and wet, soggy, moist, damp and dry bouldery, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, shaley, cobbly, gravelly, gravelly-sandy and sandy ground; rocky-sandy loam, gravelly loam, gravelly-clayey loam, gravelly-silty loam, sandy loam, clayey loam and loam ground; rocky clay, gravelly clay, sandy clay, loamy clay, silty clay and clay ground, and rocky silty, sandy silty and silty ground, occurring from 100 to 10,300 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Veronica peregrina* is native to northwestern, northern, central and southern North America; Central America and coastal Islands in the Caribbean Sea, and eastern, western and southern South America. *5, 6, 18 (genus), 43 (042810 - *Veronica peregrina* var. *xalapensis* Kunth), 44 (081811 - color photograph), 46 (Page 785), 63 (042810 - color presentation), **85** (082011 - color presentation of dried material), 101 (color photograph), 124 (081811)*

Veronica peregrina var. *xalapensis* (see *Veronica peregrina* subsp. *xalapensis*)

Simmondsiaceae: The Jojoba Family

Simmondsia californica (see *Simmondsia chinensis*)

***Simmondsia chinensis* (J.H. Link) C.K. Schneider: Jojoba**

SYNONYMY: *Simmondsia californica* T. Nuttall. COMMON NAMES: California Coffee Berry; California Jojoba; Coffee Berry (a name also applied to other species); Coffeeberry (a name also applied to other species); Coffee Bush (a name also applied to other species); Coffee Bush (English)[140]; Coffee-bush (a name also applied to other species); Deer-nut; Deer [Goat, Pig, Sheep]-nut (English)[140]; Deernut; Goat Nut; Goat-nut (a name also given to the genus *Simmondsia*); Goatnut (a name also given to the genus *Simmondsia*); Gray Box Bush; Ho:hovai (Uto-Aztecan: Hiá Ceḍ O'odham)[140]; Ho:howai; Hohoova (Uto-

Aztecan: Yaqui)[140]; Hohowai [Ho:howai, pl.; Hohwi, sing.] (Uto-Aztecan: Tohono O'odham)[140]; Ioligam (Tohono O'odham); Jojo Beans (a name given to the plant by seed collectors, Arizona); Jojoba (a name also given to the genus *Simmondsia* and the Simmondsiaceae, Spanish); Jojoba (English and Spanish)[140]; Jojoba Bean; Jojoba Bush; Jojobe; Pig-nut (a name also applied to other species); Pignut (a name also applied to other species); Pnaacöl (Hokan: Seri)[140]; Pnaokt (Seri); Qawnaxal <kowanukal> (Uto-Aztecan: Cahuilla)[140]; Quinine Plant (a name also applied to other species); Quinine Plant (English)[140]; Quinine-plant; Sheep-nut; Sheepnut; Wild Hazel (English)[140]; Wild-hazel. DESCRIPTION: Terrestrial perennial evergreen shrub (8 inches to 13 feet in height, one plant was reported to be 2 feet in height and 6½ feet in width, plants were reported to be 4 feet in height and 6 feet in width, plants were reported that were 5¼ feet in height and 5 feet in width); the stems are greenish-tan aging to reddish-brown and gray; the leaves are blue-gray, gray-green or green; the flowers (male and female flowers are borne on separate plants) are green, greenish-yellow, greenish-white, yellow or yellow-green; flowering may vary considerably from year to year but generally takes place between late December and mid-August (additional records: one for ten for late September, two for early October, three for mid-October, five for late October, two for early November, four for mid-November, two for late November and two for early December, peak blooms occur February through April); the ripe fruits are tan. HABITAT: Within the range of this species it has been reported from mountains; mountainsides; rocky mesas; plateaus; cliffs; rocky cliff faces; bouldery and rocky canyons; along rocky and gravelly canyon bottoms; rocky crevices; gravelly knolls; bouldery and rocky ridges; rocky ridgetops; rocky foothills; rocky and gravelly hills; hilltops; rocky, rocky-clayey and gravelly hillsides; bouldery, rocky, gravelly, sandy, sandy-loamy and clayey slopes; alluvial fans; bajadas; piedmonts; rocky outcrops; amongst boulders and rocks; rocky coves; dunes; sandy flats; basins; valley floors; coastal terraces; coastal beach dunes; coastal beaches; along rocky, rocky-sandy, gravelly-sandy and clayey roadsides; along rocky arroyos; along rocky bottoms of arroyos; draws; along sandy gullies; rocky ravines; seeps; around springs; around seeping streams; along runnels; along streams; along and in streambeds; along creeks; creekbeds; along and in rocky, rocky-sandy, stony, gravelly-sandy and sandy washes; rocky-clayey drainages; along and in drainage ways; (gravelly, gravelly-sandy and sandy) banks of creeks and washes; along edges of arroyos and washes; (rocky) margins of arroyos; rocky and gravelly terraces; loamy bottomlands; floodplains; mesquite bosques; riparian areas, and disturbed areas growing in dry desert pavement; bouldery, rocky, rocky-sandy, stony, gravelly, gravelly-sandy and sandy ground; sandy loam and loam ground, and rocky clay and clay ground, occurring from sea level to 5,400 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food and/or beverage crop; it was also noted as having been used as a drug or medication. This plant may live to be from 100 to over 200 years of age. Jojoba is an important browse plant for wildlife and is browsed by Desert Bighorn Sheep (*Ovis canadensis* subsp. *mexicana*), Jackrabbits (*Lepus* sp.) and Mule Deer (*Odocoileus hemionus*) and desert chipmunks, and Desert Mule Deer, gophers, mice (including the Bailey's Pocket Mouse (*Chaetodipus baileyi* subsp. *baileyi*), pack rats, Collard Peccary (*Peccari tajacu* subsp. *sonoriensis*), rabbits, ground squirrels including the Harris' Antelope Squirrel (*Ammospermophilus harrisii*) and other mammals and birds feed on the seeds. The Jojoba (*Simmondsia chinensis*) has also been included in the Box Family (Buxaceae) and the Spurge Family (Euphorbiaceace). *Simmondsia chinensis* is native to southwest-central and southern North America. *5, 6, 13 (Pages 117-118), 16, 18, 26 (color photograph), 28 (color photographs 836 A&B), 43 (042910 - *Simmondsia chinensis* C.K. Schneid.), 44 (082011), 46 (included as a member of the Box Family (Buxaceae), Page 521), 48, 58, 63 (042910 - color presentation), 77, 85 (082011 - color presentation), 91 (Pages 369-372), 115 (color presentation), 124 (082011 - no record of genus or species), 127, 134, 140 (Pages 263-265 & 305), **HR***

Solanaceae: The Potato Family

Calibrachoa parviflora (A.H. Laurent de Jussieu) W.G. D'Arcy: Seaside Petunia

SYNONYMY: *Petunia parviflora* A.H. Laurent de Jussieu. COMMON NAMES: Few-flower Petunia; Fewflower Petunia; Midget Petunia; Seaside Petunia; Seaside-petunia; Small Flower Petunia; Small Flowered Petunia; Small-flower Petunia; Small-flowered Petunia; Smallflower Petunia; Streamside Petunia; Wild Petunia (a name also applied to other species). DESCRIPTION: Terrestrial (or semi-aquatic) annual forb/herb (prostrate and spreading stems 3 inches to 2 feet in length); the leaves may be light green (tinged with red or yellow-green) or dark green; the tiny flowers may be blue, blue-yellow, bluish-purple, lavender, deep lavender, lavender-pink, magenta, pink, pink-lavender, pink-purple, purple, reddish-purple, rose, violet or white; flowering generally takes place between early February and early November (additional records: one for early December and two for late December). HABITAT: Within the range of this species it has been reported from mountains; rocky canyons; gravelly and sandy canyon bottoms; sandy bases of cliffs; meadows; foothills; rocky hillsides; rocky, rocky-sandy and silty-loamy slopes; rocky outcrops; sandy and silty-loamy flats; basins; valley floors; valley bottoms; coastal plains; along rocky roadsides; stony arroyos; sandy gulches; sandy seeps; springs; along and in bouldery, muddy and sandy streams; bouldery-cobbly-sandy, gravelly-sandy and sandy streambeds; along sandy creeks; gravelly and sandy soils along and in rivers; bouldery-cobbly-sandy, rocky-cobbly-sandy, rocky-sandy, sandy and silty-clayey riverbeds; along and in bouldery, bouldery-sandy, rocky, gravelly and sandy washes; poolbeds; lakes; clayey lakebeds; cienegas; swales; sandy banks of creeks and rivers; bouldery-sandy and sandy edges of streams, rivers, riverbeds, pools, ponds and swamps; sandy margins of streambeds, pools and ponds; (muddy and rocky-sandy) shores of ponds and lakes; mudflats; sand bars; benches; sandy terraces; bottomlands; cobbly and sandy floodplains; mesquite bosques; stock tanks; reservoir beds; canals; within ditches; sandy bottoms of ditches; along ditches banks; bouldery-cobbly-sandy, rocky, gravelly, gravelly-sandy and sandy riparian areas, and disturbed areas growing in muddy and wet,

moist and damp bouldery-cobbly-sandy, bouldery-sandy, rocky, rocky-cobbly-sandy, rocky-sandy, stony, cobbly, gravelly, gravelly-sandy and sandy ground; gravelly-clayey loam, silty loam and loam ground, and silty clay and clay ground, occurring from sea level to 5,100 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Calibrachoa parviflora* is native to southwest-central and southern North America and eastern and southern South America. *5, 6, 18 (genus), 43 (042910 - *Calibrachoa parviflora* (Jussieu) D'Arcy), 44 (082011), 46 (recorded as *Petunia parviflora* Juss., Page 761), 58 (recorded as *Petunia parviflora* Juss.), 63 (042910 - color presentation of seeds), 77 (recorded as *Petunia parviflora* Juss.), **85** (082011 - color presentation), 115 (color presentation), 124 (082011 - no record of genus or species)*

***Chamaesaracha coronopus* (M.F. Dunal) A. Gray: Greenleaf Five Eyes**

COMMON NAMES: Five Eye Chamaesaracha; Five-eye Chamaesaracha; Green False Nightshade; Green Leaf Five Eyes; Green-false Nightshade; Green-leaf Five-eyes; Greenleaf Fire Eyes; Greenleaf Five Eyes; Greenleaf Five-eyes; Greenleaf Fiveeyes; Small Groundcherry; Smoothish Chamaesaracha. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (spreading stems 4 to 18 inches in length; plants were observed and described as being 5½ inches in height and 2½ inches in width); the leaves are dark green; the flowers (1/3 to 1/2 inch in diameter) may be cream, cream-light green, cream-yellow, grayish-white, pale green, greenish-white sometimes tinged with purple, greenish-cream, greenish-yellow, lime green, purplish, white, whitish, light yellow, light yellow-cream, pale yellow-pale purple, yellow, yellow & green, yellowish or yellowish-white; flowering generally takes place between early March and mid-October (additional records: one for early November and two for late November); the fruit is a globose berry. HABITAT: Within the range of this species it has been reported from mountains; mountaintops; rocky-gravelly and gravelly-loamy mesas; cliffs; hanging gardens; bouldery-sandy, gravelly and sandy canyons; gravelly and clayey canyon bottoms; rocky and sandy ridges; ridgetops; openings in forests; clayey meadows; foothills; rocky, shaley and clayey hills; hilltops; rocky and chalky hillsides; along sandy escarpments; along rocky, cindery, gravelly-sandy, gravelly-sandy-loamy, gravelly-loamy, sandy, sandy-clayey-loamy, loamy and clayey slopes; bajadas; rocky outcrops; sandy lava flows; sand dunes; gravelly banks; prairies; sandy plains; gravelly, sandy, sandy-clayey-loamy and clayey flats; clayey basins; sandy valley floors; valley bottoms; along railroad right-of-ways; sandy roadbeds; along rocky, rocky-sandy, gravelly, gravelly-loamy, sandy, sandy-loamy, sandy-clayey, loamy and clayey roadsides; sandy arroyos; bottoms of arroyos; within draws; springs; sandy streambeds; along creeks; along rivers; sandy riverbeds; gravelly, gravelly-sandy-silty, sandy and sandy-loamy washes; rocky-sandy drainages; silty playas; sumps; sandy-silty swales; banks of washes; sandy edges of washes; sandy benches; sandy terraces; sandy and clayey bottomlands; floodplains; silty lowlands; edges of ditches; waste places, and disturbed areas growing in dry bouldery-sandy, rocky, rocky-sandy, shaley, shaley-sandy, cindery, gravelly, gravelly-sandy and sandy ground; bouldery-gravelly-sandy-clayey loam, gravelly loam, gravelly-sandy loam, gravelly-clayey loam, sandy loam, sandy-clayey loam and loam ground; sandy clay, sandy-silty clay and clay ground; gravelly-sandy silty, sandy-silty and silty ground, and chalky ground, occurring from 800 to 7,500 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. *Chamaesaracha coronopus* is native to southwest-central and southern North America. *5, 6, 15, 28 (color photograph 207), 43 (042910 - *Chamaesaracha coronopus* A. Gray), 44 (082111), 46 ("The berries are eaten by the Navajo and Hopi Indians.", Pages 752-753), 63 (042910 - color presentation of seeds), 68, **85** (082111 - color presentation), 115 (color presentation), 124 (082111), 127*

Datura meteloides (see *Datura wrightii*)

***Datura wrightii* E.A. von Regel: Sacred Thorn-apple**

SYNONYMY: *Datura meteloides* auct. non M.F. Dunal p.p. COMMON NAMES: A'neglakya (Language Isolate: Zuni)[140]; Angel's Trumpet (a name also applied to other species); Angel's-trumpet (a name also applied to other species); Angel's-trumpet (English)[140]; Ch'óhojilyéél <č'óxoɜ^{v}ilɣêi, c'oxojiléi> ("Madness Producing", Athapascan: Navajo)[140]; Chamico (Spanish: Yucatán)[140]; Cmalgapít ("Ear Deaf", Yuman: Maricopa)[140]; Dekúba <deku-ba, reku-ba> (Uto-Aztecan: Tarahumara)[140]; Devil's Weed; Estramonio (Spanish)[140]; Gegeda A'gama <gugudua'gcama, gugurha agama> ("The One With Big Horns or Big Horned One", Uto-Aztecan: Nevome, Sonora)[140]; Giant Jimson; Hairy Thorn-apple; Hakatdam <hakandam> (Uto-Aztecan: Onavas Pima)[140]; Indian Apple (not recommended for use); Indian Apple (English)[140]; Indian-apple (not recommended for use); Itanasbase ("Round Leaf", Athapascan: Chiricahua and Mescalero Apache)[140]; <jaa ilgodó> ("Forget Yourself", Athapascan: Western Apache)[140]; Jimson Weed (a name also applied to other species and the genus *Datura*); Jimson Weed (English)[140]; Jimson-weed (a name also applied to other species and the genus *Datura*), Jimsonweed (a name also applied to other species and the genus *Datura*), Kiksawva'al <kikisowil> (Uto-Aztecan: Cahuilla)[140]; Kookivuri <kokovuri> (Uto-Aztecan: Mountain Pima)[140]; Kotaḍopi <kotata'p> (Uto-Aztecan: Tohono O'odham)[140]; Kotḍopi <kotodopi, kodop, kododophi, kotobi, kotdobi> (Uto-Aztecan: Akimel O'odham)[140]; Máanet (Uto-Aztecan: Luiseño)[140]; Main-oph-weep (Uto-Aztecan: Paiute)[140]; Malyakatu' (Yuman: Mohave)[140]; Mïmïp [Manopweep, Manop^{h}weep] (Uto-Aztecan: Southern Paiute)[140]; Mo'moy (Chumash: Barbareño Chumash)[140]; Momoht (Uto-Aztecan: Tübatulabal)[140]; Momoy (Chumash: Ineseño and Ventureño Chumash)[140]; Moon Flower; Moon Lily; Moopɨ (Uto-Aztecan: Kawaiisu)[140]; Muipə <muipe> (Uto-Aztecan: Northern Paiute)[140]; Muippüh (Uto-Aztecan: Panamint)[140]; Navamutuda <nabamutuda> (Uto-Aztecan: Nevome, Sonora)[140]; Ndíyíliitsoh <ntíGíliitshoh> (Athapascan: Navajo)[140]; Pricklyburr; Sacred Datura (a name also applied to other species); Sacred Datura (English)[140]; Sacred Thorn Apple; Sacred Thorn-apple; Sacred Thornapple; Saemp'e (Kiowa Tanoan: Tewa)[140]; Selguacha; Shmalk Tuch (Yuman: Paipai)[140]; Ṣmal Ka:pí:ṭ (Yuman: Cocopa)[140]; Smalgatú ("Ear-something Inside", Yuman: Havasupai)[140];

Smalk^{a}tû' (Yuman: Walapai)[140]; Southwestern Thorn Apple; Sweet Scented Datura (a name also applied to other species); Sweet-scented Datura (a name also applied to other species); Táguaro (Uto-Aztecan: Sonora)[140]; Taŋaniva (Uto-Aztecan: Northern Paiute)[140]; Tebwi (Uto-Aztecan: Yaqui)[140]; Tecuyani (Uto-Aztecan: Náhuatl)[140]; Tecuyaui (Uto-Aztecan: Guarijío)[140]; Thorn Apple (a name also applied to other species and the genus *Datura*); [Sacred] Thorn Apple (English)[140]; Thorn-apple (a name also applied to other species and the genus *Datura*); Thornapple (a name also applied to other species and the genus *Datura*); Tikúwari (Uto-Aztecan: Tarahumara)[140]; Tlapa (Spanish)[140]; Tókocovi <tokorhobi> (Uto-Aztecan: Nevome, Sonora)[140]; Tokorakai (Uto-Aztecan: Northern Tepehuan)[140]; Tokorep <tókorew> (Uto-Aztecan: Mountain Pima)[140]; Tolache (a name also applied to the genus *Datura*, Spanish); Tolache <toluache, tolguacha> (Spanish)[140]; Tolguacha; Tolohua-xíhuitl <tologuaxíhuitl> (Uto-Aztecan: Náhuatl)[140]; Tsimona <tcimóna> (Uto-Aztecan: Hopi)[140]; ʔỤnų́pųvų (Uto-Aztecan: Ute)[140]; Western Jimson; Western Jimson Weed; Western Jimson-weed; Western Jimsonweed; Wright Datura; Wright Jimson Weed; Wright Jimson-weed; Wright Jimsonweed; Wright's Datura; Wright's Jimson Weed; Wright's Jimson-weed; Wright's Jimsonweed. DESCRIPTION: Terrestrial annual or perennial forb/herb or subshrub (spreading, sprawling and/or erect stems 1 to 5 feet in height sometimes spreading to 6 feet in width; one plant was observed and described as being 16 inches in height and 20 inches in width, one plant was observed and described as being 18 inches in height and 2 feet in width, two plants were observed and described as being 20 inches in height and 20 inches in width, one plant was observed and described as being 20 inches in height and 4 feet in width); the leaves may be dark green, gray-green or purplish; the trumpet-shaped flowers (2½ to 5½ inches in length and 6 to 10 inches in diameter) may be creamy-white, greenish-white, pale ivory, pale lavender, light purple, purple, white or white tinged with lavender, pink-lavender, purple, rose-purple or violet; flowering generally takes place between mid-March and late November (additional record: one for mid-February); the round and thorny fruits (1¼ to 2 inches in diameter) are green or whitish-green drying to brown. HABITAT: Within the range of this species it has been reported from mountains; mountaintops; sandy mesas; bases of cliffs; rocky canyons; canyon walls; sandy canyon bottoms; chasms; gorges; talus slopes; crevices in boulders and rocks; bluffs; rocky ridges; foothills; rolling hills; rocky hillsides; bouldery, rocky, gravelly-sandy, gravelly-loamy, sandy and sandy-silty slopes; rocky-sandy-loamy alluvial fans; alluvial fans; bajadas; bouldery and rocky outcrops; amongst rocks; sandy alcoves; plains; bouldery, rocky-sandy and sandy flats; sandy valley floors; sandy coastal beaches; coastal strands; along rocky, gravelly-sandy and sandy roadsides; along and in bedrock and sandy arroyos; along sandy draws; gulches; muddy springs; along clayey streams; bouldery-loamy, gravelly-sandy and sandy streambeds; rocky-sandy and gravelly-sandy soils along and in creeks; sandy creekbeds; along rivers; sandy riverbeds; along and in gravelly and sandy washes; within sandy drainage ways; silty lakebeds; freshwater and saltwater marshes; clayey-loamy swales; (sandy) banks of arroyos, streams, rivers and washes; (gravelly) edges of rivers; along margins of arroyos, rivers and riverbeds; (gravelly) shorelines of lakes; gravel bars; sandy benches; gravelly and sandy shelves; sandy terraces; sandy bottomlands; along sandy floodplains; fencelines; along and in ditches; canal banks; sandy riparian areas; sandy waste places, and disturbed areas growing in moist and dry bouldery, rocky, rocky-gravelly, rocky-sandy, gravelly, gravelly-sandy and sandy ground; bouldery loam, rocky-sandy loam, gravelly loam and clayey loam ground; rocky clay and clay ground, and sandy silty and silty ground, occurring from sea level to 7,900 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug, medication or narcotic. This plant is extremely poisonous, and just simply touching them may be dangerous. Sphinx Moths have been observed visiting the flowers. *Datura wrightii* is native to south-central and southern North America. *5, 6, 28 (recorded as *Datura meteloides*, "All parts of the plant extremely poisonous if ingested"), color photograph 208), 43 (072909), 44 (031611), 46 (recorded as *Datura meteloides* DC., Page 760), 58, 63 (043010 - color presentation), 77, 80 (This plant is listed as a Secondary Poisonous Range Plant. "Toxicity results from the high content of several solanaceous alkaloids. Poisoning of both livestock and humans can occur from the ingestion of any part of the plant, including the seeds. ... It is rare when any livestock purposely consume any of the daturas. The ill-scented herbage makes the plants highly distasteful, and livestock literally have to be forced to eat it because of the lack of other forage."), **85** (082111 - color presentation), 86 (color photograph), 115 (color presentation), 124 (031611), 127, 140 (Page 265-266 & 306)*

Lycium C. Linnaeus: Desert-thorn

COMMON NAMES: Box Thorn; Box-thorn; Boxthorn; Desert Thorn; Desert-thorn; Desertthorn; Lycium; Matrimony Vine; Matrimony-vine; Matrimonyvine; Salicieso; Squawbush; Thornbush; Wolfberry. *43 (052010), 44 (120310), 46 (Pages 749-752), 63 (040207), 124 (111710), **HR***

Lycium berlandieri M.F. Dunal: Berlandier's Wolfberry

COMMON NAMES: Bachata (Arizona, Sonora)[140]; Berlandier Lycium; Berlandier Wolfberry; Berlandier's Wolfberry; Boxthorn (a name also applied to other species and the genus *Lycium*); Huichutilla; Salicieso (a name also applied to other species and the genus *Lycium*, Arizona, Sonora); Silver Wolfberry; Terrac Wolfberry; Wolfberry (a name also applied to other species and the genus *Lycium*). DESCRIPTION: Terrestrial perennial drought-deciduous shrub (20 inches to 10 feet in height; one plant was observed and described as being 3 feet in height with a crown 3 feet in width); the bark on the stems and branches may be almost black, brown, dark brown, gray, gray-brown, purple-brown, dark red or reddish; the leaves are dark green; the bell-shaped flowers may be bluish, cream, cream-white, cream-yellow, pale green, lavender, purple, tan, white, whitish or pale yellow; flowering generally takes place between early February and early September (additional records: one for early January, two for late September, three for early October, one for mid-October, two for late November, one for early December, one for mid-December and one for late December; flowering mainly between July and September has been reported); the mature fruits are orange, red or red-orange. HABITAT: Within the range of this species it has been reported from mountains; rocky cliffs; bases of cliffs; rocky canyons; bouldery and rocky canyon bottoms; rocky talus slopes; crevices; buttes; ledges; rocky

ridgetops; rocky foothills; rocky, gravelly, gravelly-sandy and sandy hills; rocky hillsides; bedrock and rocky slopes; rocky, gravelly, gravelly-sandy and sandy bajadas; bouldery and rocky outcrops; amongst boulders and rocks; boulder fields; prairies; cobbly plains; gravelly and gravelly-sandy flats; rocky-gravelly basins; valley floors; along gravelly-sandy-clayey-loamy roadsides; along rocky, gravelly and sandy arroyos; bottoms of arroyos; ravines; streambeds; along and in sandy washes; playas; (rocky and sandy) edges of rivers; clayey-loamy terraces; bottomlands; mesquite bosques; ditches, and riparian areas growing in dry desert pavement; bouldery, rocky, rocky-gravelly, cobbly, gravelly, gravelly-sandy and sandy ground; gravelly-sandy-clayey loam, sandy loam and clayey loam ground, and loamy clay ground, occurring from sea level to 8,100 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This spiny shrub may be an attractive component of a restored native habitat. The Berlandier Lycium may live to be more than 90 years of age. The Costa's Hummingbird (*Calypte costae*) has been observed visiting the flowers and Gambel's Quail (*Callipepla gambelii* subsp. *gambelii*) uses the plant for cover, feeding and roosting. *Lycium berlandieri* is native to southwest-central and southern North America. *5, 6, 10, 13 (Page 200), 16, 18 (genus), 28 (color photograph 700), 43 (043010), 44 (082111 - no record of species; genus record), 46 (Page 752), 63 (043010), 85 (082111 - color presentation), 115 (color presentation), 124 (082111), 140 (Pages 268 & 306), **HR***

Nicotiana glauca R. Graham: Tree Tobacco

COMMON NAMES: Brazilian Tree Tobacco; Buena Mosa; Don Juan (Yaqui); Gigante; Glaucous Tobacco; Mexican Tobacco; Mustard Tree (a name also applied to other species); Rape; San Juan Tree; Shrub Tobacco; Tabaco Amarillo; Tabaco Moro; Tree Tobacco (a name also applied to other species); Tronadora; Wild Tobacco (a name also applied to other species); Wildetabak (Afrikaans); Yellow Tree Tobacco. DESCRIPTION: Terrestrial perennial evergreen shrub or tree (1 to 26 feet in height with a crown to 10 feet in width); the bark is yellow-brown; the leaves are blue-green, bluish-green or dull green; the tubular flowers (1¼ to 2 inches in length) are pale yellow, yellow or yellow-greenish; flowering generally takes place between mid-January to late December. HABITAT: Within the range of this species it has been reported from mountains; mountainsides; plateaus; rocky canyons; along rocky canyon bottoms; sandy ledges; foothills; rocky hills; rocky hilltops; bouldery hillsides; rocky and sandy-loamy slopes; sandy and silty flats; gravelly basins; valley floors; coastal marshes; along rocky and sandy roadsides; rocky and sandy arroyos; bottoms of arroyos; springs; along streams; along and in streambeds; along and in creeks; along rivers; along and in rocky-sandy and sandy riverbeds; along and in sandy washes; within drainages; along and in watercourses; oases; boggy areas; (gravelly-sandy and sandy) banks of creeks, rivers and washes; along (sandy and sandy-silty) edges of rivers and lakes; along margins of washes; shores of creeks and lakes; terraces; bottomlands; floodplains; fencerows; along banks of canals; along ditches; ditch banks; riparian areas; waste places, and disturbed areas growing in dry bouldery, rocky, rocky-gravelly, rocky-sandy, gravelly, gravelly-sandy and sandy ground; sandy loam ground, and sandy silty and silty ground, occurring from near sea level to 5,000 (one record at 8,200 feet) feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used for food and beverage and as a drug or medication. *Nicotiana glauca* is native to western and southern South America. *5, 6, 13, 16, 18, 28 (color photograph 385), 43 (050210), 44(082111), 46 (Page 761), 63 (050210 - color presentation), 68, 77, 80 (This species is listed as a Secondary Poisonous Range Plant. "The poisonous principle is the highly toxic nicotine and other alkaloids which are poisonous to all classes of livestock and to humans. The plants are generally unpalatable to range livestock but frequent losses have been reported. ... Since wild tobaccos are generally unpalatable and grow predominantly in waste places, range improvement to reduce waste areas and to provide ample forage is the best means of preventing losses."), 85 (082111 - color presentation), 86 (color photograph), 97, 115 (color presentation), 124 (082111 - no record of genus or species), 127, **HR***

Nicotiana obtusifolia M. Martens & H.G. Galeotti var. *obtusifolia*: Desert Tobacco

SYNONYMY: *Nicotiana trigonophylla* M.F. Dunal. COMMON NAMES: Ban Vivga <ban vi:v> ("Coyote Tobacco", Uto-Aztecan: Akimel O'odham)[140]; Ban Wiwga (Uto-Aztecan: Tohono O'odham)[140]; Biy, Biba-ta (Uto-Aztecan: Ópata)[140]; Coyote Tobacco (a name also applied to the species and to other species); Coyote [Desert] Tobacco (English)[140]; Desert Tobacco (a name also applied to the species and to other species); Goy Biba (Uto-Aztecan: Mayo)[140]; Ha Wiwga ("Their Tobacco", Uto-Aztecan: Tohono O'odham)[140]; Hapis Casa ("Putrid Tobacco", Hokan: Seri)[140]; Hatalewah Ū'v <a'uv, aúva> ("Coyote Tobacco", Yuman: Mohave)[140]; Intelwayok ("Old Time Tobacco", Yuki: Yuki)[140]; Isily Piv'a <pivat-isil> ("Coyote's Tobacco", Uto-Aztecan: Coahuilla)[140]; KaӨódnˌiúva (Yuman: Havasupai)[140]; Mela' Ū'v ("Coyote Tobacco", Yuman: Yuma)[140]; Nát'oh (Athapascan: Navajo)[140]; Nátotē (Athapascan: Jicarilla Apache)[140]; O'odham Ha Vivka ("People's Tobacco", Uto-Aztecan: Hiá Ceḍ O'odham, Arizona Sonora)[140]; Pahompin <pāmüpi> (Uto-Aztecan: Panamint)[140]; Pahmóbi (Uto-Aztecan: Mono)[140]; Pahmú (Uto-Aztecan: Western Paiute)[140]; Pamu (Uto-Aztecan: Mono)[140]; Pí:va-t [Píivat] (Uto-Aztecan: Luiseño)[140]; Piiva <piva, pi'va, pí:wa> (Uto-Aztecan: Hopi)[140]; Punche ("a Punch" a name also applied to the species); Qɔ'apI (Uto-Aztecan: Southern Paiute)[140]; Qo'ápų (Uto-Aztecan: Ute)[140]; So'o(n)dɨ <soódá> (Uto-Aztecan: Kawaiisu)[140]; Tabaquillo ("Little Tobacco" a name also applied to the species); Tabaquillo de Coyote (a name also applied to the species); Tobaco Cimarrón ("Wild Tobacco", Spanish: Sonora)[140]; Tobaco [de] Coyote [Loco] ("Coyote [Crazy] Tobacco", Spanish: Chihuahua, San Luis Potosí, Sonora)[140]; Tobaquillo [de Coyote] ("Little [Coyote] Tobacco", Spanish: Texas to Arizona, Sonora)[140]; Tsawawap (Uto-Aztecan: Southern Paiute)[140]; 'U:p <op> (Yuman: Cocopa)[140]; 'Úva <u:v> (Yuman: Walapai)[140]; Uvaanálˌa (Yuman: Maricopa)[140]; Viv (Uto-Aztecan: Onavas Pima)[140]; Vivá-t (Uto-Aztecan: Eudeve)[140]; Vivai (Uto-Aztecan: Northern Tephuan)[140]; Vivam (Uto-Aztecan: Yaqui)[140]; Wiopuli <wiopulĭ, wiupuri, víopoli> (Uto-Aztecan: Tohono O'odham)[140]; Wipá (Uto-Aztecan: Guarijío)[140]; Wipáka <aura-ka, bawa-ra-ka, huipá, pawa-ra-ka> (Uto-Aztecan: Tarahumara)[140]; Wiw <viva> (Uto-Aztecan: Mountain Pima)[140]; Wo'i

Viva (Yaqui). DESCRIPTION: Terrestrial annual, biennial or perennial forb/herb or subshrub (erect stems 1 to 3½ feet in height); the leaves are gray-green or dark green; the flowers may be cream, cream & pale green, cream-green, cream-white, cream-yellow, greenish, greenish-white, greenish-yellow, deep purple, lemon-yellow, pale white, white, yellow, yellow-cream, yellow-green, yellow-white or yellowish-greenish; flowering generally takes place between late February and early November (additional records: one for mid-January, one for late November, two for mid-December and one for late December, flowering probably takes place throughout the rest of the year). HABITAT: Within the range of this species it has been reported from mountains; bouldery and rocky-gravelly mountaintops; plateaus; along rims; cliffs; bases of cliffs; rocky and gravelly-loamy canyons; canyon walls; along canyon bottoms; gorges; bouldery-gravelly-silty and silty-clayey talus slopes; along crevices in boulders and rocks; rocky bluffs; rocky buttes; rocky ledges; bouldery ridges; bouldery ridgetops; edges of meadows; craters; cinder cones; foothills; rocky hills; bouldery hilltops; bouldery-rocky and rocky hillsides; bouldery escarpments; bouldery, bouldery-rocky, bouldery-gravelly, rocky, rocky-gravelly-sandy-clayey, stony, cindery, gravelly, gravelly-sandy, sandy, sandy-loam and sandy-clayey slopes; bajadas; rocky outcrops; amongst boulders, rocks and stones; bases of boulders and rocks; sandy lava flows; dunes; debris fans; rocky plains; sandy and sandy-loamy flats; basins; valley floors; valley bottoms; rocky-sandy coastal shores; along railroad right-of-ways; along rocky, rocky-gravelly-sandy-clayey-loamy, gravelly, gravelly-sandy, gravelly-sandy-clayey-loamy and sandy roadsides; along sandy-loamy arroyos; arroyo walls; arroyo bottoms; gulches; in sand and loam around springs; loamy soil along streams; along gravelly-sandy and sandy streambeds; rocky creeks; sandy creekbeds; bouldery-sandy and sandy riverbeds; along and in bedrock, rocky, rocky-sandy, gravelly-sandy and sandy washes; drainages; bouldery drainage ways; sandy waterholes; marshy areas; sinks; (rocky, cobbly, sandy and silty) banks of creeks, rivers and washes; edges of lakes; (rocky-sandy) shores of lakes; mudflats; gravelly and sandy terraces; bottomlands; floodplains; ditches; ditch banks; sandy riparian areas; waste places, and disturbed areas growing in moist, damp and dry bouldery, bouldery-rocky, bouldery-gravelly, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, stony, cobbly, cindery, gravelly, gravelly-sandy and sandy ground; rocky-gravely-sandy-clayey loam, gravelly loam, gravelly-sandy-clayey loam, sandy loam, clayey loam and loam ground; rocky-gravelly-sandy clay, sandy, silty clay and clay ground, and bouldery-gravelly silty and silty ground, occurring from sea level to 6,900 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant tends to be weedy; however, consideration could be given to using some plants in your project because the flowers are used by hummingbirds when other nectar-rich sources are not available. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used for food, beverage and/as a as a drug or medication. *Nicotiana obtusifolia* var. *obtusifolia* is native to southwest-central and southern North America. *5, 6, 15 (recorded as *Nicotiana trigonophylla* Dunal), 16 (recorded as *Nicotiana trigonophylla* Dunal), 28 (recorded as *Nicotiana trigonophylla*, color photograph 209), 43 (050310), 44 (082211 - no listing under Common Names; genus and species records), 46 (recorded as *Nicotiana trigonophylla* Dunal, Page 761), 58 (recorded as *Nicotiana trigonophylla* Dunal), 63 (050310 - color presentation), 68, 77 (recorded as *Nicotiana trigonophylla* Dunal), 80 (This species is listed as a Secondary Poisonous Range Plant. "The poisonous principle is the highly toxic nicotine and other alkaloids which are poisonous to all classes of livestock and to humans. The plants are generally unpalatable to range livestock but frequent losses have been reported. ... Since wild tobaccos are generally unpalatable and grow predominantly in waste places, range improvement to reduce waste areas and to provide ample forage is the best means of preventing losses."), **85** (082211 - color presentation), 86 (recorded as *Nicotiana trigonophylla*, color photograph), 115 (color presentation of the species), 124 (082111 - no record of genus, species or variety), 127, 140 (recorded as *Nicotiana obtusifolia* Martens & Galeotti [*N. trigonophylla* Dunal], Pages 268-269 & 306), **WTK** (April 16, 2008)*

Nicotiana trigonophylla (see *Nicotiana obtusifolia* var. *obtusifolia*)

Petunia parviflora (see *Calibrachoa parviflora*)

***Physalis acutifolia* (J. Miers) N.Y. Sandwith: Sharpleaf Groundcherry**

SYNONYMY: *Physalis wrightii* A. Gray. COMMON NAMES: Groundcherry (a name also applied to the genus *Physalis*); Irrigation Groundcherry; Pointed-leaved Ground-cherry; Sharp Leaf Ground Cherry; Sharp Leaved Ground Cherry; Sharp-leaf Ground-cherry; Sharp-leaf Groundcherry; Sharpleaf Ground Cherry; Sharpleaf Groundcherry; Sharpleaved Ground-cherry; Tomatillo (a name also applied to the genus *Physalis)*; Wright Ground Cherry; Wright Ground-cherry; Wright Groundcherry; Wright's Ground Cherry; Wright's Ground-cherry; Wright's Groundcherry. DESCRIPTION: Terrestrial annual forb/herb (2 to 42 inches in height, one plant was described as being 20 inches in height and 40 inches in width); the foliage is bluish-green or gray-green; the wheel-shaped flowers (½ to ¾ inch in diameter) are cream, greenish-yellow, white or whitish (with a greenish, orange-yellow, yellow or yellow-green center), pale yellow or yellow; the anthers are purplish; flowering generally takes place between mid-August and late November (additional records: one for mid-May, one for early June, one for late June, two for early July, one for mid-July, one for late July, one for mid-December and one for late December, flowering possibly starting as early as April and ending in late December has been reported); the berry-like seed-pods (¾ to 1¼ inches in length) are covered with a green, papery "Chinese lantern". HABITAT: Within the range of this species it has been reported from mountains; rocky mesas; canyons; canyon bottoms; foothills; hills; rocky hillsides; rocky slopes; alluvial fans; plains; clayey flats; valley floors; coastal plains; along railroad right-of-ways; roadbeds; along gravelly and gravelly-sandy-clayey-loamy roadsides; arroyos; bottoms of arroyos; draws; gullies; rocky ravines; springs; along streams; in streambeds; creekbeds; along rivers; rocky-sandy and sandy riverbeds; along and in rocky and clayey washes; drainages; around ponds; pondbeds; playas; marshlands; muddy-silty swampy areas; depressions; sloughs; banks of rivers; (sandy-clayey) edges of ponds and swales; sand bars; benches; lowlands; sandy floodplains; mesquite bosques; dikes; canals; canal banks; along ditches; ditch banks; riparian

areas, and disturbed areas growing in moist and dry rocky, rocky-sandy, gravelly and sandy soils; gravelly-sandy-clayey loam sandy loam ground; sandy clay, humusy clay and clay ground, and silty ground, occurring from sea level to 4,800 feet in elevation in the forest, woodland, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. Quail, White-tailed Deer (*Ovis canadensis*) and Bighorn Sheep (*Ovis canadensis*) browse this plant. *Physalis acutifolia* is native to southwest-central and southern North America. *5, 6, 16, 43 (050310), 44 (040211), 46 (recorded as *Physalis wrightii* Gray, Page 754), 58, 63 (050310 - color presentation of seed-pod), 68 (recorded as *Physalis wrightii* Gray), 77, 80 (Species of the genus *Physalis* are considered to be Rarely Poisonous and Suspected Poisonous Range Plants. "It has been suspected that animals have been poisoned by eating large quantities of the tops and unripe fruits of these forbs."), **85** (082211 - color presentation), 101 (recorded as *Physalis wrightii* Gray, color photograph), 124 (040211 - no record of species; genus record), 127, 140 (Pages 270 & 306)*

***Physalis angulata* C. Linnaeus: Cutleaf Groundcherry**

SYNONYMY: *Physalis angulata* C. Linnaeus var. *lanceifolia* (C.G. Nees von Esenbeck) U.T. Waterfall; *Physalis lanceifolia* C.G. Nees von Esenbeck; *Physalis linkiana* C.G. Nees von Esenbeck. COMMON NAMES: Angular Winter-cherry; Baloon Cherry; Camapu; Coqueret (French); Coqueret Anguleux (French); Cut Leaf Ground Cherry; Cut-leaf Ground-cherry; Cut-leaved Ground Cherry; Cut-leaved Ground-cherry; Cutleaf Ground Cherry; Cutleaf Ground-cherry; Cutleaf Groundcherry; Cutleaved Ground Cherry; Gooseberry (a name also applied to other species); Ground Cherry (a name also applied to the genus *Physalis*); Ground-cherry (a name also applied to the genus *Physalis*); Hogweed (a name also applied to other species); Ku Zhi (transcribed Chinese); Lance-leaf Ground-cherry; Lance-leaved Ground-cherry; Lanceleaf Ground Cherry; Lanceleaf Groundcherry; Pops; Purplevein Groundcherry; Southwest Groundcherry; Wild Tomato; Winter Cherry (a name also applied to the genus *Physalis*). DESCRIPTION: Terrestrial annual forb/herb (1 to 5 feet in height); the leaves are dark green; the flowers are cream, white (with a yellow center), pale yellow or yellow; based on few flowering records flowering generally takes place between mid-July and mid-January (flowering records: one for mid-January, one for mid-July, one for mid-August, two for late August, one for early September, one for mid-September, one for late September, one for early October, three for mid-October, one for mid-November, one for late November and one for late December); the mature, nodding fruits are orange or yellow-orange and are covered by a papery balloon-like inflated calyx. HABITAT: Within the range of this species it has been reported from canyons; canyon bottoms; hills; rocky and gravelly-loamy slopes; flats; valley floors; railroad right-of-ways; along silty roadsides; creeks; sandy riverbeds; along washes; playas; marshlands; banks of rivers; margins of creeks; edges of lagoons; along shores of lakes; mudflats; sand bars; bottomlands; gravelly and sandy floodplains; dikes; along ditches; riparian areas; waste places, and disturbed areas growing in wet, moist, damp and dry rocky, gravelly and sandy ground; gravelly loam and sandy loam ground; clay ground, and silty ground, occurring from sea level to 5,300 feet in elevation in the woodland, grassland, desertscrub and wetland ecological formations. NOTE: *Physalis angulata* is native to tropic, sub-tropic and warm-temperate regions of south-central and southern North America and coastal islands in the North Atlantic Ocean; Central America and coastal islands in the Caribbean Sea, and South America. *5, 6, 43 (050310), 44 (082211 - no listing under Common Names; genus record), 46 (*Physalis lanceifolia* Nees, Page 754), 63 (082211 - color presentation), 80 (Species of the genus *Physalis* are considered to be Rarely Poisonous and Suspected Poisonous Range Plants. "It has been suspected that animals have been poisoned by eating large quantities of the tops and unripe fruits of these forbs."), **85** (082211 - color presentation of dried material), 101 (note for *Physalis lanceifolia* Nees under *Physalis wrightii* Gray), 106 (031509), 124 (082211)*

Physalis angulata var. *lanceifolia* (see *Physalis angulata*)

Physalis lanceifolia (see *Physalis angulata*)

Physalis linkiana (see *Physalis angulata*)

Physalis lobata (see *Quincula lobata*)

Physalis lobata var. *albiflora* (see *Quincula lobata*)

***Physalis longifolia* T. Nuttall (var. *longifolia* is the variety reported as occurring in Arizona): Longleaf Groundcherry**

SYNONYMY: (for var. *longifolia*: *Physalis virginiana* P. Miller var. *sonorae* (J. Torrey) U.T. Waterfall). COMMON NAME: Common Ground Cherry; Common Ground-cherry; Common Groundcherry; Long-leaf Ground Cherry; Long-leaf Ground-cherry; Long-leaf Groundcherry; Long-leaved Ground Cherry; Long-leaved Ground-cherry; Longleaf Groundcherry; Physalis (a name also applied to the genus *Physalis*); Smooth Groundcherry; Smooth Long-leaved Ground-cherry; Smoothed Groundcherry; Tall Ground-cherry; Virginia Ground Cherry; Virginia Groundcherry. DESCRIPTION: Terrestrial perennial forb/herb (4 to 32 inches in height); the leaves are green; the flowers may be cream-greenish, pale yellow-white, yellow or yellowish-green with a dark center; flowering generally takes place between mid-May and mid-October (flowering starting as early as April has been reported). HABITAT: Within the range of this species it has been reported from mountains; canyons; crevices in rocks; clayey buttes; rocky-sandy ridges; ridgetops; meadows; foothills; bedrock, rocky, rocky-gravelly, rocky-clayey, gravelly, sandy, clayey-loamy and silty-loamy slopes; rocky outcrops; sandy breaks; silty-loamy prairies; plains; sandy and

sandy-loamy flats; clayey-loamy uplands; valley floors; roadcuts; along rocky-clayey, sandy and sandy-clayey roadsides; loamy and loamy-clayey draws; sandy ravines; seeps; springs; along streams; in stony and sandy streambeds; along and in creeks; grassy creekbeds; along rivers; along gravelly-sandy washes; within rocky-clayey-silty and gravelly-sandy drainages; boggy areas; swampy areas; swales; along (sandy) banks of streams, creeks, rivers and sloughs; edges of streams, rivers and ciénegas; along margins of creeks and rivers; along (gravelly-clayey, clayey and clayey-loamy) shores of creeks and lakes; gravel bars; benches; bottomlands; along cobbly and sandy floodplains; sandy lowlands; along sandy fencelines; in mucky-loamy, mucky-clayey-loamy and loamy-clayey soils around and in reservoirs; along canals; along ditches; along ditch banks; sandy, sandy-silty-loamy, clayey-loamy and silty-loamy riparian areas, and disturbed areas growing in mucky and moist, damp and dry rocky, rocky-gravelly, rocky-sandy, stony, cobbly, gravelly, gravelly-sandy and sandy ground; rocky loam, sandy loam, sandy-silty loam, clayey loam, silty loam and loam ground; rocky clay, gravelly clay, sandy clay, loamy clay, silty clay and clay ground, and rocky-clayey silty and silty ground, occurring from 1,600 to 8,100 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: Possibly exotic. The species, *Physalis longifolia*, was reported to have been utilized by native peoples of North America; it was noted as having been used as a food. *Physalis longifolia* is native to central and southern North America. *5, 6, 43 (050410 - *Physalis virginiana* var. *sonorae* (Torr.) Waterf.), 44 (082311 - no listing under Common Names for species or variety; genus record), 46 (Page 755), 58, 63 (050410 - color presentation), 80 (Species of the genus *Physalis* are considered to be Rarely Poisonous and Suspected Poisonous Range Plants. "It has been suspected that animals have been poisoned by eating large quantities of the tops and unripe fruits of these forbs."), **85** (082311 - color presentation of dried material), 124 (082311), 127 (species)*

Physalis virginiana var. *sonorae* (see *Physalis longifolia* var. *longifolia*)

Physalis wrightii (see *Physalis acutifolia*)

***Quincula lobata* (J. Torrey) C.S. Rafinesque-Schmaltz: Chinese Lantern**

SYNONYMY: *Physalis lobata* J. Torrey; *Physalis lobata* J. Torrey var. *albiflora* U.T. Waterfall. COMMON NAMES: Chinese Lantern (a name also applied to other species); Chinese-lantern (a name also applied to other species and the genus *Quincula*); Ground Cherry (a name also applied to other species and the genus *Physalis*); Lobed Ground Cherry; Lobed Ground-cherry; Lobed Groundcherry; Physalis (a name also applied to other species and the genus *Physalis*, Portuguese: Brazil); Plains Chinese-lantern; Plains Chineselantern; Prostrate Purple Physalis; Purple Flower Groundcherry; Purple Flowered Groundcherry; Purple Quincula; Purple Ground Cherry (a name also applied to other species); Purple Ground-cherry (a name also applied to other species); Purple Groundcherry (a name also applied to other species); Purple-flower Ground-cherry; Purple-flower Groundcherry; Purple-flowered Ground Cherry; Purple-flowered Ground-cherry; Purple-flowered Groundcherry; Purpleflower Groundcherry; Purpleflowered Groundcherry; Quincula (a name also applied to the genus *Quincula*). DESCRIPTION: Terrestrial perennial forb/herb (6 to 16 inches in height); the leaves are green or dark green; the flowers may be blue, blue-violet, dark lavender, magenta, pink-white, pale purple, purple, dark purple, rose-pink, light violet or violet; the anthers are yellow; flowering generally takes place between mid-February and late November. HABITAT: Within the range of this species it has been reported from mountains; mesas; shaley rim rock; gravelly cliffs; sandy canyons; rocky canyon walls; rocky ridges; foothills; clayey hills; hilltops; rocky hillsides; rocky, shaley and sandy-clayey-loamy slopes; alluvial fans; sandy bajadas; clayey banks; breaks; prairies; sandy plains; gravelly, sandy, sandy-clayey, clayey and silty flats; rocky uplands; grassy valley floors; railroad right-of-ways; roadcuts; along rocky, gravelly, gravelly-loamy, sandy and sandy-loamy roadsides; arroyos; clayey bottoms of draws; springs; along rocky streambeds; along creeks; riverbeds; along and in gravelly, gravelly-sandy-silty and sandy washes; gravelly-sandy drainages; clayey lakebeds; sandy, clayey and silty playas; edges of playas; mudflats; bottomlands; sandy-clayey floodplains; lowlands; mesquite bosques; stock tanks; riparian areas, and disturbed areas growing in moist and dry desert pavement; rocky, shaley, gravelly, gravelly-sandy and sandy ground; gravelly loam, sandy loam, sandy-clayey loam and clayey loam ground; sandy clay and clay ground, and rocky silty, gravelly-sandy silty and silty ground, occurring from 400 to 7,500 feet in elevation in the woodland, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop; it was also noted as having been used as a toy or in games and as a drug or medication. *Quincula lobata* is native to southwest-central and southern North America. *5, 6, 15, 16, 28 (recorded as *Physalis lobata*, color photograph 702), 43 (050510 - *Quincula lobata* Raf., *Physalis lobata* f. var. *albiflora* Waterf.), 44 (082311 - recorded as *Physalis lobata*), 46 (recorded as *Physalis lobata* Torr., Page 754), 63 (050510 - color presentation), 77 (recorded as *Physalis lobata* Torr.), 80 (Species of the genus *Physalis* are listed as being Rarely Poisonous and Suspected Poisonous Range Plants. "It has been suspected that animals have been poisoned by eating large quantities of the tops and unripe fruits of these forbs."), **85** (082311 - color presentation of dried material), 86 (color photograph, *Physalis lobata*), 115 (color presentation), 124 (082311), 127*

***Solanum americanum* P. Miller: American Black Nightshade**

COMMON NAMES: American Nightshade (a name also applied to other species); American Black Night-shade; American Black Nightshade; Black Nightshade (a name also applied to other species); Chichikarita (Tarahumara); Chichiquelite (Mexico: Sonora); Common Purple Nightshade (a name also applied to other species); Glossy Nightshade; Hierba Mora (Hispanic); Hierba Mora Negra (Spanish); Little White Nightshade; Mamyam (Yaqui: Mexico, Sonora); Mock Black Nightshade; Pichecua (Purépecha); Pitsekua Blanca (Purépecha); Pitsekua Urapitu (Purépecha); Purple Nightshade (a name also

applied to other species); Quelite Cimarrón (Hispanic); Small Flowered Night Shade; Small Flowered Nightshade; Small-flower Nightshade; Small-flowered Night-shade; Small-flowered Nightshade; Small-flowered White Nightshade; Smallflower Nightshade; Small-leaved Nightshade; Wicha Mamyam (Yaqui: Mexico, Sonora). DESCRIPTION: Terrestrial (may be semi-aquatic) annual or perennial forb/herb or subshrub (erect stems 4 inches to 5 feet in height; one plant was reported to be 40 inches in diameter); the leaves (margins entire) are green; the flowers may be cream-white, cream-yellow, pale lavender, lavender, pale violet, white, white tinged with purple, whitish or yellowish-white; the anthers are yellow; flowering generally takes place between early January and late December; the mature berries may be black, blackish, green, orange-brown, purple, dark purple or purplish-black HABITAT: Within the range of this species it has been reported from mountains; mesas; plateaus; in rocky canyons; along rocky canyon bottoms; chasms; ridges; meadows; rocky hills; rocky-loamy, sandy and clayey slopes; rocky-sandy-loamy alluvial fans; shaley outcrops; amongst rocks; sandy banks; sandy prairies; sandy and clayey flats; uplands; valley floors; valley bottoms; coastal bluffs; roadsides; arroyos; around seeps; gravelly springs; along streams; along and in rocky-sandy, gravelly and sandy streambeds; along creeks; along sandy creekbeds; along rivers; in sandy riverbeds; along and in rocky, rocky-sandy, sandy and loamy washes; within silty and silty-clayey drainages; clayey lakebeds; playas; ciénegas; freshwater marshlands; depressions; (sandy) banks of streams and rivers; along (soggy) edges of streams, creeks, rivers, washes, ponds, saltwater marshes and swamps; margins of arroyos and ponds; mudflats; benches; rocky terraces; bottomlands; rocky and cobbly-sandy floodplains; lowlands; mesquite bosques; along fencerows; sandy shores of reservoirs; sandy canal banks; ditches; cobbly-sandy, gravelly-sandy and sandy riparian areas; waste places and disturbed areas growing in shallow water; soggy and wet, moist, damp and dry rocky, shaley, cobbly-sandy, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-sandy loam, gravelly loam and loam ground; rocky clay, silty clay and clay ground, and silty ground, occurring from sea level to 8,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Solanum americanum* is native to south-central and southern North America; Central America and coastal islands in the Caribbean Sea, and northern, western, central and eastern South America, may be native to Eurasia. *5, 6, 18 (genus), 30, 43 (082311), 44 (082311 - color photograph), 46 (Page 759), 63 (082311 - color presentation), **85** (082411 - color presentation), 115 (color presentation), 124 (082311 - no record of species; genus record), 127 (082311 - no record of species)*

Solanum douglasii M.F. Dunal: Greenspot Nightshade

SYNONYMY: *Solanum nigrum* C. Linnaeus var. *douglasii* (M.F. Dunal) A. Gray. COMMON NAMES: Douglas Horse-nettle; Douglas Night Shade; Douglas Night-shade; Douglas Nightshade; Douglas' Horse-nettle; Douglas' Night Shade; Douglas' Night-shade; Douglas' Nightshade; Douglas's Horse-nettle; Douglas's Night Shade; Douglas's Night-shade; Douglas's Nightshade; Green-spot Nightshade; Greenspot Nightshade. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (1 to 6½ feet in height, one plant was reported as being 32 inches in height and 5 feet in width); the flowers may be blue-violet, blue-white, cream, pale lavender, lavender, pale purple, purple, purple-white, white, white tinged with purple, white-pale lavender, white-lavender or whitish; the anthers are yellow; flowering generally takes place between early February and early December (additional records: two for early January, two for mid-January and three for late December); the mature fruits may be black, blue-black, green or orange-brown. HABITAT: Within the range of this species it has been reported from mountains; mountaintops; mesas; plateaus; rocky and gravelly-loamy canyons; rocky canyon bottoms; chasms; bases of cliffs; talus slopes; crevices in cliffs and rocks; bluffs; wet meadows; foothills; bouldery and rocky hills; hilltops; bouldery and rocky hillsides; bouldery-gravelly, rocky, rocky-gravelly, rocky-sandy, rocky-clayey, gravelly, gravelly-sandy, gravelly-loamy, sandy-loamy, loamy, clayey and clayey-loamy slopes; rocky-sandy-loamy alluvial fans; rocky outcrops; amongst rocks; bouldery-sandy, clayey and clayey-loamy flats; basins; valley floors; coastal beaches; along rocky, rocky-gravelly, gravelly and gravelly-sandy roadsides; draws; gulches; gullies; ravines; seeps; springs; in rock along streams; along rocky streambeds; along creeks; along sandy creekbeds; silty-clayey riverbeds; within gravelly and sandy washes; drainages; within rocky drainage ways; oases; freshwater marshes; banks of creeks and rivers; (sandy) edges of washes and marshes; shores of lakes; gravelly and sandy terraces; bottomlands; floodplains; margins of charcos (stock tanks); ditches; sandy riparian areas; waste places, and disturbed areas growing in wet, moist and dry bouldery, bouldery-gravelly, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, gravelly, gravelly-sandy and sandy ground; rocky-gravelly-clayey loam, rocky-sandy loam, gravelly loam, sandy loam, clayey loam and loam ground; rocky-clayey, silty clay and clay ground, and silty ground, occurring from sea level to 8,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food and/or dye crop; it was also noted as having been used as a drug or medication and for body art. A bee (*Ptiloglossa* sp.) was observed and reported as gathering nectar from the flowers in early September. *Solanum douglasii* is native to southwest-central and southern North America. *5, 6, 15, 18 (genus), 43 (050610 - no record for *Solanum nigrum* var. *douglasii*), 44 (082411 - color photograph), 46 (Page 758), 58, 63 (050610 - color presentation), 77 (color photograph #98), **85** (082411 - color presentation), 124 (082411 - no record of species; genus record), 127, 140 (Pages 272 & 306)*

Solanum elaeagnifolium A.J. Cavanilles: Silverleaf Nightshade

COMMON NAMES: Arrebenta-cavalo (Portuguese: Brazil); Ashika (Keres: Cochiti)[140]; Buena [Mala] Mujer ("Good [Bad] Woman", Spanish: Sonora)[140]; Bull Nettle (a name also applied to other species, New Mexico); Bull-nettle (a name also applied to other species, New Mexico); Bull-nettle (English)[140]; Bullnettle (a name also applied to other species); Desert Nightshade (a name also applied to other species); Gáán Bidáá <bináá> (Athapascan: Western Apache)[140]; Ha'watapa (Language Isolate: Zuni); Horse Nettle (a name also applied to other species and the genus *Solanum*, Nebraska, New Mexico); Horse-nettle (a name also applied to other species and the genus *Solanum*, Nebraska, New Mexico); Iron-weed (English: Texas)[140];

Melãozinho-do-campo (Portuguese: Brazil); Nááłtsoí <náałshoih, ʾanatco-i> (Athapascan: Navajo)[140]; Pera ("Pear", (Spanish: Coahuila)[140]; Prairie-berry; Prickly Nightshade (Kansas); Purple Nightshade (a name also applied to other species); Rosillo (Spanish: Sonora)[140]; Saca Manteca ("Butter Puller", Spanish: Arizona, Sonora)[140]; Satansbos (Afrikaans); Silver Horse Nettle; Silver Horse-nettle; Silver Horsenettle; Silver Leaf Horse Nettle; Silver Leaf Horse-nettle; Silver Leaf Night Shade; Silver Leaf Nightshade; Silver Leafed Night Shade; Silver Leaved Horsenettle; Silver Leaved Nightshade; Silver Night Shade; Silver Night-shade; Silver Nightshade; Silver [-leaf] Nightshade (English)[140]; Silver-leaf Horse Nettle; Silver-leaf Horse-nettle; Silver-leaf Night-shade; Silver-leaf Nightshade; Silver-leafed Night-shade; Silver-leafed Nightshade; Silver-leaved Bull Nettle; Silver-leaved Horse Nettle; Silver-leaved Horse-nettle; Silver-leaved Horsenettle; Silver-leaved Nettle; Silver-leaved Nightshade; Silverleaf Bitter-apple; Silverleaf Horsenettle; Silverleaf Nightshade; Silverleaf-nettle; Tomato Weed (a name also applied to other species); Tomatillo de Buena Mujer ("Good Woman's Little Tomato", Spanish: Sonora)[140]; Trompillo ("Little Top", Spanish: New Mexico, Texas, Chihuahua, San Luis Potosí, Sonora)[140]; Trompillos (Mexico); Vakoa Hahaiñig ("Cracked Gourd", Uto-Aztecan: Akimel O'odham)[140]; Vakoa Hahaisig ("Gourd Broken Into Pieces", Uto-Aztecan: Akimel O'odham)[140]; Vakoa Hai ("Broken Gourd", Uto-Aztecan: Akimel O'odham)[140]; Vi'ul (Uto-Aztecan: Hiá Ceḍ O'odham; fruits)[140]; Wako Hahaisa (Uto-Aztecan: Tohono O'odham)[140]; White Horse Nettle; White Horse-nettle (English: New Mexico, Texas)[140]; White Horsenettle; White Weed (Texas), White-weed (English: Texas)[140]; Yellow Seed Night Shade. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (erect stems 8 inches to 2 feet, or possibly 40 inches, in height; plants were observed and described as being 8 inches in height with a crown 2 to 4 inches in width, plants were observed and described as being 10 to 12 inches in height and width, plants were observed and described as being 16 inches in height with a crown 8 inches in width); the leaves may be bluish-gray, gray, gray-green, grayish-green, greenish-gray or silvery; the star-like flowers (¾ to 1½ inch in diameter) may be light blue, blue, blue-lavender, blue-purple, dark blue, bluish-purple, bluish-violet, lavender, lavender-purple, light purple, purple, dark purple, violet, deep violet, violet-purple or white; the anthers are yellow; flowering generally takes place between late March and late November (additional records: one for mid-February and one for early March); the mature fruits (1/3 to 1/2 inch in diameter) are a golden, golden-brown, orange, orange-yellow or yellow berry. HABITAT: Within the range of this species it has been reported from mountains; mountaintops; sandy mesas; sandy plateaus; tablelands; bases of cliffs; rocky canyons; canyonsides; along bouldery-sandy, rocky and sandy canyon bottoms; chasms; rocky-sandy and sandy ridges; sandy-loamy bosques; sandy meadows; rocky-sandy rims of craters; rocky foothills; hills; hilltops; rocky and gravelly hillsides; along rocky, rocky-gravelly, stony, gravelly, gravelly-sandy, gravelly-loamy and sandy slopes; sandy-clayey-loamy bajadas; clayey outcrops; sandy lava flows; sand dunes; banks; prairies; sandy plains; gravelly, gravelly-loamy, sandy, loamy, clayey, silty and silty-clayey flats; gravelly-sandy uplands; basins; shaley-silty and sandy valley floors; along railroad right-of-ways; in roadways; along rocky, gravelly, gravelly-sandy, gravelly-sandy-clayey-loamy, gravelly-loamy, sandy and clayey roadsides; arroyos; clayey bottoms of arroyos; draws; silty bottoms of draws; springs; sandy streambeds; along creeks; rocky-gravelly-sandy and sandy creekbeds; along rivers; bouldery-cobbly-sandy and rocky-sandy riverbeds; along and in rocky, gravelly, gravelly-loamy and sandy washes; along rocky-sandy, pebbly-sandy, sandy and clayey-loamy drainages; along drainage ways; ciénegas; swampy areas; swales; (sandy and clayey) banks of arroyos and rivers; (clayey) edges of playas and ciénegas; margins of rivers; (rocky-sandy, gravelly and sandy-loamy) shores of ponds, lakes and playas; sandy beaches; benches; sandy terraces; sandy bottomlands; sandy and silty floodplains; mesquite bosques; along stony and gravelly-sandy fencelines; around stock tanks; clayey levees; along ditches; along stony ditch banks; bouldery-cobbly-sandy and sandy riparian areas; waste places, and disturbed areas growing in moist and dry bouldery-cobbly-sandy, bouldery-sandy, rocky, rocky-gravelly, rocky-gravelly-sandy, rocky-sandy, shaley, stony, gravelly, gravelly-sandy, pebbly-sandy and sandy ground; gravelly loam, gravelly-sandy-clayey loam, gravelly-clayey loam, gravelly-silty loam, sandy loam, sandy-clayey loam, clayey loam and loam ground; sandy clay, silty clay and clay ground, and rocky silty, shaley silty and silty ground, occurring from sea level to 8,000 feet in elevation in the forest, woodland, scrub; grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a food (berries used as a rennet to curdle milk), as a drug or medication and the dried berries were worn as jewelry. The green fruits may be poisonous. *Solanum elaeagnifolium* is native to southwest-central (records exist reporting that this plant occurred in the southwestern part of Pima County, Arizona from 9,570 to 20,490 years ago) and southern North America and southern South America. *5, 6, 15, 16, 18 (genus), 28 (color photograph 703), 43 (073009), 44 (031611), 46 (Page 758), 58, 63 (050610 - color presentation), 68, 77, 80 (This species is listed as a Secondary Poisonous Range Plant. "The toxic principle in these species is a glycoalkaloid to which the name solanine is applied. The toxicity of a given species may vary considerably. ... Poisoning by *Solanum* species does not always terminate in death. In the acute poisoning, nervous symptoms rapidly build to a maximum, and death or recovery occurs within a few hours to one or two days. Death is the result of paralysis. ... Where the plants are known to exist, animals should be watched closely for symptoms. The best control is to grub out the plants and remove them from the area. This should be done prior to seed development to prevent additional seeding."), **85** (082411 - color presentation), 86 (color photograph), 97, 101 (color photograph), 115 (color presentation), 124 (031611), 127, 140 (Page 271-272 & 306)*

Solanum nigrum var. *douglasii* (see *Solanum douglasii*)

Sterculiaceae: The Cacao Family

***Hermannia pauciflora* S. Watson: Santa Catalina Burstwort**

COMMON NAMES: Burstwort; Few-flowered Hermannia; Hierba del Soldado; Santa Catalina Burstwort; Sparseleaf Hermannia. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (trailing to erect stems 8 to 16 inches in height); the small flowers are orange, orange-yellow or yellow; based on few available records, flowering generally takes place between early January and mid-November (flowering records: one for early January, three for early mid-January, one for early February, three for mid-February, one for early March, two mid-March, two for late March, three for mid-April, one for late May, one for mid-July, three for late August, two for early September, one for late October and one for mid-November. HABITAT: Within the range of this species it has been reported from mountains; rocky canyons; along canyon bottoms; rocky gorges; talus slopes; crevices in rocks; soil pockets in rocky slopes; foothills; rocky hills; rocky hillsides; bedrock and rocky slopes; rocky outcrops; amongst rocks; alluvial fans; basins; arroyos; along and in rocky washes; floodplains, and riparian areas growing in dry rocky ground, occurring from sea level to 4,300 feet in elevation in the scrub, grassland and desertscrub ecological formations. NOTE: *Hermannia pauciflora* is native to southwest-central and southern North America. *5, 6, **8**, 13, 16, 43 (050710), 44 (082711 - no record of genus or species), 46 (Page 555), 63 (050710), 77, 85 (082711 - color presentation), 127 (082711 - no record of genus or species)*

Tamaricaceae: The Tamarix Family

***Tamarix chinensis* João de Loureiro: Five-stamen Tamarisk**

SYNONYMY: *Tamarix pentandra* P. Simon von Pallas. COMMON NAMES: Asiatic Tamarisk (Iowa); Cheng Liu (transcribed Chinese); China Tamarisk; Chinese Salt Cedar; Chinese Salt-cedar; Chinese Saltcedar; Chinese Tamarisk; Chinese Tamarix; Five Stamen Tamarisk; Five Stamen Tamarix; Five-stamen Tamarisk; Five-stamen Tamarix; Five-stamened Tamarisk; Fivestamen Tamarisk; Fivestamen Tamarix; French Tamarisk; Juniper Tamarix (a name also applied to other species); Pino Salado; Salt Cedar (a name also applied to other species and the genus *Tamarix*); Salt-cedar (a name also applied to other species and the genus *Tamarix*); Saltcedar (a name also applied to other species and the genus *Tamarix*); Tamarisco; Tamarisk (a name also applied to other species, the genus *Tamarix* and to the Tamaricaceae); Tamarix (a name also applied to other species, the genus *Tamarix* and to the Tamaricaceae). DESCRIPTION: Terrestrial perennial deciduous shrub or tree (4 to 33 feet in height); the bark is black, brown or reddish-brown; the branches are grayish-green; the twigs are green becoming purplish or reddish; the scale-like leaves are bluish-green, grayish-green or green; the flowers are cream, pale pink, pink, deep pink, pinkish-white, purplish, deep purplish-pink, red, reddish-pink, white or white-pink; flowering generally takes place between early March and late November. HABITAT: Within the range of this species it has been reported from mountains; rocky canyons; rocky canyon walls; bases of canyon walls; along rocky and sandy canyon bottoms; chasms; shaley knolls; ridges; rocky and sandy hillsides; rocky, rocky-sandy, shaley, gravelly-clayey, sandy-loamy, clayey, clayey-loamy and silty slopes; sand dunes; prairies; clayey-loamy plains; muddy, stony-cobbly, gravelly-sandy, gravelly-loamy, sandy, sandy-loamy, sandy-silty, clayey and clayey-loamy flats; rocky, rocky-sandy and sandy uplands; basins; hollows; valley floors; sandy valley bottoms; roadcuts; along roadsides; silty arroyos; within sandy draws; bottoms of arroyos; draws; within gulches; bottoms of gullies; along and in gravelly-sandy ravines; broad grassy bottoms of ravines; seeps; shaley and sandy springs; bouldery and sandy along streams; along and in streambeds; along creeks; along and in sandy and loamy creekbeds; in sand along rivers; along rocky-cobbly-sandy, gravelly-sandy, sandy and silty riverbeds; along and in rocky, rocky-sandy, gravelly, gravelly-sandy, sandy, sandy-clayey and sandy-silty washes; along and in drainages; along watercourses; tanks; in moist sandy soils along ponds; along lakes; lakebeds; ciénegas; marshy areas; vernally moist swales; along (muddy, rocky, rocky-gravelly-silty, sandy and clayey) banks of gullies, streams, creeks, creekbeds, rivers, washes and ponds; (gravelly and sandy) edges of streams, rivers, ponds, lakes and marshes; along (wet-moist, muddy and sandy) margins of rivers, ponds and lakes; shorelines of ponds and lakes; clayey mudflats; cobbly, gravel, gravelly-sand, sand and silt bars; rocky-sandy and sandy beaches; sandy benches; coves; riparian ledges; terraces; bottomlands; sandy floodplains; lowlands; mesquite bosques; dams; banks of stock tanks; rocky, shaley, sandy, sandy-clayey and clayey soils around and in reservoirs and dry beds; canals; along canal banks; along and in ditches; ditch banks; gravelly-sandy and sandy riparian areas, and disturbed areas growing in rimrock pavement; cryptogrammic; shallow water; muddy and wet, moist, damp and dry bouldery, stony-cobbly, rocky, rocky-cobbly-sandy, rocky-sandy, shaley, cobbly, gravelly, gravelly-sandy and sandy ground; gravelly loam, sandy loam, clayey loam and loam ground, gravelly clay, sandy clay and clay ground; and rocky-gravelly silty, sandy silty and silty ground, occurring from sea level to 8,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant that poses a significant threat to our native biotic communities. *Tamarix chinensis* is native to eastern Asia. *5, 6, 13, 16 (recorded as *Tamarix pentandra* Pall.), 18, 26 (note), 28 (recorded as *Tamarix pentandra*, color photograph 35), 43 (050710), 44 (082411 - color photograph), 46 (recorded as *Tamarix pentandra* Pall., Page 557), 52 (color photograph), 63 (050710 - color presentation), 68, 85 (082511 - color presentation), 91, 109 (color photograph of a *Tamarix* sp.), 124 (082411), **HR***

Tamarix pentandra (see *Tamarix chinensis*)

***Tamarix ramosissima* C.F. von Ledebour: Saltcedar**

COMMON NAMES: Atarfe; Common Salt Cedar; Common Salt-cedar; Common Saltcedar; Odessa Tamarix; Perstamarisk (Afrikaans); Pink Tamarisk; Pink Tamarix; Pino Salado; Salado; Salt Cedar (a name also applied to other species and the genus *Tamarix*); Salt-cedar (a name also applied to other species and the genus *Tamarix*); Saltcedar (a name also applied to other species and the genus *Tamarix*); Talaya; Tamarisco; Tamarisk (a name also applied to other species, the genus *Tamarix*

and to the Tamaricaceae); Tamarix (a name also applied to other species, the genus *Tamarix* and to the Tamaricaceae); Tamariz; Taray. DESCRIPTION: Terrestrial perennial winter deciduous or evergreen shrub or tree (2 to 33 feet in height; one shrubby tree was observed and described as being 20 feet in height with a crown 20 feet in width); the bark is red or reddish-brown; the scale-like leaves are grayish-green; the flowers may be pale lavender, lavender-pink, pale pink, pale pink-purple, pink, deep pink, pink-lavender, pink-white, pinkish-purple, purple, purple-pink, red, deep rose, white or white-pink; flowering generally takes place between early March and late November (additional records: one for early January, two for early February and one for mid-December). HABITAT: Within the range of this species it has been reported from mountains; plateaus; hanging gardens; rocky and stony canyons; bouldery-gravelly-sandy and sandy canyon bottoms; meadows; bluffs; ledges; foothills; rocky and cindery slopes; rocky outcrops; sand dunes; hummocks; plains; sandy flats; sandy basins; valley floors; along sandy roadsides; along and in sandy arroyos; along bottoms of arroyos; within shaley-silty draws; seeps; around springs; along streams; streambeds; along creeks; along and in bouldery-cobbly-sandy, rocky, rocky-sandy and sandy creekbeds; in clayey-loams along rivers; sandy and sandy-loamy riverbeds; along and in bouldery-sandy and sandy washes; along rocky-loamy drainages; around waterholes; lagoons; lakebeds; playas; silty marshy areas; saltwater marshes; clayey depressions; along sloughs; (clayey) banks of streambeds and rivers; (rocky-sandy, gravelly and sandy) edges of arroyos, streams, rivers, washes, pools, ponds, lakes and bogs; along (muddy, rocky, sandy and clayey) margins of creeks, pools, ponds and lakes; (clayey) shores of lakes; mudflats; sand bars; sandy-clayey beaches; sandy benches; sandy terraces; rocky bottomlands; floodplains; margins of stock tanks (charcos); reservoirs; sandy soils along canals; canal banks; along edges of canals; along sandy ditches; ditch banks; rocky-gravelly-sandy, rocky-sandy and sandy riparian areas, and disturbed areas growing in muddy, clayey-mucky and wet and moist bouldery-cobbly-sandy, bouldery-gravelly-sandy, rocky, rocky-gravelly-sandy, rocky-sandy, stony, cindery, gravelly, pebbly-sandy and sandy ground; rocky loam, sandy loam and clayey loam ground; sandy clay and clay ground, and shaley silty and sandy silty ground, occurring from sea level to 7,100 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant that poses a significant threat to our native biotic communities. Saltcedar is similar to and may be confused with Smallflower Tamarisk (*Tamarisk parviflora* DC.), Tamarisk flowers are 5-petaled and Smallflower Tamarisk flowers are 4-petaled, and the bark on the stems of Saltcedar is reddish-brown whereas on Smallflower Tamarisk it is brown to deep purple. Some Arizona populations of *Tamarix ramosissima* may have historically been referred to as *Tamarix pentandra*. Some botanists consider *Tamarix ramosissima* to be a synonymous with *Tamarix chinensis*. *Tamarix ramosissima* is native to eastern Europe and western and central Asia. *5, 6, 13 (Pages 97 & 98), 18 (note under *Tamarix chinensis*), 22 (color photograph), 26 (note), 43 (050810), 44 (040211 - color photograph), 46 (no record of species; genus, Page 557), 58, 63 (050810 - color presentation), 77, 85 (082511 - color presentation, included under *Tamarix chinensis*), 91 (*Tamarix chinensis* Lour. / *Tamarix ramosissima* Ledeb., Pages 384-386), 101 (color photograph), 109 (color photograph of a Tamarix), 124 (040211), 140 (Page 306), **HR***

Ulmaceae: The Elm Family

Celtis douglasii (see *Celtis laevigata* var. *reticulata*)

***Celtis ehrenbergiana* (J.F. Klotzsch) F.M. Liebmann: Spiny Hackberry**

SYNONYMY: *Celtis pallida* J. Torrey; *Celtis tala* J. Gillies ex J. É. Planchon var. *pallida* (J. Torrey) J. É. Planchon. COMMON NAMES: Acebuche (Spanish: Coahuila, Sonora)[140]; Bainora <vainora> (Uto-Aztecan: Cahita, Sonora)[140]; Bainoro; Capul <capui> ("Cherry or Capulí", Spanish: Sonora, Durango, Texas)[140]; Desert Hackberry; Garabato ("Iron Hook", Spanish: Sinaloa)[140]; Garambullo ("Spiny Plant", Spanish: Mayo, Sonora)[140]; Gec Cehd (Oto-Manguean: Zapotec)[140]; Granejo [Amarillo] ("[Yellow] Little Seed", Spanish: Chihuahua, Durango, Nuevo León, Sonora, Tamaulipas, Texas)[140]; Granjeno (Spanish); Guichi-bezia (Oto-Manguean: Zapotec)[140]; Gumbro <cumbro, cúmero> (Uto-Aztecan: Cahita, Mayo, Onavas Pima)[140]; [Desert, Spiny] Hackberry [Hagberry, Hegeberry] (English)[140]; Huasteco; [Granejo] Huasteco ("Huastec [Seeds]", Spanish: Tamaulipas)[140]; Jiłhazhí <jiłhazhi> (Jiłhazí is a name that is also applied to *Celtis reticulata* and *Sambucus nigra*, Athapascan: Navajo)[140], K:om (Uto-Aztecan: Onavas Pima), Ko:m <kohm> (Uto-Aztecan: Akimel O'odham, Tohono O'odham)[140]; Kuavulĭ <kókauli> (Uto-Aztecan: Akimel O'odham, Hiá Ceḍ O'odham)[140]; Kunwo (Uto-Aztecan: Yaqui)[140]; Kuwavul <ku'avor> (Uto-Aztecan: Tohono O'odham, Onavas Pima)[140]; Palo de Águila ("Eagle's Tree", Spanish: Sonora)[140]; Ptaacal (Hokan: Seri)[140]; Rompecapa ("Cape Tearer", Spanish: Oaxaca, Sonora)[140]; Spiny Desert Hackberry; Spiny Hackberry; Spiny [Shiny] Hackberry (English)[140]; Suhtú (Uto-Aztecan: Guarijío)[140]; Wusha'i (Uto-Aztecan: Onavas Pima)[140]. DESCRIPTION: Terrestrial perennial (drought-deciduous) evergreen shrub or tree (3 to 20 feet in height with rounded crowns; one plant was observed and described as being 7 feet in height with a crown 7 feet in width); one plant was observed and described as being 7 feet in height with a crown 13 feet in width); the bark is gray; the thorny branches are whitish-gray; the leaves are green or dark green; the inconspicuous flowers may be green, greenish-yellow, white-green or yellow, flowering generally takes place between early March and late October (flowering has also been reported as ending in November, flowering has also been reported as occurring year-round); the ripe fruits are orange, bright red, reddish-orange or yellow. HABITAT: Within the range of this species it has been reported from mountains; mesas; rocky and rocky-gravelly canyons; rocky canyon bottoms; rocky bases of cliffs; ridges; rocky ridgetops; foothills; rocky hills; rocky hillsides; bedrock, bouldery, rocky, gravelly, gravelly-loamy and gravelly-sandy slopes; bajadas; rocky outcrops; amongst boulders; coves; cobbly plains; gravelly-sandy and sandy flats; rocky-gravelly basins; along roadsides; along rocky and sandy arroyos; rocky and sandy bottoms of arroyos; draws; gullies; seeps; springs; along seeping streams; along streams; along and in streambeds; in sand along creeks; along rivers; bouldery-cobbly-sandy riverbeds; along and in gravelly and sandy washes; within drainages; banks of arroyos, rivers, washes and drainages; (sandy) edges of rivers; along margins of arroyos

and washes; benches; gravelly terraces; bottomlands; gravelly-clayey floodplains; mesquite bosques; around stock tanks (represos); riparian areas, and disturbed areas growing in muddy (rarely reported) and dry desert pavement; bouldery, bouldery-rocky, bouldery-cobbly-sandy, rocky, rocky-gravelly, cobbly, gravelly, gravelly-sandy and sandy ground; gravelly loam ground, and gravelly clay ground, occurring from sea level to 6,000 feet in elevation in the forest, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The small fruits are reportedly juicy and sweet. The Desert Hackberry may live to be more than 88 years of age and may be useful in controlling erosion. The Desert Hackberry is a larval food plant for the American Snout (*Libytheana carinenta*) and Empress Leilia (*Asterocampa leilia*) and is browsed by deer; the fruits are eaten by Northern Mockingbirds (*Mimus polyglottos*), Thrashers and other species of birds, small desert mammals, White-nosed Coati (*Nasua narica*), Coyotes (*Canis latrans*), foxes and Javelinas (*Peccari tajacu*). It provides a nesting site for the White-wing Dove (*Zenaida asiatica*) and cover for Gambel's Quail (*Callipepla gambelii gambelii*) as well as other birds and mammals. *Celtis ehrenbergiana* is native to south-central and southern North America; Central America and coastal islands in the Caribbean Sea, and western, eastern and southern South America. *5, 6, 13 (recorded as *Celtis tala* Gillies var. *pallida* (Torrey) Planch., Pages 155-156), 15 (recorded as *Celtis pallida* Torr.), 16 (recorded as *Celtis pallida* Torr.), 18, 26 (recorded as *Celtis pallida*, color photograph), 28 (recorded as *Celtis pallida*, color photograph 69), 43 (050810), 44 (120310 - no record of species; genus record), 46 (recorded as *Celtis pallida* Torr., Page 220), 48, 58 (recorded as *Celtis pallida* Torr.), 63 (050810), 77 (recorded as *Celtis pallida* Torr.), 85 (082611 - also recorded as *Celtis pallida* var. *pallida* Torrey), 91 (recorded as *Celtis pallida* Torr., Pages 154-156), 115 (color presentation), 124 (031611 - no record of species; genus record), 140 (recorded as *Celtis pallida* Torrey, placed in the Cannabaceae, Pages 272-273, 274 & 288), **WTK** (April 16, 2008)*

Celtis pallida (see *Celtis ehrenbergiana*)

Celtis pallida var. *pallida* (see footnote 85 under *Celtis ehrenbergiana*)

***Celtis laevigata* C.L. von Wildenow var. *reticulata* (J. Torrey) L.D. Benson: Netleaf Hackberry**

SYNONYMY: *Celtis douglasii* J.É. Planchon; *Celtis reticulata* J. Torrey. COMMON NAMES: ᵃ'qwá' <aqwa'> (Yuman: Walapai)[140]; Acibuche <acebuche> (Spanish: Chihuahua)[140]; Aceituna ("Olive", Spanish)[140]; Bainoro <vainora> (Spanish: Sonora)[140]; Canyon Hackberry; Cúmaro (Mexico, Sonora); [Palo] Cumbro (Spanish: Sinaloa)[140]; Cúmero <combro, cumaro, cumbro> (Uto-Aztecan: Cahita, Mayo, Sonora, Sinaloa)[140]; Didzé Bik'ǫǫdlizí <diʒé bekǫɬizí> (Athapascan: Navajo)[140], Douglas Hackberry; Douglas's Hackberry; False Elm; Garabato Blanco ("White Iron Hook", Spanish: Baja California)[140]; Gumbro (Uto-Aztecan: Onavas Pima); Hack Berry; Hackberry (a name also applied to the genus *Celtis*); [Net-leaf] Hackberry (English)[140]; I*Y*ntlidz ("Hard Seed", Athapascan: Chiricahua and Mescalero Apache)[140]; Jiłhááze (Athapascan: Western Apache)[140]; Jiłhazí <jilxazi, tjiłxájih> ("Chewing Plant" Jiłhazí is a name that is also applied to *Celtis palida* and *Sambucus nigra*, Athapascan: Navajo)[140]; Keʔmoci (Uto-Aztecan: Guarijío)[140]; Ko:m <kom> (Uto-Aztecan: Tohono O'odham)[140]; Kumar (Uto-Aztecan: Onavas Pima)[140]; Machaquí <uchieá> (Uto-Aztecan: Guarijío, Sonora)[140]; Membrillo (Spanish: San Luis Potosí)[140]; Net Leaf Hackberry; Net-leaf Hackberry; Net-leaf Sugar Hackberry; Net-leafed Hackberry; Net Leaved Hackberry; Net-leaved Hackberry; Netleaf Hackberry; Oklahoma Hackberry; Palo Blanco ("White Tree", Spanish: Arizona, Texas, Coahuila, Durango, Tamaulipas)[140]; Palo Duro ("Hard Tree", Spanish: New Mexico)[140]; Palo Mulato ("Mulato Tree", Spanish: Durango)[140]; Shikai-shikai-ka (Keres: Acoma, Laguna)[140]; Small-leaf Nettle Tree; Small-leaved Nettle Tree; Sugar-berry (a name also applied to the genus *Celtis*); Sugar-berry (English)[140]; Sugarberry (a name also applied to the genus *Celtis*); Thick-leaf Hackberry; Thick-leaved Hackberry; Vaior (Spanish: Mexico)[140]; Western Hackberry (a name also applied to other species); Western Hackberry (English)[140]. DESCRIPTION: Terrestrial perennial deciduous shrub or tree (40 inches to 60 feet in height with a rounded and spreading crown; stunted shrubs or trees up to 2 feet in height were observed and reported from forests at higher elevations, one tree was observed and described as being 13 feet in height and 16 feet in width, one tree was observed and described as being 30 feet in height and width); the bark is gray, dark gray or reddish-brown becoming "warty" with age; the twigs are reddish-brown; the upper surface of the leaves may be dark green or yellow-green and the lower surface is gray-green appearing in early April to late May developing fully in June, they turn yellow in the fall; the inconspicuous flowers are green or yellow-green; the anthers are green; the stigmas are whitish-green; flowering generally takes place between mid-March and mid-September; the fruits may be black, purplish, pale orange, orange, orange-red-brown, dark red, reddish or reddish-black. HABITAT: Within the range of this species it has been reported from mountains; mountainsides; rocky mesas; plateaus; rocky cliffs; hanging gardens; bases of cliffs; along bouldery, rocky, rocky-gravelly and gravelly-loamy canyons; canyonsides; bouldery, rocky, gravelly and gravelly-sandy-clayey canyon bottoms; chasms; gorges; bouldery talus; crevices in rocks; bluffs; ledges; rocky ridges; rocky ridgetops; foothills; sandy hills; rocky hillsides; bouldery, bouldery-sandy, rocky, rocky-sandy-clayey-loamy, rocky-loamy, shaley, shaley-gravelly, gravelly-loamy, sandy-loamy and loamy slopes; alluvial fans; rocky outcrops; amongst boulders and rocks; bases of rock slides; rocky and sandy alcoves; sandy lava flows; lava beds; sand dunes; shell banks; breaks; prairies; plains; sandy flats; basins; sandy valley floors; valley bottoms; along gravelly-loamy roadsides; along and in gravelly arroyos; sandy bottoms of arroyos; bottoms of draws; gulches; rocky gullies; ravines; sandy seeps; springs; along streams; along and in bouldery, gravelly-sandy and sandy streambeds; in sand along creeks; along and in bouldery and sandy creekbeds; along rivers; riverbeds; along and in rocky, rocky-gravelly, gravelly, sandy and sandy-clayey-loamy washes; rocky-sandy drainages; loamy drainage ways; along watercourses; oases; among and in pools; ponds; lakes; tanks; ciénegas; along (rocky) banks of arroyos, ravines, streams, streambeds, creeks, rivers, washes and drainages; (sandy) edges of arroyos, springs, streams and washes; along margins of rivers and ponds; shores of lakes; rocky-sandy and gravelly-sandy benches;

gravelly, sandy and silty-loamy terraces; silty bottomlands; along floodplains; mesquite bosques; fencerows; gravelly canal banks; along ditches; rocky-gravelly and sandy riparian areas, and disturbed areas growing in wet, moist, damp and dry (seasonally wet) bouldery, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, shaley, shaley-gravelly, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-sandy-clayey loam, gravelly loam, sandy loam, sandy-clayey loam, silty loam and loam ground; gravelly-sandy clay ground, and silty ground, occurring from 300 to 7,700 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, fiber and/or dye crop; it was also noted as having been used for tools, as a drug or medication or as a fuel. The Netleaf Hackberry may be useful in the rehabilitation of disturbed sites and suitable for planting in patios, yards and along streets in urban areas and may live to be 100 to 200 years in age. The Netleaf Hackberry provides cover and food for many species of birds and mammals; the American Beaver (*Castor canadensis*) feeds on the wood; the plant is browsed by Pronghorn (*Antilocapra americana*), Mule Deer (*Odocoileus hemionus*) and White-tailed Deer (*Odocoileus virginianus*); the fruit is eaten by wildlife; and Scrub Jays (*Aphelocoma californica*) feed on the leaf galls that form on the foliage. When restoring the floodplains of the major river systems in this township consider including the following plants in the mix: Inland Saltgrass (*Distichlis spicata*), Vine Mesquite Grass (*Panicum obtusum*), Indian Rushpea (*Hoffmannseggia glauca*), Little Snapdragon Vine (*Maurandella antirrhiniflora*), Schott Yellowhood (*Nissolia schottii*), Fingerleaf Gourd (*Cucurbita digitata*), Red Sprangletop (*Leptochloa panicea* subsp. *brachiata*), Whiplash Pappusgrass (*Pappophorum vaginatum*), Alkali Sacaton (*Sporobolus airoides*), Big Sacaton (*Sporobolus wrightii*), Hartweg Twinevine (*Funastrum cynanchoides*), Hartweg Twinevine (*Funastrum cynanchoides* subsp. *heterophyllum*), Virginia Creeper (*Parthenocissus quinquefolia*), Canyon Grape (*Vitis arizonica*), Drummond Clematis (*Clematis drummondii*), Mojave Seablite (*Suaeda moquinii*), Prairie Acacia (*Acacia angustissima*), Allthorn (*Koeberlinia spinosa* var. *spinosa*), Desert Saltbush (*Atriplex polycarpa*), Fourwing Saltbush (*Atriplex canescens*), Wright Lycium (*Lycium andersonii* var. *wrightii*), Torrey Lycium (*Lycium torreyi*), Arrowweed (*Pluchea sericea*), Fremont Lycium (*Lycium fremontii*), Creosote Bush (*Larrea tridentata* var. *tridentata*), Greythorn (*Ziziphus obtusifolia* var. *canescens*), Southern Cattail (*Typha domingensis*), Seep Willow (*Baccharis salicifolia*), Whitethorn Acacia (*Acacia constricta*), Desert Hackberry (*Celtis ehrenbergiana*), Catclaw Acacia (*Acacia greggii* var. *greggii*), Soaptree Yucca (*Yucca elata*), Coyote Willow (*Salix exigua*), Screwbean Mesquite (*Prosopis pubescens*), Common Cottonbush (*Cephalanthus occidentalis*), Desert Elderberry (*Sambucus nigra* ssp. *canadensis*), Blue Paloverde (*Parkinsonia florida*), Western Soapberry (*Sapindus saponaria* var. *drummondii*), Netleaf Hackberry (*Celtis laevigata* var. *reticulata*), Velvet Mesquite (*Prosopis velutina*), Western Black Willow (*Salix gooddingii*), Velvet Ash (*Fraxinus velutina*), Arizona Black Walnut (*Juglans major*), Fremont Cottonwood (*Populus fremontii* subsp. *fremontii*). *Celtis laevigata* var. *reticulata* is native to south-central and southern North America. *5, 6, 13 (Pages 154-155), 15 (recorded as *Celtis reticulata* Torr.), 18, 26 (recorded as *Celtis reticulata*, color photograph), 28 (recorded as *Celtis reticulata*, color photograph 70), 43 (120410 - *Celtis laevigata* var. *reticulata* (Torr.) L.D. Benson), 44 (031611 - located in the Common Names link under *Celtis reticulata* Torr.; genus record), 46 (Page 220), 48, 52 (recorded as *Celtis reticulata*, color photograph), 53, 58 (recorded as *Celtis reticulata* Torr.), 63 (050910 - color presentation), 85 (082611 - color presentation), 115 (color presentation), 124 (031611), 127, 140 (recorded as *Celtis reticulata* Torrey, placed in the Cannabaceae, Pages 108, 272, 273-274 & 288), **HR***

Celtis reticulata (see *Celtis laevigata* var. *reticulata*)

Celtis tala var. *pallida* (see *Celtis ehrenbergiana*)

Verbenaceae: The Verbena Family

***Glandularia bipinnatifida* (T. Nuttall) T. Nuttall: Dakota Mock Vervain**

COMMON NAMES: Alfombrilla (Hispanic); Alfombrilla de Campo (Hispanic); Azul Chichique (Hispanic); Dakota Mock Vervain; Dakota Mock-vervain; Dakota Verbena; Dakota Vervain; Davis Mountain Mock Vervain; Desert Vervain; Hierba del Ojo (Hispanic); Moradilla (Hispanic); Prostrate Vervain; Small-flowered Verbena; Tatsundiku Moradu (Purépecha); Vervain (a name also applied to other species, the genus *Verbena* and the Verbenaceae); Wright Vervain. DESCRIPTION: Terrestrial annual or perennial forb/herb (prostrate, decumbent, ascending to erect stems 4 to 20 inches in height); the leaves may be gray, dark green or yellow-green; the flowers may be light blue, pale blue-violet, blue, blue-lavender, blue-purple, bluish-lavender, bluish-purple, light lavender, lavender, lavender-blue, lavender-pink, lavender-purple, periwinkle blue, pale pink-lavender, pink, deep pink, pink-lavender, pink-purple, pale purple (aging blue), purple, purple & white, purplish-pink, rose, rose-pink, rose-purple, violet, violet-purple, white or yellow; flowering generally takes place between early February and early November (additional record: one for early December). HABITAT: Within the range of this species it has been reported from mountains; rocky mountaintops; rocky mountainsides; grassy mesas; rocky plateaus; shaley rimrock; cliffs; along rocky, gravelly and gravelly-loamy canyons; rocky canyon walls; along sandy canyon bottoms; scree; crevices in rocks; bluffs; rocky buttes; buttes; knolls; rocky and rocky-gravelly ridges; rocky and rocky-gravelly ridgetops; clearings in forests; meadows; foothills; rocky, rocky-loamy and clayey hills; rocky-gravelly-loamy hilltops; rocky and rocky-gravelly hillsides; bouldery, rocky, rocky-loamy, rocky-clayey, rocky-clayey-loamy, shaley, stony, gravelly, gravelly-sandy, gravelly-silty, sandy, sandy-clayey-loamy, loamy, loamy-clayey, clayey and clayey-loamy slopes; bajadas; pediments; bedrock and rocky outcrops; amongst boulders; lava beds; sand hills; dunes; shaley, loamy and loamy-clayey banks; breaks; rocky, rocky-loamy, gravelly-loamy, sandy, loamy, loamy-

clayey and silty prairies; gravelly-loamy, sandy, sandy-loamy and sandy-clayey-loamy plains; sandy and sandy-clayey-loamy flats; loamy, loamy-clayey and silty uplands; sandy valley floors; along railroad right-of-ways; along and in gravelly-loamy roadbeds; roadcuts; along rocky, rocky-silty, shaley, cindery, gravelly, gravelly-sandy-loamy, gravelly-loamy, sandy, sandy-loamy, clayey-loamy and silty roadsides; clayey-loamy arroyos; chutes; rocky draws; bottoms of draws; within rocky gulches; sandy bottoms of gulches; bouldery-rocky gullies; stony ravines; seeps; springs; in clay along streams; along and in rocky streambeds; in sand along creeks; sandy creekbeds; along and in rivers; along and in riverbeds; along and in gravelly and sandy washes; sandy drainages; along drainage ways; in rocks around ponds; bogs; bowls; sumps; swales; along (stony, gravelly-sandy, clayey and silty) banks of arroyos, draws, creeks, rivers and bowls; (silty) edges of streams and washes; margins of rivers and lakes; shores of lakes; terraces; sandy floodplains; lowlands; flanks of stock tanks; sandy and clayey ditches; sandy and clayey-loamy riparian areas, and disturbed areas growing in moist and dry bouldery, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, shaley, stony, stony-sandy, cindery, cindery-gravelly, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-gravelly loam, rocky-clayey loam, gravelly loam, gravelly-sandy loam, gravelly-clayey loam, sandy loam, sandy-clayey loam, clayey loam, silty loam, silty-clayey loam and loam ground; rocky clay, loamy clay, silty clay and clay ground, and rocky silty, gravelly silty and silty ground, occurring from 700 to 10,100 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. The flowers may be fragrant. *Glandularia bipinnatifida* is native to south-central and southern North America and Central America. *5, 6, 15, 18, 28 (recorded as *Verbena bipinnatifida*, color photograph 638), 30, 43 (051110 - *Glandularia bipinnatifida* Nutt.), 44 (082611 - no listing recorded under Common Names), 46 (recorded as *Verbena bipinnatifida* Nutt., Page 727), 48 (genus), 58, 63 (051110), **85** (082611), 115 (color presentation), 124 (082611), 127, 140 (recorded as *Glandularia bipinnatifida* (Nuttall) Nuttall [*Verbena bipinnatifida* Nuttall], Page 306)*

***Glandularia gooddingii* (J.I. Briquet) O.T. Solbrig: Southwestern Mock Vervain**

SYNONYMY: *Verbena gooddingii* J.I. Briquet; *Verbena gooddingii* J.I. Briquet var. *nepetifolia* I. Tidestrøm. COMMON NAMES: Desert Verbena (a name also applied to other species); Desert Vervain; Goodding Glandularia; Goodding Mock Vervain; Goodding Verbena; Goodding Vervain; Goodding's Glandularia; Goodding's Mock Verbena; Goodding's Mock Vervain; Goodding's Verbena; Goodding's Vervain; Gooding Verbena (error); Mexican Vervain; Mojave Verbena; Southwestern Mock Vervain; Southwestern Mock Vervain; Southwestern Verbena; Southwestern Vervain; Sweet William; Verbena (a name also applied to other species, the genus *Verbena* and the Verbenaceae); Vervain (a name also applied to other species, the genus *Verbena* and the Verbenaceae). DESCRIPTION: Terrestrial perennial forb/herb (6 inches to 2 feet in height; one plant was observed and described as being 6 to 10 inches in height and 6 inches in width, one plant was observed and described as being 24 inches in height and 12 inches in width); the leaves are gray-green, green or dark green; the flowers may be light blue, blue, blue-lavender, blue-purple, blue-violet, bluish-purple, pale lavender, lavender, lavender-blue, lavender-purple, magenta, pink, pink-lavender, pink-purple, pink-violet, light purple, purple, purple-blue, purple-lavender, purplish-pink, reddish-violet, rose-pink, sky blue or white-lavender; flowering generally takes place between early February and mid-October (additional records: one for early November, one for mid-November, two for late November and one for early December). HABITAT: Within the range of this species it has been reported from mountains; cobbly-gravelly and gravelly mesas; plateaus; rocky cliffs; along canyons; bouldery-cobbly, rocky, gravelly and sandy canyon bottoms; rock cliffs; talus slopes; crevices in rocks; rocky ledges; rocky-sandy and sandy ridges; rocky ridgetops; meadows; cinder cones; gravelly, gravelly-sandy and sandy foothills; rocky hills; hilltops; rocky hillsides; bouldery-sandy, rocky, rocky-gravelly, gravelly and clayey-loamy slopes; rocky outcrops; amongst boulders; rocky plains; sandy and clayey-loamy flats; sandy valley floors; in roadways; along rocky, cindery, gravelly, gravelly-sandy-clayey-loamy, gravelly-loamy, pebbly, sandy, sandy-loamy and loamy roadsides; within rocky and gravelly arroyos; rocky bottoms of arroyos; gravelly gulches; bouldery-rocky ravines; seeps; springs; along and in streambeds; along creeks; creekbeds; along rivers; along and in rocky, rocky-sandy, gravelly and sandy washes; drainages; around pools; playas; ciénegas; (sandy and silty) banks of creeks, rivers and washes; (gravelly-sandy and silty) edges of streambeds and washes; margins of washes; sand bars; cobbly benches; shelves; terraces; sandy bottomlands; sandy-clayey floodplains; rocky, cobbly-gravelly, gravelly and sandy riparian areas; recently burned areas of forests, and disturbed areas growing in dry bouldery, bouldery-rocky, bouldery-cobbly, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, stony, cobbly, cobbly-gravelly, cindery, gravelly, gravelly-sandy, pebbly and sandy ground; rocky-gravelly loam, gravelly loam, gravelly-sandy-clayey loam, gravelly-clayey loam, sandy loam, clayey loam and loam ground; bouldery clay, sandy clay and clay ground, and powdery-silty and silty ground, occurring from 500 to 7,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The flowers may be fragrant. *Glandularia gooddingii* is native to southwest-central and southern North America. *5, 6, 15, 16, 28 (color photograph 636), 43 (073109), 44 (082611 - no listing recorded under Common Names, common names listing recorded under *Verbena gooddingii* Briq., color photograph), 46 (recorded as *Verbena gooddingii* Briq., Pages 726-727 and *Verbena gooddingii* Briq. var. *nepetifolia* Tidestrøm, Pages 726-727), 48 (genus), 63 (051410), 77 (recorded as *Verbena gooddingii* Briq., color photograph #53), **85** (082611 - color presentation), 115 (color presentation), 124 (082611 - no record of species; genus record), 140 (Page 306)*

Lantana horrida (see *Lantana urticoides*)

Verbena gooddingii (see *Glandularia gooddingii*)

Verbena gooddingii var. *nepetifolia* (see *Glandularia gooddingii*)

***Lantana urticoides* A. von Hayek: West Indian Shrubverbena**

SYNONYMY: *Lantana horrida* auct. non K.S. Knuth. COMMON NAMES: Bunchberry; Calico Bush; Common Lantana; Common Verbena; Hierba de Cristo; Lantana (a name also applied to other species and the genus *Lantana*); Texas Lantana; Trailing Lantana; West Indian Shrub-verbena; West Indian Shrubverbena; Western Lantana. DESCRIPTION: Terrestrial perennial evergreen subshrub (4 to 8½ feet in height); the flowers may be orange, orange-yellow, red, rose-yellow, yellow or bright yellow (fading to orange or orange-red); flowering generally takes place between early February and late October (based on few flowering records: one for early February, one for early March, one for mid-July, one for mid-August, one for late August, one for early September and two for late October); the fruits are black or deep blue-black. HABITAT: Within the range of this species it has been reported from mountains; canyons; along gravelly-sandy canyon bottoms; slopes; plains; sandy flats; roadsides; streams; riverbeds; washes; watersheds; banks of streams; lowlands; riparian areas, and disturbed areas growing in dry gravelly-sandy and sandy ground, occurring at from near sea level to 4,000 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant that poses a significant threat to our native biotic communities. *Lantana urticoides* plant is native to southwest-central (Texas) and southern North America. *5, 6, 13 (recorded as *Lantana horrida* H.B.K.), 16 (recorded as *Lantana horrida* H.B.K.), 43 (051410), 44 (082611 - no listing recorded under Common Name; genus record), 46 (recorded as *Lantana horrida* H.B.K., Page 728), 63 (051410), 80 (Species in the genus *Lantana* are considered to be Rarely Poisonous and Suspected Poisonous Range Plants. "Two species of these poisonous ornamental shrubs have escaped along streams in western Pima and Santa Cruz Counties." Species in the genus *Lantana* are considered to be Poisonous Cropland and Garden Plants. "All parts of this ornamental shrub are poisonous and have caused photosensitization and death of livestock. Also berries have poisoned children."), 85 (082611), 97, 124 (082611 - no record of genus or species), **HR***

Viscaceae (Loranthaceae): The Christmas Mistletoe Family

***Phoradendron californicum* T. Nuttall: Mesquite Mistletoe**

SYNONYMY: *Phoradendron californicum* T. Nuttall var. *distans* W. Trelease. COMMON NAMES: Acacia Mistletoe; American Mistletoe (a name also applied to the genus *Phoradendron*); California Mistletoe; California Mesquite Mistletoe; Chayal (Uto-Aztecan: Cahuilla)[140]; Chile de Espino ("Spiny Chile", Spanish: Sonora)[140]; Desert [Mesquite] Mistletoe (English)[140]; Haakvoḍ (Uto-Aztecan: Akimel O'odham)[140]; Ha:hwaḍ; Ha:kvaḍ (Uto-Aztecan: Hiá Ceḍ O'odham)[140]; Ha:kwaḍ <hakowa't> (Uto-Aztecan: Tohono O'odham)[140]; Haramkulyi (Uto-Aztecan: Mountain Pima)[140]; Kanúc (Yuman: Maricopa)[140]; Mesquite American Mistletoe; Mesquite Mistletoe; Pohótela ("Phainopepla" because the Phainopepla disperses the seeds, Uto-Aztecan: Mayo)[140]; Sxacál [Sxyacál] (Yuman: Cocopa)[140]; To:kĭ (Uto-Aztecan: Hiá Ceḍ O'odham, Arizona)[140]; To(a)ker <toc'guer> ("On The Oak", Uto-Aztecan: Mountain Pima)[140]; Toji (Spanish: Sonora)[140]; Western Dwarf Mistletoe. DESCRIPTION: Terrestrial perennial subshrub or shrub (8 inches to 5 feet in height; one clump was observed and described as being 16 inches in length and 36 inches in width); the stems (16 to 40 inches in length) may be brown, green, green-reddish, dark olive-green, reddish, red-brown, yellow-green or yellowish; the fragrant flowers are greenish-yellow or yellow-green; the anthers are yellow; flowering generally takes place between late July and early June (additional records: one record for late June and one record for early July, flowering beginning in January and ending in November has also been reported); the fruits may be orange, orange-pink, pink, pink-red, pale red, reddish, red-orange, salmon (reported on surfaces exposed to sunlight), white, white-pink, white-reddish or whitish to yellow-white (reported on surfaces not exposed to sunlight) with the older berries turning brown-red or red. HABITAT: This partial parasite was observed growing on Catclaw Acacia, Whitethorn Acacia, Kearney Condalia, Velvet Mesquite, Blue Paloverde and Foothill Paloverde, and is commonly reported as growing on: *Acacia spp.* (*Acacia constricta*, Whtitethorn Acacia; *Acacia farnesiana*, Sweet Acacia, and *Acacia greggii*, Catclaw Acacia); *Condalia spp.* (*Condalia globosa*, Bitter Snakewood and *Condalia warnockii*, Kearney Snakewood); *Larrea tridentata*, Creosote Bush; *Olneya tesota*, Desert Ironwood; *Parkinsonia spp.* (*Parkinsonia aculeata*, Jerusalem Thorn; *Parkinsonia florida*, Blue Palo Verde; *Parkinsonia microphylla*, Yellow Palo Verde, and *Parkinsonia praecox*, Sonoran Palo Verde); *Prosopis spp.* (*Prosopis glandulosa*, Honey Mesquite; *Prosopis pubescens*, Screwbean Mesquite, and *Prosopis velutina*, Velvet Mesquite); *Simmondsia chinensis*, Jojoba, and *Ziziphus obtusifolia*, Lotebush, occurring from sea level to 5,100 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: When removing Mesquite Mistletoe from the trees and shrubs on your property consider leaving some of the plants for wildlife. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a food (berries) and as a drug or medication. The flowers are fragrant. The Northern Mockingbird (*Mimus polyglottos*) and Phainopepla (*Phainopepla nitens*) feed on the berries; White-wing Doves (*Zenaida asiatica*) and Verdins (*Auriparus flaviceps*) nest in the stems, and Mourning Doves (*Zenaida macroura*), Gambel's Quail (*Callipepla gambelii*) as well as other birds take refuge in the stems. *Phoradendron californicum* is native to southwest-central and southern North America. *5, 6, 13 (Pages 285-286, color photograph: Plate U.2., Page 406), 15, 16, 28 (color photograph 799), 43 (051710 - *Phoradendron californicum* var. *distans* Trel. in Trel.), 44 (082611), 46 (recorded as *Phoradendron californicum* Nutt. and *Phoradendron californicum* Nutt. var. *distans* Trelease, Page 224), 58, 63 (051410 - color presentation), 77, 80 (Species of the genus *Phoradendron* are considered to be Rarely Poisonous and Suspected Poisonous Range Plants. "Cattle may be killed by browsing these parasitic forbs, but plants are unpalatable and poisoning is rare. Also children

may be poisoned by eating the berries."), **85** (082611 - color presentation), 97, 115 (color presentation), 124 (082611 - no record of genus or species), 127, 140 (Pages 276-278 & 305 - placed in the Santalaceae), ADS (Kissing plant is a tree killer, Tuesday, November 30, 2010, Section A, Pages 1&4, retort Friday, December 3, 2010, Section A, Page 17: Story missed positive points on mistletoe), **WTK** (April 16, 2008)*

Phoradendron californicum var. *distans* (see *Phoradendron californicum*)

Vitaceae: The Grape Family

Cissus trifoliata **(C. Linnaeus) C. Linnaeus: Sorrelvine**

COMMON NAMES: Cow Itch; Cow-itch; Cut-leaf Cissus; Cut-leaved Cissus; Grape Ivy; Hierba del Buey; Ivy Treebine; Marinevine; Possum Grape (a name also applied to the genus *Cissus*); Possum-grape; Sorrelvine; Vine-sorrel; Yerba del Buey (Southern United States); Yuku Wiroa (Yaqui). DESCRIPTION: Terrestrial perennial evergreen or deciduous vine (clambering, climbing, scrambling, sprawling, trailing or twining stems 32 inches to 17 feet in length), the succulent leaves are green; the flowers are cream, green, green-yellow or yellow; based on few records located, flowering generally takes place between mid-July and late September (flowering records: one for mid-July, one for early August, two for late August, six for early September, one for mid-September and one for late September). HABITAT: Within the range of this species it has been reported from mountains; cliffs; canyons; bouldery canyon bottoms; rocky gorges; crevices in bedrock; hills; rocky hillsides; bouldery and rocky outcrops; amongst boulders and rocks; sandy-silty plains; dunes; rocky banks; railroad right-of-ways; gullies; along washes; sandy drainages; (rocky) banks of washes; floodplains, and riparian areas growing in dry bouldery, rocky and sandy ground and sandy silty ground, occurring from sea level to 6,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, but is sensitive to frost. The tubers of this plant are reportedly poisonous. *Cissus trifoliata* is native to south-central and southern North America and northern South America and coastal islands in the Caribbean Sea. *5, 6, 13 (Page 154), 15, 18, 43 (102110 - *Cissus trifoliata* L.), 44 (082611 - no record of genus or species), 46 (Page 536), 63 (102110 - color presentation), **85** (082611 - color presentation), 106 (102110), 124 (082611), 140 (Page 306)*

Vitis arizonica **G. Engelmann: Canyon Grape**

SYNONYMY: *Vitis arizonica* G. Engelmann var. *glabra* T.V. Munson; *Vitis treleasei* T.V. Munson ex L.H. Bailey. COMMON NAMES: Arizona Grape; Arizona Wild Grape; Bakámai Bišáparagai (Uto-Aztecan: Northern Tepehuan)[140]; Canyon [Arizona, Gulch, Wild] Grape (English)[140]; Ch'il Na'atł'o'ii ("Weaving Plant", Athapascan: Navajo)[140]; Dahts'aa' <dasts'aa, dahts'aa' benanisdizí, tach'aa> (Athapascan: Western Apache)[140]; Dastsa <dastasa> (Athapascan: Chiricahua and Mescalero Apache)[140]; Gulch Grape; I'icamác (Yuman: Maricopa)[140]; Idjérkʳa (Yuman: Havasupai)[140]; Isampu (Uto-Aztecan: Panamint)[140]; Itcêqª <i'je:qa> (Yuman: Walapai)[140]; Jeyulí (Uto-Aztecan: Guarijío)[140]; Mákwit (Uto-Aztecan: Luiseño)[140]; Mischiñ Uuḍvis <mischiñ huuḍvis> (Uto-Aztecan: Akimel O'odham)[140]; Ó:va (Uto-Aztecan: Hopi)[140]; Parra ("Vine", Spanish: Tamaulipas)[140]; Parra Cimarrona (Hispanic); Parra del Monte [Silvestre] ("Wild Grape", Spanish: Arizona, Texas, Chihuahua)[140]; Shohar U'ushi (Uto-Aztecan: Mountain Pima)[140]; Sonótova (Uto-Aztecan: Mono)[140]; Sụụ'rọ'oʔnapụ (Uto-Aztecan: Ute)[140]; Tutzé (Athapascan: Jicari-lla Apache)[140]; U´li (Hispanic); U:dvis (Uto-Aztecan: Hiá Ceḍ O'odham)[140]; U:ḍwis (Uto-Aztecan: Tohono O'odham)[140]; U:va <uuwa> (Uto-Aztecan: Onavas Pima)[140]; ʔU:vs (Yuman: Cocopa)[140]; Uirí (Uto-Aztecan: Guarijío)[140]; Urí <uli> (Uto-Aztecan: Tarahumara)[140]; Uuva (Uto-Aztecan: Yaqui)[140]; Uva [Cimarrón[("Wild Grape", Spanish: Chihuahua, Sonora)[140]; Uva de Monte (Hispanic); Uva Silvestre (Hispanic); Vid ("Vine", Spanish)[140]; Wild Grape (a name also applied to other species, the genus *Vitis* and to the Vitaceae). DESCRIPTION: Terrestrial perennial deciduous vine (clambering, climbing scrambling, sprawling, spreading, trailing and/or twining stems 16 inches to 33 feet in length); the bark is red-brown; the heart-shaped leaves are green, dark green or yellow-green; the stems may be reddish; the tiny flowers may be cream-white-yellow, cream-yellow, pale green, greenish, white, greenish-white, greenish-yellow, pale yellow, yellow, yellow-green or yellowish-white; flowering generally takes place between early April and late June (additional records: one for mid-July and one for late August; flowering in March has also been reported); the mature fruits (¼ to ¾ inch in diameter, juicy with a few large seeds) may be black, dark blue, blue-black, dark blue-purple, deep purple or purple sometimes with a (glaucous) bloom. HABITAT: Within the range of this species it has been reported from mountains; plateaus; cliffs; along rocky, rocky-clayey, gravelly-sandy, sandy and clayey-loamy canyons; canyon walls; rocky, stony and sandy canyon bottoms; chasms; bases of cliffs; along talus; crevices; bluffs; along rocky ledges; meadows; hills; hillsides; rocky escarpments; bouldery-cobbly, rocky, rocky-loamy, gravelly, gravelly-sandy and sandy slopes; bajadas; rock outcroppings; amongst boulders and rocks; shaded alcoves; gravelly flats; sandy basins; valley floors; along gravelly roadsides; within arroyos; bottoms of arroyos; within rocky draws; gulches; rocky ravines; seeps; along springs; along streams; along and in rocky-gravelly-sandy streambeds; along and in bouldery creeks; along rocky, rocky-sandy and sandy-clayey creekbeds; riverbeds; along and in rocky and sandy washes; along watercourses; in bedrock and bouldery-rocky drainages; along and in lakes; boggy areas; along rocky banks of streams, creeks, creekbeds, rivers, washes and lakes; sandy edges of rivers and washes; along rocky shores of lakes; benches; sandy bottomlands; floodplains; along fencelines; in ditches; ditch banks; bouldery, bouldery-sandy, rocky, sandy and sandy-clayey riparian areas, and disturbed areas growing in shallow water and wet, moist, damp and dry bouldery, bouldery-rocky, bouldery-cobbly, bouldery-sandy, rocky, rocky-gravelly-sandy, rocky-sandy shaley, stony, gravelly, gravelly-sandy and sandy ground; rocky loam, gravelly loam, sandy loam and clayey loam ground, and rocky clay, sandy clay and clay ground, occurring from 2,000 to 9,200 feet in elevation in the forest, woodland,

scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food and/or beverage crop; it was also noted as having been used as a toy or in games, as a love medicine and for ceremonial items. The flowers may be fragrant. The Canyon Grape may be useful in controlling erosion along drainages. Birds feed on the berries. Canyon Grape is useful in controlling erosion along creeks. When restoring the floodplains of the major river systems in this township consider including the following plants in the mix: Inland Saltgrass (*Distichlis spicata*), Vine Mesquite Grass (*Panicum obtusum*), Indian Rushpea (*Hoffmannseggia glauca*), Little Snapdragon Vine (*Maurandella antirrhiniflora*), Schott Yellowhood (*Nissolia schottii*), Fingerleaf Gourd (*Cucurbita digitata*), Red Sprangletop (*Leptochloa panicea* subsp. *brachiata*), Whiplash Pappusgrass (*Pappophorum vaginatum*), Alkali Sacaton (*Sporobolus airoides*), Big Sacaton (*Sporobolus wrightii*), Hartweg Twinevine (*Funastrum cynanchoides*), Hartweg Twinevine (*Funastrum cynanchoides* subsp. *heterophyllum*), Virginia Creeper (*Parthenocissus quinquefolia*), Canyon Grape (*Vitis arizonica*), Drummond Clematis (*Clematis drummondii*), Mojave Seablite (*Suaeda moquinii*), Prairie Acacia (*Acacia angustissima*), Allthorn (*Koeberlinia spinosa* var. *spinosa*), Desert Saltbush (*Atriplex polycarpa*), Fourwing Saltbush (*Atriplex canescens*), Wright Lycium (*Lycium andersonii* var. *wrightii*), Torrey Lycium (*Lycium torreyi*), Arrowweed (*Pluchea sericea*), Fremont Lycium (*Lycium fremontii*), Creosote Bush (*Larrea tridentata* var. *tridentata*), Greythorn (*Ziziphus obtusifolia* var. *canescens*), Southern Cattail (*Typha domingensis*), Seep Willow (*Baccharis salicifolia*), Whitethorn Acacia (*Acacia constricta*), Desert Hackberry (*Celtis ehrenbergiana*), Catclaw Acacia (*Acacia greggii* var. *greggii*), Soaptree Yucca (*Yucca elata*), Coyote Willow (*Salix exigua*), Screwbean Mesquite (*Prosopis pubescens*), Common Cottonbush (*Cephalanthus occidentalis*), Desert Elderberry (*Sambucus nigra* ssp. *canadensis*), Blue Paloverde (*Parkinsonia florida*), Western Soapberry (*Sapindus saponaria* var. *drummondii*), Netleaf Hackberry (*Celtis laevigata* var. *reticulata*), Velvet Mesquite (*Prosopis velutina*), Western Black Willow (*Salix gooddingii*), Velvet Ash (*Fraxinus velutina*), Arizona Black Walnut (*Juglans major*), Fremont Cottonwood (*Populus fremontii* subsp. *fremontii*). *Vitis arizonica* is native to southwest-central and southern North America. *5, 6, 13, 15, 18 (genus), 28 (color photograph), 30, 43 (080209), 44 (041312 - no record of species; genus record), 46 (*Vitis arizonica* Engelm., Page 535; *Vitis arizonica* Engelm. var. *glabra* Munson, Page 535 and *Vitis treleasei* Munson - note, Page 535), 48, 58, 63 (051510 - color presentation), **85** (051510 - color presentation), 115 (color presentation), 124 (041312 - no record of species; genus record), 125, 127, 140 (Pages 278-280 & 307)*

Vitis arizonica var. *glabra* (see *Vitis arizonica*)

Vitis treleasei (see *Vitis arizonica*)

Zygophyllaceae: The Creosote-bush Family

***Kallstroemia grandiflora* J. Torrey ex A. Gray: Arizona Poppy**

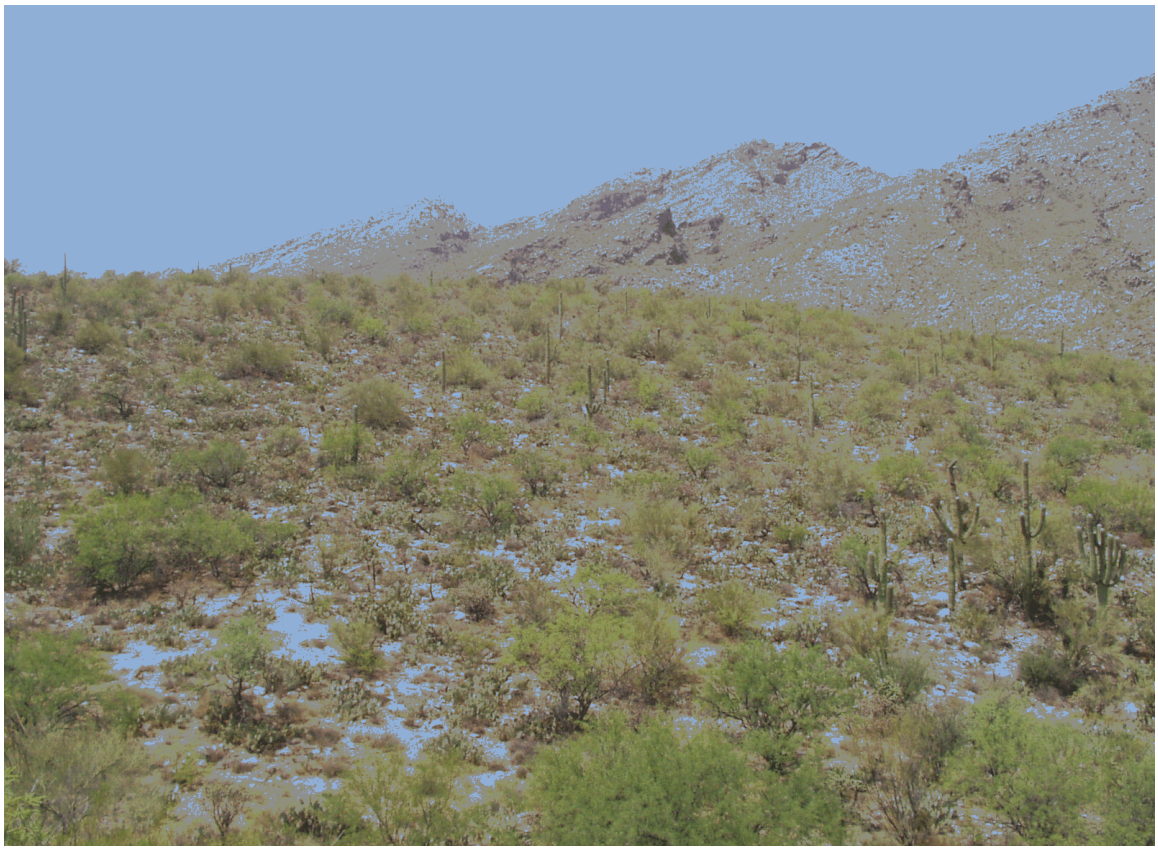
COMMON NAMES: Arizona Caltrop; Arizona Poppy; Arizona-poppy; Arizona Summer Poppy; Baiborin, Caltrop (a name applied to the genus *Kallstroemia* and the Zygophyllaceae); Desert Poppy; Desert-poppy; Mexican Poppy; Mexican-poppy; Orange Caltrop; Summer Poppy; Summer-poppy. DESCRIPTION: Terrestrial annual forb/herb (prostrate, spreading decumbent and/or ascending stems 4 inches to 1 foot in height and to 4 feet in length); the stems may be reddish-orange; the leaves gray-green or green; the flowers (½ to 1¼ inches in diameter) may be apricot-orange, harvest-moon-orange, melon-orange, light orange, orange, orange with a crimson or red center, orangish-yellow, pink-orange, yellow-orange or yellowish-orange; the anthers are orange; flowering generally takes place between late June and early November (additional records: one for mid-May, one for late November and one for mid-December). HABITAT: Within the range of this species it has been reported from mountains; mesas; rocky canyons; canyon bottoms; rocky ridgetops; foothills; sandy hills; rocky hillsides; sandy escarpments; rocky, rocky-loamy, gravelly, gravelly-sandy-loamy, gravelly-loamy, gravelly-clayey, sandy, clayey and silty slopes; gravelly bajadas; rocky outcrops; lava flows; llanos; plains; rocky, gravelly and gravelly-sandy flats; basins; along valley floors; along sandy railroad right-of-ways; along rocky-gravelly, gravelly, gravelly-sandy, gravelly-sandy-loamy, gravelly-loamy, gravelly-clayey, sandy and loamy roadsides; sandy arroyos; streambeds; creeks; rocky-sandy and sandy creekbeds; along and in rocky, gravelly, gravelly-sandy-silty and sandy washes; drainages; along banks of rivers; benches; sandy terraces; rocky-sandy bottomlands; floodplains; mesquite bosques; around stock tanks; ditches; sandy riparian areas, and disturbed areas growing in moist and dry rocky, rocky-gravelly, rocky-sandy, gravelly, gravelly-sandy and sandy ground; rocky loam, gravelly loam, gravelly-sandy loam, sandy loam and loam ground; gravelly clay, sandy clay and clay ground, and gravelly-sandy silty and silty ground, occurring from sea level to 6,600 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The Arizona Poppy is a food plant of doves, quail and Whitetail Deer (*Odocoileus virginianus* subsp. *couesi*). *Kallstroemia grandiflora* is native to southwest-central and southern North America. *5, 6, 16, 28 (color photograph 533), 43 (073109), 44 (082611 - color photograph, no records listed under Common Names; genus record), 46 (Page 492), 48, 58, 63 (051510 - color presentation), 68, 77, 80 (Species of the genus *Kallstroemia* are considered to be Rarely Poisonous and Suspected Poisonous Range Plants. "Animals must be forced to eat large amounts of this unpalatable, annual forb before poisoning occurs."), **85** (082611 - color presentation), 86 (color photograph), 115 (color presentation), 124 (082611 - no record of species; genus record), 140 (Page 307)*

***Larrea tridentata* (A.P. de Candolle) F.V. Coville var. *tridentata*: Creosote Bush**

SYNONYMY: *Larrea divaricata* auct. non A.J. Cavanilles; *Larrea divaricata* A.J. Cavanilles subsp. *tridentata* (A.P. de Candolle) R.S. Felger & C.H. Lowe. COMMON NAMES: Chaparral (a name more commonly applied to plant associations rather than a particular species of plant, a name also applied to the species); Coville Creosotebush (a name also applied to the species); Creosote Bush (a name also applied to the species, the genus *Larrea* and the Zygophyllaceae); Creosote-bush (a name also applied to the species, the genus *Larrea* and the Zygophyllaceae); Creosotebush (a name also applied to the species, the genus *Larrea* and the Zygophyllaceae); Gobernadora (a name also applied to the species); Greasewood (a name also applied to the species and other species, New Mexico); Guamis (a name also applied to the species); Hediondilla ("Little Bad Smeller" a name also applied to the species and other species, Spanish). DESCRIPTION: Terrestrial perennial evergreen shrub (20 inches to 13 feet in height and about the same in width); the bark is gray; the leaves are bright glossy green or yellow-green; the flowers (½ to 1 inch in diameter) are yellow or yellow-white; flowering takes place throughout the year with the peak blooming periods occurring in the spring, between March and April, and then again between November and December; the round, fuzzy fruits (¼ inch in diameter) are gray, reddish, white or rust colored. HABITAT: Within the range of this species it has been reported from mountains; rocky, gravelly and sandy mesas; plateaus; rims of canyons; sandy canyons; canyon bottoms; talus slopes; sandy pockets of soil; rocky ridges; foothills; rocky hills; rocky hillsides; bedrock, rocky, gravelly, sandy and sandy-loamy slopes; alluvial fans; gravelly and sandy bajadas; rocky outcrops; amongst boulders and rocks; sand dunes; benchlands; sandy plains; cindery-gravelly, gravelly and sandy flats; sandy valley floors; sandy roadsides; arroyos; bottoms of arroyos; along riverbeds; along and in gravelly-sandy and sandy washes; (sandy) banks of streams, creeks and rivers; edges of washes; gravelly and sandy terraces; floodplains; mesquite bosques; riparian areas, and disturbed areas growing in dry bouldery, rocky, rocky-sandy, stony, gravelly, gravelly-sandy and sandy ground; rocky-clayey loam, sandy loam and clayey loam ground; sandy clay ground, and rocky-sandy silty and silty ground, occurring from below sea level to 5,800 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a building material, as a tool, in the making of brooms, brushes and musical instruments, as a drug or medication and in creating body art. Older stems of the Creosote Bush may be 40 to 90 years of age. Using Creosote Bush in the restoration of disturbed sites may increase water infiltration and storage; transplants are recommended over spot-seeding, rodent protection is necessary for transplanted seedlings. When planting a Creosote Bush consider planting a small Desert Night-blooming Cereus (*Peniocereus greggii* var. *transmontanus*) at the base of the plant. The branches will provide support and the roots will protect the tuber of the cereus from hungry Javelinas. The Creosote Bush is the characteristic plant of the southwestern deserts in North America with its distribution very closely delineating the desert regions. As the Creosote Bush ages the older central stems of the plant die off and new stems form at the outer edge of the crown. New stems are not created at the center of the plant. As the crown of the plant expands a "clonal ring", made up of genetically identical individual shrublets, develops which continues the outward expansion of the ring eventually reaching several yards in diameter. It has been estimated that some of the older rings approach from 9,400 to 11,700 years of age. The Creosote Bush provides cover for many animals; Lac Scale insects (*Tachardiella larreae*), jackrabbits, desert woodrats and other small mammals feed on this plant; stem galls are produced in response to the Creosote Gall midge (*Asphondylia* sp.), and the Desert Tortoise (*Gopherus agassizi*) often digs its shelter under the base of the plant where the roots help to stabilize the soil. *Larrea tridentata* var. *tridentata* is native to southwest-central and southern North America. *5, 6, 13 (Pages 122-123, color photograph: Plates L.2., Page 399 and M.1., Page 400), 16, 18, 26 (species, recorded as *Larrea tridentata*, color photograph of species), 28 (recorded as *Larrea tridentata* (*Larrea divaricata*), color photograph 354), 43 (051710 - *Larrea tridentata* Coville, *Larrea divaricata* Cav. subsp. *tridentata* (Sessé & Moc. ex DC.) Felger), 44 (082611 - no listings recorded under Common Names; genus and species records, color photograph of species), 46 (species, recorded as *Larrea tridentata* (DC.) Coville: "An outstanding xerophyte and a very important element of the perennial desert flora in southern and western Arizona. ... Creosote-bush has a strong characteristic odor, especially noticeable when the foliage is wet. The plant is ordinarily not touched by livestock, although it is reported that sheep, especially pregnant ewes, have been killed by partaking of it. This plant is reported to cause dermatitis in exceptional persons who are allergic to it.", Page 491), 48, 63 (051610 - color presentation), 77 (recorded as *Larrea divaricata* Cav.ssp. *tridentata* (DC.) Felger & Lowe, color photograph #101), 80 (This species is listed under Rarely Poisonous and Suspected Poisonous Range Plants. "Early reports accusing this common desert shrub of being poisonous have been proven wrong."), 85 (082711), 91 (*Larrea tridentata* (Moc. & Ses.) Cav. [= *L. divaricata* Cav. subsp. *tridentata* (Ses. & Moc. ex DC.) Felger & Lowe, *Covillea tridentata* (DC.) Vail], Pages 255-259), 101 (species, color photograph of species), 107, 115 (color presentation), 124 (082711 - no record of genus, species or variety), 127, **WTK** (April 16, 2008)*

Larrea divaricata (see *Larrea tridentata* var. *tridentata*)

Larrea divaricata subsp. *tridentata* (see *Larrea tridentata* var. *tridentata*)



This photograph was taken looking to the northwest toward the Santa Catalina Mountains.
William T. Kendall, August 4, 2005

LISTING OF ANIMALS

STRICTLY ENFORCED LAWS PROTECT MANY OF ARIZONA'S NATIVE ANIMALS FROM COLLECTION AND FROM BEING DISTURBED OR KILLED

Operation GAME THIEF: 602-942-3000

Kingdom Animalia: The Animal Kingdom
Subkingdom Metazoa: The Multicellular Animals

Section Protostomia: The Protosomes
Phylum Arthropoda: The Arthropods
Subphylum Mandibulata: The Mandibulates

CLASS INSECTA: The INSECTS

ORDER HOMOPTERA: The APHIDS, CICADAS, HOPPERS, PSYLLIDS, SCALE INSECTS, WHITEFLIES and Their Allies

Dactylopiidae: The Cochineal Insect Family

***Dactylopius coccus* Costa, 1835: Cochineal Scale**

COMMON NAME: Cochineal Scale. HABITS: Observed growing on pricklypear cacti. *42 (081812 - no record of species; genus record), 106 (081812 - records located under Cochineal), **HR***

ORDER HYMENOPTERA: The ANTS, BEES, SAWFLIES, WASPS and Their Allies

Apidae: The Honeybee Family

It has been suggested that, if stung, you should remove the stinger as soon as possible, call 911 or 1-800-222-1222 for additional information and consider transport to a medical facility, it may take hundreds of bee stings to inflict a fatal toxic dose of venom in a healthy adult; however, one sting can cause a fatal allergic (anaphylactic) reaction in a hypersensitive person. *97*
http://www.pharmacy.arizona.edu/outreach/poison

If stung contact the Arizona Poison and Drug Information Center: 1-800-222-1222.

***Apis mellifera* Linnaeus, 1758: Honeybee**

COMMON NAMES: Abeille Domestique (French)[42]; African Honeybee; European Honeybee; Honeybee; Western Honeybee. HABITS: Found in bee boxes, buildings, water boxes and holes in ground, caves, cavities in saguaros, crevices, hollow trees and logs. HABITAT: Within the range of this species it has been reported from the grassland, desertscrub and wetland ecological formations. NOTES: Introduced EXOTIC Invasive Species. The Honeybee is an exotic domesticated animal kept for crop pollination and for the production of honey and beeswax. *14 (041912 - no record of species), 42 (061812), 60, 97, 106 (041912 - color presentation), **HR***

ORDER LEPIDOPTERA: The BUTTERFLIES, MOTHS AND SKIPPERS

Riodinidae: The Metalmark Family

***Calephelis arizonensis* McAlpine, 1971: Arizona Metalmark**

SYNONYMY: *Calephelis rawsoni* subsp. *arizonensis* McAlpine, 1971 - Invalid?. COMMON NAMES: Arizona Metalmark; Arizona Metalmark Butterfly; Rawson's Metalmark. HABITS: Feeds on species in the genus Bidens (Beggar Ticks and Bur Marigolds. HABITAT: Reported from mountains; canyons; woodlands, and riparian areas. ***8**, 14 (060312 - recorded as *Calephelis rawsoni* subsp. *arizonensis* McAlpine), 42 (061812), 106 (060312 - no record of species or genus)*

Calephelis rawsoni subsp. *arizonensis* (see *Calephelis arizonensis*)

Section Deuterostomia: The Deuterostomes
Phylum Chordata: The Chordates
Subphylum Vertebrata: The Vertebrates

CLASS AMPHIBIA: The AMPHIBIANS

Ranidae: The Frog Family

***Lithobates yavapaiensis* (Platz and Frost, 1984): Lowland Leopard Frog**

SYNONYMY: *Rana yavapaiensis* Platz and Frost, 1984. COMMON NAMES: Lowland Leopard Frog; Rana de Yavapai (Spanish)[42,106]; San Felipe Leopard Frog; Yavapai Frog; Yavapai Leopard Frog. HABITS: Feeds on algae (larvae), organic debris (larvae), insects, plant tissue (larvae), snails and spiders). Takes shelter in underground burrows and rock fissures. Breeding takes place in cienegas, impoundments, ponds, rivers, springs and streams. HABITAT: Within the range of this species it has been reported from freshwater springs; small to medium-sized streams and rivers; small ponds; marsh habitats, and stock tanks being generally restricted to permanent and semi permanent waters often concentrating in deep pools in association with root masses of large riparian trees in the woodland, grassland and wetland ecological formations. ***8**, 14 (041912 - recorded as *Rana yavapaiensis* (Platz and Frost), color presentation), 42 (061812), 87 (recorded as *Rana yavapaiensis*), 106 (041912 - recorded as *Rana yavapaiensis* Platz and Frost, 1984, color presentation)*

Rana yavapaiensis (see *Lithobates yavapaiensis*)

CLASS AVES: The BIRDS

Columbidae: The Dove and Pigeon Family

***Zenaida asiatica* (Linnaeus, 1758): White-winged Dove**

COMMON NAMES: Mexican Dove; Okokoi (Tohono O'odham)[90]; Paloma ala Blancha (Spanish)[14,42]; Paloma de alas Blanchas (Spanish)[90]; Sonora Dove; Tourterelle à Ailes Blanche (French)[42]; Western White-wing Dove (*Z.a. mearnsi* (Ridgway, 1915) - Valid); White-wing; White-winged Dove; White-winged Pigeon. HABITS: Feeds on berries, fruit, gastropods, insects, mollusks and seeds. Nests are flimsy stick platforms located in thickets and trees. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (041912 - subsp. *grandis* (Saunders); subsp. *mearnsi* (Ridgway); subsp. *monticola* (Saunders), color presentation), 20, 42 (061812), 55, 69, 73, 84, 90, 93, 106 (041912 - color presentation), **WTK** (April 16, 2008)*

Odontophoridae: The Quail Family

***Callipepla gambelii* subsp. *gambelii* (Gambel, 1843): Gambel's Quail**

SYNONYMY: *Lophortyx gambelii* subsp. *gambelii* Gambel, 1843; *Lophortyx gambelii* subsp. *ignoscens* Friedmann, 1943; *Lophortyx gambelii* subsp. *sanus* Mearns, 1914. COMMON NAMES: Arizona Quail; Codorniz Chiquiri [Spanish)[42]; Codorniz (Gambel) Chiquiri (Spanish)[90]; Codorniz de Gambel (Hispanic)[14]; Desert Quail; Gambel's Quail; Kakaichu (Tohono O'odham)[90]. HABITS: The species feeds on insects, plant material and seeds. The eggs are laid in scrapes or grass lined nests located on the ground under prickly-pear cacti. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042212 - species, color presentation), 42 (081812), 55 (species, recorded as *Lophortyx gambelii*), 69 (note, species, recorded as *Lophortyx gambelii*), 73 (species, recorded as *Lophortyx gambelii*), 84 (species), 90 (species), 93 (species, recorded as *Lophortyx gambelii*), 106 (042212 - species including a listing of subspecies, color presentation), **WTK** (April 16, 2008)*

Lophortyx gambelii subsp. *gambelii* (see *Callipepla gambelii* subsp. *gambelii*)

Lophortyx gambelii subsp. *ignoscens* (see *Callipepla gambelii* subsp. *gambelii*)

Lophortyx gambelii subsp. *sanus* (see *Callipepla gambelii* subsp. *gambelii*)

Strigidae: The Typical Owl Family

***Glaucidium brasilianum* subsp. *cactorum* Van Rossem 1937: Cactus Ferruginous Pigmy-owl**

COMMON NAMES: Cactus Ferruginous Pigmy Owl; Cactus Ferruginous Pigmy-owl. HABITS: Feeds on amphibians, small birds, earthworms, frogs, insects, reptiles and small rodents. Nests are located in cavities and abandoned woodpecker holes in saguaros and trees. HABITAT: Within the range of this species it has been reported from the desertscrub and wetland ecological formations. ***8**, 14 (060912 - subsp. *cactorum* (AZ)), 42 (061912), 55 (species), 69 (species), 73 (species), 84 (species), 90 (species), 93 (species), 106 (060912 - species, color presentation of species)*

Antilocapridae: The Pronghorn Family

Antilocapra americana (Ord, 1815): Pronghorn

COMMON NAMES: American Pronghorn (*A.a. americana* (Ord, 1815) - Valid); Antelope; Berrendo (Spanish)[42]; Chihuahuan Pronghorn (*A.a. mexicana* Merriam, 1901 - Valid); Chihuahuan Pronghorn Antelope (*A.a. mexicana* Merriam, 1901); Mexican Pronghorn (*A.a. mexicana* Merriam, 1901 - Valid); Peninsular Pronghorn (*A.a. peninsularis* Nelson, 1912 - Valid); Prong Buck; Prong-horn; Pronghorn; Pronghorn Antelope; Prong-horned Antelope; Sonoran Pronghorn (*A.a. sonoriensis* Goldman, 1945 - Valid); Sonoran Pronghorn Antelope (*A.a. sonoriensis* Goldman, 1945 - Valid). HABITS: Feeds on cacti, forbs, grasses and shrubs. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: A pioneer of Tucson, Arizona, states that in the early days it was not uncommon to have bands of antelope circling the wagon on the trip between Tucson and Nogales.[65] *8, 14 (042312 - subsp. *americana* (Ord); subsp. *mexicana* Merriam, 1901; subsp. *sonoriensis* Goldman, 1945, color presentation of *Antilocapra americana americana*), 42 (061912), **55** (recorded as *Antilocapra americana* Ord. Prong-horned Antelope. Formerly widely distributed in grassland areas throughout the state; presently restricted to areas of favorable habitat.), 65 (*Antilocapra americana mexicana*), 73, 106 (042312 - includes a listing of subspecies, color presentation), 100 (color photograph), 110 (Sonoran Pronghorn (*Antilocapra americana sonoriensis*): Historic Range: Southwest Arizona, south of the Bill Williams River and east to the Santa Cruz River. In Mexico, the northern part of the State of Sonora.), **118** (recorded as *Antilocapra americana americana* (Ord) - Distribution: mapping and records for northeastern and northwestern Arizona; *Antilocapra americana mexicana* Merriam - Distribution: Southeastern Arizona, and *Antilocapra americana sonoriensis* Goldman - Distribution: Southwestern Arizona. Figure 111, Page 255), 148 (color presentation)*

Antilocapra americana subsp. *mexicana* Merriam, 1901: Chihuahuan Pronghorn

COMMON NAMES: "Antelope"; Chihuahuan Pronghorn; Chihuahuan Pronghorn Antelope; Mexican Pronghorn; Prong-horn; Pronghorn, Pronghorn Antelope; Prong-horned Antelope. HABITS: The species feeds on cacti, forbs, grasses and shrubs. HABITAT: Within the range of this species it has been reported from the woodland, grassland, desertscrub and wetland ecological formations. NOTES: EXTIRPATED from southeastern Arizona, several reintroductions have taken place. A pioneer of Tucson, Arizona, states that in the early days it was not uncommon to have bands of antelope circling the wagon on the trip between Tucson and Nogales.[65] *8 (Historically throughout south-eastern and south-central Arizona.), 14 (042312 - subsp. *americana* (Ord); subsp. *mexicana* Merriam, 1901; subsp. *sonoriensis* Goldman, 1945, color presentation of *Antilocapra americana americana*. Historically occurred in grass-shrub valleys and grasslands of southeastern and south-central Arizona), 42 (061912), 55 (species: recorded as *Antilocapra americana* Ord. Prong-horned Antelope. Formerly widely distributed in grassland areas throughout the state; presently restricted to areas of favorable habitat.), **65** (A pioneer of Tucson, Arizona, states that in the early days it was not uncommon to have bands of antelope circling the wagon on the trip between Tucson and Nogales.), 73 (species), 100 (color photograph of species), 106 (042312), **118** (recorded as *Antilocapra americana mexicana* Merriam - Distribution: Southeastern Arizona. Figure 111, Page 255), 148 (color presentation)*

Bovidae: The Cow, Sheep and Allies Family

Bison bison (Linnaeus, 1758): American Bison

SYNONYMY: *Bos bison* Linnaeus, 1758. COMMON NAMES: American Bison; American Buffalo; Bison (*B.b. bison* (Linnaeus, 1758) - Valid); Bisonte (Hispanic)[14]; Bisonte Americano (Spanish)[42]; Buffalo; Cibolas (term used to refer to the Buffalo and Buffalo-hunting Indians by early Mexican and Spanish explorers)[14]; Mountain Bison; Plains Bison (*B.b. bison* (Linnaeus, 1758) - Valid); Prairie Bison; Tatanka (Lakota Sioux); Wood Bison (*B.b. athabascae* Rhoads, 1898 - Valid; *B.b. bison* (Linnaeus, 1758) - Valid); Woodland Bison; Zu-ke-ta kah-noo-nah (used by the Indians for the smaller southern Buffalo, Texas and the Pecos Valley)[14]; Zu-ta kah-noo-nah (used by the Indians for the larger northern Buffalo, ranged from the Arkansas River and northward)[14]. HABITS: Feeds on grasses and sedges and other herbaceous vegetation to about 5 feet in height. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: Native to North America. Herds have been reduced from an estimated 30 to 200 million head in the mid-1800's to around 350,000 head at present (mostly animals being raised for human consumption) with possibly fewer than 4,000 head (brought up from fewer than 550 Plains Bison in the United States) being continuously "free-roaming" animals. *8 (according to BISON-M the Arizona Game and Fish Department, Heritage Data Management System, *Bison bison* has been listed under the Natural Heritage Arizona State Rank "SRFSE" ("SRF" = "State Reported Falsely"; "SE" = "State Exotic")), 14 (042312 - recorded as *Bos bison* (Linnaeus) color presentation), 42 (072112), 55 (no record of species), 63 (052809), 73, 100, 106 (042312 - includes a listing of subspecies, color presentation), 118 (included in the Hypothetical List of Mammals possibly occurring in Arizona, satisfactory record of which is lacking. *Bison bison* subsp. (unnamed). "Although Coues (1867) indicated that buffalo "formerly ranged over Arizona - now absent," there is no good evidence that they occurred in the state within historic times except as introductions (for example see Bailey, 1935:1).), 148 (color presentation)*

Bos bison (see *Bison bison*)

***Ovis canadensis* Shaw, 1804: Rocky Mountain Bighorn Sheep**

COMMON NAMES: American Bighorn; Audubon's Bighorn Sheep (*O.c. auduboni* Merriam, 1901 - Invalid?, extinct circa 1925); Badlands Bighorn (*O.c. auduboni* Merriam, 1901 - Invalid?); Berrego Cimarron (Hispanic)[14]; Berrego Cimarron del Desierto (Hispanic); Big Horn; Bighorn; Bighorn Sheep (*O.c. canadensis* Shaw, 1804 - Invalid?); Borrego Cimarrón (Spanish)[42]; California Bighorn Sheep (*O.c. californiana* Douglas, 1829 - Invalid?); Desert Bighorn (*O.c. mexicana* Merriam, 1901 - Invalid?; *O.c. nelsoni* Merriam, 1897 - Invalid?); Desert Bighorn Sheep (*O.c. mexicana* Merriam, 1901 - Invalid?; *O.c. nelsoni* Merriam, 1897 - Invalid?); Mexican Bighorn Sheep (*O.c. mexicana* Merriam, 1901 - Invalid?); Mountain Sheep; Nelson's Bighorn Sheep (*O.c. nelsoni* Merriam, 1897 - Invalid?); Peninsular Bighorn Sheep (*O.c. cremnobates* Elliot, 1904 - Invalid?); Rocky Mountain Bighorn (*O.c. canadensis* Shaw, 1804 - Invalid?); Rocky Mountain Bighorn Sheep (*O.c. canadensis* Shaw, 1804 - Invalid?); Sierra Nevada Bighorn (*O.c. sierrae* Grinnell, 1912 - Invalid?); Sierra Nevada Bighorn Sheep (*O.c. sierrae* Grinnell, 1912 - Invalid?); Texas Big Horn Sheep; Texas Bighorn Sheep; Weems' Bighorn Sheep (*O.c. weemsi* Goldman, 1937 - Invalid?). HABITS: Feeds on agave, brittle bush, bursage, bush muhly, cacti, catclaw, cholla, coffeeberry, desert fluffgrass, desert ironwood, desert thorn, fairy duster, filaree, galleta, grama, jojoba, mesquite, mallow, Nevada joint fir, plantain, prickly-pear, ratany, ricegrass, saguaro, saltbush, threeawn and turpentine broom. Young are dropped in small scraped out depressions located in protected places on inaccessible peaks. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042312 - subsp. *canadensis*, color presentation; subsp. *mexicana* (Merriam), color presentations; subsp. *nelsoni*), 42 (061912 - no subspecies listed), **55** (recorded as *Ovis canadensis* Shaw. Bighorn. Probably formerly statewide in mountainous or rocky situations; presently restricted to scattered low desert mountains.), 65, 73, 100 (color photograph), 106 (042312 - listing of subspecies, color presentation), 118 (recorded as *Ovis canadensis mexicana* Merriam - Distribution: Probably formerly statewide in mountainous situations. Figure 112, Page 257), 148 (color presentation)*

***Ovis canadensis* subsp. *mexicana* Merriam, 1901 - Invalid?: Desert Bighorn Sheep**

COMMON NAMES: Berrego Cimarron del Desierto (Hispanic)[14]; Big Horn; Bighorn; Bighorn Sheep; Desert Bighorn; Desert Bighorn Sheep; Mexican Bighorn Sheep; Mountain Sheep. HABITS: The species feeds on agave, brittle bush, bursage, bush muhly, cacti, catclaw, cholla, coffeeberry, desert fluffgrass, desert ironwood, desert thorn, fairy duster, filaree, galleta, grama, jojoba, mesquite, mallow, Nevada joint fir, plantain, prickly-pear, ratany, ricegrass, saguaro, saltbush, threeawn and turpentine broom; young are dropped in small scraped out depressions located in protected places on inaccessible peaks. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042312 - subsp. *canadensis*, color presentation; subsp. *mexicana* (Merriam), color presentations; subsp. *nelsoni*), 42 (061912 - no subspecies listed), 55 (species: recorded as *Ovis canadensis* Shaw. Bighorn. Probably formerly statewide in mountainous or rocky situations; presently restricted to scattered low desert mountains."), 65 (species), 73 (species), 100 (color photograph of species, species record), 106 (042312 - color presentation of species), **118** (recorded as *Ovis canadensis mexicana* Merriam - Distribution: Probably formerly statewide in mountainous situations. Figure 112, Page 257), 148 (color presentation)*

Canidae: The Dog and Allies Family

***Canis latrans* Say, 1823: Coyote**

COMMON NAME: American Jackal; Barking Coyote; Belize Coyote (*C.l. goldmani* Merriam, 1904 - Valid); California Valley Coyote (*C.l. ochropus* Eschscholtz, 1829 - Valid); Colima Coyote (*C.l. vigilis* Merriam, 1897 - Valid); Coyote (English, French, Hispanic, Spanish: derived from the Náhuatl word "cóyotl")[14,42,106]; Durango Coyote (*C.l. impavidus* J.A. Allen, 1903 - Valid); Honduras Coyote (*C.l. hondurensis* Goldman, 1936 - Valid); Lower Rio Grande Coyote (*C.l. microdon* Merriam, 1897 - Valid); Mearns Coyote (*C.l. mearnsi* Merriam, 1897 - Valid); Mexican Coyote (*C.l. cagotis* C.E.H. Smith, 1839 - Valid); Mountain Coyote (*C.l. lestes* Merriam, 1897 - Valid); Northeastern Coyote (*C.l. thamnos* Jackson, 1949 - Valid); Northern Coyote (*C.l. incolatus* Hall, 1934 - Valid); Northwest Coast Coyote (*C.l. umpquensis* Jackson, 1949 - Valid); Peninsula Coyote (*C.l. peninsulae* Merriam, 1897 - Valid); Plains Coyote (*C.l. latrans* Say, 1823 - Valid); Prairie Wolf; San Pedro Martir Coyote (*C.l. clepticus* Elliot, 1903 - Valid); Salvador Coyote (*C.l. dickeyi* Nelson, 1932 - Valid); Southeastern Coyote (*C.l. frustor* Woodhouse, 1851 - Valid); Texas Plains Coyote (*C.l. texensis* Bailey, 1905 - Valid); Tiburón Island Coyote (*C.l. jamesi* Townsend, 1912 - Valid). HABITS: Feeds on amphibians, berries, birds, carrion, fruits, gophers, insects, mice, rabbits, reptiles and squirrels. The young are born in dens that may be dug in the ground or located in caves. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042412 - subsp. *lestes* (Merriam); subsp. *mearnsi* (Merriam); subsp. *texensis* (V. Bailey), color presentation), 42 (061912), **55** (recorded as *Canis latrans* Say. Coyote. Statewide (120 - 9,100 feet).), 65 (color photograph), 73, 100 (color photograph), 106 (042412 - includes a listing of subspecies, color presentation), 118 (recorded as *Canis latrans mearnsi* Merriam - Distribution: Statewide. Figure 87, Page 217), 148 (color presentation)*

***Canis latrans* subsp. *mearnsi* Merriam, 1897: Coyote**

COMMON NAMES: Coyote; Mearns Coyote. HABITS: The species feeds on amphibians, berries, birds, carrion, fruits, gophers, insects, mice, rabbits, reptiles and squirrels. The young are born in dens that may be dug in the ground or located in caves. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042412 - subsp. *lestes* (Merriam); subsp. *mearnsi* (Merriam); subsp. *texensis* (V. Bailey), color presentation of species), 42 (061912), 55 (species: recorded as *Canis latrans* Say. Coyote. Statewide (120 - 9,100 feet).), 65 (color photograph of species, species record), 73 (species), 100 (color photograph of species, species record), 106 (042412 - species, color presentation of species), **118** (recorded as *Canis latrans mearnsi* Merriam - Distribution: Statewide. Figure 87, Page 217), 148 (color presentation)*

Canis lupus Linnaeus, 1758: Gray Wolf

COMMON NAMES: Buffalo Wolf (*C.l. nubilus* Say, 1823 - Valid); Common Wolf; Domestic Dog (*C.l. familiaris* Linnaeus, 1758 - Valid); Dusky Wolf (*C.l. nubilus* Say, 1823 - Valid); Gray Wolf; Grey Wolf; Intermountain Gray Wolf; Great Plains Wolf (*C.l. nubilus* Say, 1823 - Valid); Intermountain Gray Wolf; Lobo (Spanish)[65]; Lobo Gris (Hispanic)[14]; Lobo Gris (Spanish)[42]; Lobo Mexicano (Hispanic: applied to *C.l. baileyi* Nelson and Goldman, 1929 - Valid)[14]; Loup (French)[42]; Mexican Gray Wolf (*C.l. baileyi* Nelson and Goldman, 1929 - Valid); Mexican Grey Wolf (*C.l. baileyi* Nelson and Goldman, 1929 - Valid); Mexican Wolf (*C.l. baileyi* Nelson and Goldman, 1929 - Valid); Northern Plains Gray Wolf (*C.l. nubilus* Say, 1823 - Valid); Southern Rocky Mountain Wolf (*C.l. youngi* Goldman, 1937 - Valid); Southern Rocky Mountain Gray Wolf (*C.l. youngi* Goldman, 1937 - Valid); Timber Wolf; Wolf. HABITS: Feeds on berries, birds, fish, fruits, insects, deer, elk, javelina, livestock, small mammals, bighorn sheep, pronghorn and rabbits. Maternity dens are chambers without nests usually located in the ground on high ground, under rock ledges, slopes of canyon walls or hills near water. HABITAT: Within the range of this species it has been reported from forest, woodland, grassland and wetland ecological formations. NOTES: The Mexican Gray Wolf is the smallest subspecies of gray wolf in North America. This wolf generally avoids desert areas. At one time the Mexican Gray Wolf was extirpated from Arizona; however, successful re-introduction efforts are bringing it back from near extinction. *8, 14 (042412 - subsp. *baileyi* Nelson and Goldman; subsp. *nubilus* Say; subsp. *youngi* Goldman, color presentation), 42 (061912), **55** (recorded as *Canis lupus* Frisch. Gray Wolf. Formerly throughout the eastern portions of the state, at present rare or approximately extinct.), 73, 100 (color photograph), 106 (042312 - includes a listing of subspecies, color presentation), 110 (recorded as *Canis lupus baileyi* - shows the historic range as being roughly that portion of Pima County east of the Tohono O'odham Nation), 118 (recorded as *Canis lupus baileyi* Nelson and Goldman - Distribution: Southeastern Arizona. Figure 88, Page 219), 148 (color presentation)*

Canis lupus subsp. *baileyi* Nelson and Goldman, 1929: Mexican Gray Wolf

COMMON NAMES: Lobo (Spanish)[65]; Lobo Mexicano (Hispanic)[14]; Mexican Gray Wolf; Mexican Grey Wolf; Mexican Wolf. HABITS: Feeds on berries, birds, fish, fruits, insects, deer, elk, javelina, livestock, small mammals, bighorn sheep, pronghorn and rabbits. Maternity dens are chambers without nests usually located in the ground on high ground, under rock ledges, slopes of canyon walls or hills near water. HABITAT: Within the range of this species it has been reported from forest, woodland, grassland and wetland ecological formations. NOTES: The Mexican Gray Wolf is the smallest subspecies of gray wolf in North America. This wolf generally avoids desert areas. At one time the Mexican Gray Wolf was extirpated from Arizona; however, successful re-introduction efforts are bringing it back from near extinction. *8, 14 (0042412 - subsp. *baileyi* Nelson and Goldman; subsp. *nubilus* Say; subsp. *youngi* Goldman, color presentation), 42 (061912), 55 (species: recorded as *Canis lupus* Frisch. Gray Wolf. Formerly throughout the eastern portions of the state, at present rare or approximately extinct.), 73 (species), 100 (species, color photograph of species), 106 (042312 - species, color presentation of species), 110 (recorded as *Canis lupus baileyi* - shows the historic range as being roughly that portion of Pima County east of the Tohono O'odham Nation), **118** (recorded as *Canis lupus baileyi* Nelson and Goldman - Distribution: Southeastern Arizona. Figure 88, Page 219), 148 (color presentation)*

Urocyon cinereoargenteus (Schreber, 1775): Common Gray Fox

COMMON NAMES: Arizona Gray Fox (*U.c. scottii* Mearns, 1891 - Valid); Common Gray Fox; Gray Fox; Renard Gris (French)[42]; Scott's Gray Fox (*U.c. scottii* Mearns, 1891 - Valid); Southern Gray Fox (*U.c. scottii* Mearns, 1891 - Valid); Zorra Gris (Hispanic)[14]; Zorra Gris (Spanish)[42]. HABITS: The species feeds on birds, desert cottontails, hackberry and prickly-pear fruits, grasses, insects (crickets and grasshoppers), juniper berries, lizards, manzanita berries, nuts, small rodents and snakes. Nests are made of bark, grasses and leaves and located in underground burrows, small caves, piles of rock, amongst boulders, crevices in cliffs and in hollows in trees. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: The Gray Fox climbs trees. *14 (042412 - subsp. *scottii* (Mearns), color presentation), 42 (061912), **55** (recorded as *Urocyon cinereoargenteus* (Schreber). Gray Fox. Statewide with the possible exception of the northeast portion (120 - 5,800 feet).), 65 (species, color photograph), 73, 100 (color photograph), 106 (042412 - includes a listing of subspecies, color presentation), 118 (recorded as *Urocyon cinereoargenteus scottii* Mearns - Distribution: Probably statewide. Figure 90, Page 222), 148 (color presentation)*

Urocyon cinereoargenteus subsp. *scottii* Mearns, 1891: Common Gray Fox

COMMON NAMES: Arizona Gray Fox; Common Gray Fox; Gray Fox; Scott's Gray Fox; Southern Gray Fox; Zorra Gris (Hispanic)[14]. HABITS: The species feeds on birds, desert cottontails, hackberry and prickly-pear fruits, grasses, insects (crickets and grasshoppers), juniper berries, lizards, manzanita berries, nuts, small rodents and snakes. Nests are made of bark,

grasses and leaves and located in underground burrows, small caves, piles of rock, amongst boulders, crevices in cliffs and in hollows in trees. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: The Gray Fox climbs trees. *14 (042412 - subsp. *scottii* (Mearns), color presentation of species), 42 (061912), 55 (species: recorded as *Urocyon cinereoargenteus* (Schreber). Gray Fox. Statewide with the possible exception of the northeast portion (120 - 5,800 feet).), 65 (species, color photograph of species), 73 (species), 100 (species, color photograph of species), 106 (042412 - species), **118** (recorded as *Urocyon cinereoargenteus scottii* Mearns - Distribution: Probably statewide. Figure 90, Page 222), 148 (color presentation)*

***Vulpes macrotis* Merriam, 1888: Kit Fox**

COMMON NAMES: Kit Fox; Desert Kit Fox (*V.m. arispus* Elliot, 1904 - Invalid?); Large-eared Kit Fox (*V.m. macrotis* Merriam, 1888 - Invalid); San Joaquin Kit Fox (*V.m. mutica* Merriam, 1902 - Invalid); Southern California Kit Fox (*V.m. macrotis* Merriam, 1888 - Invalid: extinct circa 1903); Swift-footed Fox (*V.m. arispus* Elliot, 1904 - Invalid?); Zorra del Desierto (Hispanic)[14]. HABITS: Feeds on berries, birds, cottontail rabbits, crickets, grasses, grasshoppers, ground squirrels, jack rabbits, kangaroo rats, lizards and pocket mice. The young are born in dens in underground burrows that have been excavated in soft soils. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Vulpes velox* (Say, 1823): The Swift Fox is generally considered a separate species by most authors. *14 (042412 - subsp. *macrotis* (Merriam); subsp. *neomexicanus* (Merriam)), 42 (061912), **55** (recorded as *Vulpes macrotis* Merriam. Kit Fox. Widely distributed at lower elevations throughout the southern part of the state (120 - 5,000 feet).), 65, 73, 100 (color photograph), 106 (042412 - color presentation), 118 (recorded as *Vulpes macrotis arispus* Elliot - Distribution: Lower elevations in western and southern part of the state; *Vulpes macrotis neomexicana* Merriam - Distribution: Extreme southeastern Arizona. Figure 89, Page 220), 148 (color presentation)*

***Vulpes macrotis* subsp. *arispus* Elliot - Invalid?, 1904: Kit Fox**

COMMON NAMES: Desert Kit fox; Kit Fox; Swift-footed Fox; Zorra del Desierto (Hispanic)[14]. HABITS: The species feeds on berries, birds, cottontail rabbits, crickets, grasses, grasshoppers, ground squirrels, jack rabbits, kangaroo rats, lizards and pocket mice. The young are born in dens in underground burrows that have been excavated in soft soils. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Vulpes velox* (Say, 1823): The Swift Fox is generally considered a separate species by most authors. *14 (042412 - subsp. *macrotis* (Merriam); subsp. *neomexicanus* (Merriam)), 42 (061912), 55 (species: recorded as *Vulpes macrotis* Merriam. Kit Fox. Widely distributed at lower elevations throughout the southern part of the state (120 - 5,800 feet).) 65 (species), 73 (species), 100 (color photograph of species), 106 (042412 - species, color presentation of species), **118** (recorded as *Vulpes macrotis arispus* Elliot - Distribution: Lower elevations in western and southern part of the state. Figure 89, Page 220), 148 (color presentation)*

Vulpes velox (see NOTE under *Vulpes macrotis*, *Vulpes macrotis arispus* and/or *Vulpes macrotis macrostis*)

Castoridae: The Beaver Family

***Castor canadensis* Kuhl, 1820: American Beaver**

COMMON NAMES: Admiralty Beaver (*C.c. phaeus* Heller, 1909 - Invalid?); American Beaver; Bank Beaver; Beaver; Canadian Beaver (*C.c. canadensis* Kuhl, 1820 - Invalid?); Carolina Beaver (*C.c. carolinensis* Rhoads, 1898 - Invalid?); Castor (French)[42]; Castor (Hispanic)[14]; Castor Americano (Spanish)[42]; Castor Cat; Colorado Beaver (*C.c. concisor* Warren and Hall, 1939 - Invalid?); Cook Inlet Beaver (*C.c. belugae* Taylor, 1916 - Invalid?); Flat Tail; Missouri River Beaver (*C.c. missouriensis* Bailey, 1919 - Invalid?); New England Beaver (*C.c. acadicus* Bailey, 1942 - Invalid?); North American Beaver; Pacific Beaver (*C.c. leucodonta* Gray, 1869 - Invalid?); Rio Grande Beaver (*C.c. mexicanus* Bailey, 1913 - Invalid?); Sonora Beaver (*C.c. frondator* Mearns, 1897 - Invalid?); Texas Beaver (*C.c. texensis* Bailey, 1905 - Invalid?); Washington Beaver (*C.c. pacificus* Rhoads, 1898 - Invalid?); Woods Beaver (*C.c. michiganensis* Bailey, 1913 - Invalid?). HABITS: Feeds on bark, branches, buds, leaves or needles and twigs of alder, aspen, birch, cattail, cottonwood, maple, mesquite, tamarix and willow, and the roots of pond lilies and other tuberous plants; kits are born in lodges or dens dug into banks, nest materials include stalks and leave of tules, sedges, herbs and fine rootlets. HABITAT: Within the range of this species it has been reported that riparian habitats are required with beaver reported from creeks, streams, rivers, marshes, cienegas, ponds and lakes in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: Donald F. Hoffmeister noted in Mammals of Arizona that "Beaver in Arizona attempt to colonize some streams that are exceedingly small or have a very limited flow of water."[145] Beaver dams help reduce erosion, collect and retain organic matter and sediment and raise water tables (Las Cienegas National Conservation Area, Appendix 1, Chapter 3). Beaver dams may help to reduce flooding and provide habitat for other animals including otters and waterfowl. The extent of the historical distribution of the American Beaver in Pima County is unknown; however, it has been reported that the Tohono O'odham people hunted and ate beaver. *14 (042412 - subsp. *concisor* (Warren and Hall); subsp. *frondator* Mearns; subsp. *missouriensis* V. Bailey; subsp. *mexicanus* V. Bailey), 42 (061912 - no subspecies listed), 49, **55** (recorded as *Castor canadensis* Kuhle. Beaver. formerly widespread in all of the permanent streams of the state; now restricted in distribution), 73, 100 (color photograph), 106 (042412 - includes a listing of subspecies, color presentation. "Early American exploration of the San Pedro River, like most rivers in western North America, was driven by the pursuit of

beaver pelts. James Ohio Pattie and his father led a party of fur trappers down the Gila River and then down the San Pedro River in 1826 which was so successful that he called the San Pedro the Beaver River. [2] In the 19th century the river was a meandering stream with fluvial marshlands, riparian forest, Sporobolus grasslands and extensive beaver ponds. As the beaver were removed by fur trapping and cattle denuded the riparian vegetation, the river down-cut and then widened in a process of arroyo formation observed on many rivers in the Southwest.[9] The beaver were finally extirpated by 1920's dynamiting of the beaver dams from soldiers from Fort Huachuca to prevent malaria. By the mid-20th century the once perennial river only flowed during the rainy season and beaver, fluvial marshlands and Sporobolus grasslands were uncommon.[9][10] Physician naturalist Edgar Alexander Mearns' 1907 Mammals of the Mexican boundary of the United States reported beaver (*Castor canadensis*) on the San Pedro River and Babocomari Creek.[11] Mearns claimed that the San Pedro River beaver represented a new subspecies *Castor canadensis frondator* or "Sonora beaver" that ranged from Mexico up to Wyoming and Montana.[12]," from Wikipedia: San Pedro River, Arizona), 118 (recorded as *Castor canadensis repentinus* Goldman - Distribution: Formerly in the Colorado River from the Grand Canyon southward to Mexico and *Castor canadensis frondator* Mearns - Distribution: Formerly San Pedro and Gila River drainages. Figure 60, Page 155), 143 (note on the Tohono O'odham hunting beaver and included beaver in their diet), 148 (color presentation), WTK (The headwaters of the Babocomari River, Cienega Creek and Sonoita Creek are located near Sonoita, Arizona. With the Beaver being plentiful in the San Pedro and Babocomari Rivers it would seem possible that they were also present in the Cienega Creek, which flows into the Pantano and Rillito Creeks, and the Sonoita Creek, which flows into the Santa Cruz River, which in turn flow into the Gila and Salt Rivers.)*

Cervidae: The Deer and Allies Family

Cervus canadensis (see *Cervus elaphus*)

Cervus canadensis subsp. *merriami* (see *Cervus elaphus* subsp. *merriami*)

***Cervus elaphus* Linnaeus, 1758: Elk**

SYNONYMY: *Cervus canadensis* Linnaeus, 1758 / (Erxleben, 1777) - Invalid?. COMMON NAMES: Ala-Shan Wapiti (*C.e.* (*Cervus canadensis*) *alashanicus* Bobrinski and Flierov, 1935 - Invalid?); Alashan Wapiti (*C.e.* (*Cervus canadensis*) *alashanicus* Bobrinski and Flierov, 1935- Invalid?); Altai Maral (*C.e. sibirica* (*Cervus canadensis sibiricus*) Severtzov, 1873 - Invalid?)[106,148]; Altai Wapiti (*C.e.* (*Cervus canadensis*) *asiaticus* Severtzov, 1873 / Lydekker, 1898 - Invalid?); American Elk; Arizona Wapiti (*C.e.* (*Cervus canadensis*) *merriami* Nelson, 1902 - Invalid?: extinct circa 1923); Atlantica Deer (*C.e. atlanticus* Lonnberg, 1906 - Invalid?); Atlas Deer (*C.e. barbarus* Bennett, 1848 - Valid); Austria Deer (*C.e. austriacus* - Invalid?); Bactrian Deer (*C.e. bactrianus* Lydekker, 1900 - Invalid?); Baikal Wapiti (*C.e.* (*Cervus canadensis*) *baicalensis* Lydekker, 1915 - Invalid?; *C.e.* (*Cervus canadensis*) *isubra* Noack, 1889 - Invalid?)[148]; Baltic Deer (*C.e. balticus* Matschie, 1907 - Invalid?); Barasingha Deer (*C.e. hanglu* Wagner, 1844 - Valid); Barbary Deer (*C.e. barbarus* Bennett, 1848 - Valid); Barbary Stag (*C.e. barbarus* Bennett, 1848 - Valid); Bukharian Deer (*C.e. bactrianus* Lydekker, 1900 - Invalid?); California Wapiti (*C.e.* (*Cervus canadensis*) *nannodes* Merriam, 1905 - Invalid?); Canadian Wapiti (*C.e.* (*Cervus canadensis*) *roosevelti* Merriam, 1897 - Invalid?); Carpathian Red Deer (*C.e. carpathicus* Tatarinov, 1956 - Invalid?); Carpathian Red Deer (*C.e. hippelaphus* Kerr, 1792 - Invalid?); Caspian Red Deer (*C.e. maral* Ogilby, 1840 - Invalid?); Central European Red Deer (*C.e. hippelaphus* Kerr, 1792 - Invalid?); Ciervo Común (Spanish)[42]; Common Red Deer (*C.e. elaphus* Linnaeus, 1758 - Valid); Corsican Red Deer (*C.e. corsicanus* Erxleben, 1777 - Invalid?); Dwarf Wapiti (*C.e.* (*Cervus canadensis*) *nannodes* Merriam, 1905 - Invalid?); Eastern Elk (*Cervus canadensis canadensis* Linnaeus, 1758 / (Erxleben, 1777) - Invalid?); Eastern Red Deer (*C.e. montanus* Botezat, 1903 - Invalid?); Elk; Hangual Deer (*C.e. hanglu* Wagner, 1844 - Valid); Hangul[148]; Hangul (*C.e.* (*Cervus canadensis*) *hanglu* Wagner, 1844 - Valid)[106]; Kansu Deer (*C.e.* (*Cervus canadensis*) *kansuensis* Pocock, 1912 - Invalid?); Kansu Red Deer (*C.e.* (*Cervus canadensis*) *kansuensis* Pocock, 1912 - Invalid?); Kashmir Deer (*C.e. hanglu* Wagner, 1844 - Valid); Kashmir Stag (*C.e. hanglu* Wagner, 1844 - Valid; *C.e. wallichi* G. Cuvier, 1823 - Invalid?); MacNeill's Deer (*C.e.* (*Cervus canadensis*) *macneilli* Lydekker, 1909 - Invalid?); Manchurian Elk (*C.e.* (*Cervus canadensis*) *xanthopygus* Milne-Edwards, 1867 - Invalid?); Manchurian Wapiti (*C.e.* (*Cervus canadensis*) *xanthopygus* Milne-Edwards, 1867 - Invalid?)[106]; Manitoba Elk (*C.e.* (*Cervus canadensis*) *manitobensis* Millais, 1915- Invalid?); Manitoban Elk (*C.e.* (*Cervus canadensis*) *manitobensis* Millais, 1915- Invalid?); Maral Deer (*C.e. maral* Ogilby, 1840 - Invalid?); Maral Red Deer (*C.e. maral* Gray, 1850 - Invalid?); Merriam's Elk (*C.e.* (*Cervus canadensis*) *merriami* Nelson, 1902 - Invalid: extinct circa 1923); Merriam's Wapiti (*C.e.* (*Cervus canadensis*) *merriami* Nelson, 1902- extinct circa 1923, Invalid?); Olympic Elk (*C.e.* (*Cervus canadensis*) *occidentalis* Hamilton Smith, 1827 - Invalid; *C.e.* (*Cervus canadensis*) *roosevelti* Merriam, 1897- Invalid?); Red Deer; Rocky Mountain Elk (*C.e.* (*Cervus canadensis*) *nelsoni* Bailey, 1935 - Invalid?); Rocky Mountain Wapiti (*C.e.* (*Cervus canadensis*) *nelsoni* Bailey, 1935 - Invalid?); Roosevelt Elk (*C.e.* (*Cervus canadensis*) *roosevelti* Merriam, 1897- Invalid?); Roosevelt Wapiti (*C.e.* (*Cervus canadensis*) *occidentalis* Hamilton Smith, 1827 - Invalid?; *C.e. (Cervus canadensis) roosevelti* Merriam, 1897- Invalid?); Roosevelt's Wapiti (*C.e.* (*Cervus canadensis*) *roosevelti* Merriam, 1897- Invalid?); San Joaquin Valley Elk (*C.e.* (*Cervus canadensis*) *nannodes* Merriam, 1905 - Invalid?); Scottish Red Deer (*C.e. scoticus* Lonnberg, 1906 - Invalid?); Shingielt Red Deer (*C.e.* (*Cervus canadensis*) *wachei* Noack, 1902 - Invalid?); Short-faced Carpathian Red Deer (*C.e. campestris* Botezat, 1903 - Invalid?); Shou (*C.e. affinis* Hodgson, 1841 - Invalid?)[148]; Shou (*C.e.* (*Cervus canadensis*) *wallichi* G. Cuvier, 1823 - Invalid?)[106]; Shou Deer (*C.e. wallichi* G. Cuvier, 1823 - Invalid?); "Siberian Elk" (*C.e. sibirica* (*Cervus canadensis sibiricus*) Severtzov, 1873 - Invalid?); Sichuan Deer (*C.e.* (*Cervus canadensis*) *macneilli* Lydekker, 1909 - Invalid?); Sikkim Stag (*C.e. affinis* Hodgson, 1841 - Invalid?; *C.e.*

wallichi G. Cuvier, 1823 - Invalid?); Spanish Red Deer (*C.e. hispanicus* Helzheimer, 1909 - Invalid?); Swedish Red Deer (*C.e. elaphus* Linnaeus, 1758 - Valid); Tian Shan Maral (*C.e.* (*Cervus canadensis*) *songaricus* Severtzov, 1873- Invalid?)[106]; Tian Shan Wapiti (*C.e.* (*Cervus canadensis*) *songaricus* Severtzov, 1873 - Invalid?)[106]; Tien-Shan Wapiti (*C.e.* (*Cervus canadensis*) *songaricus* Severtzov, 1873 - Invalid?)[148]; Tibetan Red Deer (*C.e. wallichi* G. Cuvier, 1823 - Invalid?); Tule Elk (*C.e.* (*Cervus canadensis*) *nannodes* Merriam, 1905 - Invalid?); Venado Alazan (Hispanic)[14]; Wallich's Deer (*C.e. wallichi* G. Cuvier, 1823 - Invalid?); Wapiti[14]; Wapiti (French: applied to *C.e. elaphus* Linnaeus, 1758 - Valid)[42]; Western Elk (*C.e.* (*Cervus canadensis*) *occidentalis* Hamilton Smith, 1827 - Invalid?; *C.e.* (*Cervus canadensis*) *roosevelti* Merriam, 1897- Invalid?); Western European Red Deer (*C.e. carpathicus* Tatarinov, 1956 - Invalid?); Western European Red Deer (*C.e. elaphus* Linnaeus, 1758 - Valid); Yarkand Deer (*C.e.* (*Cervus canadensis*) *yarkandensis* Blanford, 1892 - Invalid?). HABITS: Feeds on agaves (basal portions of fleshy leaves, green flower stalks and flowers); asters; bear grass; eriogonums; goosefoot; grasses; lupines; mushrooms; sedges, and other mountain plants and will browse aspen; cliffrose; conifer needles; manzanita; mountain mahogany; oak (acorns and leaves); rabbitbrush; sagebrush; serviceberry; snowberry, and willow. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: The Elk known as *Cervus elaphus* subsp. *merriami*, which was native to Arizona, is now extinct with the last reported sighting being made in the White Mountains in 1923. This extinction was brought about by unregulated hunting. Merriam's Elk is believed to have been extirpated from New Mexico by 1900 and from Arizona in 1923. By 1913, *Cervus canadensis* subsp. *nelsoni*, were being transplanted into Arizona. *Cervus elaphus* is native to central and southern North America. *14 (042812 - subsp. *merriami* (Nelson); subsp. *nelsoni* (V. Bailey), color presentation), 42 (061912 - no record for *Cervus canadensis*), **55** (recorded as *Cervus canadensis* (Erxleben). Elk. Formerly probably occurred in most of the higher mountains of the state; was exterminated and reintroduced (in 1913); presently occurs at higher elevations in the central part of the state.), 73, 100 (color photograph), 106 (061212 - includes a listing of subspecies, color presentation; there is a separate "page" for Wapiti - *Cervus canadensis* (Erxleben, 1777)), 118 (recorded as *Cervus canadensis merriami* Nelson - Distribution: Extinct; probably formerly occurred in most of the higher mountains of the state. Figure 108, Page 251, and *Cervus canadensis nelsoni* Bailey - Distribution: Introduced into Arizona (in 1913 and later) from Yellowstone National Park, Wyoming. Now established.), 148 (color photographs, including color photographs of many of the subspecies), 149*

Cervus elaphus subsp. *merriami* Nelson, 1902 - Invalid?: Merriam's Elk

SYNONYMY: *Cervus canadensis* subsp. *merriami* Nelson, 1902 - Invalid?, 1902. COMMON NAMES: Arizona Wapiti; Merriam's Elk; Merriam's Wapiti; Wapiti[14]. HABITS: The species feeds on agaves (basal portions of fleshy leaves, green flower stalks and flowers); asters; bear grass; eriogonums; goosefoot; grasses; lupines; mushrooms; sedges, and other mountain plants and will browse aspen; cliffrose; conifer needles; manzanita; mountain mahogany; oak (acorns and leaves); rabbitbrush; sagebrush; serviceberry; snowberry, and willow. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations, this subspecies has been reported from forests and wetland ecological formations. NOTES: The Elk known as *Cervus elaphus* subsp. *merriami*, which was native to Arizona, is now extinct with the last reported sighting being made in the White Mountains in 1923. This extinction was brought about by unregulated hunting. Merriam's Elk is believed to have been extirpated from New Mexico by 1900 and from Arizona in 1923. By 1913, *Cervus canadensis* subsp. *nelsoni*, were being transplanted into Arizona. *14 (042812 - subsp. *merriami* (Nelson); subsp. *nelsoni* (V. Bailey)), 42 (061912 - no record of this subspecies), 55 (species: recorded as *Cervus canadensis* (Erxleben). Elk. Formerly probably occurred in most of the higher mountains of the state; was exterminated and reintroduced (in 1913); presently occurs at higher elevations in the central part of the state.), 73 (species), 100 (color photograph of species, species record), 106 (061312 - recorded as *Cervus elaphus*: *Cervus canadensis merriami*), **118** (recorded as *Cervus canadensis merriami* Nelson - Distribution: Extinct; probably formerly occurred in most of the higher mountains of the state. Figure 108, Page 251), 148, 149 (no record)*

Odocoileus hemionus (Rafinesque, 1817): Mule Deer

COMMON NAMES: Black-tailed Deer (*O.h. columbianus* (Richardson, 1829) - Invalid?); *O.h. hemionus* (Rafinesque, 1817) - Valid; Blacktail Deer (*O.h. columbianus* (Richardson, 1829) - Invalid?); Burro (*Odocoileus hemionus crooki* Mearns, 1897 - Invalid?); Burro Mule Deer (*O.h. eremicus* Mearns, 1897 - Invalid?); California Mule Deer (*O.h. californicus* Caton, 1876 - Invalid?); Cedros Island Mule Deer (*O.h. cedrosensis* Merriam, 1898 - Invalid?); Cerros Island Mule Deer *O.h. cerrosensis* Merriam, 1898 - Valid); Columbian Black-tailed Deer (*O.h. columbianus* (Richardson, 1829) - Invalid?); Crook Black-tailed Deer (*O.h. crooki* Mearns, 1897 - Invalid?); Desert Mule Deer (*O.h. crooki* Mearns, 1897 - Invalid?); *O.h. eremicus* Mearns, 1897 - Invalid?); Inyo Mule Deer (*O.h. inyoensis* Cowan, 1933 - Invalid?); Mule Deer; Peninsula Mule Deer (*O.h. peninsulae* Lydekker, 1898 - Invalid?); Rocky Mountain Mule Deer (*O.h. hemionus* (Rafinesque, 1817) - Valid); Sitka Deer (*O.h. sitkensis* Merriam, 1898 - Invalid?); Sitka Black-tailed Deer (*O.h. sitkensis* Merriam, 1898 - Invalid?); Southern Mule Deer (*O.h. fuliginatus* Cowan, 1937 - Invalid?); Tiburon Island Mule Deer (*O.h. sheldoni* Goldman, 1939 - Invalid?); Venado Bura (Spanish)[42]; Venado Pardo (Hispanic)[14]. HABITS: Feeds on acorns, beans, branches, fruits, leaves or needles, nuts, seeds and/or twigs of aspen, barberry, bitterbrush, blackberry, buckbrush, buckwheat, calliandra, ceanothus, catclaw, cedar, cliffrose, dogwood, Douglas fir, huckleberry, joint fir, jojoba, juniper, mountain mahogany, mountainlover, oak, pinyon, ponderosa pine, poplar, sagebrush, saltbush, serviceberry, thimbleberry, white fir, wild cherry, willow and yew, and grasses lupines, mistletoe, moss, mushrooms, salal, sedges and spurges. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042412 - subsp. *hemionus*; subsp. *crooki* (Mearns), color presentation), 42 (061912), **55** (recorded as *Odocoileus hemionus* (Rafinesque). Black-tailed or Mule Deer.

Statewide, but not of uniform distribution (250 - 9,000 feet).), 65, 73, 100 (color photograph), 106 (042412 - includes a listing of subspecies, color presentation), 118 (recorded as *Odocoileus hemionus crooki* (Mearns) - Distribution: Northeastern, central and southeastern part of the state. Figure 109, Page 252), 148 (color presentation)*

***Odocoileus hemionus* subsp. *crooki* Mearns, 1897 - Invalid?: Mule Deer**

COMMON NAMES: Burro; Crook Black-tailed Deer; Desert Mule Deer; Mule Deer; Venado Pardo (Hispanic)[14]. HABITS: The species feeds on acorns, beans, branches, fruits, leaves or needles, nuts, seeds and/or twigs of aspen, barberry, bitterbrush, blackberry, buckbrush, buckwheat, calliandra, ceanothus, catclaw, cedar, cliffrose, dogwood, Douglas fir, huckleberry, joint fir, jojoba, juniper, mountain mahogany, mountainlover, oak, pinyon, ponderosa pine, poplar, sagebrush, saltbush, serviceberry, thimbleberry, white fir, wild cherry, willow and yew, and grasses lupines, mistletoe, moss, mushrooms, salal, sedges and spurges. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042412 - subsp. *hemionus*; subsp. *crooki* (Mearns), color presentation of species), 42 (061912 - no record of this subspecies), 55 (species: recorded as *Odocoileus hemionus* (Rafinesque) Black-tailed or Mule Deer. Statewide, but not of uniform distribution (250 - 9,000 feet).), 65, 73 (species), 100 (species, color photograph of species), 106 (042412 - species, color presentation of species), **118** (recorded as *Odocoileus hemionus crooki* (Mearns) - Distribution: Northeastern, central and southeastern part of the state. Figure 109, Page 252), 148 (color presentation)*

***Odocoileus virginianus* (Zimmermann, 1780): White-tailed Deer**

COMMON NAMES: Acapulco White-tailed Deer (*O.v. acapulcensis* Caton, 1877 - Invalid?); Andean White-tailed Deer (*O.v. peruvianus* Gray, 1874 - Invalid?); Arizona White-tailed Deer (*O.v. couesi* Coues and Yarrow, 1875 - Invalid?); Arizona Whitetail (*O.v. couesi* Coues and Yarrow, 1875 - Invalid?); Avery Island White-tailed Deer (*O.v. mcilhennyi* F.W. Miller, 1928 - Invalid?); Blackbeard Island White-tailed Deer (*O.v. nigribarbis* Goldman and Kellogg, 1940 - Invalid?); Bulls Island White-tailed Deer (*O.v. taurinsulae* Goldman and Kellogg, 1940 - Invalid?); Carmen Mountains Jorge Deer (*O.v. carminis* Goldman and Kellogg, 1940 - Invalid?); Central American White-tailed Deer (*O.v. truei* Merriam, 1898 - Invalid?); Cerf de Virginie (French)[42]; Chiapas White-tailed Deer (*O.v. nelsoni* Merriam, 1898 - Invalid?); Chiriqui White-tailed Deer (*O.v. chiriquensis* J.A. Allen, 1904 - Invalid?); Coiba Island White-tailed Deer (*O.v. rothschildi* Thomas, 1902 - Invalid?); Columbian White-tailed Deer (*O.v. leucurus* (Douglas, 1929) - Valid); Coues White-tailed (*O.v. couesi* Coues and Yarrow, 1875 - Invalid?); Coues White-tailed Deer (*O.v. couesi* Coues and Yarrow, 1875 - Invalid?); Coues' Deer (*O.v. couesi* Coues and Yarrow - Invalid?); Coues' White-tailed Deer (*O.v. couesi* Coues and Yarrow, 1875 - Invalid?); Dakota White-tailed Deer (*O.v. dacotensis* Goldman and Kellogg, 1940 - Invalid?); Desert Whitetail (*O.v. couesi* Coues and Yarrow, 1875 - Invalid?); Fantail (*O.v. couesi* Coues and Yarrow, 1875 - Invalid?); Fantail Deer (*O.v. couesi* Coues and Yarrow, 1875 - Invalid?); Florida Coastal White-tailed Deer (*O.v. osceola* Bangs, 1896 - Invalid?); Florida Keys White-tailed Deer (*O.v. clavium* Barbour and Allen, 1922 - Valid); Florida White-tailed Deer (*O.v. seminolus* Goldman and Kellogg, 1940 - Invalid?); Hilton Head Island White-tailed Deer (*O.v. hiltonensis* Goldman and Kellogg, 1940 - Invalid?); Hunting Island White-tailed Deer (*O.v. venatorius* Goldman and Kellogg, 1940 - Invalid?); Kansas White-tailed Deer (*O.v. macrourus* Rafinesque, 1817 - Invalid?); Key Deer (*O.v. clavium* Barbour and G.M. Allen, 1922 - Valid); Maso (Yaqui); Lichtenstein's White-tailed Deer (*O.v. mexicanus* Gmelin, 1788 - Invalid?); Mexican Lowland White-tailed Deer (*O.v. thomasi* Merriam, 1898 - Invalid?); Mexican White-tailed Deer (*O.v. mexicanus* Gmelin, 1788 - Invalid?); Miquihuan White-tailed Deer (*O.v. miquihuanensis* Goldman and Kellogg, 1940 - Invalid?); Nelson's White-tailed Deer (*O.v. nelsoni* Merriam, 1898 - Invalid?); Nicaragua White-tailed Deer (*O.v. truei* Merriam, 1898 - Invalid?); Northern Plains White-tailed Deer (*O.v. dacotensis* Goldman and Kellogg, 1940 - Invalid?); Northern Rocky Mountains White-tailed Deer (*O.v. ochrourus* Bailey, 1932 - Invalid?); Northern Vera Cruz White-tailed Deer (*O.v. veraecrucis* Goldman and Kellogg, 1940 - Invalid?); Northern (Woodland) White-tailed Deer (*O.v. borealis* Miller, 1900 - Invalid?); Northern Woodland White-tailed Deer (*O.v. borealis* Miller, 1900 - Invalid?); Northwest White-tailed Deer (*O.v. ochrourus* Bailey, 1932 - Invalid?); Oaxaca White-tailed Deer (*O.v. oaxacensis* Goldman and Kellogg, 1940 - Invalid?); Osceola's White-tailed Deer (*O.v. osceola* Bangs, 1896 - Invalid?); Peruvian Venado Deer (*O.v. peruvianus* Gray, 1874 - Invalid?); Plains White-tailed Deer (*O.v. macrourus* Rafinesque, 1817 - Invalid?); Rafinesque's White-tailed Deer (*O.v. macrourus* Rafinesque, 1817 - Invalid?); Rain Forest White-tailed Deer (*O.v. toltecus* Saussure, 1860 - Invalid?); Rothschild's White-tailed Deer (*O.v. rothschildi* Thomas, 1902 - Invalid?); Sandhill White-tailed Deer (*O.v. texanus* Mearns, 1898 - Invalid?); Sinaloa White-tailed Deer (*O.v. sinaloae* J.A. Allen, 1903 - Invalid?); Sonora White-tailed Deer (*O.v. couesi* Coues and Yarrow, 1875 - Invalid?); Sonoran Fantail (*O.v. couesi* Coues and Yarrow, 1875 - Invalid?); South American White-tailed Deer (*O.v. gymnotis* Wiegmann, 1833 - Invalid?); *O.v. peruvianus* Gray 1874 - Invalid?); Southern White-tailed Deer (*O.v. virginianus* (Zimmermann, 1870) - Valid); Tamaulipas White-tailed Deer (*O.v. miquihuanensis* Goldman and Kellogg, 1940 - Invalid?); Tawny Northwest White-tailed Deer (*O.v. ochrourus* Bailey, 1932 - Invalid?); Texas White-tailed Deer (*O.v. texanus* Mearns, 1898 - Invalid?); Thomas's White-tailed Deer (*O.v. thomasi* Merriam, 1898 - Invalid?); True's White-tailed Deer (*O.v. truei* Merriam, 1898 - Invalid?); Venado Cola Blanca (Hispanic)[14]; Venado Cola Blanca (Spanish)[42]; Virginia Deer; Virginia White-tailed Deer (*O.v. virginianus* (Zimmermann, 1870) - Valid); Western White-tailed Deer (*O.v. macrourus* Rafinesque, 1817 - Invalid?); White-tailed Deer (*O.v. virginianus* (Zimmermann, 1870) - Valid); Whitetail; Whitetail Deer; Yucatán White-tailed Deer (*O.v. toltecus* Saussure, 1860 - Invalid?; *O.v. yucatanensis* Hays, 1872 - Invalid?). HABITS: The species feeds on fungi, grass and acorns, branches, buds, cones, fruits, leaves, mast, needles and /or twigs of alder, barberry, buckbrush, calliandra, catclaw acacia, Emory and scrub oaks and other evergreen oaks, hackberry, hemlock, holly-leaf buckthorn, juniper, mesquite, mountainlover, Oregon-grape, pinyon, ratany, sagebrush, skunkbush, spiderwort, spruce, willow, yellow-leaf silktassel. Young are generally dropped along ridges and hillsides. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological

formations. *14 (042412 - subsp. *couesi* (Coues and Yarrow); subsp. *texana* (Mearns), color presentation), 42 (061912), **55** (recorded as *Odocoileus virginianus* (Zimmermann). White-tailed Deer. Southeastern Arizona (1,200 - 9,000 feet).), 65, 73, 100 (color photograph), 106 (042412 - includes a listing of subspecies, color presentation), 118 (recorded as *Odocoileus virginianus couesi* (Coues & Yarrow) - Distribution: Southern Arizona. Figure 110, Page 254), 148 (color presentation)*

***Odocoileus virginianus* subsp. *couesi* Coues & Yarrow, 1875 - Invalid?: Coues' White-tailed Deer**

COMMON NAMES: Arizona Whitetail; Arizona White-tailed Deer; Coues' Deer; Coues White-tailed; Coues' White-tailed Deer; Desert Whitetail; Fantail; Fantail Deer; Maso (Yaqui); Sonora White-tailed Deer; Sonoran Fantail; Venado Cola Blanca (Hispanic)[14]; Virginia Deer; Whitetail; White-tailed Deer; Whitetail Deer. HABITS: The species feeds on fungi, grass and acorns, branches, buds, cones, fruits, leaves, mast, needles and /or twigs of alder, barberry, buckbrush, calliandra, catclaw acacia, Emory and scrub oaks and other evergreen oaks, hackberry, hemlock, holly-leaf buckthorn, juniper, mesquite, mountainlover, Oregon-grape, pinyon, ratany, sagebrush, skunkbush, spiderwort, spruce, willow, yellow-leaf silktassel. Young are generally dropped along ridges and hillsides. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042412 - subsp. *couesi* (Coues and Yarrow); subsp. *texana* (Mearns), color presentation of species), 42 (061912 - no record of this subspecies), 55 (species: recorded as *Odocoileus virginianus* (Zimmermann). White-tailed Deer. Southeastern Arizona (1,200 - 9,000 feet).), 65, 73 (species), 100 (color photograph of species), 106 (042412 - color presentation), **118** (recorded as *Odocoileus virginianus couesi* (Coues & Yarrow) - Distribution: Southern Arizona. Figure 110, Page 254), 148 (color presentation)*

Erethizontidae: The Porcupine Family

Erethizon dorsatum (see *Erethizon dorsatus*)

Erethizon dorsatum subsp. *couesi* (see *Erethizon dorsatus* subsp. *couesi*)

***Erethizon dorsatus* (Linnaeus, 1758): Common Porcupine**

SYNONYMY: *Erethizon dorsatum* (Linnaeus, 1758). COMMON NAMES: American Porcupine; Arizona Porcupine (*E.d. couesi* Mearns, 1897 - Valid); Canadian Porcupine; Canadian Tree Porcupine; Common Porcupine; Coues' Tree Porcupine (*E.d. couesi* Mearns, 1897 - Valid); North American Porcupine; Porc-épic d'Amérique (French)[42]; Porcupine; Puerco Espin (Hispanic)[14]; Puercoespín Norteamericano (Spanish)[42]; Rocky Mountain Porcupine (*E.d. epixanthus* Brandt, 1835 - Valid); Western Porcupine (*E.d. epixanthus* Brandt, 1835 - Valid); Yellow-haired Porcupine (*E.d. epixanthus* Brandt, 1835 - Valid). HABITS: Feeds on the bark of cedar, fir, hemlock, mesquite and pine trees and ocotillo and on acorns, apple trees, ash leaves, aspen trees, basswood, young beech trees and beachnuts, buckbrush (Ceanothus sp.), buds, clover, dwarf mistletoe, fungi, grass (juveniles), herbs (juveniles), leaves, lupine, oak leaves, pine needles, fruits of pricklypear cacti, skunk cabbage, sugar maples and twigs. Shelter is sought in caves, hollow logs, mine shafts, piles of rocks, rocky slopes and rock walls. The young are born in dens (no nest structure) located in the cavities of dying tree, tree stumps, caves, under rocks and man-made structures. Dens may be used for many years and generations. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042512 - subsp. *couesi* (Mearns); subsp. *epixanthum* (Brandt)), 42 (061912), **55** (recorded as *Erethizon dorsatum* Linnaeus. Porcupine. Probably statewide but more common in wooded areas (3,000 - 9,000 feet).), 65, 73, 100 (color photograph), 106 (042512 - recorded as *Erethizon dorsatum* (Linnaeus, 1758), includes a listing of subspecies, color presentation), 118 (recorded as *Erethizon dorsatum couesi* Mearns - Distribution: Statewide in mountains and riparian situations. Figure 86, Page 215), 148 (color presentation)*

***Erethizon dorsatus* subsp. *couesi* Mearns, 1897: Common Porcupine**

SYNONYMY: *Erethizon dorsatum* subsp. *couesi* (Mearns, 1897). COMMON NAMES: American Porcupine; Arizona Porcupine; Canadian Porcupine; Common Porcupine; Coues' Tree Porcupine; North American Porcupine; Porcupine; Puerco Espin (Hispanic)[14]. HABITS: Feeds on the bark of cedar, fir, hemlock, mesquite and pine trees and ocotillo and on acorns, apple trees, ash leaves, aspen trees, basswood, young beech trees and beachnuts, buckbrush (Ceanothus sp.), buds, clover, dwarf mistletoe, fungi, grass (juveniles), herbs (juveniles), leaves, lupine, oak leaves, pine needles, fruits of pricklypear cacti, skunk cabbage, sugar maples and twigs. Shelter is sought in caves, hollow logs, mine shafts, piles of rocks, rocky slopes and rock walls. The young are born in dens (no nest structure) located in the cavities of dying tree, tree stumps, caves, under rocks and man-made structures. Dens may be used for many years and generations. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042512 - subsp. *couesi* (Mearns); subsp. *epixanthum* (Brandt)), 42 (061912), 55 (species: recorded as *Erethizon dorsatum* Linnaeus. Porcupine. Probably statewide but more common in wooded areas (3,000 - 9,000 feet).), 65 (species), 73 (species), 100 (color photograph of species, species record), 106 (042512 - species including a listing of subspecies, color presentation of species), **118** (recorded as *Erethizon dorsatum couesi* Mearns - Distribution: Statewide in mountains and riparian situations. Figure 86, Page 215), 148 (color presentation of species)*

Felidae: The Cat Family

Felis concolor (see *Puma concolor*)

Felis concolor subsp. *azteca* (see *Puma concolor* subsp. *couguar*)

Felis concolor subsp. *browni* (see *Puma concolor* subsp. *couguar*)

Felis onca (see *Panthera onca*)

Felis onca subsp. *arizonensis* (see footnote 118 under *Panthera onca* subsp. *arizonensis*)

Felis pardalis (see *Leopardus pardalis*)

Felis pardalis subsp *sonoriensis* (see *Leopardus pardalis* subsp *sonoriensis*)

Felis rufus (see *Lynx rufus*)

Felis rufus subsp. *baileyi* (see footnote 118 under *Lynx rufus* subsp. *baileyi*)

Felis yaguarondi (see *Puma yagouaroundi*)

Felis yaguarondi subsp. *cacomitli* (see footnote 118 under *Puma yagouaroundi*)

Herpailurus yaguarondi (see *Puma yagouaroundi*)

***Leopardus pardalis* (Linnaeus, 1758): Ocelot**

SYNONYMY: *Felis pardalis* (Linnaeus, 1758). COMMON NAMES: Dwarf Leopard; Leopard-cat; McKenney's Wildcat; Ocelot; Ocelote (Spanish)[42]; Painted Leopard; Sonoran Ocelot (*L.p. sonoriensis* (Goldman, 1925) - Valid); Tiger-cat; Tigrillo (Mexico)[145]. HABITS: (Feeds on amphibians, lesser anteaters, armadillos, birds, fish, insects, land crabs, small to medium-sized mammals (including mice, rats and rabbits among others) and reptiles (including lizards, snakes and land tortoises). Kittens are born in a nest lined with grass or other materials located in rocky bluffs, caves, rocky dens, hollow logs or dense thickets. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: EXTIRPATED. *8, 14 (042512 - subsp. *sonoriensis* is the subspecies reported as occurring in Arizona), 42 (061912), **55** (recorded as *Felis pardalis* Linnaeus. Ocelot. Formerly southeastern Arizona as far north as Fort Verde; no recent records.), 100 (color photograph), 106 (042512 - includes a listing of subspecies), 118 (recorded as *Felis pardalis sonoriensis* Goldman - Distribution: Formerly southeastern Arizona as far north as Ft. Verde. Figure 104, Page 244), 148 (color presentation)*

***Leopardus pardalis* subsp *sonoriensis* (Goldman, 1925): Sonoran Ocelot**

SYNONYMY: *Felis pardalis* subsp. *sonoriensis* Goldman, 1925. COMMON NAMES: Dwarf Leopard; McKenney's Wildcat; Ocelot; Ocelote (Spanish); Painted Leopard; Sonoran Ocelot. HABITS: (Feeds on amphibians, lesser anteaters, armadillos, birds, fish, insects, land crabs, small to medium-sized mammals (including mice, rats and rabbits among others) and reptiles (including lizards, snakes and land tortoises). Kittens are born in a nest lined with grass or other materials located in rocky bluffs, caves, rocky dens, hollow logs or dense thickets. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: EXTIRPATED. *8 (species), 14 (042512 - subsp. *sonoriensis* is the subspecies reported as occurring in Arizona), 42 (061912), 55 (species: recorded as *Felis pardalis* Linnaeus. Ocelot. Formerly southeastern Arizona as far north as Fort Verde; no recent records.), 100 (species, color photograph of species), 106 (042512 - includes a listing of subspecies), **118** (recorded as *Felis pardalis sonoriensis* Goldman - Distribution: Formerly southeastern Arizona as far north as Ft. Verde. Figure 104, Page 244), 148 (color presentation of species)*

***Lynx rufus* (Schreber, 1777): Bobcat**

SYNONYMY: *Felis rufus* Schreber, 1777. COMMON NAMES: Bailey Bobcat (*L.r. baileyi* Merriam, 1890 - Valid); Bailey's Lynx (*L.r. baileyi* Merriam, 1890 - Valid); Bobcat (*L.r. rufus* (Schreber, 1777) - Valid); Desert Bobcat (*L.r. baileyi* Merriam, 1890 - Valid); Gato Montes (Hispanic)[14]; Lince Americano (Spanish)[42]; Lynx Roux (French)[42]; Mexican Bobcat (*L.r. escuinapae* J.A. Allen, 1903 - Valid); Plateau Bobcat (*L.r. baileyi* Merriam, 1890 - Valid); Red Lynx; Wildcat. HABITS: Feeds on almost any meat source available including ground nesting birds, carrion, domestic cats, cottontail rabbits, deer, foxes, insects, jackrabbits, lizards, small mammals, opossums, porcupines, raccoons, reptiles, rodents, bighorn sheep, skunks and woodchucks. Shelter may be taken in a rock cleft, thickets or on the branches of trees. Young are born in dens located in rocky caves, rock shelters, recesses and protected areas with nests made of leaves and other dry plant material. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (091108 - *Lynx rufus baileyi* Schreber), **55** (recorded as *Lynx rufus* (Schreber). Bobcat. Statewide (120 - 9,300 feet).), 65, 73, 100 (color photograph), 106 (052906), 118 (recorded as *Lynx rufus baileyi* Merriam - Distribution: Statewide. Figure 106, Page

247), **St. Philip's In The Hills Parish, Sunday Bulletin,** Page 38 (May 17, 2009), **MIX FM** (94.9 MIX fm, January 18, 2011, Big Al on the Bobby Rich Morning Mix)*

Lynx rufus subsp. *baileyi* Merriam, 1890: Desert Bobcat

COMMON NAMES: Bailey Bobcat; Bailey's Lynx; Bobcat; Desert Bobcat; Gato Montes (Hispanic)[14]; Plateau Bobcat; Wildcat. HABITS: Feeds on almost any meat source available including ground nesting birds, carrion, domestic cats, cottontail rabbits, deer, foxes, jackrabbits, lizards, small mammals, opossums, porcupines, raccoons, reptiles, rodents, bighorn sheep, skunks and woodchucks. Shelter may be taken in a rock cleft, thickets or on the branches of trees. Young are born in dens located in rocky caves, rock shelters, recesses and protected areas with nests made of leaves and other dry plant material. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042512 - subsp. *baileyi* (Merriam), color presentation), 42 (061912), 55 (species: recorded as *Lynx rufus* (Schreber). Bobcat. Statewide (120 - 9,300 feet).), 65, 73 (species), 100 (species, color photograph of species), 106 (042512 - species, includes a listing of subspecies, color presentation), **118** (recorded as *Lynx rufus baileyi* Merriam - Distribution: Statewide. Figure 106, Page 247), 148 (color presentation)*

Panthera onca (Linnaeus, 1758): Jaguar

SYNONYMY: *Felis onca* Linnaeus, 1758. COMMON NAMES: Amazonian Jaguar (*P.o. onca* (Linnaeus, 1758) - Valid); Arizona Jaguar (*P.o. arizonensis* (Goldman, 1932) - Valid); American Leopard; Black Panther; Blank Panther; Central American Jaguar (*P.o. centralis* (Mearns, 1901) - Valid); Goldman's Jaguar (*P.o. goldmani* (Mearns, 1901) - Valid); Hernandez's Jaguar (*P.o. hernandesii* (J.E. Gray, 1857) - Valid); Jaguar; Jaguar (Hispanic)[14]; Jaguar (Spanish)[42]; Jaguarete (Spanish)[8]; Mexican Jaguar (*P.o. hernandesii* (J.E. Gray, 1857) - Valid); Mexican Tiger; Panther; Paraguayan Jaguar (*P.o. paraguensis* (Hollister, 1914) - Valid); Parana Jaguar (*P.o. palustris* (Ameghino, 1888) - Valid); Peruvian Jaguar (*P.o. peruviana* (de Blainville, 1843) - Valid); Tigre[65,145]; Veracruz Jaguar (*P.o. veraecrucis* (Nelson and Goldman, 1933) - Valid); West Mexican Jaguar (*P.o. hernandesii* (J.E. Gray, 1857) - Valid); Yaguar[8]; Yukatan Jaguar (*P.o. goldmani* (Mearns, 1901) - Valid). HABITS: Feeds on armadillos, birds, caiman, capybaras, deer, fish, frogs, livestock, pacas, peccaries (javelina), mice, rabbits, tapirs, turtles and other vertebrates. Young are born in dens located in caves, rocky areas, dense brush and thickets. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: EXTIRPATED from Arizona. *8, 14 (042512 - subsp. *arizonensis* (Goldman)), 42 (061912), **55** (recorded as *Felis onca* Linnaeus. Jaguar. Probably formerly rare throughout the state. Today an occasional individual is found in the southern part of the state.), 65, 100 (color photograph), 106 (042512 - includes a listing of subspecies, color presentation), 118 (recorded as *Felis onca arizonensis* Goldman - Distribution: Probably formerly rare throughout the state. Today an occasional individual found in the southern part of the state. Figure 104, Page 244), 148 (color presentation)*

Panthera onca subsp. *arizonensis* (Goldman, 1932): Arizona Jaguar

COMMON NAMES: Arizona Jaguar; Jaguar; Jaguar (Hispanic)[14]; Jaguar (Spanish)[42]. HABITS: Feeds on armadillos, birds, caiman, capybaras, deer, fish, frogs, livestock, pacas, peccaries (javelina), mice, rabbits, tapirs, turtles and other vertebrates. Young are born in dens located in caves, rocky areas, dense brush and thickets. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: EXTIRPATED from Arizona. *8, 14 (042512 - subsp. *arizonensis* Goldman), 42 (061912), 55 (species, recorded as *Felis onca* Linnaeus. Jaguar. Probably formerly rare throughout the state. Today an occasional individual is found in the southern part of the state.), 65 (species), 100 (species, color photograph of species), 106 (042512 - species, includes a listing of subspecies, color presentation), **118** (recorded as *Felis onca arizonensis* Goldman - Distribution: Probably formerly rare throughout the state. Today an occasional individual found in the southern part of the state. Figure 104, Page 244), 148 (color presentation)*

Puma concolor (Linnaeus, 1771): Cougar

SYNONYMY: *Felis concolor* Linnaeus, 1771. COMMON NAMES: Adirondack Cougar (*P.c. couguar* (Kerr, 1792) - Valid); Amazon Cougar (*P.c. discolor* (Schreber, 1777) - Invalid?; *P.c. puma* Molina, 1782 - Valid); American Lion; Andes Puma (*P.c. araucanus* (Osgood, 1943) - Invalid?; *P.c. puma* Molina, 1782 - Valid?); Argentine Puma (*P.c. cabrerae* Pocock, 1940 - Valid); Anthony's Puma (*P.c. anthonyi* (Nelson and Goldman, 1931) - Valid); Baja California Cougar (*P.c. improcera* (Phillips, 1912) - Invalid; *P.c. couguar* (Kerr, 1792) - Valid); Bolivian Cougar (*P.c. osgoodi* (Nelson and Goldman, 1943) - Invalid?; *P.c. concolor* (Linnaeus, 1771) - Valid?); Brazilian Cougar (*P.c. concolor* (Linnaeus, 1771) - Valid); Brown Tiger; California Cougar (*P.c. californica* (May, 1896) - Invalid? ; *P.c. couguar* (Kerr, 1792) - Valid?); California Lion; California Mountain Lion (*P.c. californica* (May, 1896) - Invalid?; *P.c. couguar* (Kerr, 1792) - Valid?); Cat-a-Mountain; Catamount; Catamount Cat (a mountain Red Tiger); Central American Puma (*P.c. costaricensis* (Merriam, 1901) - Valid); Chilean Puma (*P.c. puma* (Molina, 1782) - Valid); Columbian Cougar (*P.c. bangsi* (Merriam, 1901) - Invalid?; *P.c. concolor* (Linnaeus, 1771) - Valid?); Costa Rican Puma (*P.c. costaricensis* (Merriam, 1901) - Valid); Cougar; Deer Tiger; Eastern Cougar (*P.c. couguar* (Kerr, 1792) - Valid); Eastern Puma (*P.c. couguar* (Kerr, 1792) - Valid); Eastern South American Cougar (*P.c. capricornensis* (Merriam, 1901) - Invalid?; *P.c. anthonyi* (Nelson and Goldman, 1931) - Valid?); El Leon (Mexico); Ecuador Cougar (*P.c. soderstromii* (Lömberg, 1913) - Invalid?; *P.c. concolor* (Linnaeus, 1771) - Valid?); Florida Cougar (*P.c. coryi* (Bangs, 1899) - Invalid; *P.c. couguar* (Kerr, 1792) - Valid); Florida Panther (*P.c. coryi* (Bangs, 1899) - Invalid; *P.c. couguar* (Kerr, 1792) - Valid); Ghost Cat; Indian Devil; Green's Puma (*P.c. greeni* (Nelson and Goldman, 1931) - Invalid?; *P.c. concolor* (Linnaeus, 1771) - Valid?); Hudson's Puma (*P.c. hudsoni* (Cabrera, 1958) - Invalid?; *P.c. cabrerae* Pocock, 1940 - Valid?); Incan Cougar

(*P.c. incanum* (Nelson and Goldman, 1929) - Invalid?; *P.c. concolor* (Linnaeus, 1771) - Valid?); Kaibab Cougar (*P.c. kaibabensis* (Nelson and Goldman, 1931) - Invalid; *P.c. couguar* (Kerr, 1792) - Valid); King Cat; Leon de Montana (Hispanic); Louisiana Cougar (*P.c. arundivaga* (Hollister, 1911) - Invalid?; *P.c. couguar* (Kerr, 1792) - Valid?); Mato Grosso Cougar (*P.c. acrocodia* (Goldman, 1943) - Invalid?; *P.c. anthonyi* (Nelson and Goldman, 1931) - Valid?); Mayan Cougar (*P.c. mayensis* (Nelson and Goldman, 1929) - Invalid; *P.c. couguar* (Kerr, 1792) - Valid); Mexican Cougar (*P.c. azteca* (Merriam, 1901) - Invalid; *P.c. couguar* (Kerr, 1792) - Valid); Mexican Lion; Missoula Cougar (*P.c. missoulensis* (Goldman, 1943) - Invalid; *P.c. couguar* (Kerr, 1792) - Valid); Mountain Lion (*P.c. concolor* (Linnaeus, 1771) - Valid); Mountain Screamer; North American Cougar (*P.c. couguar* (Kerr, 1792) - Valid); Northern South American Cougar (*P.c. concolor* (Linnaeus, 1771) - Valid); Northwestern Cougar (*P.c. oregonensis* (Rafinesque, 1832) - Invalid; *P.c. couguar* (Kerr, 1792) - Valid); Olympic Mountains Cougar (*P.c. olympus* (Merriam, 1897) - Invalid?; *P.c. couguar* (Kerr, 1792) - Valid?); Oregon Cougar (*P.c. oregonensis* (Rafinesque, 1832) - Invalid; *P.c. couguar* (Kerr, 1792) - Valid); Painted Cat; Painter; Panther; Patagonia Cougar (*P.c. patagonica* (Merriam, 1901) - Invalid?; *P.c. puma* Molina, 1782 - Valid?); Pearson's Puma (*P.c. pearsoni* (Thomas, 1901) - Invalid?; *P.c. puma* Molina, 1782 - Valid?); Puma; Puma (*P.c. concolor* (Linnaeus, 1771) - Valid); Puma (Spanish)[42]; Red Tiger (Belize); Rocky Mountain Cougar (*P.c. hippolestes* (Merriam, 1897) - Invalid; *P.c. couguar* (Kerr, 1792) - Valid); Silver Lion; Sneak Cat; Southern South American Cougar (*P.c. puma* Molina, 1782 - Valid); Texas Mountain Lion (*P.c. stanleyana* (Goldman, 1938) - Invalid; *P.c. couguar* (Kerr, 1792) - Valid); Vancouver Island Cougar (*P.c. vancouverensis* (Nelson and Goldman, 1932) - Invalid; *P.c. couguar* (Kerr, 1792) - Valid); Wisconsin Cougar (*P.c. schorgeri* (Jackson, 1955) - Invalid; *P.c. couguar* (Kerr, 1792) - Valid); Yuma Cougar (*P.c. browni* (Merriam, 1903) - Invalid; *P.c. couguar* (Kerr, 1792) - Valid); Yuma Mountain Lion (*P.c. browni* (Merriam, 1903) - Invalid; *P.c. couguar* (Kerr, 1792) - Valid); Yuma Puma (*P.c. browni* (Merriam, 1903) - Invalid; *P.c. couguar* (Kerr, 1792) - Valid). HABITS: Feeds on beavers, bighorn sheep, birds, black bears, bobcats, cottontail rabbits, coyotes, deer (its major prey species in Arizona), elk, jackrabbits, javelina, livestock, porcupines, pronghorn, raccoons, skunks and small mammals. Kittens are born in dens located in protected areas such as shallow caves, crevices, downed logs, rock shelters and impenetrable thickets. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: Running should be curtailed in areas where Mountain Lions are known to frequent, a person running may elicit an attack response from a nearby Mountain Lion. Mountain Lions are extremely agile and have great jumping power and have been reported as being able to leap to a height of 18 feet into a tree. *8 (*Puma concolor* (Linnaeus)), 14 (042512 - subsp. *azteca* (Merriam); subsp. *kaibabensis* (Nelson and Goldman); subsp. *stanleyana* (Goldman), color presentation. The Yuma Mountain Lion (*Felis concolor browni*) is included as a separate record.), 42 (062012), **55** (recorded as *Felis concolor* Linnaeus. Mountain Lion. Statewide (200 - 8,000 feet).), 65, 73, 100 (color photograph), 106 (062012 - includes a listing of subspecies, color presentation. Taken from the "Cougar" page: As with many predators, a cougar may attack if cornered, if a fleeing human stimulates their instinct to chase, or if a person "plays dead". Standing still however may cause the cougar to consider a person easy prey.[109] Exaggerating the threat to the animal through intense eye contact, loud but calm shouting, and any other action to appear larger and more menacing, may make the animal retreat. Fighting back with sticks and rocks, or even bare hands, is often effective in persuading an attacking cougar to disengage.[5] [73] ... Preceding attacks on humans, cougars display aberrant behavior, such as activity during daylight hours, a lack of fear of humans, and stalking humans.[110]), 118 (recorded as *Felis concolor azteca* Merriam - Distribution: Statewide except extreme western and northwestern parts; *Felis concolor browni* (Merriam) - Distribution: Southwestern part of the state, and *Felis concolor kaibabensis* Nelson and Goldman - Distribution: Northwestern Arizona, north and west of the Colorado River. Figure 105, Page 245), 145, 148 (color presentation), **ADS** (Sunday, April 13, 2008, Section A, Pages 1 and 10, includes a map of recent sightings)*

Puma concolor subsp. *azteca* (see *Puma concolor* subsp. *couguar*)

Puma concolor subsp. *browni* (see *Puma concolor* subsp. *couguar*)

Puma concolor subsp. *coryi* (see *Puma concolor* subsp. *couguar*)

Puma concolor subsp. *cougar* (see *Puma concolor* subsp. *couguar*)

***Puma concolor* subsp. *couguar* (Kerr, 1792): North American Cougar**

SYNONYMY: *Felis concolor* subsp. *azteca* Merriam, 1901; *Felis concolor* subsp. *browni* Merriam, 1903; *P.c.* subsp. *azteca* (Merriam, 1901); *P.c.* subsp. *browni* (Merriam, 1903); *P.c. coryi* (Bangs, 1899); *P.c. cougar* (Kerr, 1792); *P.c. hippolestes* (Merriam, 1897); *P.c. improcera* (Phillips, 1912); *P.c. kaibabensis* (Nelson and Goldman, 1931); *P.c. mayensis* (Nelson and Goldman, 1929); *P.c. missoulensis* (Goldman, 1943); *P.c. oregonensis* (Rafinesque, 1832); *P.c. schorgeri* (Jackson, 1955); *P.c. stanleyana* (Goldman, 1938); *P.c. vancouverensis* (Nelson and Goldman, 1932). COMMON NAMES: Adirondack Cougar; American Lion; Baja California Cougar; Brown Tiger; California Lion; Cat-a-Mountain; Catamount; Catamount Cat (a mountain Red Tiger); Cougar; Deer Tiger; Eastern Cougar; Eastern Puma; El Leon (Mexico); Florida Cougar; Florida Panther; Ghost Cat; Indian Devil; Kaibab Cougar; King Cat; Leon de Montana (Hispanic); Mayan Cougar; Mexican Cougar; Mexican Lion; Missoula Cougar; Mountain Lion; Mountain Screamer; North American Cougar; Northwestern Cougar; Oregon Cougar; Painted Cat; Painter; Panther; Puma; Rocky Mountain Cougar; Silver Lion; Sneak Cat; Texas Mountain Lion (*P.c. couguar* (Kerr, 1792)); Vancouver Island Cougar; Wisconsin Cougar; Yuma Cougar; Yuma Mountain Lion; Yuma Puma. HABITS: Feeds on beavers, bighorn sheep, birds, black bears, bobcats, cottontail rabbits, coyotes, deer (its major prey species in Arizona), elk, jackrabbits,

javelina, livestock, porcupines, pronghorn, raccoons, skunks and small mammals. Kittens are born in dens located in protected areas such as shallow caves, crevices, downed logs, rock shelters and impenetrable thickets. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: Running should be curtailed in areas where Mountain Lions are known to frequent, a person running may elicit an attack response from a nearby Mountain Lion. Mountain Lions are extremely agile and have great jumping power and have been reported as being able to leap to a height of 18 feet into a tree. *8 (*Puma concolor* (Linnaeus)), 14 (042512 - subsp. *azteca* (Merriam); subsp. *kaibabensis* (Nelson and Goldman); subsp. *stanleyana* (Goldman), color presentation. The Yuma Mountain Lion (*Felis concolor browni*) is included as a separate record.), 42 (062012), 55 (species: recorded as *Felis concolor* Linnaeus. Mountain Lion. Statewide (200 - 8,000 feet).), 65 (species), 73 (species), 85 (052906 - species), 100 (color photograph of species, species record), 106 (062012 - species, includes a listing of subspecies, color presentation of species. Taken from the "Cougar" page: As with many predators, a cougar may attack if cornered, if a fleeing human stimulates their instinct to chase, or if a person "plays dead". Standing still however may cause the cougar to consider a person easy prey.[109] Exaggerating the threat to the animal through intense eye contact, loud but calm shouting, and any other action to appear larger and more menacing, may make the animal retreat. Fighting back with sticks and rocks, or even bare hands, is often effective in persuading an attacking cougar to disengage.[5] [73] ... Preceding attacks on humans, cougars display aberrant behavior, such as activity during daylight hours, a lack of fear of humans, and stalking humans.[110]), **118** (recorded as *Felis concolor azteca* Merriam - Distribution: Statewide except extreme western and northwestern parts. Figure 105, Page 245 and *Felis concolor browni* (Merriam) - Distribution: Southwestern part of the state. Figure 105, Page 245), 145, 148 (color presentation)*

Puma concolor subsp. *hippolestes* (see *Puma concolor* subsp. *couguar*)

Puma concolor subsp. *improcera* (see *Puma concolor* subsp. *couguar*)

Puma concolor subsp. *kaibabensis* (see *Puma concolor* subsp. *couguar*)

Puma concolor subsp. *mayensis* (see *Puma concolor* subsp. *couguar*)

Puma concolor subsp. *missoulensis* (see *Puma concolor* subsp. *couguar*)

Puma concolor subsp. *oregonensis* (see *Puma concolor* subsp. *couguar*)

Puma concolor subsp. *schorgeri* (see *Puma concolor* subsp. *couguar*)

Puma concolor subsp. *stanleyana* (see *Puma concolor* subsp. *couguar*)

Puma concolor subsp. *vancouverensis* (see *Puma concolor* subsp. *couguar*)

***Puma yagouaroundi* (É. Geoffroy Saint-Hilaire, 1803): Jaguarundi**

SYNONYMY: *Felis yaguarondi* Lacépède, 1809; *Herpailurus yaguarondi* (Lacépède, 1809). COMMON NAMES: Eyra (a name given to the red phase)[106]; Gato Colorado (Spanish)[106]; Gato Moro (Spanish)[106]; Geoffroy's Jaguarundi (*P.y. yagouaroundi* (E. Geoffroy Saint-Hilaire, 1803) - Valid); Guatemalan Jaguarundi (*P.y. fossata* (Mearns, 1901) - Valid); Gulf Coast Jaguarundi (*P.y. cacomitli* (Berlandier, 1859) - Valid; Jaguarundi (a name given to the gray phase, Spanish)[106]; Jaguarundi Cat; Panamanian Jaguarundi (*P.y. panamensis* (J.A. Allen, 1904) - Valid); León Brenero (Spanish)[106]; Leoncillo ("Little Lion", Spanish)[106]; Onza (Spanish)[106]; Sinaloan Jaguarundi (*P.y. tolteca* (Thomas, 1898) - Valid); Tigrillo (Spanish)[106]. HABITS: Feeds on birds, fish, fruits, small to medium-size mammals, and reptiles. Dens are located in brush, thickets and under downed trees. HABITAT: Within the range of this species it has been reported from woodland, scrub, grassland, desertscrub and wetland ecological formations. *8 (*Herpailurus yaguarondi tolteca*), 14 (042512 - *Herpailurus yaguarondi* subsp. *tolteca* (AZ), 42 (062112), **55** (recorded as *Felis yaguarondi* Fischer. Jaguarundi. Rare in the southern part of the state; no recent records.), 100 (color photograph), 106 (042512 - includes a listing of subspecies, color presentation), **118** (recorded as *Felis yaguarondi cacomitli* Berlandier - Distribution: Rare in southern part of the state. Pages 246-247), 148 (recorded as *Herpailurus yaguarondi*, color presentation)*

Geomyidae: The Pocket Gopher Family

***Thomomys bottae* (Eydoux & Gervais, 1836): Botta's Pocket Gopher**

COMMON NAMES: Bailey's Pocket Gopher (*T.b. lachuguilla* Bailey, 1902 - Invalid?); Botta's Pocket Gopher; Cebolleta Pocket Gopher (*T.b. paguatae* - Invalid?); Cervine Pocket Gopher (*T.b. cervinus* J.A. Allen, 1895 - Invalid?); Desert Pocket Gopher (*T.b. desertorum* Merriam, 1901 - Invalid?); Espanola Pocket Gopher (*T.b. pervagus* Merriam, 1901 - Invalid?); Faw-colored Pocket Gopher (*T.b. cervinus* J.A. Allen, 1895 - Invalid?); Fulvous Pocket Gopher (*T.b. fulvus* Woodhouse, 1852 - Invalid?); Golden Pocket Gopher (*T.b. aureus* J.A. Allen, 1893 - Invalid?); Graham Mountains Pocket Gopher (*T.b. grahamensis* Goldman, 1931 - Invalid?); Guadalupe Pocket Gopher (*T.b. guadalupensis* Goldman, 1936 - Invalid?); Guadalupe Southern

Pocket Gopher (*T.b. guadalupensis* Goldman, 1936 - Invalid?); Harquahala Pocket Gopher (*T.b. subsimilus* Goldman, 1933 - Invalid?); Harquahala Southern Pocket Gopher (*T.b. subsimilus* Goldman, 1933 - Invalid?); Hualapai Pocket Gopher (*T.b. hualpaiensis* Goldman, 1936 - Invalid?); Juarez Pocket Gopher (*T.b. toltecus* J.A. Allen, 1893 - Invalid?); Lachuguilla Pocket Gopher (*T.b. lachuguilla* Bailey, 1902 - Invalid?); Mearns' Pocket Gopher (*T.b. mearnsi* Baily, 1914 - Invalid?); Mearns' Southern Pocket Gopher (*T.b. mearnsi* Baily, 1914 - Invalid?); Phoenix Pocket Gopher (*T.b. cervinus* J.A. Allen, 1895 - Invalid?); Pinal Mountains Pocket Gopher (*T.b. pinalensis* Goldman, 1938 - Invalid?); Prospect Valley Pocket Gopher (*T.b. muralis* Goldman, 1936 - Invalid?); Reddish Brown Pocket Gopher (*T.b. fulvus* Woodhouse, 1852 - Invalid?); Roaming Pocket Gopher (*T.b. pervagus* Merriam, 1901 - Invalid?); Ruidosa Pocket Gopher (*T.b. ruidosae* Hall, 1932 - Invalid?); Santa Catalina Southern Pocket Gopher (*T.b. catalinae* Goldman, 1931 - Invalid?; Searchlight Pocket Gopher (*T.b. suboles* Goldman, 1928 - Invalid?); Southwestern Pocket Gopher; Toltec Pocket Gopher (*T.b. toltecus* J.A. Allen, 1893 - Invalid?); Tularosa Pocket Gopher (*T.b. tularosae* Hall, 1932 - Invalid?); Tuza de Botta (Hispanic)[14]; Tuza de Botta (Spanish)[42]; Valley Pocket Gopher; White Pocket gopher (*T.b. albatus* Grinnell, 1912 - Invalid?); Yellow Pocket Gopher (*T.b. aureus* J.A. Allen, 1893 - Invalid?). HABITS: Feeds on bulbs, grasses, herbaceous plants, roots and tubers. Young are born in nests in underground burrows. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042612 - subsp. *actuosus*; subsp. *albatus*; subsp. *alexandrae*; subsp. *alienus*; subsp. *aureus*; subsp. *catalinae*; subsp. *cervinus*; subsp. *collis*; subsp. *connectens*; subsp. *cultellus*; subsp. *desertorum*; subsp. *fulvus*; subsp. *grahamensis*; subsp. *guadalupensis*; subsp. *hualpaiensis*; subsp. *lachuguilla*; subsp. *mearnsi*; subsp. *modicus*; subsp. *morulus*; subsp. *muralis*; subsp. *opulentus*; subsp. *paguatae*; subsp. *pectoralis*; subsp. *peramplus*; subsp. *pervagus*; subsp. *pinalensis*; subsp. *planirostris*; subsp. *planorum*; subsp. *pusillus*; subsp. *rufidulus*; subsp. *ruidosae*; subsp. *suboles*; subsp. *subsimilus*; *toltecus*; subsp. *tularosae*), 42 (062112), **55** (recorded as *Thomomys bottae* (Eydoux and Gervais). Valley Pocket Gopher. Widely distributed throughout the state at all elevations.), 65, 73, 100 (color photograph), 106 (042612 - color presentation), 118 (Distribution: mapping and records show numerous varieties throughout Arizona, only those shown as occurring in Pima County are listed here. *Thomomys bottae catalinae* Goldman - Distribution: Known only from the higher elevations of the Santa Catalina Mountains, Pima County. *Thomomys bottae comobabiensis* Huey - Distribution: Slopes of Comobabi Mountains, Pima County. *Thomomys bottae growlerensis* Huey - Distribution: Known from southwestern Pima County. *Thomomys bottae hueyi* Goldman - Distribution: Known only from the higher elevations in the Rincon Mountains, Pima County. *Thomomys bottae modicus* Goldman - Distribution: Known from the Santa Cruz and Altar Valleys. *Thomomys bottae phasma* Goldman - Distribution: Known from southeastern Yuma County. *Thomomys bottae proximus* Burt & Campbell - Distribution: Oak Zone of the Santa Rita and Huachuca Mountains. *Thomomys bottae pusillus* Goldman - Distribution: Known only from the region of the type locality [Coyote Mountains, 3,000 feet, Pima County, Arizona]. Figure 46, Page 107), 148 (color presentation)*

Thomomys bottae subsp. *modicus* Goldman, 1931 - Invalid?: Botta's Pocket Gopher

COMMON NAMES: Botta's Pocket Gopher; Southwestern Pocket Gopher; Tuza de Botta (Hispanic)[14]; Valley Pocket Gopher. HABITS: The species feeds on bulbs, grasses, herbaceous plants, roots and tubers. Young are born in nests in underground burrows. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042612 - subsp. *actuosus*; subsp. *albatus*; subsp. *alexandrae*; subsp. *alienus*; subsp. *aureus*; subsp. *catalinae*; subsp. *cervinus*; subsp. *collis*; subsp. *connectens*; subsp. *cultellus*; subsp. *desertorum*; subsp. *fulvus*; subsp. *grahamensis*; subsp. *guadalupensis*; subsp. *hualpaiensis*; subsp. *lachuguilla*; subsp. *mearnsi*; subsp. *modicus*; subsp. *morulus*; subsp. *muralis*; subsp. *opulentus*; subsp. *paguatae*; subsp. *pectoralis*; subsp. *peramplus*; subsp. *pervagus*; subsp. *pinalensis*; subsp. *planirostris*; subsp. *planorum*; subsp. *pusillus*; subsp. *rufidulus*; subsp. *ruidosae*; subsp. *suboles*; subsp. *subsimilus*; *toltecus*; subsp. *tularosae*), 42 (062112 - no subspecies listed), 55 (species: recorded as *Thomomys bottae* (Eydoux and Gervais). Valley Pocket Gopher. Widely distributed throughout the state at all elevations.), 65 (species), 73 (species), 100 (species, color photograph of species), 106 (042612 - species, color presentation of species), **118** (recorded as *Thomomys bottae modicus* Goldman - Distribution: Known from the Santa Cruz and Altar Valleys. Figure 46, Page 107), 148 (color presentation of species)*

Heteromyidae: The Kangaroo Rat and Pocket Mouse Family

Chaetodipus baileyi (Merriam, 1894): Bailey's Pocket Mouse

SYNONYMY: *Perognathus baileyi* Merriam, 1894. COMMON NAMES: Bailey Pocket Mouse; Bailey's Pocket Mouse; Raton de Bailey (Hispanic)[14]; Ratón-de Abazones Sonorense (Spanish)[42]. HABITS: The species feeds on vegetation, and fruits and seeds of cacti, grasses and other herbs. Nests are located underground burrows. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, and desertscrub ecological formations. *14 (042612 - subsp. *baileyi* (Merriam)), 42 (062112), **55** (recorded as *Perognathus baileyi* Merriam. Bailey's Pocket Mouse. Widely distributed in the southern part of the state (900 - 4,700 feet).), 65 (genus), 73, 100 (color photograph), 106 (042612 - color presentation), 118 (recorded as *Chaetodipus baileyi baileyi* Merriam - Distribution: Grasslands of southeastern Arizona. Figure 51, Page 133), 148 (color presentation)*

Chaetodipus baileyi subsp. *baileyi* (Merriam, 1894) - Invalid?: Bailey's Pocket Mouse

SYNONYMY: *Perognathus baileyi* subsp. *baileyi* Merriam, 1894 - Invalid?. COMMON NAMES: Bailey Pocket Mouse; Bailey's Pocket Mouse; Bailey's Pocket Mouse; Raton de Bailey (Hispanic)[14]. HABITS: The species feeds on

vegetation, and fruits and seeds of cacti, grasses and other herbs. Nests are located underground burrows. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, and desertscrub ecological formations. *14 (042612 - subsp. *baileyi* (Merriam), 42 (062112 - no subspecies listed), 55 (species: recorded as *Perognathus baileyi* Merriam. Bailey's Pocket Mouse. Widely distributed in the southern part of the state (900 - 4,700 feet).), 65 (genus), 73 (species), 100 (species, color photograph of species), 106 (042612 - species, color presentation of species), **118** (recorded as *Chaetodipus baileyi baileyi* Merriam - Distribution: Grasslands of southeastern Arizona. Figure 51, Page 133), 148 (color presentation of species)*

***Chaetodipus hispidus* (Baird, 1858): Hispid Pocket Mouse**

SYNONYMY: *Perognathus hispidus* Baird, 1858. COMMON NAME: Hispid Pocket Mouse; Ratón-de Abazones Crespo (Spanish)[42]. HABITS: Feeds on insects (grasshoppers), leaves and seeds. Nests are constructed of grasses and located in underground burrows. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042612 - subsp. *hispidus*; subsp. *conditi*), 42 (062112), **55** (recorded as *Perognathus hispidus* Baird. Hispid Pocket Mouse. Locally common in grasslands of southeastern part of the state; an isolated population occurs near Camp Verde (3,200 - 5,000 feet).), 65 (genus), 73, 100, 106 (042612 - includes a listing of subspecies), 118 (recorded as *Perognathus hispidus conditi* Allen - Distribution: Grasslands of southeastern Arizona. Figure 51, Page 132), 148 (color presentation)*

***Chaetodipus hispidus* subsp. *conditi* (J.A. Allen, 1894) - Invalid?: Hispid Pocket Mouse**

SYNONYMY: *Perognathus hispidus* subsp. *conditi* J.A. Allen, 1894 - Invalid?. COMMON NAME: Hispid Pocket Mouse. HABITS: The species feeds on insects (grasshoppers), leaves and seeds. Nests are constructed of grasses and located in underground burrows. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042612 - subsp. *hispidus*; subsp. *conditi*), 42 (062112 - no subspecies listed), 55 (species: recorded as *Perognathus hispidus* Baird. Hispid Pocket Mouse. Locally common in grasslands of southeastern part of the state; an isolated population occurs near Camp Verde (3,200 - 5,000 feet).), 65 (genus), 73 (species), 100 (species), 106 (042612 - species, includes a listing of subspecies), **118** (recorded as *Perognathus hispidus conditi* Allen - Distribution: Grasslands of southeastern Arizona. Figure 51, Page 132), 148 (color presentation of species)*

***Chaetodipus intermedius* (Merriam, 1889): Rock Pocket Mouse**

SYNONYMY: *Perognathus intermedius* Merriam, 1889. COMMON NAMES: Black Mountain Pocket Mouse (*C.i. nigrimontis* Blossom, 1933 - Invalid?); Gila Pocket Mouse (*C.i. phasma* Goldman, 1918 - Invalid?); Intermediate Pocket Mouse (*C.i. intermedius* Merriam, 1889 - Invalid?); Raton de Rocas de Bosla (Hispanic)[14]; Ratón-de Abazones de Roca (Spanish)[42]; Rock Pocket Mouse. HABITS: Feeds on seeds. Burrows are dug in soil near to or under rocks. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042612 - subsp. *atar* Dice; *beardi*; subsp. *crititus*; subsp. *intermedius*; subsp. *nigrimontis*; subsp. *phasma*; subsp. *rupestris* Benson; subsp. *umbrosus*), 42 (062112), **55** (recorded as *Perognathus intermedius* Merriam. Rock Pocket Mouse. Widely distributed in rocky areas in the Colorado River valley, western and southern Arizona (120 - 6,000 feet)."), 65 (genus), 73 (*Perognathus intermedius*), 100, 106 (042612), 118 (recorded as *Chaetodipus intermedius crinitis* Benson - Distribution: Known from south of the upper Colorado River. *Chaetodipus intermedius intermedius* Merriam - Distribution: Known from Mohave County southward and eastward, across most of the state to Cochise County. *Chaetodipus intermedius nigrimontis* Blossom - Distribution: Known only from the vicinity of the type locality (Black Mountain, 10 mi SW Tucson). *Chaetodipus intermedius phasma* Goldman - Distribution: Known from southern Yuma County and extreme southwestern Pima County. *Chaetodipus intermedius pinicate* Blossum - Distribution: Known from the Pinicate lava area in southern Yuma County. *Chaetodipus intermedius umbrosus* Benson - Distribution: Known from grassland area just south of the Mogollon Rim. Figure 54, Page 141), 148 (color presentation)*

***Chaetodipus intermedius* subsp. *intermedius* (Merriam, 1889) - Invalid?: Intermediate Pocket Mouse**

SYNONYMY: *Perognathus intermedius* subsp. *intermedius* Merriam, 1889 - Invalid?. COMMON NAMES: Intermediate Pocket mouse; Raton de Rocas de Bosla (Hispanic)[14]; Rock Pocket Mouse. HABITS: The species feeds on seeds. Burrows are dug in soil near to or under rocks. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042612 - subsp. *atar* Dice; *beardi*; subsp. *crititus*; subsp. *intermedius*; subsp. *nigrimontis*; subsp. *phasma*; subsp. *rupestris* Benson; subsp. *umbrosus*), 42 (062112 - no subspecies listed), 55 (species: recorded as *Perognathus intermedius* Merriam. Rock Pocket Mouse. Widely distributed in rocky areas in the Colorado River valley, western and southern Arizona (120 - 6,000 feet).), 65 (genus), 73 (species, recorded as *Perognathus intermedius*), 100 (species), 106 (042612 - species), **118** (recorded as *Chaetodipus intermedius intermedius* Merriam - Distribution: Known from Mohave County southward and eastward, across most of the state to Cochise County. Figure 54, Page 141), 148 (color presentation of species)*

***Chaetodipus penicillatus* (Woodhouse, 1852): Desert Pocket Mouse**

SYNONYMY: *Perognathus penicillatus* Woodhouse, 1852. COMMON NAMES: Desert Pocket Mouse; Price Pocket Mouse (*C.p. pricei* (J.A. Allen, 1894) - Invalid?); Raton del Desierto (Hispanic)[14]; Ratón-de abazones Desértico (Spanish)[42]; Sonoran Desert Pocket Mouse. HABITS: Feeds on insects, green vegetation and seeds (of broomweed, creosote bush, grasses,

greythorn, herbs and mesquite). Nests are made in underground burrows. HABITAT: Within the range of this species it has been reported from the scrub, grassland, desertscrub and wetland ecological formations. *14 (042712 - subsp. *pricei* (J.A. Allen)), 42 (062112), **55** (recorded as *Perognathus penicillatus* Woodhouse. Desert Pocket Mouse. Widely distributed in desert and low grasslands of southern and western Arizona (120 - 5,200 feet.).), 65 (genus), 73 (recorded as *Perognathus penicillatus*), 100 (color photograph), 106 (061412 - color presentation), 118 (recorded as *Perognathus penicillatus angustirostris* Osgood - Distribution: Known from southern Yuma County. *Perognathus penicillatus eremicus* Mearns - Distribution: Known from extreme southeastern Arizona. *Perognathus penicillatus penicillatus* Woodhouse - Distribution: Known from southern Mohave and northern Yuma Counties. *Perognathus penicillatus pricei* Allen - Distribution: Known from south-central Arizona and *Perognathus penicillatus sobrinus* Goldman - Distribution: Perhaps occurs in extreme northwestern Arizona. Figure 53, Page 137), 148 (color presentation)*

Chaetodipus penicillatus subsp. *pricei* (J.A. Allen, 1894) - Invalid?: Price Pocket Mouse

SYNONYMY: *Perognathus penicillatus* subsp. *pricei* J.A. Allen, 1894 - Invalid?. COMMON NAMES: Desert Pocket Mouse; Price Pocket Mouse; Raton del Desierto (Hispanic)[14]; Sonoran Desert Pocket Mouse. HABITS: The species feeds on insects, green vegetation and seeds (of broomweed, creosote bush, grasses, greythorn, herbs and mesquite). Nests are made in underground burrows. HABITAT: Within the range of this species it has been reported from the scrub, grassland, desertscrub and wetland ecological formations. *14 (042712 - subsp. *pricei* (J.A. Allen)), 42 (062112 - no subspecies listed), 55 (species: recorded as *Perognathus penicillatus* Woodhouse. Desert Pocket Mouse. Widely distributed in desert and low grasslands of southern and western Arizona (120 - 5,200 feet).), 65 (genus), 73 (species, recorded as *Perognathus penicillatus*), 100 (species, color photograph of species), 106 (061412 - species, color presentation of species), **118** (recorded as *Perognathus penicillatus pricei* Allen - Distribution: Known from south-central Arizona. Figure 53, Page 137), 148 (color presentation of species)*

Dipodomys merriami Mearns, 1890: Merriam's Kangaroo Rat

COMMON NAMES: Merriam Kangaroo Rat; Merriam's Kangaroo Rat; Rata de Nopalera Merriam (Hispanic)[14]; Rata-canguro de Merriam (Spanish)[42]. HABITS: Feeds on ants, green plant material and seeds (of creosote bush, grama grass, mesquite, ocotillo and purselane). Nests are made in underground burrows often located under bushes. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042712 - subsp. *ambiguus* (Merriam); subsp. *olivaceus* (Swarth), color presentation), 42 (062112), **55** (recorded as *Dipodomys merriami* Mearns. Merriam's Kangaroo Rat. Widely distributed in western and southern parts of the state (120 - 5,000 feet).), 65 (color photograph), 73, 100 (color photograph), 106 (061412 - includes a listing of subspecies, color presentation), 118 (recorded as *Dipodomys merriami merriami* Mearns - Distribution: Occurs throughout most of the western and southern part of the state. *Dipodomys merriami regillus* Goldman - Distribution: Known from extreme southern Yuma County and *Dipodomys merriami vulcani* Benson - Distribution: Known from northern Arizona north of the Colorado River. Figure 56, Page 145), 148 (color presentation)*

Dipodomys merriami subsp. *merriami* Mearns, 1890: Merriam's Kangaroo Rat

COMMON NAMES: Merriam Kangaroo Rat; Merriam's Kangaroo Rat; Rata de Nopalera Merriam (Hispanic)[14]; Rata-canguro de Merriam (Spanish)[42]. HABITS: The species feeds on ants, green plant material and seeds (of creosote bush, grama grass, mesquite, ocotillo and purselane). Nests are made in underground burrows often located under bushes. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042712 - subsp. *ambiguus* (Merriam); subsp. *olivaceus* (Swarth), color presentation of species), 42 (062112), 55 (species: recorded as *Dipodomys merriami* Mearns. Merriam's Kangaroo Rat. Widely distributed in western and southern parts of the state (120 - 5,000 feet).), 65 (species, color photograph of species), 73 (species), 100 (species, color photograph of species), 106 (061412 - includes a listing of subspecies, color presentation of species), **118** (recorded as *Dipodomys merriami merriami* Mearns - Distribution: Occurs throughout most of the western and southern part of the state. Figure 56, Page 145), 148 (color presentation)*

Dipodomys ordii Woodhouse, 1853: Ord's Kangaroo Rat

COMMON NAMES: Five-toed Kangaroo Rat; Long-footed Kangaroo Rat (*D.o. longipes* Merriam, 1890 - Invalid?); Mountain Kangaroo Rat (*D.o. montanus* Baird, 1855 - Invalid?); Ord's Kangaroo Rat (*D.o. ordii* Woodhouse, 1853 - Invalid?); Painted Desert Kangaroo Rat (*D.o. longipes* Merriam, 1890 - Invalid?); Rata de Nopalera Ord (Hispanic)[14]; Rata-canguro Común (Spanish)[42]; Richardson's Kangaroo Rat (*D.o. richardsoni* J.A. Allen, 1891 - Invalid?). HABITS: Feeds on fruits, subterranean fungi, insects (grasshoppers and moths), leaves, mosses, needles and seeds. The nest is made in underground burrows. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042812 - subsp. *longipes* (Merriam); subsp. *medius* (Setzer); subsp. *montanus* (Baird); subsp. *ordii*; subsp. *richardsoni* (J.A. Allen)), 42 (062112), **55** (recorded as *Dipodomys ordii* Woodhouse. Ord's Kangaroo Rat. Widely distributed in grasslands in northern and eastern parts of the state (2,700-7,000 feet).), 85 (082608), 100 (color photograph), 106 (042812 - color presentation), 118 (recorded as *Dipodomys ordii ordii* Woodhouse - Distribution: Grasslands of southeastern Arizona. Figure 57, Page 149), 148 (color presentation)*

Dipodomys ordii subsp. *ordii* Woodhouse, 1853 - Invalid?: Ord's Kangaroo Rat

COMMON NAMES: Five-toed Kangaroo Rat; Ord's Kangaroo Rat; Rata de Nopalera Ord (Hispanic)[14]. HABITS: The species feeds on fruits, subterranean fungi, insects (grasshoppers and moths), leaves, needles and seeds. The nest is made in underground burrows. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042812 - subsp. *longipes* (Merriam); subsp. *medius* (Setzer); subsp. *montanus* (Baird); subsp. *ordii*; subsp. *richardsoni* (J.A. Allen)), 42 (062112 - no subspecies listed), 55 (species: recorded as *Dipodomys ordii* Woodhouse. Ord's Kangaroo Rat. Widely distributed in grasslands in northern and eastern parts of the state (2,700-7,000 feet).), 73 (species), 100 (species, color photograph), 106 (042812 - species, color presentation of species), **118** (recorded as *Dipodomys ordii ordii* Woodhouse - Distribution: Grasslands of southeastern Arizona. Figure 57, Page 149), 148 (color presentation of species)*

***Dipodomys spectabilis* Merriam, 1890: Banner-tailed Kangaroo Rat**

COMMON NAMES: Bailey Kangaroo Rat (*D.s. baileyi* Goldman, 1923 - Invalid?); Banner-tailed Kangaroo Rat; Kangaroo Rat; Large Kangaroo Rat (*D.s. spectabilis* Merriam, 1890 - Invalid?); Notable Kangaroo Rat; Rata de Nopalera (Hispanic)[14]; Rata-canguro Cola de Bandera (Spanish)[42]. HABITS: Feeds on grasses, forbs, succulent plants, insects, rodents and seeds. Nests are made up of chaff, stems and leaves of grass located in underground burrows in firm soils. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042812 - subsp. *baileyi* (Goldman, 1923); subsp. *perblandus*; subsp. *spectabilis*), 42 (062112), **55** (recorded as *Dipodomys spectabilis* Merriam. Banner-tailed Kangaroo Rat. Locally common in grasslands of southeastern Arizona (1,300 - 5,000 feet).), 65 (color photograph), 85 (052906), 100 (color photograph), 106 (042812), 118 (recorded as *Dipodomys spectabilis perblandus* Goldman - Distribution: Known from the grasslands of southern Pinal and Pima County and *Dipodomys spectabilis spectabilis* Merriam - Distribution: Known from the grasslands of Cochise County. Figure 55, Page 143), 148 (color presentation)*

***Dipodomys spectabilis* subsp. *perblandus* Goldman, 1933 - Invalid?: Banner-tailed Kangaroo Rat**

COMMON NAMES: Banner-tailed Kangaroo Rat; Kangaroo Rat; Rata de Nopalera (Hispanic)[14]. HABITS: The species feeds on grasses, forbs, succulent plants, insects, rodents and seeds. Nests are made up of chaff, stems and leaves of grass located in underground burrows in firm soils. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042812 - subsp. *baileyi* (Goldman, 1923); subsp. *perblandus*; subsp. *spectabilis*), 42 (062112 - no subspecies listed), 55 (species: recorded as *Dipodomys spectabilis* Merriam. Banner-tailed Kangaroo Rat. Locally common in grasslands of southeastern Arizona (1,300 - 5,000 feet).), 65 (species, color photograph), 100 (species, color photograph), 106 (042812 - species), **118** (recorded as *Dipodomys spectabilis perblandus* Goldman - Distribution: Known from the grasslands of southern Pinal and Pima County. Figure 55, Page 143), 148 (color presentation of species)*

***Perognathus amplus* Osgood, 1900: Arizona Pocket Mouse**

COMMON NAME: Arizona Pocket Mouse; Coconino Arizona Pocket Mouse (*P.a. ammodytes* Benson, 1933 - Invalid?); Loring Pocket Mouse; Ratón-de Abazones de Arizona (Spanish)[42]; Sonoran Pocket Mouse (*P.a. taylori* Goldman, 1932 - Invalid?); Wupatki Arizona Pocket Mouse (*P.a. cineris* Benson, 1933 - Invalid?); Yavapai Arizona Pocket Mouse (*P.a. amplus* Osgood, 1900 - Invalid?). HABITS: The species feeds on green plants, insects and seeds. Nests are located in underground burrows. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042812 - subsp. *ammodytes*; subsp. *amplus*; subsp. *cineris*), 42 (062112), **55** (recorded as *Perognathus amplus* Osgood. Arizona Pocket Mouse. Locally common in desert areas on south-central, western and north-central parts of the state (500 - 5,100 feet).), 65 (genus), 73, 100 (color photograph), 106 (042812), 118 (recorded as *Perognathus amplus ammodytes* Benson - Distribution: Known only from the upper part of the Colorado River; *Perognathus amplus amplus* - Distribution: Known only from the vicinity of Fort Verde, Yavapai County; *Perognathus amplus cineris* Benson - Distribution: Known only from the region of the Wupatki National Monument; *Perognathus amplus jacksoni* Goldman - Distribution: known from central Arizona; *Perognathus amplus pergracilis* Goldman - Distribution: Known from Mojave County south of the Colorado and extreme northern Yuma County [now La Paz County]; *Perognathus amplus rotundus* Goldman - Distribution: Southwestern Yuma County, and *Perognathus amplus taylori* Goldman - Distribution: Known from south central Arizona. Figure 50, Page 129), 148 (color presentation)*

***Perognathus amplus* subsp. *taylori* Goldman, 1932 - Invalid?: Arizona Pocket Mouse**

COMMON NAME: Arizona Pocket Mouse. HABITS: The species feeds on green plants, insects and seeds. Nests are located in underground burrows. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042812 - subsp. *ammodytes*; subsp. *amplus*; subsp. *cineris*), 42 (062112 - no subspecies listed), 55 (species: recorded as *Perognathus amplus* Osgood. Arizona Pocket Mouse. Locally common in desert areas on south-central, western and north-central parts of the state (500 - 5,100 feet).), 65 (genus), 73 (species), 100 (species, color photograph of species), 106 (042812 - species), **118** (recorded as *Perognathus amplus taylori* Goldman. Distribution: Known from south central Arizona. Figure 50, Page 129), 148 (color presentation of species)*

Perognathus baileyi (see *Chaetodipus baileyi*)

Perognathus baileyi subsp. *baileyi* (see *Chaetodipus baileyi* subsp. *baileyi*)

***Perognathus flavus* Baird, 1855: Silky Pocket Mouse**

COMMON NAME: Baird's Pocket Mouse (*P.f. flavus* Baird, 1855 - Invalid?); Baird's Pocket Mouse; Goodpaster's Silky Pocket Mouse (*P.f. goodpasteri* Hoffmeister, 1956 - Invalid?); Hopi Silky Pocket Mouse (*P.f. hopiensis* Goldman, 1932 - Invalid?); Ratón-de Abazones Sedoso (Spanish)[42]; Silky Pocket Mouse; Springerville Pocket Mouse (*P.f. goodpasteri* Hoffmeister, 1956 - Invalid?). HABITS: Feeds on seeds, nuts and invertebrates (though very few are taken). Nests are located in underground burrows. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (061412 - subsp. *flavus* (Baird); subsp. *gilvus* (Osgood); subsp. *goodpasteri* (Hoffmeister); subsp. *hopiensis* (Goldman)), 42 (062112), **55** (recorded as *Perognathus flavus* Baird. Silky Pocket Mouse. Locally common in grasslands throughout the state (2,900 - 6,500 feet).), 65 (genus), 73, 100 (color photograph), 106 (061412), 118 (recorded as *Perognathus flavus flavus* Baird - Distribution: Southeastern part of the state. Figure 48, Page 124), 148 (color presentation)*

***Perognathus flavus* subsp. *flavus* Baird, 1855 - Invalid?: Silky Pocket Mouse**

COMMON NAME: Silky Pocket Mouse. HABITS: The species feeds on seeds, nuts and invertebrates (though very few are taken). Nests are located in underground burrows. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (061412 - subsp. *flavus* (Baird); subsp. *gilvus* (Osgood); subsp. *goodpasteri* (Hoffmeister); subsp. *hopiensis* (Goldman), 42 (062112 - no subspecies listed), 55 (species: recorded as *Perognathus flavus* Baird. Silky Pocket Mouse. Locally common in grasslands throughout the state (2,900 - 6,500 feet).), 65 (genus), 73 (species), 100 (species, color photograph of species), 106 (061412 - species), **118** (recorded as *Perognathus flavus flavus* Baird - Distribution: Southeastern part of the state. Figure 48, Page 124), 148 (color presentation of species)*

Perognathus hispidus (see *Chaetodipus hispidus*)

Perognathus hispidus subsp. *conditi* (see *Chaetodipus hispidus* subsp. *conditi*)

Perognathus intermedius (see *Chaetodipus intermedius*)

Perognathus intermedius subsp. *intermedius* (see *Chaetodipus intermedius* subsp. *intermedius*)

***Perognathus longimembris* (Coues, 1875): Little Pocket Mouse**

COMMON NAME: Arizona Little Pocket Mouse (*P.l. arizonensis* Goldman, 1931 - Invalid?); Little Pocket Mouse; Pima Little Pocket Mouse (*P.l. pimensis* Huey, 1937 - Invalid?); Ratón-de Abazones Menor (Spanish)[42]; Virgin Valley Pocket Mouse (*P.l. virginis* Huey, 1939 - Invalid?); Yuma Pocket Mouse (*P.l. bombycinus* Osgood, 1907 - Invalid?). HABITS: Feeds on greens and seeds. HABITAT: Within the range of this species it has been reported from the scrub, grassland, desertscrub and wetland ecological formations. *14 (042812), 42 (062112), **55** (recorded as *Perognathus longimembris* (Coues). Little Pocket Mouse. Known from scattered localities in the western part of the state (500 - 4,500 feet).), 65 (genus), 73, 100 (color photograph), 106 (042812 - color presentation), 118 (recorded as *Perognathus longimembris arizonensis* Goldman - Distribution: Known from north-central Arizona north of the Colorado River; *Perognathus longimembris bombycinus* Osgood - Distribution: Known only in western Yuma County; *Perognathus longimembris pimensis* Huey - Distribution: Southcentral part of the state, and *Perognathus longimembris virginis* Huey - Distribution: Known only from northwestern Mohave County. Figure 49, Page 127), 148 (color presentation)*

***Perognathus longimembris* subsp. *pimensis* Huey, 1937 - Invalid?: Pima Little Pocket Mouse**

COMMON NAME: Little Pocket Mouse; Pima Little Pocket Mouse. HABITS: Feeds on greens and seeds. HABITAT: Within the range of this species it has been reported from the scrub, grassland, desertscrub and wetland ecological formations. *14 (042812 - species), 42 (062112 - no record of this subspecies), 55 (recorded as *Perognathus longimembris* (Coues). Little Pocket Mouse. Known from scattered localities in the western part of the state (500 - 4,500 feet).), 65 (genus), 73 (species), 100 (species, color photograph of species), 106 (042812 - species), **118** (recorded as *Perognathus longimembris pimensis* Huey - Distribution: Southcentral part of the state. Figure 49, Page 127), 148 (color presentation of species)*

Perognathus penicillatus (see *Chaetodipus penicillatus*)

Perognathus penicillatus subsp. *pricei* (see *Chaetodipus penicillatus* subsp. *pricei*)

Leporidae: The Hare and Rabbit Family

***Lepus alleni* Mearns, 1890: Antelope Jackrabbit**

COMMON NAME: Allen's Jack Rabbit (*L.a. alleni* Mearns, 1890); Allen's Jackrabbit (*L.a. alleni* Mearns, 1890); Antelope Jack Rabbit; Antelope Jackrabbit; Liebre Antilope (Spanish)[42]. HABITS: Feeds on cacti, Catclaw Acacia, grasses, herbs and the bark, buds and leaves of mesquite. Young are born in a nest that is usually located above ground. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042912), 42 (062112), **55** (recorded as *Lepus alleni* (Mearns). Antelope Jack Rabbit. Occurs in the central third of the southern half of the state.), 65, 73, 100 (color photograph), 106 (042912 - includes a listing of subspecies, color presentation), 118 (recorded as *Lepus alleni* subsp. *alleni* Mearns - Distribution: Occurs in the central third of the southern half of the state. Figure 31, Page 68), 148 (color presentation)*

Lepus alleni subsp. *alleni* Mearns, 1890: Allen's Jackrabbit

COMMON NAME: Allen's Jack Rabbit; Allen's Jackrabbit; Antelope Jack Rabbit; Antelope Jackrabbit;. HABITS: The species feeds on cacti, Catclaw Acacia, grasses, herbs and the bark, buds and leaves of mesquite. Young are born in a nest that is usually located above ground. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042912 - species), 42 (062112), 55 (species: recorded as *Lepus alleni* (Mearns). Antelope Jack Rabbit. Occurs in the central third of the southern half of the state.), 65 (species), 73 (species), 100 (species, color photograph of species), 106 (042912 - species, including a listing of subspecies, color presentation of species), **118** (recorded as *Lepus alleni* subsp. *alleni* Mearns - Distribution: Occurs in the central third of the southern half of the state. Figure 31, Page 68), 148 (color presentation)*

Lepus californicus Gray, 1837: Black-tailed Jackrabbit

COMMON NAMES: American Desert Hare; Arizona Jackrabbit (*L.c. eremicus* J.A. Allen, 1894 - Invalid?); Black-tailed Jack Rabbit; Black-tailed Jackrabbit; Blackeared Jackrabbit (*L.c. melanotis* Mearns, 1890 - Valid); Colorado Desert Jackrabbit (*L.c. deserticola* Mearns, 1896 - Valid); Desert Jackrabbit (*L.c. deserticola* Mearns, 1896 - Valid; *L.c. eremicus* J.A. Allen, 1894 - Invalid?); Great Plains Jackrabbit (*L.c. melanotis* Mearns, 1890 - Valid); "Jackass Rabbit"; Liebre Cola Negra (Hispanic)[14]; Liebre Cola Negra (Spanish)[42]; Texas Jackrabbit (*L.c. texianus* Waterhouse, 1848 - Valid); Western Desert Jackrabbit (*L.c. deserticola* Mearns, 1896 - Valid). HABITS: Feeds on grasses, mesquite leaves and prickly-pear cacti. Young are born in nests located either above or below ground in forms that have been lined with breast hair, after birth the young are moved to separate nests and cared for individually by the female. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042912 - subsp. *melanotis* (Mearns); subsp. *texianus* (Waterhouse), color presentation), 42 (062112), **55** (recorded as *Lepus californicus* Gray. Black-tailed Jack Rabbit. Statewide.), 65, 73, 100 (color photograph), 106 (042912 - includes a listing of subspecies, color presentation), 118 (recorded as *Lepus californicus deserticola* Mearns - Distribution: Occurs in the western half of the state; *Lepus californicus eremicus* J.A. Allen - Distribution: Southeastern Arizona, and *Lepus californicus texianus* Waterhouse - Distribution: Occurs in the northeastern quarter of the state. Figure 32, Page 69), 148 (color presentation)*

Lepus californicus subsp. *eremicus* J.A. Allen, 1894 - Invalid: Desert Jackrabbit

COMMON NAMES: Arizona Jackrabbit; Black-tailed Jack Rabbit; Desert Jackrabbit; "Jackass Rabbit". HABITS: The species feeds on grass, mesquite leaves and prickly-pear cacti. Young are born in nests located either above or below ground in forms that have been lined with breast hair, after birth the young are moved to separate nests and cared for individually by the female. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042912 - subsp. *melanotis* (Mearns); subsp. *texianus* (Waterhouse), color presentation), 42 (062112 - no record of this subspecies), 55 (species: recorded as *Lepus californicus* Gray. Black-tailed Jack Rabbit. Statewide.), 65 (species), 73 (species), 100 (species, color photograph of species), 106 (species, includes a listing of subspecies, color presentation of species), **118** (recorded as *Lepus californicus eremicus* J.A. Allen - Distribution: Southeastern Arizona. Figure 32, Page 69), 148 (color presentation)*

Sylvilagus audubonii (Baird, 1858): Desert Cottontail

COMMON NAME: Arizona Cottontail (*S.a. arizonae* (Mearns, 1896) - Valid); Audubon's Cottontail; Cedar Belt Cottontail (*S.a. cedrophilus* (Nelson, 1907) - Invalid?); Colorado Cottontail (*S.a. warreni* Nelson, 1907 - Valid); Conejo del Desierto (Hispanic)[14]; Desert Cottontail; Desert Cottontail Rabbit; Lesser Deseert Cottontail (*S.a. minor* (Mearns, 1896) - Valid); Little Cottontail (*S.a. minor* (Mearns, 1896) - Valid); New Mexico Cottontail (*S.a. neomexicana* (Nelson, 1907) - Invalid?); Sacramento Valley Cottontail (*S.a. audubonii* (Baird, 1858) - Valid). HABITS: Feeds on green plants, cacti, bark and twigs. Young are born into nests lined with forbs, grasses and the female's fur which are located on the ground and in brush piles, piles of rocks, and burrows abandoned by other animals. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042912 - subsp. *cedrophilus* (Nelson); subsp. *minor* (Mearns); subsp. *neomexicana* (Nelson), color presentation), 42 (062112), **55** (recorded as *Sylvilagus audubonii* (Baird). Desert Cottontail. Common at elevations below 6,000 feet throughout the state.), 65, 73, 100 (color photograph), 106 (042912 - color presentation), 118 (recorded as *Sylvilagus audubonii arizonae* (J.A. Allen) - Distribution: Widely distributed at elevations up to 6,000 feet in the western half of the state; *Sylvilagus audubonii minor* (Mearns) - Distribution: Known only from the southeastern part of the state, and *Sylvilagus audubonii warreni* Nelson - Distribution: Known only from the northeastern part of the state. Figure 34, Page 74), 148 (color presentation)*

***Sylvilagus audubonii* subsp. *arizonae* (Mearns, 1896): Arizona Cottontail**

COMMON NAME: Arizona Cottontail. HABITS: The species feeds on green plants, cacti, bark and twigs. Young are born into nests lined with forbs, grasses and the female's fur which are located on the ground and in brush piles, piles of rocks, and burrows abandoned by other animals. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042912 - subsp. *cedrophilus* (Nelson); subsp. *minor* (Mearns); subsp. *neomexicana* (Nelson), color presentation), 42 (062112), 55 (species: recorded as *Sylvilagus audubonii* (Baird). Desert Cottontail. Common at elevations below 6,000 feet throughout the state.), 65 (species), 73 (species), 100 (species, color photograph of species), 106 (042912 - species, color presentation of species), **118** (recorded as *Sylvilagus audubonii arizonae* (J.A. Allen) - Distribution: Widely distributed at elevations up to 6,000 feet in the western half of the state. Figure 34, Page 74), 148 (color presentation)*

Mephitidae: The Skunk Family

***Conepatus leuconotus* (Lichtenstein, 1832): Common Hog-nosed Skunk**

COMMON NAMES: American Hog-nosed Skunk; Big Thicket Hog-nosed Skunk (*C.l. telmalestes* Bailey, 1905 - Valid: extinct); Common Hog-nosed Skunk; Eastern Hog-nosed Skunk; Hog-nosed Skunk; Hognose Skunk; Mexican Hog-nosed Skunk (*C.l. leuconotus* (Lichtenstein, 1832) - Valid); Rooter Skunk; White-spotted Skunk; Zorrillo Nariz de Puerco (Hispanic)[14]; Zorrillo-narigón Norteño (Spanish: applied to *C.l. leuconotus* (Lichtenstein, 1832) - Valid)[42]; Zorrillo-narigón Occidental (Spanish)[42]. HABITS: Feeds on arachnids, birds, insects, small mammals, mollusks, plant material, reptiles and worms. These skunks take refuge in caves, crevices in rocks and in the ground. Rocky areas are used for denning with the young born beneath rocks, grasses are used for nesting. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (043012 - subsp. *mearnsi* (Merriam); subsp. *venaticus* (Goldman)), 42 (062112), **55** (recorded as *Conepatus mesoleucus* Lichtenstein. Hog-nosed Skunk. Southeastern part of the state (2,000 - 6,000 feet).), 65, 73 (*Conepatus mesoleucus*), 100 (*Conepatus mesoleucus*, color photograph), 106 (043012 - includes a listing of subspecies, color presentation), 118 (recorded as *Conepatus mesoleucus venaticus* Goldman - Distribution: South central and southeastern Arizona. Figure 102, Page 241), 148 (color presentation), 149*

***Conepatus leuconotus* subsp. *leuconotus* (Lichtenstein, 1832): Common Hog-nosed Skun**k

SYNONYMY: *Conepatus leuconotus* subsp. *venaticus* (Goldman, 1922) - Invalid?; *Conepatus mesoleucus* (Lichtenstein, 1832) - Valid; *Conepatus mesoleucus* subsp. *venaticus* Goldman, 1922 - Invalid. COMMON NAMES: Common Hog-nosed Skunk; Hog-nosed Skunk; Hognose Skunk; Mexican Hog-nosed Skunk; Rooter Skunk (Texas); Zorrillo Nariz de Puerco (Hispanic)[14]; Zorrillo-narigón Norteño (Spanish applied to *Conepatus mesoleucus*)[42]. HABITS: The species feeds on arachnids, birds, insects, small mammals, mollusks, plant material, reptiles and worms. These skunks take refuge in caves, crevices in rocks and in the ground. Rocky areas are used for denning with the young born beneath rocks, grasses are used for nesting. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (043012 - subsp. *mearnsi* (Merriam); subsp. *venaticus* (Goldman)), 42 (062112), 55 (species, recorded as *Conepatus mesoleucus* Lichtenstein. Hog-nosed Skunk. Southeastern part of the state (2,000 - 6,000 feet).), 65 (species), 73 (species, *Conepatus mesoleucus*), 100 (species record (*Conepatus mesoleucus*), color photograph of species), 106 (043012 - species, includes a listing of subspecies, color presentation of species), **118** (recorded as *Conepatus mesoleucus venaticus* Goldman - Distribution: South central and southeastern Arizona. Figure 102, Page 241), 148 (color presentation of species), 149*

Conepatus leuconotus subsp. *venaticus* (see *Conepatus leuconotus* subsp. *leuconotus*)

Conepatus mesoleucus (see *Conepatus leuconotus* subsp. *leuconotus*)

Conepatus mesoleucus subsp. *venaticus* (see *Conepatus leuconotus* subsp. *leuconotus*)

***Mephitis macroura* Lichtenstein, 1832: Hooded Skunk**

COMMON NAMES: Hooded Skunk; Miller's Skunk (*M.m. milleri* Mearns, 1897 - Valid); Mofeta Rayada (Spanish)[106]; Moufette à Capuchon (French)[106]; Northern Hooded Skunk (*M.m. milleri* Mearns, 1897 - Valid); Pay (Maya)[106]; Southern Skunk; White-sided Skunk; Zorrillo (Hispanic)[14,106]; Zorrillo-listado del Sur (Spanish). HABITS: Feeds on small birds (and bird eggs), insects and other invertebrates, rodents and plant material (including prickly-pear). The young are born in a dens located in burrows or among rocks. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (043012 - subsp. *milleri* (Mearns)), 42 (062112), **55** (recorded as *Mephitis macroura* (Lichtenstein). Hooded Skunk. Southeastern part of the state (2,000 - 6,000 feet).), 65, 73, 100 (color photograph), 106 (043012 - color presentation), 118 (recorded as *Mephitis macroura milleri* (Mearns) - Distribution: South central and southeastern Arizona. Figure 101, Page 240), 148 (color presentation)*

***Mephitis macroura* subsp. *milleri* Mearns, 1897: Hooded Skunk**

COMMON NAMES: Hooded Skunk; Millers Skunk; Northern Hooded Skunk; Zorrillo (Hispanic)[14]. HABITS: The species feeds on small birds (and bird eggs), insects and other invertebrates, rodents and plant material (including prickly-pear).

The young are born in a dens located in burrows or among rocks. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (043012 - subsp. *milleri* (Mearns)), 42 (062112), 55 (species: recorded as *Mephitis macroura* (Lichtenstein). Hooded Skunk. Southeastern part of the state (2,000 - 6,000 feet).), 65 (species), 73 (species), 100 (species, color photograph of species), 106 (043012 - color presentation), **118** (recorded as *Mephitis macroura milleri* (Mearns) - Distribution: South central and southeastern Arizona. Figure 101, Page 240), 148 (color presentation of species)*

***Mephitis mephitis* (Schreber, 1776): Striped Skunk**

COMMON NAMES: Arizona Skunk (*M.m. estor* Merriam, 1890 - Valid); Long-tailed Texas Skunk (*M.m. varians* Gray, 1837 - Valid); Mouffette Rayée (French)[42]; Northern Plains Skunk (*M.m. hudsonica* Richardson, 1829 - Valid); Striped Skunk; Zorrillo Rayado (Hispanic)[14]; Zorrillo-listado del Norte (Spanish)[42]. HABITS: Feeds on amphibians, berries, the eggs of ground nesting birds, carrion, crayfish, earthworms, fishes, frogs, fruits, insects (ants, beetles, crickets, grasshoppers, honeybees, wasps), small mammals (mice, moles, rats, squirrels, voles), mollusks, plant material, reptiles, snails and spiders. The young are born in nests made of dried grasses and leaves located in dirt banks, underground burrows abandoned by other animals, downed logs, pits and rock outcrops. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: The Striped Skunk is most active dusk through dawn. This species is the chief carrier of rabies in the United States and those active during the daylight hours frequently being found to be rabid. *14 (043012 - subsp. *estor* (Merriam); subsp. *hudsonica* (Richardson); subsp. *varians* (Gray), color presentation), 42 (062112), **55** (recorded as *Mephitis mephitis* (Schreber). Striped Skunk. Statewide (300 - 9,000 feet).), 65 (color photograph), 73, 100 (color photograph), 106 (043012 - includes a listing of subspecies, color presentation), 118 (recorded as *Mephitis mephitis estor* Merriam - Distribution: Statewide. Figure 100, Page 239), 148 (color presentation)*

***Mephitis mephitis* subsp. *estor* Merriam, 1890: Arizona Skunk**

COMMON NAMES: Arizona Skunk; Striped Skunk; Zorrillo Rayado (Hispanic)[14]. HABITS: The species feeds on amphibians, berries, the eggs of ground nesting birds, carrion, crayfish, earthworms, fishes, frogs, fruits, insects (ants, beetles, crickets, grasshoppers, honeybees, wasps), small mammals (mice, moles, rats, squirrels, voles), mollusks, plant material, reptiles, snails and spiders. The young are born in nests made of dried grasses and leaves located in dirt banks, underground burrows abandoned by other animals, downed logs, pits and rock outcrops. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: The Striped Skunk is most active dusk through dawn. This species is the chief carrier of rabies in the United States and those active during the daylight hours frequently being found to be rabid. *14 (043012 - subsp. *estor* (Merriam); subsp. *hudsonica* (Richardson); subsp. *varians* (Gray), color presentation of species), 42 (062112), 55 (species: recorded as *Mephitis mephitis* (Schreber). Striped Skunk. Statewide (300 - 9,000 feet).), 65 (species, color photograph of species), 73 (species), 100 (species, color photograph of species), 106 (043012 - species, includes a listing of subspecies, color presentation of species), **118** (recorded as *Mephitis mephitis estor* Merriam - Distribution: Statewide. Figure 100, Page 239), 148 (color presentation)*

***Spilogale gracilis* Merriam, 1890: Western Spotted Skunk**

SYNONYMY: *Spilogale putorius* subsp. *gracilis* Merriam, 1890 - Invalid?. COMMON NAMES: Channel Islands Spotted Skunk (*S.g. amphialus* Dickey, 1929 - Valid); Spotted Skunk; Western Spotted Skunk; Zorillo Pinto (Hispanic)[14]. HABITS: Feeds on arachnids, berries, birds and bird eggs, carrion, fruits, insects, small mammals, scorpions and seeds. Dens are made in rock crevices and hollow logs. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (043012 - considers *Spilogale putorius gracilis* Merriam is a synonym for *Spilogale gracilis* the Western Spotted Skunk, and *Spilogale putorius leucoparia* is a synonym for *Spilogale putorius* the Eastern Spotted Skunk), 42 (062112), **55** (recorded as *Spilogale putorius* (Linnaeus). Spotted Skunk. Probably statewide (120 - 7,000 feet).), 65 (recorded as *Spilogale putorius*), 73 (recorded as *Spilogale gracilis*), 100 (recorded as *Spilogale gracilis*, color photograph), 106 (043012 - includes a listing of subspecies, color presentation), **118** (recorded as *Spilogale putorius gracilis* Merriam - Distribution: Probably statewide. Figure 99, Page 237), 148 (color presentation)*

Spilogale putorius (see footnotes 14, 55, 65 and 85 under *Spilogale gracilis*)

Spilogale putorius subsp. *gracilis* (see *Spilogale gracilis*)

Molossidae: The Free-tailed Bat Family

***Eumops perotis* (Schinz, 1821): Western Mastiff Bat**

COMMON NAMES: Bonnet Bat; California Mastiff Bat (*E.p. californicus* Merriam, 1890); Greater Bonneted Bat; Greater Mastiff Bat; Greater Western Bonneted Bat; Greater Western Mastiff Bat (*E.p. californicus* Merriam, 1890); Mastiff Bat; Murcielago Mastiff (Hispanic); Murciélago-con bonete Mayor (Spanish); Western Bonneted Bat; Western Mastiff Bat. HABITS: Feeds on crickets, long-horned grasshoppers, moths and other small insects. Roosts in crevices and shallow caves in cliffs and rock walls at lower elevations. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *8 (*Eumops perotis californicus*), 14 (050112 -

subsp. *californicus*), 42 (062112), **55** (recorded as *Eumops perotis* (Schinz). Western Mastiff Bat. Rare; in small colonies in rock crevices at lower elevations in the western and southern part of the state.), 65, 73, 92, 100 (color photograph), 106 (050112 - color presentation), 118 (recorded as *Eumops perotis californicus* (Merriam) - Distribution: Probably throughout southern Arizona in the Lower Sonoran Life Zone.), 148 (color presentation)*

***Eumops perotis* subsp. *californicus* Merriam, 1890 - Invalid?: Greater Western Mastiff Bat**

COMMON NAMES: Bonnet Bat; California Mastiff Bat; Greater Mastiff Bat; Greater Western Bonneted Bat; Greater Western Mastiff Bat; Mastiff Bat; Murcielago Mastiff (Hispanic)[14]; Western Mastiff Bat. HABITS: The species feeds on crickets, long-horned grasshoppers, moths and other small insects. Roosts in crevices and shallow caves in cliffs and rock walls at lower elevations. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *8, 14 (050112 - subsp. *californicus*), 42 (062112 - no subspecies listed), 55 (species: recorded as *Eumops perotis* (Schinz). Western Mastiff Bat. Rare; in small colonies in rock crevices at lower elevations in the western and southern part of the state.), 65 (species), 73 (species), 92 (species), 100 (species, color photograph of species), 106 (050112 - color presentation), **118** (recorded as *Eumops perotis californicus* (Merriam) - Distribution: Probably throughout southern Arizona in the Lower Sonoran Life Zone. Figure 29, Page 65), 148 (color presentation)*

***Nyctinomops femorosaccus* (Merriam, 1889): Pocketed Free-tailed Bat**

SYNONYMY: *Tadarida femorosacca* (Merriam) - Invalid?. COMMON NAMES: Palm Springs Free-tailed Bat; Pocketed Free-tailed Bat; Murcielago Cola Libra en Bolsa (Hispanic)[14]; Murciélago-cola Suelta de Bolsa (Spanish)[42]. HABITS: Feeds on ants, leafhoppers, moths, wasps and other insects. Roosts in rocky crevices. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *8, 14 (050112), 42 (062112), 55 (recorded as *Tadarida femorosacca* (Merriam). Pocketed Free-tailed Bat. Rare; found at lower elevations in the western and southern part of the state.), 100, 106 (050112 - color presentation), **118** (recorded as *Tadarida femorosacca* (Merriam) - Distribution: Probably occurs throughout the Lower Sonoran Life Zone of southern Arizona. Figure 27, Page 63), 148 (color presentation)*

***Nyctinomops macrotis* (Gray, 1840): Big Free-tailed Bat**

SYNONYMY: *Tadarida macrotis* (Gray, 1840) - Invalid?; *Tadarida molossa* (Pallas) - Invalid?. COMMON NAMES: Big Free-tailed Bat; Cuban Free-tailed Bat; Murcielago Cola Libre (Hispanic)[14]; Murciélago-cola Suelta Mayor (Spanish)[42]; Greater Broad-eared Free-tailed Bat. HABITS: Feeds on insects. Roosts in rocky cliffs, crevices, fissures, caves and holes in trees. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations ecological formations. *8, 14 (050112), 42 (062112), **55** (recorded as *Tadarida molossa* (Pallas). Big Free-tailed Bat. Rare; statewide, mainly at elevations below 5,000 feet.), 73, 100 (color photograph), 106 (050112 - color presentation), **118** (recorded as *Tadarida molossa* (Pallas) - Distribution: Probably occurs throughout the Lower Sonoran Life Zone of Arizona. Figure 28, Page 64), 148 (color presentation), 149*

***Tadarida brasiliensis* (I. Geoffroy, 1824) (subsp *mexicana* (Saussure, 1860 - Invalid?) is the only subspecies reported as occurring in Arizona): Brazilian Free-tailed Bat**

COMMON NAMES: Brazilian Free-tailed Bat; Guano Bat; Mexican Free-tail Bat; Mexican Free-tailed Bat; Mexican Freetail Bat; Murcielago Braziliano (Hispanic)[14]; Murciélago-cola Suelta Brasileño (Spanish)[42]. HABITS: Feeds on small insects (ants, beetles, dragonflies, flies, leafhoppers, moths, true bugs, wasps). Roosts in caverns; caves; crevices in rocks; fissures in cliffs; buildings; mines, and under bridges. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: Bacardi rum features the Mexican free-tailed bat as its icon because of the species pollination of sugar cane as well as for their consumption of insects that damage the sugar cane crop. *8, 14 (050112 - subsp. *mexicana*), 42 (062112), **55** (recorded as *Tadarida brasiliensis* (I.Geof. St.-Hilaire). Mexican Free-tailed Bat. Locally abundant throughout the state, especially at elevations below 5,000 feet.), 65, 73, 92, 100 (color photograph), 106 (050112 - includes a listing of subspecies, color presentation), 118 (recorded as *Tadarida brasiliensis mexicana* (Saussure) - Distribution: Probably statewide in some part of the year. Figure 26, Page 62), 148 (color presentation)*

***Tadarida brasiliensis* subsp *mexicana* (Saussure, 1860) - Invalid?: Brazilian Free-tailed Bat**

COMMON NAMES: Brazilian Free-tailed Bat; Guano Bat; Mexican Free-tail Bat; Mexican Free-tailed Bat; Mexican Freetail Bat; Murcielago Braziliano (Hispanic)[14]. HABITS: The species feeds on small insects (ants, beetles, dragonflies, flies, leafhoppers, moths, true bugs, wasps). HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *8, 14 (050112 - subsp. *mexicana*), 42 (062112 - no subspecies listed), 55 (species: recorded as *Tadarida brasiliensis* (I.Geof. St.-Hilaire). Mexican Free-tailed Bat. Locally abundant throughout the state, especially at elevations below 5,000 feet.), 65 (species), 73 (species), 92 (species), 100 (species, color photograph of species), 106 (050112 - species, includes a listing of subspecies, color presentation of species), **118** (recorded as *Tadarida brasiliensis mexicana* (Saussure) - Distribution: Probably statewide in some part of the year. Figure 26, Page 62), 148 (color presentation)*

Tadarida femorosacca (see *Nyctinomops femorosacca*)

Tadarida macrotis (see *Nyctinomops macrotis*)

Tadarida molossa (see *Nyctinomops macrotis*)

Muridae: The Mouse and Rat Family

***Mus musculus* Linnaeus, 1758: House Mouse**

COMMON NAMES: House Mouse; Raton Comun (Hispanic)[14]; Souris Commune (French)[42]. HABITS: Feeds on insects, plants and seeds almost anything edible. Nests are made up of down, feathers, grass, hair, trash and other soft materials and are located in man-made structures. HABITAT: Within the range of this species it has been reported from areas of human habitation and in lower elevations along roadsides, floodplains, fencerows, ditchbanks, agricultural fields and orchards in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: EXOTIC (native to southern Asia), a destructive animal and a carrier of disease. "Gough Island in the South Atlantic is used by 20 species of seabird for breeding, including almost all of the world's Tristan Albatross (*Diomedea dabbenena*) and Atlantic Petrel (*Pterodroma incerta*). Until house mice arrived on the island in the 19th century with seamen, the birds did not have any mammalian predators. The mice have since grown unusually large and have learned to attack albatross chicks, which can be nearly 1 m tall, but are largely immobile, by working in groups and gnawing on them until they bleed to death. The estimated 700,000 mice on the island kill over one million bird chicks per year.[30],,106 *14 (010512), 42 (062112), 55 (recorded as *Mus musculus* (Linnaeus). House Mouse. Introduced; often around dwellings and occassionally occurring as feral populations.), 73, 100, 106 (010512 - includes a listing of subspecies, color presentation), **118** (recorded as *Mus musculus* subsp. - Distribution: Throughout the state in association with human habitations; many feral populatons are established in various areas. Page 213), 148 (color presentation)*

***Neotoma albigula* Hartley, 1894: White-throated Wood Rat**

COMMON NAMES: Colorado Valley Woodrat (*N.a. venusta* True, 1894 - Invalid?); La Plata White-throated Wood Rat (*N.a. laplataensis* F.W. Miller, 1933 - Invalid?); Packrat; Rata-cambalachera Garganta Blanca (Spanish)[42]; Trade Rat; White-throated Packrat; White-throated Wood Rat. HABITS: Feeds on ants, beetles, cacti (flowers, fruits, stems), flowers, forbs, fruits, grasses, juniper, leaves, mesquite (bark, flowers, leaves, seeds), green plant material, reptiles, seeds and yucca leaves. Nests are built under mesquite, cholla and prickly-pear cacti, or in rocky crevices using sticks, pieces of cholla and prickly-pear cacti, and rubbish, sometimes with underground burrows. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050112 - subsp. *albigula*; subsp. *laplataensis* F.W. Miller; subsp. *melas* (Dice); subsp. *mearnsi*; subsp. *warreni* (Merriam); subsp. *venusta*, color presentation), 42 (062112), **55** (recorded as *Neotoma albigula* Hartley. White-throated Wood Rat. Widely distributed at elevations below 7,000 feet throughout all of the state south of the Colorado River (120 - 8,000 feet).), 65 (color photograph), 73, 100 (color photograph), 106 (050112 - includes a listing of subspecies, color presentation), 118 (recorded as *Neotoma albigula albigula* Hartley - Distribution: Occurs commonly south of the Mogollon Rim; *Neotoma albigula mearnsi* Goldman - Distribution: Know from southern Yuma County; *Neotoma albigula laplataensis* F.W. Miller - Distribution: Known from northeastern Arizona, and *Neotoma albigula venusta* True - Distribution: Known from western Arizona. Figure 76, Page 193), 148 (color presentation)*

***Neotoma albigula* subsp. *albigula* Hartley, 1894 - Invalid?: White-throated Wood Rat**

COMMON NAMES: Packrat; Trade Rat; White-throated Packrat; White-throated Wood Rat. HABITS: The species feeds on ants, beetles, cacti (flowers, fruits, stems), flowers, forbs, fruits, grasses, juniper, leaves, mesquite (bark, flowers, leaves, seeds), green plant material, reptiles, seeds and yucca leaves. Nests are built under mesquite, cholla and prickly-pear cacti, or in rocky crevices using sticks, pieces of cholla and prickly-pear cacti, and rubbish, sometimes with underground burrows. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050112 - subsp. *albigula*; subsp. l*aplataensis* (F.W. Miller); subsp. *melas* (Dice); subsp. *mearnsi*; subsp. *warreni* (Merriam); subsp. *venusta*, color presentation), 42 (062112 - no subspecies listed), 55 (species: recorded as *Neotoma albigula* Hartley. White-throated Wood Rat. Widely distributed at elevations below 7,000 feet throughout all of the state south of the Colorado River (120 - 8,000 feet).), 65 (species, color photograph of species), 73 (species), 100 (species, color photograph of species), 106 (050112 - species, includes a listing of subspecies, color presentation of species), **118** (recorded as *Neotoma albigula albigula* Hartley - Distribution: Occurs commonly south of the Mogollon Rim. Figure 76, Page 193), 148 (species, color presentation of species)*

***Onychomys torridus* (Coues, 1874): Southern Grasshopper Mouse**

COMMON NAMES: Raton Chapulinero del Sur (Hispanic)[14]; Ratón-saltamontes Sureño (Spanish)[42]; Scorpion Mouse; Southern Grasshopper Mouse. HABITS: Feeds on arthropods, beetles, grasshoppers, insects, lizards, scorpions, seeds and small vertebrates including other species of mice. Nests are located in underground burrows. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050112 - subsp. *torridus* (Coues)), 42 (062112), **55** (recorded as *Onychomys torridus* (Coues). Southern Grasshopper Mouse. Widely distributed in the western and southern parts of the state (120 - 5,000 feet).), 65 (genus), 73, 100 (color photograph), 106 (050112), 118 (recorded as *Onychomys torridus longicaudus* Merriam - Distribution: Extreme northwestern Arizona; *Onychomys*

torridus perpallidus Mearns - Distribution: Wesern Arizona, and *Onychomys torridus torridus* (Coues) - Distribution: Southeastern quarter of the state. Figure 62, Page 161), 148 (color presentation)*

***Onychomys torridus* subsp. *torridus* (Coues, 1874) - Invalid?: Southern Grasshopper Mouse**

COMMON NAMES: Raton Chapulinero del Sur (Hispanic)[14]; Scorpion Mouse; Southern Grasshopper Mouse. HABITS: The species feeds on arthropods, beetles, grasshoppers, insects, lizards, scorpions, seeds and small vertebrates including other species of mice. Nests are located in underground burrows. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050112 - subsp. *torridus* (Coues)), 42 (062112 - no subspecies listed), 55 (species: recorded as *Onychomys torridus* (Coues). Southern Grasshopper Mouse. Widely distributed in the western and southern parts of the state (120 - 5,000 feet).), 65 (genus), 73 (species), 100 (species, color photograph of species), 106 (050112 - species), **118** (recorded as *Onychomys torridus torridus* (Coues) - Distribution: Southeastern quarter of the state. Figure 62, Page 161), 148 (color presentation of species)*

***Peromyscus eremicus* (Baird, 1858): Cactus Mouse**

COMMON NAMES: Anthony Desert Mouse (*P.e. anthonyi* Merriam, 1887 - Invalid?); Anthony's Cactus Mouse (*P.e. anthonyi* Merriam, 1887 - Invalid?); Apache Desert Mouse (*P.e. anthonyi* Merriam, 1887 - Invalid?); Black Mountain Cactus Mouse (*P.e. pullus* Blossom, 1933 - Invalid?); Cactus Mouse; Desert Mouse; Desert White-footed Mouse (*P.e. eremicus* Baird, 1858 - Invalid?); Pinacate Cactus Mouse (*P.e. papagensis* Goldman, 1917 - Invalid?); Raton de Cactaceas (Hispanic)[14]; Ratón de Cactus (Spanish)[42]. HABITS: Feeds on flowers, small fruits, insects, green plant material and seeds. Nests are made within the abandoned burrows of other animals, clumps of cacti and among rocks. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050112 - subsp. *anthonyi* Merriam; subsp. *eremicus*; subsp. *pullus*, color presentation), 42 (062112), **55** (recorded as *Peromyscus eremicus* (Baird). Cactus Mouse. Widely distributed in western and southern Arizona (120 - 6,000 feet).), 65 (genus), 73, 100 (color photograp), 106 (050112 - color presentation), 118 (recorded as *Peromyscus eremicus anthonyi* (Merriam) - Distribution: Southeastern part of the state; *Peromyscus eremicus eremicus* (Baird) - Distribution: Almost all of the western and southern part of the state; *Peromyscus eremicus papagensis* Goldman - Distribution: Known only from the Pinacate lava in southern Yuma County, and *Peromyscus eremicus pullus* Blossum - Distribution: Known only from Black Mountain 10 mi. SSW Tucson, Pima County, Arizona. Figure 67, Page 171), 148 (color presentation)*

***Peromyscus eremicus* subsp. *eremicus* (Baird, 1858) - Invalid?: Desert Mouse**

COMMON NAMES: Cactus Mouse; Desert White-footed Mouse; Raton de Cactaceas (Hispanic)[14]. HABITS: The species feeds on flowers, small fruits, insects, green plant material and seeds. Nests are made within the abandoned burrows of other animals, clumps of cacti and among rocks. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050112 - species, subsp. *anthonyi* Merriam; subsp. *eremicus*; subsp. *pullus*, color presentation of species), 42 (062112 - no subspecies listed), 55 (species: recorded as *Peromyscus eremicus* (Baird). Cactus Mouse. Widely distributed in western and southern Arizona (120 - 6,000 feet).), 65 (genus), 73 (species), 100 (species, color photograph of species), 106 (050112 - species, color presentation of species), **118** (recorded as *Peromyscus eremicus eremicus* (Baird) - Distribution: Almost all of the western and southern part of the state. Figure 67, Page 171), 148 (color presentation of species)*

***Peromyscus leucopus* (Rafinesque, 1818): White-footed Mouse**

COMMON NAME: Apache Wood Mouse (*P.l. arizonae* J.A. Allen, 1894 - Invalid?); Arizona White-footed Mouse (*P.l. arizonae* J.A. Allen, 1894 - Invalid?); Raton Patas Blancas (Hispanic)[14]; Souris à Pattes Blanches (French)[42]; White-footed Mouse; Wood Mouse; Woodmouse (Texas). HABITS: Feeds on berries, crustaceans, fungi, insects and other invertebrates, nuts, seeds and possibly small vertebrates. Nests are made of shredded bark, feathers, forbs, grasses, hair, leaves, mosses and plant fibers located in concealed places in banks, burrows, cavities in live and dead trees, holes in the ground, under rocks, in shrubs and tree stumps and logs. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: The White-footed Mouse may live to be 8 years of age. *14 (061512 - subsp. *arizonae* (J.A. Allen); subsp. *tornillo* (Mearns)), 42 (062112), **55** (recorded as *Peromyscus leucopus* (Rafinesque. White-footed Mouse. Known from eastern and central parts of the state (2,300 - 6,500 feet).), 65 (genus), 73, 100 (color photograph), 106 (050112 - color presentation), 118 (recorded as *Peromyscus leucopus arizonae* (Allen) - Distribution: Southeastern part of the state and *Peromyscus leucopus ochraceus* Osgood - Distribution: Along the Little Colorado River and an isolated population on the south edge of the Mogollon Rim which probably represents an unnamed race. Figure 70, Page 180), 148 (color presentation)*

***Peromyscus leucopus subsp. arizonae* J.A. Allen, 1894 - Invalid?: Arizona White-footed Mouse**

COMMON NAME: Apache Wood Mouse; Arizona White-footed Mouse; Raton Patas Blancas (Hispanic)[14]; White-footed Mouse; Wood Mouse. HABITS: Feeds on berries, crustaceans, fungi, insects and other invertebrates, nuts, seeds and possibly small vertebrates. Nests are made of shredded bark, feathers, forbs, grasses, hair, leaves, mosses and plant fibers located in concealed places in banks, burrows, cavities in live and dead trees, holes in the ground, under rocks, in shrubs and tree stumps and logs. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (061512 - subsp. *arizonae* (J.A. Allen); subsp. *tornillo* (Mearns)), 42 (062112 - no

subspecies listed), 55 (species: recorded as *Peromyscus leucopus* (Rafinesque. White-footed Mouse. Known from eastern and central parts of the state (2,300 - 6,500 feet).), 65 (genus), 73 (species), 100 (color photograph of species, species), 106 (050112 - species, color presentation of species), **118** (recorded as *Peromyscus leucopus arizonae* (Allen) - Distribution: Southeastern part of the state. Figure 70, Page 180), 148 (color presentation of species)*

***Peromyscus maniculatus* (Wagner, 1845): Deer Mouse**

COMMON NAMES: Arizona Wood Mouse (*P.m. rufinus* Merriam, 1890 - Invalid?); Chihuahua Deer Mouse (*P.m. blandus* Osgood, 1904 - Invalid?); Chihuahua Plains Mouse (*P.m. blandus* Osgood, 1904 - Invalid?); Deer Mouse; Gentle Field Mouse (*P.m. blandus* Osgood, 1904 - Invalid?); Prairie Deer Mouse; Raton Venado (Hispanic); Ratón Norteamericano (Spanish)[42]; Sonoran Deer Mouse (*P.m. sonoriensis* Le Conte, 1853 - Invalid?); Sonoran White-footed Mouse (*P.m. sonoriensis* Le Conte, 1853 - Invalid?); Souris Sylvestre (French)[42]; Tawny Field Mouse (*P.m. rufinus* Merriam, 1890 - Invalid?); Tawny White-footed Mouse (*P.m. rufinus* Merriam, 1890 - Invalid?); Wagner's Field Mouse; White-footed Mouse. HABITS: Feeds on bark, berries, bones, centipedes, earthworms, small fruits, fungi, insects, leaves, nuts and snails. Nests are built in buildings, underground burrows, rock crevices debris, in and under logs, and clumps of vegetation. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050112 - subsp. *blandus* (Osgood); subsp. *rufinus* (Merriam)), 42 (062112), **55** (recorded as *Peromyscus maniculatus* (Wagner). Deer Mouse. Statewide (120 - 11,400 feet).), 65 (genus), 73, 100 (color photograph), 106 (050112 - color presentation), 118 (recorded as *Peromyscus maniculatus blandus* Osgood - Distribution: Extreme southeastern part of the state; *Peromyscus maniculatus rufinus* (Merriam) - Distribution: Higher elevations throughout the state, and *Peromyscus maniculatus sonoriensis* (Le Conte) - Distribution: Grasslands at lower elevations throughout the state. Figure 69, Page 177), 148 (color presentation)*

***Peromyscus maniculatus* subsp. *sonoriensis* Le Conte, 1853 - Invalid?: Sonoran Deer Mouse**

COMMON NAMES: Deer Mouse; Sonoran Deer Mouse; Sonoran White-footed Mouse. HABITS: The species feeds on bark, berries, bones, centipedes, earthworms, small fruits, fungi, insects, leaves, nuts and snails. Nests are built in buildings, underground burrows, rock crevices debris, in and under logs, and clumps of vegetation. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050112 - subsp. *blandus* (Osgood); subsp. *rufinus* (Merriam)), 42 (062112 - no subspecies listed), 55 (species, recorded as *Peromyscus maniculatus* (Wagner). Deer Mouse. Statewide (120 - 11,400 feet).), 65 (genus), 73 (species), 100 (species, color photograph of species), 106 (050112 - color presentation of species), **118** (recorded as *Peromyscus maniculatus sonoriensis* (Le Conte) - Distribution: Grasslands at lower elevations throughout the state. Figure 69, Page 177), 148 (color presentation of species)*

***Peromyscus merriami* Mearns, 1896: Merriam's Mouse**

COMMON NAMES: Merriam's Mouse; Mesquite Mouse; Ratón de Merriam (Spanish)[42]; Sonoyta Desert Mouse. HABITS: Probably feeds on invertebrates and seeds. HABITAT: Within the range of this species it has been reported from the grassland, desertscrub and wetland ecological formations. *14 (050112), 42 (062112), **55** (recorded as *Peromyscus merriami* Mearns. Merriam's Mouse. Known from scattered localities is Pinal, Pima and Santa Cruz counties (1,600 - 3,600 feet).), 73 (note on species), 100, 106 (061512), 118 (recorded as *Peromyscus merriami merriami* Mearns - Distribution: Known from mesquite bosque situations in southern Arizona. Figure 68, Page 174), 148 (color presentation)*

***Peromyscus merriami* subsp. *merriami* Mearns, 1896: Merriam's Mouse**

COMMON NAMES: Merriam's Mouse; Mesquite Mouse. HABITS: The species probably feeds on invertebrates and seeds. HABITAT: Within the range of this species it has been reported from the grassland, desertscrub and wetland ecological formations. *14 (050112), 42 (062112 - no subspecies listed), 55 (species, recorded as *Peromyscus merriami* Mearns. Merriam's Mouse. Known from scattered localities is Pinal, Pima and Santa Cruz counties (1,600 - 3,600 feet).), 73 (note on species), 100 (species), 106 (061512 - species), **118** (recorded as *Peromyscus merriami merriami* Mearns - Distribution: Known from mesquite bosque situations in southern Arizona. Figure 68, Page 174), 148 (color presentation of species)*

***Rattus norvegicus* (Berkenhout, 1769): Norway Rat**

COMMON NAMES: Brown Norway Rat; Brown Rat; Common Rat; Hanover Rat; Norway Rat; Norwegian Rat; Rat Surmulot (French)[42]; Rata Comun (Hispanic)[14]; Sewer Rat; Wharf Rat; Water Rat; 'White Rat' (bred albino strain used in laboratories). HABITS: Feeds on birds, fish, insects, meat (commonly feeds on the flesh of dead animals, will kill chickens and eat their eggs), mollusks, plants, seeds and grains. Nests are made up of down, forbs, feathers, grasses, hair and leaves and are located in logs, banks, underground burrows and man-made structures. HABITAT: Usually found in areas of human habitation (cities and farmyards), along ditches and riverbanks in the forest, woodland, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC (native to central Asia), a very destructive animal and a major carrier of diseases. *14 (010512), 42 (072112), **55** (recorded as *Rattus norvegicus* (Berkenhout): Norway Rat. Introduced but not common; found only around large towns and cities.), 73, 100, 106 (010512 - color presentation), **118** (recorded as *Rattus norvegicus* (Berkenhout) - Distribution: At present known only from a few scattered populations in or near towns or cities. "Coues (1867) reported that this species was to be found n Arizona "not away from man's dwellings." Page 212), 148 (color presentation)*

***Reithrodontomys megalotis* (Baird, 1858): Western Harvest Mouse**

COMMON NAME: Arizona Harvest Mouse (*R.m. arizonensis* Allen, 1895 - Invalid?); Aztec Harvest Mouse (*R.m. aztecus* J.A. Allen, 1893 - Invalid?); Big-eared Harvest Mouse (*R.m. megalotis* (Baird, 1858) - Invalid?); Chiricahua Western Harvest Mouse (*R.m. arizonensis* Allen, 1895 - Invalid?); Ratón-cosechero Común (Spanish)[42]; Western Harvest Mouse. HABITS: Feeds on arachnids, grasses, insects (larvae and adults) and seeds of grasses, forbs and shrubs. Spherical nests are made of woven plant material and lined with plant fibers and can be located near the ground or above the ground in dense vegetation. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050112 - subsp. *arizonensis*; subsp. *aztecus* J.A. Allen; subsp. *megalotis*), 42 (062112), **55** (recorded as *Reithrodontomys megalotis* (Baird). Western Harvest Mouse. Statewide (120 - 8,000 feet).), 73, 100 (color photograph), 106 (050112 - color presentation), 118 (recorded as *Reithrodontomys megalotis arizonensis* (Allen) - Distribution: Known only from the region of the type locality (Chiricahua Mountains); *Reithrodontomys megalotis aztecus* (Allen) - Distribution: Extreme northeastern part of state, and *Reithrodontomys megalotis megalotis* (Baird) - Distribution: At medium and low elevations statewide except extreme northeastern part of the state. Figure 64, Page 164), 148 (color presentation)*

***Reithrodontomys megalotis* subsp. *megalotis* (Baird, 1858) - Invalid?: Chiricahua Western Harvest Mouse**

COMMON NAME: Big-eared Harvest Mouse; Western Harvest Mouse. HABITS: The species feeds on arachnids, grasses, insects (larvae and adults) and seeds of grasses forbs and shrubs. Spherical nests are made of woven plant material and lined with plant fibers and can be located near the ground or above the ground in dense vegetation. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050112 - subsp. *arizonensis*; subsp. *aztecus* J.A. Allen; subsp. *megalotis*), 42 - no subspecies listed), 55 (species, recorded as *Reithrodontomys megalotis* (Baird). Western Harvest Mouse. Statewide (120 - 8,000 feet).), 73 (species), 100 (species, color photograph of species), 106 (050112 - species, color presentation of species), 118 (recorded as *Reithrodontomys megalotis megalotis* (Baird) - Distribution: At medium and low elevations statewide except extreme northeastern part of the state. Figure 64, Page 164), 148 (color presentation of species)*

***Sigmodon arizonae* subsp. *ciengae* A.B. Howell, 1919 - Invalid?: Cienega Cotton Rat**

SYNONYMY: *Sigmodon hispidus* subsp. *cienegae* A.B. Howell, 1919 - Invalid?. COMMON NAMES: Arizona Cotton Rat; Cienega Cotton Rat; Cotton Rat. HABITS: Possibly feeding on berries, carcasses, fruits, insects and seeds. The nests are made of grass. HABITAT: Within the range of this species it has been reported from the woodland, grassland, desertscrub and wetland ecological formations. *14 (050112 - subsp. *arizonae* (A.B. Howell); subsp. *cienegae* (A.B. Howell); subsp. *jacksoni* (A.B. Howell)), 42 (062112 - no record of this subspecies), 55 (no record of subspecies or species, possibly recorded as *Sigmodon hispidus* Say and Ord. Hispid Cotton Rat. Known from scattered riparian and grassland areas in southern part of the state (120-5,000 feet).), 73 (note on species), 100 (species), 106 (050112 - species, includes a listing of subspecies), **118** (recorded as *Sigmodon hispidus* subsp. *cienegae* A.B. Howell - Distribution: Locally common in southeastern Arizona. Figure 74, Page 188), 148 (color presentation of species)*

Sigmodon hispidus subsp. *cienegae* (see *Sigmodon arizonae* subsp. *ciengae*)

Mustelidae: The Weasel and Allies Family

***Lontra canadensis* (Schreber, 1777): North American River Otter**

SYNONYMY: *Lutra canadensis* (Schreber, 1777). COMMON NAMES: Arizona Otter (*L.c. sonora* (Rhoads, 1898) - Valid); Arizona River Otter (*L.c. sonora* (Rhoads, 1898) - Valid); California Otter (*L.c. brevipilosus* (Grinnell, 1914) - Invalid?); Canadian River Otter (*L.c. canadensis* (Schreber, 1777) - Valid); Carolina Otter (*L.c. lataxina* (Cuvier, 1823) - Valid); Common Otter; Degenerate Otter (*L.c. degener* (Bangs, 1898) - Invalid?); Florida Otter (*L.c. vaga* (Bangs, 1898) - Invalid?); Interior Otter (*L.c. interior* (Swenk, 1920) - Invalid?); Island Otter (*L.c. periclyzomae* (Elliot, 1905) - Valid); Kodiak River Otter (*L.c. kodiacensis* (Goldman, 1935)) - Valid; Loutre de Rivière (French)[42], Mexican Otter (*L.c. sonora* (Rhoads, 1898) - Valid); Nearctic River Otter (*L.c. lataxina* (Cuvier, 1823) - Valid; *L.c. sonora* (Rhoads, 1898) - Valid); Newfoundland Otter (*L.c. degener* (Bangs, 1898) - Invalid?); North American River Otter; Northeastern Otter (*L.c. hudsonica* (Merriam, 1899 / Desmarest, 1803) - Invalid?); Northern River Otter; Nutria-de Río Norteamericana (Spanish)[42]; Pacific Otter (*L.c. pacifica* (J.A. Allen, 1898) - Valid); Pah-hua-pe'na (Tewa - Taos Indians)[14]; Queen Charlotte Otter (*L.c. periclyzomae* (Elliot, 1905) - Valid); River Otter; Sonora Otter (*L.c. sonora* (Rhoads, 1898) - Valid); Sea-Girt Otter (*L.c. periclyzomae* (Elliot, 1905) - Valid); South East Canadian River Otter (*L.c. lataxina* (Cuvier, 1823) - Valid); South West Canadian River Otter (*L.c. sonora* (Rhoads, 1898) - Valid); Southeastern River Otter (*L.c. lataxina* (Cuvier, 1823) - Valid); Southwestern River Otter (*L.c. sonora* (Rhoads, 1898) - Valid); Texas River Otter (*L.c. texensis* (Goldman, 1935) - Invalid?); Vancouver River Otter (*L.c. vancouverensis* (Goldman, 1935) - Invalid?); Yukon River Otter (*L.c. yukonensis* (Goldman, 1935) - Invalid?). HABITS: Feeds on amphibians, birds, crustaceans, fishes, large aquatic insects, small mammals, aquatic plants and turtles. Nests are made of grasses, leaves, reeds and sticks located in dens dug in banks or within abandoned beaver and nutria dens and man-made structures. HABITAT: Within the range of this species it has been reported from permanently flowing water of streams and rivers, ponds, including beaver ponds, lakes, marshes and cienegas in areas where there is overhanging bank vegetation and haul-out and slide sites for access and where dens can be established in banks in wetland ecological formations within the forest, woodland, scrub, grassland and desertscrub

ecological formations. NOTES: It is believed that it formerly inhabited the Black river, Colorado River, Gila River and Salt River. The historical presence of the River Otter in Pima County is unknown. *Lontra canadensis lataxina* (Cuvier) was introduced into central Arizona during 1981 - 1983. *8 (*Lontra canadensis sonora* Rhoads), 14 (050112 - subsp. *sonora* (Rhoads); subsp. *lataxina* (Cuvier) color presentation), 42 (062112), **55** (recorded as *Lutra canadensis* (Schreber) "Formerly in all of the larger permanent river systems; now rare."), 73 (recorded as *Lutra canadensis*), 100 (recorded as *Lutra canadensis*, color photograph), 106 (050112 - includes a listing of subspecies, color presentation), 118 (recorded as *Lontra canadensis sonora* Rhoads - Distribution: Formerly occurred in the Colorado and Gila rivers and their major tributaries. Today greatly reduced in numbers. Figure 103, Page 242), 148 (color presentation)*

***Lontra canadensis* subsp. *sonora* (Rhoads, 1898): Southwestern River Otter**

SYNONYMY: *Lutra canadensis* subsp. *sonorae* Rhoads, 1898 - Invalid?. COMMON NAMES: Arizona Otter; Arizona River Otter; Common Otter; Mexican Otter; Nearctic River Otter; Pah-hua-pe'na (Tewa - Taos Indians)[14]; River Otter; Sonora Otter; South West Canadian River Otter; Southwestern River Otter. HABITS: Feeds on amphibians, birds, crustaceans, fishes, large aquatic insects, small mammals, aquatic plants and turtles. Nests are made of grasses, leaves, reeds and sticks located in dens dug in banks or within abandoned beaver and nutria dens and man-made structures. HABITAT: Within the range of this species it has been reported from permanently flowing water of streams and rivers, ponds, including beaver ponds, lakes, marshes and ciénegas in areas where there is overhanging bank vegetation and haul-out and slide sites for access and where dens can be established in banks in wetland ecological formations within the forest, woodland, scrub, grassland and desertscrub ecological formations. NOTES: It is believed that it formerly inhabited the Black river, Colorado River, Gila River and Salt River. The historical presence of the River Otter in Pima County is unknown. *Lontra canadensis lataxina* (Cuvier) was introduced into central Arizona during 1981 - 1983. *8 (*Lontra canadensis sonora* Rhoads), 14 (050112 - subsp. *sonora* (Rhoads); subsp. *lataxina* (Cuvier) color presentation), 42 (062112), 55 (species, recorded as *Lutra canadensis* (Schreber) "Formerly in all of the larger permanent river systems; now rare."), 73 (species, recorded as *Lutra canadensis*), 100 (species, recorded as *Lutra canadensis*, color photograph), 106 (050112 - species, includes a listing of subspecies, color presentation of species), **118** (recorded as *Lontra canadensis sonora* Rhoads - Distribution: Formerly occurred in the Colorado and Gila rivers and their major tributaries. Today greatly reduced in numbers. Figure 103, Page 242), 148 (color presentation)*

Lutra canadensis (see *Lontra canadensis*)

Lutra canadensis subsp. *sonorae* (see *Lontra canadensis* subsp. *sonora*)

***Taxidea taxus* (Schreber, 1777): American Badger**

COMMON NAMES: American Badger; Badger; Berlandier's Badger (*T.t. berlandieri* Baird, 1758 - Valid); North American Badger; Mexican Badger (*T.t. berlandieri* Baird, 1758 - Valid); Tejon (Hispanic)[14]; Tejón ("Badger", a name also applied to the Coati, Spanish)[106]; Texas Badger (*T.t. berlandieri* Baird, 1758 - Valid); Tlalcoyote (Spanish)[42,106]. HABITS: Feeds on amphibians, ground dwelling birds (and eggs), carrion, fish, insects, burrowing rodents (moles, voles, gophers, ground squirrels, mice, woodrats, pack rats, prairie dogs, marmots, groundhogs), cottontails, pikas, jackrabbits, skunks, snakes and some plant material such as corn, peas, beans and mushrooms and fungi. Temporary shelter is taken in burrows. The young are born in natal dens in underground burrows. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050212 - subsp. *berlandieri* (Baird), color presentation), 42 (062112), **55** (recorded as *Taxidea taxus* (Schreber). Badger. Statewide (120 - 7,000 feet).), 65, 73, 100 (color photograph), 106 (050212 - includes a listing of subspecies, color presentation), **118** (recorded as *Taxidea taxus* - Distribution: Statewide. Figure 98, Page 235), 145, 148 (color presentation)*

***Taxidea taxus* subsp. *berlandieri* Baird, 1858: Berlandier's Badger**

COMMON NAMES: Berlandier's Badger; Mexican Badger; Tejon (Hispanic)[14]; Texas Badger. HABITS: The species feeds on amphibians, ground dwelling birds (and eggs), carrion, fish, insects, burrowing rodents (moles, voles, gophers, ground squirrels, mice, woodrats, pack rats, prairie dogs, marmots, groundhogs), cottontails, pikas, jackrabbits, skunks, snakes and some plant material such as corn, peas, beans and mushrooms and fungi. Temporary shelter is taken in burrows. The young are born in natal dens in underground burrows. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050212 - subsp. *berlandieri* (Baird), color presentation), 42 (062112), 55 (species, recorded as *Taxidea taxus* (Schreber). Badger. Statewide (120 - 7,000 feet).), 65 (species), 73 (species), 100 (species, color photograph of species), 106 (050212 - species, includes a listing of subspecies, color presentation of species), 118 (recorded as *Taxidea taxus* - Distribution: Statewide. Figure 98, Page 235), **145** (described the range of *Taxidea taxus berlandieri* Baird as being throughout the state but absent from higher elevations), 148 (color presentation)*

Phyllostomidae: The Leaf-nosed Bat Family

***Choeronycteris mexicana* Tschudi, 1844: Mexican Long-tongued Bat**

COMMON NAMES: Hognose Bat; Hog-nosed Bat; Long-tongued Bat; Mexican Hog-nosed Bat; Mexican Long-tongued Bat; Murcielago Lengua Larga Mexicano (Hispanic)[14]; Murciélago Trompudo (Spanish)[42]. HABITS: Feeds on fruits,

insects, nectar and pollen. Roosts are located under bridges, and in shallow caves, rock fissures and mine tunnels. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *8, 14 (050212), 42 (062112), 55 (recorded as *Choeronycteris mexicana* Tschudi. Mexican Long-tailed Bat. Uncommon; usually found near the fronts of shallow caves and mine tunnels. Known from Pima, Santa Cruz and Cochise counties.), 73, 92, 100 (color photograph), 106 (050212 - color presentation), **118** (recorded as *Choeronycteris mexicana* Tschudi - Distribution: Known only from the southeastern part of the state. Figure 8, Page 33), 148 (color presentation)*

Leptonycteris curasoae subsp. *yerbabuenae* (see *Leptonycteris yerbabuenae*)

Leptonycteris nivalis (see footnote 55 under *Leptonycteris yerbabuenae*)

Leptonycteris nivalis subsp. *nivalis* (see footnote 118 under *Leptonycteris yerbabuenae*)

Leptonycteris nivalis subsp. *sanborni* (see *Leptonycteris yerbabuenae*)

Leptonycteris nivalis subsp. *yerbabuenae* (see *Leptonycteris yerbabuenae*)

Leptonycteris sanborni (see *Leptonycteris yerbabuenae*)

***Leptonycteris yerbabuenae* Martinez and Villa, 1940: Lesser Long-nosed Bat**

SYNONYMY: *Leptonycteris curasoae* subsp. *yerbabuenae* Martinez and Villa, 1940; *Leptonycteris nivalis* subsp. *sanborni* Hoffmeister, 1957 - Invalid?; *Leptonycteris nivalis* subsp. *yerbabuenae* Martinez and Villa, 1940; *Leptonycteris sanborni* Hoffmeister, 1957. COMMON NAMES: "Leptos" (a name applied by bat enthusiasts); Lesser Long-nosed Bat; Little Long-nosed Bat; Mexican Long-nosed Bat; Murcielago de Sanborn (Hispanic)[14]; North American Long-nosed Bat; Sanborn's Long-nosed Bat; Sanborn's Southern Long-nosed Bat; Southern Long-nosed Bat; Yerba Buena Long-nosed Bat. HABITS: Feeds on insects, nectar, pollen and the nectar and soft-bodied fruits of agaves and cacti. Roosts are located in caves, rock crevices, abandoned mines and tunnels. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: Long-nosed bats are pollinators of Agaves, Cardons, Organ Pipe Cacti and Saguaros. *8, 14 (0502-12 - Populations may be compromised by roost-site disturbance, loss of food sources and direct killing by humans.), 35 (This species is vulnerable to disturbances at roosting sites by cave explorers.), 42 (062112), 55 (species, recorded as *Leptonycteris nivalis* (Saussure). Long-nosed Bat. Locally common in moist caves. Known from Pinal, Pima, Santa Cruz and Cochise Counties.), 92 (recorded as *Leptonycteris sanborni*), 100 (species, recorded as *Leptonycteris curasoae* and *Leptonycteris nivalis*, color photographs), 106 (050212 - color presentation), 110 (recorded as *Leptonycteris sanborni*), **118** (recorded as *Leptonycteris nivalis nivalis* (Saussure) - Distribution: Known only from the southeastern part of the state. Figure 9, Page 35), 148 (color presentation)*

***Macrotus californicus* Baird, 1857: California Leaf-nosed Bat**

COMMON NAMES: California Big-eared Bat; California Large-eared Bat; California Leaf-nosed Bat; Leaf-nosed Bat; Leafnose Bat; Murciélago-orejón Californiano (Spanish)[42]. HABITS: Feeds on beetles, butterflies, caterpillars, cicadas, crickets, dragonflies, grasshoppers, leafhoppers, moths and other insects. Roosts are located in caves, deep grottos and abandoned mine tunnels. HABITAT: Within the range of this species it has been reported from the grassland, desertscrub and wetland ecological formations. NOTE: Human disturbance of roosting caves is a major threat. *8, 14 (050212), 42 (062112), **55** (recorded as *Macrotus californicus* Baird. Leaf-nosed Bat. Locally common in shallow caves, mine tunnels and under bridges. Occurs widely at lower elevations in the western and southern parts of the state."), 73, 92, 100 (color photograph), 106 (061612 - color presentation), **118** (recorded as *Macrotus californicus* Baird - Distribution: Known from lower elevations in the southern and western parts of the state. Figure 7, Page 32), 148 (color presentation)*

Procyonidae: The Raccoon and Allies Family

***Bassariscus astutus* (Lichtenstein, 1830): Ringtail**

COMMON NAMES: Arizona Ringtail (*B.a. arizonensis* Goldman, 1932 - Valid); Arizona Ring-tailed Cat (*B.a. arizonensis* Goldman, 1932 - Valid); Band-tailed Cat; Cacomistle; Cacomixtle Norteño (Spanish)[42]; Cat Squirrel; Civet Cat; Common Raccoon-fox; Coon Cat; Gato Minero (Hispanic)[14]; Mexican Ring-tailed Cat (*B.a. yumanensis* Huey, 1937 - Valid); Miner's Cat; Nevada Ring-tailed Cat (*B.a. nevadensis* Miller, 1913 - Valid); Ringtail; Ringtail Cat; Ring-tailed Cat; Tawny Raccoon-fox (*B.a. flavus* Rhoads, 1893 - Valid); Texas Ring-tailed Cat (*B.a. flavus* Rhoads, 1893 - Valid); Yuma Ringtail (*B.a. yumanensis* Huey, 1937 - Valid); Yuma Ring-tailed Cat (*B.a. yumanensis* Huey, 1937 - Valid). HABITS: Feeds on berries, birds, fruits, carrion, crickets, eggs, insects, lizards, small mammals, snakes and spiders. Nests are made of grass located in dens in underground burrows, caves, cliffs, rocky outcrops, cavities in logs, stumps and trees and man-made structures. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *8 (subsp. *arizonensis*; subsp. *nevadensis*; subsp. *yumanensis*), 14 (050212- subsp. *arizonensis* (Goldman); subsp. *flavus* (Rhoads), color presentation), 42 (062112), **55** (recorded as *Bassariscus astutus* (Lichenstein). Ringtail.

Statewide (120 - 6,500 feet).), 65 (color photograph), 73, 100 (color photograph), 106 (050212 - includes a listing of subspecies, color presentation), 118 (recorded as *Bassariscus astutus arizonensis* Goldman - Distribution: Statewide except extreme southeastern and southwestern parts; *Bassariscus astutus flavus* Rhoads - Distribution: Extreme southeastern part of the state, and *Bassariscus astutus yumanensis* Huey - Distribution: Southwestern Arizona. Figure 93, Page 227), 148 (color presentation)*

***Bassariscus astutus* subsp. *arizonensis* Goldman, 1932: Arizona Ringtail**

COMMON NAMES: Arizona Ring-tailed Cat; Band-tailed Cat; Cacomistle; Civet Cat; Coon Cat; Gato Minero (Hispanic)[14]; Miner's Cat; Ringtail; Ringtail Cat; Ring-tailed Cat. HABITS: The species feeds on berries, birds, fruits, carrion, crickets, eggs, insects, lizards, small mammals, snakes and spiders. Nests are made of grass located in dens in underground burrows, caves, cliffs, rocky outcrops, cavities in logs, stumps and trees and man-made structures. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *8, 14 (050212- subsp. *arizonensis* (Goldman); subsp. *flavus* (Rhoads), color presentation), 42 (062112), 55 (species, recorded as *Bassariscus astutus* (Lichenstein). Ringtail. Statewide (120 - 6,500 feet).), 65 (species, color photograph of species), 73 (species), 100 (species, color photograph of species), 106 (050212 - species, includes a listing of subspecies, color presentation of species), **118** (recorded as *Bassariscus astutus arizonensis* Goldman - Distribution: Statewide except extreme southeastern and southwestern parts. Figure 93, Page 227), 148 (color presentation)*

***Nasua narica* (Linnaeus, 1766): White-nosed Coati**

COMMON NAMES: Antoon[106]; Boqueron Coati (*N.n. panamensis* Allen, 1904 - Invalid?); Chula[14,65]; Chulo[14]; Coati (Indian Name)[14]; Coatí Norteño (Spanish)[42]; Coatimundi (generally applied to roving male Coati)[106]; Cozumel Island Coati (*N.n. nelsoni* Merriam, 1901 - Valid); Dark Coati (*N.n. molaris* Merriam, 1902 - Valid); El Gato Solo (Los Gatos en Familia)[14]; Manzanillo Coati (*N.n. molaris* Merriam, 1902 - Valid); Nelson's Coati (*N.n. nelsoni* Merriam, 1901 - Valid); Pallid Coati (*N.n. molaris* Merriam, 1902 - Valid); Panamanian Coati (*N.n. panamensis* Allen, 1904 - Invalid?); Pizote[14,106]; Red Coati (*N.n. rufus* Goldman, 1932 - Invalid?); Tamaulipas Coati (*N.n. molaris* Merriam, 1902 - Valid); Tejón (means Badger, but is a name that is also applied to the Coati, Spanish)[106]; White-nosed Coati; Yucatan Coati (*N.n. yucatanica* J.A. Allen, 1904 - Valid); Yucatanian Coati (*N.n. yucatanica* J.A. Allen, 1904 - Valid). HABITS: Feeds on the berries of juniper and manzanita, birds, carrion, eggs, fruits, insects (including among others crickets and grasshoppers) and other invertebrates, prickly pear fruit, lizards, small mammals, nuts, snakes, tubers, worms and yucca fruits. Young are born in dens located in caves, crevices in rocks, mines shafts and cavities among tree roots. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050212 - color presentation), 42 (062112), **55** (recorded as *Nasua narica* (Linnaeus). Coati. In woodland situations in the Graham, Chiricahua, Huachuca, Patagonia and Pena Blanca mountains (5,000 to 7,500 feet).), 65 (Reported that "eyewitness accounts by ranchers established that they (*Nasua narica*) were in the Rincon Mountains in what is now part of the Saguaro National Monument in the very early 1900s." Page 42), 73, 100 (color photograph), 106 (050212 - includes a listing of subspecies, color presentation), 118 (recorded as *Nasua narica pallida* Allen - Distribution: Mountains of southern and southeastern part of the state. Figure 95, Page 230), 148 (color presentation), 149*

***Nasua narica* subsp. *molaris* Merriam, 1902: Manzanillo Coati**

SYNONYMY: *Nasua narica* subsp. *pallida* J.A. Allen, 1904 - Invalid?. COMMON NAMES: Coati (Indian Name)[14]; Coatimundi (applied to roving male Coati)[106]; Dark Coati; Manzanillo Coati; Pallid Coati; Tamaulipas Coati; Tejón (means Badger, but is a name that is also applied to the Coati, Spanish). HABITS: The species feeds on the berries of juniper and manzanita, birds, carrion, eggs, fruits, insects (including among others crickets and grasshoppers) and other invertebrates, prickly pear fruit, lizards, small mammals, nuts, snakes, tubers, worms and yucca fruits. Young are born in dens located in caves, crevices in rocks, mines shafts and cavities among tree roots. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050212 - species, color presentation), 42 (062112), 55 (species, recorded as *Nasua narica* (Linnaeus). Coati. In woodland situations in the Graham, Chiricahua, Huachuca, Patagonia and Pena Blanca mountains (5,000 to 7,500 feet).), 65 (species, reported that "eyewitness accounts by ranchers established that they (*Nasua narica*) were in the Rincon Mountains in what is now part of the Saguaro National Monument in the very early 1900s." Page 42), 73 (species), 100 (species, color photograph), 106 (050212 - species, includes a listing of subspecies, color presentation of species), **118** (recorded as *Nasua narica pallida* Allen - Distribution: Mountains of southern and southeastern part of the state. Figure 95, Page 230), 148 (color presentation), 149*

Nasua narica subsp. *pallida* (see *Nasua narica* subsp. *molaris*)

***Procyon lotor* (Linnaeus, 1758): Common Raccoon**

COMMON NAMES: Ahrah-koon-em ("[the] One Who Rubs, Scrubs, and Scratches with Its Hands", Proto-Algonquian)[106]; Alabama Raccoon (*P.l. varius* Nelson and Goldman, 1930 - Invalid?); Araiguma (transcribed Japanese)[106]; Arathkone (transcribed Powhatan)[106]; Aroughcun (transcribed Powhatan)[106]; Bahama Raccoon (*P.l. maynardi* Bangs, 1898 - Valid); Bahamas Raccoon (*P.l. maynardi* Bangs, 1898 - Valid); Bahamian Raccoon (*P.l. maynardi* Bangs, 1898 - Valid); Baja California Raccoon (*P.l. grinnelli* Nelson and Goldman, 1930 - Valid); Barbados Raccoon (*P.l. gloveralleni* Nelson and Goldman, 1930 - Valid: extinct); California Raccoon (*P.l. psora* Gray, 1842 - Valid); Campeche Raccoon (*P.l. hernandezii* Wagler, 1831 - Valid); Coastal Marsh Raccoon (*P.l. lotor* (Linnaeus, 1758) - Valid); Colorado Desert Raccoon (*P.l. pallidus* Merriam, 1900 - Valid); Common Raccoon; Coon (colloquial abbreviation)[106]; Costa Rican Raccoon (*P.l. hernandezii* Wagler,

1831 - Valid); Desert Raccoon (*P.l. pallidus* Merriam, 1900 - Valid); Dickey's Raccoon (*P.l. hernandezii* Wagler, 1831 - Valid); Eastern Raccoon (*P.l. lotor* (Linnaeus, 1758) - Valid); Florida Raccoon (*P.l. elucus* Bangs, 1898 - Valid); Guadeloupe Raccoon (*P.l. minor* Miller, 1911 - Invalid?); Hernandez Raccoon (*P.l. hernandezii* Wagler, 1831 - Valid); Hilton Head Island Raccoon (*P.l. solutus* Nelson and Goldman, 1931 - Invalid?); Isthmian Raccoon (*P.l. pumilus* Miller, 1911 - Valid); Key Vaca Raccoon (*P.l. auspicatus* Nelson, 1930 - Valid); Key West Raccoon (*P.l. incautus* Nelson, 1930 - Valid); Mapache (Spanish: from the Uto-Aztecan, Náhuatl [Aztec] word Mapachitli "[the] One Who Takes Everything in Its Hands")[106]; Mapache Común (Spanish)[42]; Matecumbe Key Raccoon (*P.l. inesperatus* Nelson, 1930 - Valid); Mexican Plateau Raccoon (*P.l. hernandezii* Wagler, 1831 - Valid); Mexican Raccoon (*P.l. hernandezii* Wagler, 1831 - Valid); Mississippi Delta Raccoon (*P.l. megalodous* Lowery, 1943 - Valid); Mosómedve (Hungarian)[106]; North American Raccoon; Northern Raccoon; Orsetto Lavatore (Italian)[106]; Pacific Raccoon (*P.l. pacificus* Merriam, 1899 - Valid); Pacific Northwest Raccoon (*P.l. pacificus* Merriam, 1899 - Valid); Pale Raccoon (*P.l. pallidus* Merriam, 1900 - Valid); Pallid Raccoon (*P.l. pallidus* Merriam, 1900 - Valid); Raccoon; Racoon; Racuno (Hispanic)[14]; Ratão-lavadeiro (Portuguese: Portugal)[106]; Raton Laveur (French)[42,106]; Saint Simon Island Raccoon (*P.l. litoreus* Nelson and Goldman, 1930 - Valid); Salvadore Raccoon (*P.l. hernandezii* Wagler, 1831 - Valid); San Diego Raccoon (*P.l. psora* Gray, 1842 - Valid); Sleepy Raccoon (*P.l. hernandezii* Wagler, 1831 - Valid); Snake River Valley Raccoon (*P.l. excelsus* Nelson and Goldman, 1930 - Valid); Southwestern Raccoon (*P.l. psora* Gray, 1842 - Valid); Ten Thousand Islands Raccoon (*P.l. marinus* Nelson, 1930 - Valid); Texas Raccoon (*P.l. fuscipes* Mearns, 1914 - Valid); Thousand Island Raccoon (*P.l. marinus* Nelson, 1930 - Valid); Torch Key Raccoon (*P.l. incautus* Nelson, 1930 - Valid); Tres Marias Raccoon (*P.l. insularis* Merriam, 1898 - Valid); Upper Mississippi Valley Raccoon (*P.l. hirtus* Nelson & Goldman, 1930 - Valid); Vancouver Raccoon (*P.l. vancouverensis* Nelson and Goldman, 1930 - Valid); Waschbär (German)[106]. HABITS: Feeds on annelid worms, berries, birds, nestlings and eggs, carrion, crayfishes, small fishes, frogs, fruits, insects, small mammals, nuts, shellfish, turtles and turtle eggs and vegetables. Nests are made of leaves located in dens in small caves, amongst boulders, rocky crevices in cliffs and cavities in trees. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: Racoons are never very far from permanent water. *14 (050212 - subsp. *hirtus* (Nelson & Goldman); subsp. *mexicanus* (Baird); subsp. *pallidus* (Merriam)), 42 (062112), **55** (recorded as *Procyon lotor* (Linnaeus). Raccoon. Riparian situations along the Colorado, Little Colorado and Gila river systems and in the grasslands of the southeastern portion of the state (120 - 6,900 feet).), 65 (color photograph), 73, 100 (color photograph), 106 (050212 - includes a listing of subspecies, color presentation), 118 (recorded as *Procyon lotor* subsp. *mexicanus* Baird - Distribution: Southeastern Arizona; *Procyon lotor* subsp. *pallidus* Merriam - Distribution: Northern and Western Arizona. Figure 94, Page 229), 148 (color presentation), 149*

***Procyon lotor* subsp. *hernandezii* Wagler, 1831: Mexican Plateau Raccoon**

SYNONYMY: *Procyon lotor* subsp. *mexicana* Baird, 1858 - Invalid?; *Procyon lotor* subsp. *mexicanus* Baird, 1858 - Invalid?. COMMON NAMES: Hernandez Raccoon; Mexican Plateau Raccoon; Mexican Raccoon; Raccoon; Racuno (Hispanic)[14]. HABITS: Feeds on annelid worms, berries, birds, nestlings and eggs, carrion, crayfishes, small fishes, frogs, fruits, insects, small mammals, nuts, shellfish, turtles and turtle eggs and vegetables. Nests are made of leaves located in dens in small caves, amongst boulders, rocky crevices in cliffs and cavities in trees. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: Racoons are never very far from permanent water. *14 (050212 - subsp. *hirtus* (Nelson & Goldman); subsp. *mexicanus* (Baird); subsp. *pallidus* (Merriam)), 42 (062112), 55 (species, recorded as *Procyon lotor* (Linnaeus). Raccoon. Riparian situations along the Colorado, Little Colorado and Gila River systems and in the grasslands of the southeastern portion of the state (120 - 6,900 feet).), 65 (color photograph), 73 (species), 100 (species, color photograph of species), 106 (050212 - species, includes a listing of subspecies, color presentation of species), **118** (recorded as *Procyon lotor mexicanus* Baird - Distribution: Southeastern Arizona. Figure 94, Page 229), 148 (color presentation), 149*

Procyon lotor subsp. *mexicana* (see *Procyon lotor* subsp. *hernandezii*)

Procyon lotor subsp. *mexicanus* (see *Procyon lotor* subsp. *hernandezii*)

Sciuridae: The Squirrel and Allies Family

***Ammospermophilus harrisii* (Audubon and Bachman, 1854): Harris' Antelope Squirrel**

SYNONYMY: *Citellus harrisii* (Audubon and Bachman, 1854) - Invalid?. COMMON NAMES: Ardilla de Tierra Harris (Hispanic)[14]; Ardilla-antilope de Sonora (Spanish)[42]; Bahia Kino Antelope Squirrel (*A.h. saxicolus* (Mearns, 1896) - Invalid?); Gray-tailed Antelope Squirrel (*A.h. harrisii* (Audubon and Bachman, 1854) - Invalid?); Harris Antelope Squirrel; Harris' Antelope Squirrel; Harris' Antelope-squirrel; Harris's Antelope Squirrel; Rock Spermophile (*A.h. saxicolus* (Mearns, 1896) - Invalid?); Yuma Antelope Squirrel (*A.h. saxicolus* (Mearns, 1896) - Invalid?). HABITS: Feeds on fruits, insects, plants and seeds. Dens are located in underground burrows. HABITAT: Within the range of this species it has been reported from the grassland, desertscrub and wetland ecological formations. *14 (050212 - subsp. *harrisii*), 42 (062112), **55** (recorded as *Citellus harrisii* (Audubon & Bachman). Harris Antelope Squirrel. Southern and western parts of the state at elevations below 6,500 feet.), 65 (color photograph), 73, 100 (color photograph), 106 (050212 - color presentation), 118 (recorded as *Citellus harrisii*

harrisii (Audubon & Bachman) - Distribution: Southern and western Arizona except for most of Yuma County. *Citellus harrisii saxicola* (Mearns) - Distribution: Southwestern Arizona. Figure 38, Page 85), 148 (color presentation), 149*

***Ammospermophilus harrisii* subsp. *harrisii* (Audubon and Bachman, 1854) - Invalid?: Harris' Antelope Squirrel**

SYNONYMY: *Citellus harrisii* subsp. *harrisii* (Audubon & Bachman, 1854) - Invalid?. COMMON NAMES: Ardilla de Tierra Harris (Hispanic)[14]; Gray-tailed Antelope Squirrel; Harris Antelope Squirrel; Harris' Antelope Squirrel; Harris' Antelope-squirrel; Harris's Antelope Squirrel;. HABITS: The species feeds on fruits, insects, plants and seeds. Dens are located in underground burrows. HABITAT: Within the range of this species it has been reported from the grassland, desertscrub and wetland ecological formations. *14 (050212 - subsp. *harrisii*), 42 (062112 - no subspecies listed), 55 (species, recorded as *Citellus harrisii* (Audubon & Bachman). Harris Antelope Squirrel. Southern and western parts of the state at elevations below 6,500 feet.), 65 (species, color photograph of species), 73 (species), 100 (species, color photograph of species), 106 (050212 - color presentation), **118** (recorded as *Citellus harrisii harrisii* (Audubon & Bachman) - Distribution: Southern and western Arizona except for most of Yuma County, Page 85), 148 (color presentation), 149*

Citellus harrisii (see *Ammospermophilus harrisii*)

Citellus harrisii subsp. *harrisii* (see *Ammospermophilus harrisii* subsp. *harrisii*)

Citellus tereticaudus (see *Spermophilus tereticaudus*)

Citellus tereticaudus subsp. *neglectus* (see footnote 118 under *Spermophilus tereticaudus*)

Citellus variegatus (see *Spermophilus variegatus*)

Citellus variegatus subsp. *grammurus* (see *Spermophilus variegatus* subsp. *grammurus*)

Otospermophilus variegatus (see *Spermophilus variegatus*)

Otospermophilus variegatus subsp. *grammurus* (see *Spermophilus variegatus* subsp. *grammurus*)

***Spermophilus tereticaudus* Baird, 1858: Round-tailed Ground Squirrel**

SYNONYMY: *Citellus tereticaudus* Baird - Invalid?. COMMON NAMES: Ardillón Cola Redonda (Spanish)[42,106]; Arizona Round-tailed Ground Squirrel (*S.t. neglectus* Merriam, 1889 - Invalid?); Coachella Valley Round-tailed Ground Squirrel (*S.t. chlorus* (Elliot, 1904) - Valid); Dolan Spring Ground Squirrel (*S.t. neglectus* Merriam, 1889 - Invalid?); Neglected Spermophile (*S.t. neglectus* Merriam, 1889 - Invalid?); Round-tailed Ground Squirrel. HABITS: Feeds on the buds of burroweed and mesquite; the leaves of shrubs; the flowers of ocotillo, palo verde, plantain, and saltbush; on the seeds of creosote bush and mesquite, and cacti, grasses, insects (ants, grasshoppers, termites), observed taking Gambel's Quail chicks and visiting road kill. Nests are made of plant fibers and stems and located in dens in underground burrows. HABITAT: Within the range of this species it has been reported from the desertscrub ecological formation. *14 (050212), 42 (062112), **55** (recorded as *Citellus tereticaudus* Baird. Round-tailed Ground Squirrel. Lower Sonoran Life-zone of the western part of the state (below 3,200 feet).), 65, 73, 100 (color photograph), 106 (050212 - includes a listing of subspecies, color presentation), **118** (recorded as *Citellus tereticaudus neglectus* (Merriam) - Distribution: Lower Sonoran Life Zone of southwestern Arizona. Figure 39, Page 90), 148 (color presentation)*

***Spermophilus variegatus* (Erxleben, 1777): Rock Squirrel**

SYNONYMY: *Citellus variegatus* (Erxleben) - Invalid?; *Otospermophilus variegatus* (Erxleben, 1777) - Invalid?. COMMON NAMES: Ardilla Coluda (Hispanic)[14]; Ardillón de Roca (Spanish)[42]; Black-backed Rock Squirrel (*S.v. buckleyi* Slack, 1861 - Invalid?); Brown-headed Rock Squirrel (*S.v. rupestris*, (J. Allen, 1903) - Invalid?); Buckley's Spermophile (*S.v. buckleyi* Slack, 1861 - Invalid?); Bushy-tailed Spermophile (*S.v. grammurus* (Say, 1823) - Invalid?); Malapais Rock Squirrel (*S.v. tularosae* (Benson, 1932) - Invalid?); Mexican Rock Squirrel (*S.v. variegatus* (Erxleben, 1777 - Invalid?); Rock Squirrel; Say's Rock Squirrel (*S.v. grammurus* (Say, 1823) - Invalid?); Tiburon Rock Squirrel (*S.v. tiburonensis* Jones and Manning, 1989 - Invalid?); Tularosa Rock Squirrel (*S.v. tularosae* (Benson, 1932) - Invalid?); Utah Rock Squirrel (*S.v. utah* (Merriam, 1903) - Invalid?); Varied Squirrel; Walnut Rock Squirrel (*S.v. juglans* (V. Bailey, 1913) - Invalid?). HABITS: Feeds on acorns, berries, small birds, chicks and eggs, carrion, insects, fruits, small mammals, nuts and seeds. Nests are made of leaves, pine needles and plant fibers and located in dens in underground burrows between boulders, rock crevices and talus. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050212 - subsp. *grammurus* (Say); *tularosae* (Benson), color presentation), 42 (062112), **55** (recorded as *Citellus variegatus* (Erxleben). Rock Squirrel. Statewide, especially at elevations below 6,000 feet.), 65 (color photograph), 73, 100 (color photograph), 106 (050212 - color presentation), 118 (recorded as *Citellus variegatus grammurus* (Say) - Distribution: Statewide, especially common below 6000 feet. Figure 37, Page 82), 148 (color presentation), 149*

***Spermophilus variegatus* subsp. *grammurus* Say, 1823** - Invalid?**: Say's Rock Squirrel**

SYNONYMY: *Citellus variegatus* subsp. *grammurus* - Invalid?; *Otospermophilus variegatus* subsp. *grammurus* Say, 1823 - Invalid?. COMMON NAMES: Ardilla Coluda (Hispanic); Bushy-tailed Spermophile; Rock Squirrel; Say's Rock Squirrel. HABITS: The species feeds on acorns, berries, small birds, chicks and eggs, carrion, insects, fruits, small mammals, nuts and seeds burrows. Nests are made of leaves, pine needles and plant fibers and located in dens in underground burrows between boulders, rock crevices and talus. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050212 - subsp. *grammurus* (Say); *tularosae* (Benson), color presentation), 42 (062112 - no subspecies listed), 55 (species, recorded as *Citellus variegatus* (Erxleben). Rock Squirrel. Statewide, especially at elevations below 6,000 feet.), 65 (species, color photograph of species), 73 (species), 100 (species, color photograph of species), 106 (050212 - species, color presentation of species), **118** (recorded as *Citellus variegatus grammurus* (Say) - Distribution: Statewide, especially common below 6000 feet. Figure 37, Page 82), 148 (color presentation), 149*

Soricidae: The Shrew Fmaily

***Notiosorex crawfordi* (Coues, 1877): Desert Shrew**

COMMON NAMES: Crawford's Desert Shrew (*N.c. crawfordi* (Coues, 1877) - Invalid?); Crawford's Gray Shrew; Desert Shrew; Gray Shrew; Musarana del Deseirto Crawford (Hispanic)[14]; Musaraña-desértica Norteña (Spanish)[42]. HABITS: Feeds on centipedes, insects, lizards, small mice, scorpions, sowbugs and spiders. Nests are made of shredded bark and leaves and located in packrat dens or under dead agaves. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050212 - subsp. *crawfordi*, color presentation), 42 (061712), **55** (recorded as *Notiosorex crawfordi* (Coues). Desert Shrew. Locally common, widely distributed statewide at elevations below 6,000 feet, especially in riparian situations.), 65, 73, 100 (color photograph), 106 (050212 - color presentation), 118 (recorded as *Notiosorex crawfordi crawfordi* (Coues) - Distribution: Probably occurs statewide at elevations below 6000 feet. Figure 5, Page 30), 148 (color presentation)*

***Notiosorex crawfordi* subsp. *crawfordi* (Coues, 1877) - Invalid?: Crawford's Desert Shrew**

COMMON NAMES: Crawford's Desert Shrew; Crawford's Gray Shrew; Desert Shrew; Gray Shrew; Musarana del Deseirto Crawford (Hispanic)[14]. HABITS: The species feeds on centipedes, insects, lizards, small mice, scorpions, sowbugs and spiders. Nests are made of shredded bark and leaves and located in packrat dens or under dead agaves. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050212 - subsp. *crawfordi*, color presentation of species), 42 (061712 - no subspecies listed), 55 (species, recorded as *Notiosorex crawfordi* (Coues). Desert Shrew. Locally common, widely distributed statewide at elevations below 6,000 feet, especially in riparian situations.), 65 (species), 73 (species), 100 (species, color photograph of species), 106 (050212 - color presentation of species), **118** (recorded as *Notiosorex crawfordi crawfordi* (Coues) - Distribution: Probably occurs statewide at elevations below 6000 feet. Figure 5, Page 30), 148 (color presentation of species)*

Tayassuidae: The Javelina Family

Dicotyles tajacu (see *Pecari tajacu*)

Dicotyles tajacu subsp. *sonoriensis* (see *Pecari tajacu* subsp. *sonoriensis*)

Pecari angulatus (see footnote 65 under *Pecari tajacu* and/or *Pecari tajacu* subsp. *sonoriensis*)

***Pecari tajacu* (Linnaeus, 1758): Collared Peccary**

SYNONYMY: *Dicotyles tajacu* (Linnaeus, 1758) - Invalid; *Tayassu tajacu* (Linnaeus, 1758). COMMON NAMES: Báquiro[106]; Collared Peccary; Jabalina (Hispanic)[14]; Javelina; Mexican Hog; Musk Hog; Pecari de Collar (Spanish)[42]; Peccary; Pigelina (Arizona); Quenk (Trinidad)[106]; Saíno[106]; Sonoran Collared Peccary (*P.t. sonoriensis* (Mearns, 1897) - Invalid?); Sonora Peccary (*P.t. sonoriensis* (Mearns, 1897) - Invalid?); Texan Collard Peccary (*P.t. angulatus* (Cope, 1889) - Invalid?); Wild Hog; Wild Pig. HABITS: Feeds on agaves, amphibians, berries, bulbs, fruits, fungi, grasses, insects, mesquite beans, nuts, roots, palm nuts, succulent plants, prickly-pear and other cacti, reptiles, rodents, roots, sotol, tubers and worms. Javelina bed down during the day in thick brush and prickly-pear thickets and at night in burrows usually under the roots of trees. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050312 - subsp. *sonoriensis* (Mearns), color presentation), 42 (061712), **55** (recorded as *Tayassu tajacu* (Linnaeus), Javelina. Southeastern and central parts of the state (1,200 - 6,000 feet).), 65 (recorded as *Pecari angulatus*), 73 (recorded as *Dicotyles tajacu*), 100 (recorded as *Tayassu tajacu*, color photograph), 106 (050312 - color presentation), 118 (recorded as *Tayassu tajacu sonoriensis* (Mearns) - Distribution: Southern part of the state. Figure 107, Page 249), 148 (color presentation), 149*

***Pecari tajacu* subsp. *sonoriensis* (Mearns, 1897) - Invalid?: Sonoran Collared Peccary**

SYNONYMY: *Dicotyles tajacu* subsp. *sonoriensis* (Mearns, 1897) - Invalid?; *Tayassu tajacu* subsp. *sonoriensis* (Mearns, 1897) - Invalid?. COMMON NAMES: Collared Peccary; Jabalina (Hispanic)[14]; Javelina; Musk Hog; Peccary; Pigelina (Arizona); Sonora Peccary; Sonoran Collared Peccary. HABITS: The species feeds on agaves, amphibians, berries, bulbs, fruits, fungi, grasses, insects, mesquite beans, nuts, roots, palm nuts, succulent plants, prickly-pear and other cacti, reptiles, rodents, roots, sotol, tubers and worms. Javelina bed down during the day in thick brush and prickly-pear thickets and at night in burrows usually under the roots of trees. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050312 - subsp. *sonoriensis* (Mearns), color presentation), 42 (061712 - no subspecies listed), 55 (species, recorded as *Tayassu tajacu* (Linnaeus). Javelina. Southeastern and central parts of the state (1,200 - 6,000 feet).), 65 (species, recorded as *Pecari angulatus*), 73 (species, recorded as *Dicotyles tajacu*), 100 (species, recorded as *Tayassu tajacu*, color photograph of species), 106 (050312 - color presentation of species), **118** (recorded as *Tayassu tajacu sonoriensis* (Mearns) - Distribution: Southern part of the state. Figure 107, Page 249), 148 (color presentation), 149*

Tayassu tajacu (see *Pecari tajacu*)

Tayassu tajacu subsp. *sonoriensis* (see see *Pecari tajacu* subsp. *sonoriensis*)

Ursidae: The Bear Family

Euarctos americanus (see *Ursus americanus*)

Euarctos americanus subsp. *amblyceps* (see *Ursus americanus* subsp. *amblyceps*)

***Ursus americanus* Pallas, 1780: Black Bear**

SYNONYMY: *Euarctos americanus* (Pallas, 1780) - Invalid?. COMMON NAMES: Alexander Black Bear (*U.a. pugnax* Swarth, 1911 - Valid); American Black Bear (*U.a. americanus* Pallas, 1780 - Valid); Awasos (Algonquian: Abenaki)[106]; 'Baribal' (French, Italian, Spanish)[106]; Black Bear; Blue Bear (*U.a. emmonsii* Dall, 1895 - Valid); British Columbia Bear (*U.a. altifrontalis* Elliot, 1903 - Valid); California Black Bear (*U.a. californiensis* Miller, 1900 - Valid); Cinnamon Bear (*U.a. cinnamomum* Audubon and Bachman, 1854 - Valid); Dall Black Bear (*U.a. pugnax* Swarth, 1911 - Valid); Dall Island Black Bear (*U.a. pugnax* Swarth, 1911 - Valid); Daxpitchée (Siouan: Crow)[106]; Desert Black Bear (*U.a. eremicus* Merriam, 1904 - Valid); Eastern Black Bear (*U.a. americanus* Pallas, 1780 - Valid); Emmons Bear (*U.a. emmonsii* Dall, 1895 - Valid); Emmons's Glacier Bear (*U.a. emmonsii* Dall, 1895 - Valid); Everglades Bear (*U.a. floidanus* Merriam, 1896 - Valid); Fighting Bear (*U.a. machetes* Elliot, 1903 - Valid); Florida Black Bear (*U.a. floidanus* Merriam, 1896 - Valid); Floridan Bear (*U.a. floidanus* Merriam, 1896 - Valid); Glacier Bear (*U.a. emmonsii* Dall, 1895 - Valid; *U.a. glacilis* Kells, 1897 - Invalid?); Gv-ni-ge-yo-na (Iroquoian: Tsalagi)[106]; Haida Gwaii Black Bear (*U.a. carlottae* Osgood, 1901 - Valid); Hoonaw (Uto-Aztecan: Hopi)[106]; Hunter's Bear (*U.a. perniger* J.A. Allen, 1910 - Valid [*U.a. hunteri* Anderson, 1944 - Invalid?]); Jóona (Uto-Aztecan: Mayo [Yoreme])[106]; Judumi (Uto-Aztecan: O'odham))[106] Kenai Peninsula Bear (*U.a. perniger* J.A. Allen, 1910 - Valid); Kermode Bear (*U.a. kermodei* Hornaday, 1905 - Valid); Kenai Black Bear (*U.a. perniger* J.A. Allen, 1910 - Valid); Kiááyo (Algonquian: Blackfoot)[106]; Kmákan (Yuman: Kiliwa)[106]; Louisiana Black Bear (*U.a. luteolus* Griffith, 1821 - Valid); Mahkwa (Algonquian: Kickapoo)[106]; Makwa (Algonquian)[106]; Makwaa (Algonquian: Ojibwe)[106]; Maskwa (Algonquian: Cree)[106]; Mato (Siouan: Lakota [Sioux])[106]; Mexican Black Bear (*U.a. eremicus* Merriam, 1904 - Valid); Minnesota Black Bear(*U.a. americanus* Pallas, 1780 - Valid); New Mexico Black Bear (*U.a. amblyceps* Baird, 1859 - Valid); Newfoundland Black Bear (*U.a. hamiltoni* Cameron, 1957 - Valid); North American Black Bear; Northwestern Black Bear (*U.a. altifrontalis* Elliot, 1903 - Valid); Ohoí (Uto-Aztecan: Guarijío)[106]; Ojuí (Uto-Aztecan: Tarahumara)[106]; Olympic Black Bear (*U.a. altifrontalis* Elliot, 1903 - Valid); Oso Negro (Hispanic)[14]; Oso Negro (Spanish)[42]; Ours Noir (French)[42]; Queen Charlotte Black Bear (*U.a. carlottae* Osgood, 1901 - Valid); S'eek (Na-Dené: Tlingit)[106]; Shash [Łizhinígíí] (Athabaskan: Navajo)[106]; Shoot-zhraii (Athabaskan: Gwich'in)[106]; Sonborger's Black Bear (*U.a. americanus* Pallas, 1780 - Valid; *U.a. songborgeri* Bangs, 1898 - Invalid?); Spirit Bear (*U.a. kermodei* Hornaday, 1905 - Valid); S^S (Athabaskan: Carrier)[106]; Texan Black Bear (*U.a. luteolus* Griffith, 1821 - Valid); Tlācamāyeh (Uto-Aztecan: Náhuatl)[106]; Tsah (Athabaskan: Dene)[106]; Vancouver Bear (*U.a. vancouveri* Hall, 1928 - Valid); Vancouver Island Black Bear (*U.a. vancouveri* Hall, 1928); Weda' (Uto-Aztecan: Shoshone)[106]; West Mexico Black Bear (*U.a. machetes* Elliot, 1903 - Valid); Yáaka' (Plateau Penutian: Sahaptian [Nez Perce])[106]; Yáka (Plateau Penutian: Sahaptian [Sahaptin])[106]. HABITS: Feeds on acorns, ants, beetles, berries, buds, carrion, crickets, currants, fish, fruits, grapes, grubs, insects, leaves, pinyon nuts, prickly-pear fruit, raspberries, sprouts, small to medium-size mammals and other vertebrates and twigs. Shelter is taken in dense cover and they climb trees to escape danger. Nests are made of grasses leaves, mud and sticks located in a den. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: Winnipeg (aka "Winnie" 1915-1934) of "Winnie the Pooh" fame was a female Black Bear cub, and Black Bear cubs were also involved in the naming of Smokey the Bear and the Teddy Bear. *14 (050312 - subsp. *amblyceps* (Baird), color presentation), 42 (061712), **55** (recorded as *Euarctos americanus* (Pallas). Black Bear. Formerly common throughout the mountainous areas of the state, now greatly reduced in numbers and distribution.), 73, 100 (color photograph), 106 (050312 - includes a listing of subspecies, color presentation), 118 (recorded as *Euarctos americanus amblyceps* (Baird) -

Distribution: Probably formerly occurred throughout the state, at least in mountainous areas. Figure 91, Page 224), 148 (color presentation), ADS (Bear killed in SaddleBrooke' relatively unafraid' of humans, Wednesday, June 6, 2012, Page A2)*

***Ursus americanus* subsp. *amblyceps* Baird, 1859: New Mexico Black Bear**

SYNONYMY: *Euarctos americanus* subsp. *amblyceps* (Baird, 1859) - Invalid?. COMMON NAMES: Black Bear; New Mexico Black Bear; Oso Negro (Hispanic)[14]. HABITS: The species feeds on acorns, ants, beetles, berries, buds, carrion, crickets, currants, fish, fruits, grapes, grubs, insects, leaves, pinyon nuts, prickly-pear fruit, raspberries, sprouts, small to medium-size mammals and other vertebrates and twigs. Shelter is taken in dense cover and they climb trees to escape danger. Nests are made of grasses leaves, mud and sticks located in a den. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050312 - subsp. *amblyceps* (Baird), color presentation), 42 (061712), 55 (species, recorded as *Euarctos americanus* (Pallas). Black Bear. Formerly common throughout the mountainous areas of the state, now greatly reduced in numbers and distribution.), 73 (species), 100 (species, color photograph of species), 106 (050312 - includes a listing of subspecies, color presentation), **118** (recorded as *Euarctos americanus amblyceps* (Baird) - Distribution: Probably formerly occurred throughout the state, at least in mountainous areas. Figure 91, Page 224), 148 (color presentation of species)*

Ursus arctos (see footnotes 14 and 100 under *Ursus arctos* subsp. *horribilis*)

***Ursus arctos* subsp. *horribilis* Ord, 1815: Grizzly Bear**

SYNONYMY: *U.a. apache* Merriam, 1916 - Invalid?; *U.a. arizonae* Merriam, 1916 - Invalid?; *U.a. bairdi* Merriam, 1914 - Invalid?; *U.a. horriaeus* Baird, 1858 - Invalid?; *U.a. kennerlyi* Merriam, 1914 - Invalid?; *U.a. navaho* Merriam, 1914 - Invalid?; *U.a. perturbans* Merriam, 1918 - Invalid?; *U.a. texensis* Merriam, 1914 - Invalid?; *Ursus horribilis* Ord, 1815 - Invalid?. COMMON NAMES: American Grizzly Bear (*U.a. horribilis* Ord, 1815 - Valid); Apache Grizzly (*U.a. horribilis* Ord, 1815 - Valid; *U.a. apache* Merriam, 1916 - Invalid?); Arizona Brown Bear (*U.a. horribilis* Ord, 1815 - Valid; *U.a. arizonae* Merriam, 1916 - Invalid?); Arizona Grizzly (*U.a. horribilis* Ord, 1815 - Valid; *U.a. arizonae* Merriam, 1916 - Invalid?); Baird Grizzly (*U.a. horribilis* Ord, 1815 - Valid; *U.a. bairdi* Merriam, 1914 - Invalid?); Big Plains Grizzly (*U.a. horribilis* Ord, 1815 - Valid); Brown Bear (*Ursus arctos* Linnaeus, 1758 - Valid; *U.a. arctos* Linnaeus, 1758 - Valid; *U.a. horribilis* Ord, 1815 - Valid; *U.a. pruinosus* Blyth, 1854 - Invalid?); Grizzly; Grizzly Bear (*Ursus arctos* Linnaeus - Valid, 1758; *U.a. horribilis* Ord, 1815 - Valid); Navajo Grizzly (*U.a. horribilis* Ord, 1815 - Valid; *U.a. navaho* Merriam, 1914 - Invalid?); New Mexico Grizzly (*U.a. horribilis* Ord, 1815 - Valid; *U.a. bairdi* Merriam, 1914 - Invalid?); North American Brown Bear; Oso Gris (Hispanic)[14]; Silvertip (*U.a. horribilis* Ord, 1815 - Valid); Silvertip Bear; Sonora Grizzly (*U.a. horribilis* Ord, 1815 - Valid; *U.a. kennerlyi* Merriam, 1914 - Invalid?); Texas Brown Bear (*U.a. horribilis* Ord, 1815 - Valid; *U.a. texensis* Merriam, 1914 - Invalid?); Texas Grizzly (*U.a. horribilis* Ord, 1815 - Valid; *U.a. texensis* Merriam, 1914 - Invalid?). HABITS: The species feeds on berries, carrion, fish (bass, salmon and trout), fungi, grasses, insects (Army Cutworm moths), leaves, large mammals (Bison, Black Bear, Caribou, Deer, Elk, Moose and Mountain Goats) and small mammals (rodents), nuts (Whitebark Pine nuts), roots and sprouts. The Grizzly Bear beds down in depressions in thickets. Dens are excavated from under rocks or located in caves, crevices or hollow trees. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: The last confirmed "kill" in Arizona was made on the slopes of Mount Baldy (Apache County) in the summer of 1939. Pad marks and two-colored, four inch long hairs of a Grizzly Bear were observed in the Sierra Madre of southwestern Chihuahua as late as 1959. Grizzly Bears were killed-off by American immigrants because of the risks posed to humans and livestock. The Grizzly Bear has been EXTIRPATED from Arizona. *14 (050312 - *Ursus arctos* subsp. *horriaeus* Baird, 1858 - Extinct; subsp. *perturbans* Merriam - Extinct), **39** (recorded as *Ursus horribilis* - included the following note when referring to Grizzly Bears in the Tucson Area "Jack O'Connor told us of a kill in the Catalinas in 1915. Up until 1912, there were quite a few grizzly bears in the Catalinas and also the Galiuros. The Santa Cruz River bottom was a favorite hangout of these bears, all the way from Nogales to the Tucson area. We have a few authentic reports of desert grizzlies, but Jack talked with some old timers who hunted them in the river bottom." It reported that the majority of grizzly bears in Arizona were found in the east-central part of the state. The bears entire range, however, stretched from Bill Williams Mountain southeast to Springerville, the Chuska Mountains of the Four Corners area, then south to the Chiricahuas, west to Nogales, north using the Santa Cruz River as a western boundary to the Tucson area. Also the Santa Ritas, Catalinas, Galiuros, the Pinals, Sierra Anchas, the Young country of Canyon and Cherry Creeks, the Mazatzals, Pine Mountain, the Bradshaws, Mingus Mountain, the Camp Wood area and Sycamore Canyon, south of Bill Williams Mountain. The following dates of last known "kills" were provided: Arizona on September 13, 1935 (however, there was a possible sighting in 1936); California in August 1922; New Mexico has two "last" kills one in the spring of 1923 and the other in 1933; Texas on November 2, 1890, and Utah on August 22, 1923. A grizzly bear was killed in the Sierra del Pinitos in Sonora Mexico, a few miles southeast of Nogales, Arizona, on June 18, 1955. This booklet included the listing of six subspecies taken in Arizona: *Ursus horribilis apache*, the Apache Grizzly; *Ursus horribilis arizonae* Merriam, the Arizona Grizzly; *Ursus horribilis baird*, the New Mexico Grizzly; *Ursus horribilis kennerlyi*, the Sonora Grizzly; *Ursus horribilis navajo*, the Navajo Grizzly, and *Ursus horribilis texensis*, the Texas Grizzly), **40** (recorded as *Ursus arctos* - Grizzly Bears were historically present in the Rincon and Santa Catalina Mountains and along the Santa Cruz River bottom from Nogales to Tucson.), 42 (061712), **55** (recorded as *Ursus horribilis* Ord. Grizzly Bear. Formerly throughout the mountainous areas of the state, now extinct in Arizona.), 73 (recorded as *Ursus horribilis*), 100 (species, recorded as *Ursus arctos*, color photograph), 106 (050312 - color presentation), **118** (recorded as *Ursus horribilis* - Distribution: Formerly statewide, now extinct in Arizona. Figure 92, Page 225), 139, ADS (Monday, January

30, 2012, Series reminds: Once grizzlies roamed nearby, Section A, Pages 1&4. This article reported that Grizzlies occurred in the Rincon Mountains until the 1920's. It also reported the trapping and killing of a grizzly in 1921 just south of Rincon Peak at 8,000 feet in elevation.), 148 (color presentation), 149*

Ursus horribilis (see *Ursus arctos* subsp. *horribilis*)

Ursus horribilis subsp. apache (see *Ursus arctos* subsp. *horribilis*)

Ursus horribilis subsp. arizonae (see *Ursus arctos* subsp. *horribilis*)

Ursus horribilis subsp. bairdi (see *Ursus arctos* subsp. *horribilis*)

Ursus horribilis subsp. kennerlyi (see *Ursus arctos* subsp. *horribilis*)

Ursus horribilis subsp. navaho (see *Ursus arctos* subsp. *horribilis*)

Ursus horribilis subsp. texensis (see *Ursus arctos* subsp. *horribilis*)

Vespertilionidae: The Plain-nosed Bat Family

***Antrozous pallidus* (Le Conte, 1856): Pallid Bat**

COMMON NAMES: Big-eared Pale Bat; Desert Bat; Desert Palid Bat (*A.p. pallidus* Le Conte, 1856 - Invalid?); Le Conte's Palid Bat (*A.p. pallidus* Le Conte, 1856 - Invalid?); Murcielago Palid (Hispanic)[14]; Murciélago-desértico Norteño (Spanish)[42]; Pale Bat (*A.p. pallidus* Le Conte, 1856 - Invalid?); Pallid Bat. HABITS: Feeds on flightless arthropods on the ground, insects, scorpions, lizards and nectar. Roosts under bridges, buildings, in caves, crevices in cliffs, rocky outcrops, under slabs of rocks, hollow trees and tunnels. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *8, 14 (050312 - subsp. *pallidus*), 42 (062212), **55** (recorded as *Antrozous pallidus* (Le Conte). Pallid Bat. Locally common throughout the state.), 73, 92 (color photograph), 100 (color photograph), 106 (050312 - color presentation), 118 (recorded as *Antrozous pallidus pallidus* (Le Conte) - Distribution: Statewide. Figure 25, Page 60), 148 (color presentation)*

***Antrozous pallidus* subsp. *pallidus* (LeConte, 1756) - Invalid?: Pallid Bat**

COMMON NAMES: Desert Palid Bat; LeConte's Palid Bat; Murcielago Pallid (Hispanic)[14]; Pale Bat; Pallid Bat. HABITS: The species feeds on flightless arthropods on the ground, insects, lizards and nectar. Roosts under bridges, buildings, in caves, crevices in cliffs, rocky outcrops, under slabs of rocks, hollow trees and tunnels. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *8, 14 (050312 - subsp. *pallidus*), 42 (061712 - no subspecies listed), 55 (species, recorded as *Antrozous pallidus* (Le Conte). Pallid Bat. Locally common throughout the state.), 73 (species), 92 (species, color photograph of species), 100 (species, color photograph of species), 106 (050312 - species, color presentation of species), **118** (recorded as *Antrozous pallidus pallidus* (Le Conte) - Distribution: Statewide. Figure 25, Page 60), 148 (color presentation)*

Corynorhinus townsendii (see *Plecotus townsendii*)

Corynorhinus townsendii subsp. *pallescens* (see *Plecotus townsendii* subsp. *pallescens*)

Dasypterus ega (see *Lasiurus ega*)

***Eptesicus fuscus* (Beauvois, 1796): Big Brown Bat**

COMMON NAMES: Big Brown Bat; Grande Chauve-souris Brune (French)[42]; Murcielago Cafe' Grande (Hispanic)[14]; Murciélago-moreno Norteamericano (Spanish)[42]; Pallid Brown Bat (*E.f. pallidus* (Young, 1908) - Invalid?). HABITS: Feeds on insects (beetles, moths, mosquitoes, wasps). Roosts under bridges, in buildings, caves, crevices in cliff faces, mines and holes in saguaros and trees. HABITAT: Within the range of this species it has been reported from tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050312 - subsp. *pallidus* (Young)), 42 (062212), **55** (recorded as *Eptesicus fuscus* (Palisot de Beauvois). Big Brown Bat. Locally common throughout the state.), 73, 92 (color photograph), 100 (color photograph), 106 (050312 - includes a listing of subspecies, color presentation), 118 (recorded as *Eptesicus fuscus pallidus* (Young) - Distribution: Statewide. Figure 20, Page 52), 148 (color presentation)*

***Eptesicus fuscus* subsp. *pallidus* (Young, 1908) - Invalid?: Pallid Brown Bat**

COMMON NAMES: Big Brown Bat; Murcielago Cafe' Grande (Hispanic)[14]; Pallid Brown Bat. HABITS: The species feeds on insects (beetles, moths, mosquitoes, wasps). Roosts under bridges, in buildings, caves, crevices in cliff faces, mines and holes in saguaros and trees. HABITAT: Within the range of this species it has been reported from tundra, forest, woodland,

scrub, grassland, desertscrub and wetland ecological formations. *14 (050312 - subsp. *pallidus* (Young)), 42 (061712 - no subspecies listed), 55 (species, recorded as *Eptesicus fuscus* (Palisot de Beauvois). Big Brown Bat. Locally common throughout the state.), 73 (species), 92 (species, color photograph of species), 100 (species, color photograph of species), 106 (050312 - species, includes a listing of subspecies, color presentation of species), **118** (recorded as *Eptesicus fuscus pallidus* (Young) - Distribution: Statewide. Figure 20, Page 52), 148 (color presentation)*

Euderma maculata (see *Euderma maculatum*)

***Euderma maculatum* (J.A. Allen, 1891): Spotted Bat**

SYNONYMY: *Euderma maculata* (J.A. Allen, 1891) - Invalid?. COMMON NAMES: Death's Head Bat; Jackass Bat; Murcielago Pinto (Hispanic)[14]; Murciélago Pinto (Spanish)[42]; Pinto Bat; Spotted Bat; Spotted Great-eared Bat. HABITS: Feeds on insects (mainly grasshoppers and moths). Roosts in cracks and crevices in caves, cliffs and ledges, and under loose rock in rocky situations, possibly in close proximity to water. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This bat is rarely encountered. Riparian habitats seem to be important t o this species. *8, 14 (050312 - color presentation), 42 (061712), 55 (recorded as *Euderma maculata* (J.A. Allen). Spotted Bat. Extremely rare; known from four specimens, Maricopa and Yuma counties.), 73, 92, 100 (color photograph), 106 (050312 - color presentation), **118** (recorded as *Euderma maculata* (J.A. Allen) - Distribution: Can be expected almost anywhere in the state although recorded from only four localities. Figure 23, Page 57), 148 (color presentation)*

***Lasionycteris noctivagans* (LeConte, 1831): Silver-haired Bat**

COMMON NAMES: Chauve-souris Argentée (French)[42]; Murcielago Plateado (Hispanic)[14]; Murciélago Pelo Plateado (Spanish)[42]; Night-wandering Bat; Silver-haired Bat; Silvery-haired Bat; Silverwings. HABITS: Feeds on caddis flies, flies, moths and other insects. Uncommon tree dwelling bat found under bark, in bird nests, dead trees, fissures in rock ledges, tree hollows, and woodpecker holes. HABITAT: Within the range of this species it has been reported from tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *8, 14 (050312), 42 (061712), 55 (recorded as *Lasionycteris noctivagans* (Le Conte). Silver-haired Bat. Uncommon solitary tree-dwelling bat found throughout the state at elevations above 5,000 feet), 73, 92 (color photograph), 100 (color photograph), 106 (050312 - color presentation), **118** (recorded as *Lasionycteris noctivagans* (Le Conte) - Distribution: Probably statewide, at least during certain seasons of the year. Figure 18, Page 48), 148 (color presentation)*

***Lasiurus blossevillii* (Lesson and Garnot, 1826): Western Red Bat**

COMMON NAMES: California Red Bat (*L.b. teliotis* (H. Allen, 1891) - Invalid?); Desert Red Bat; Lesser Red Bat; Murcielago Rojo (Hispanic)[14]; Murciélago-cola Peluda de Blossevilli (Spanish)[42]; Red Bat; Western Red Bat (*L.b. teliotis* (H. Allen, 1891) - Invalid?). HABITS: Feeds on insects (ants, beetles, cicadas, crickets, flies, moths, true bugs). Roosts in the foliage of herbs, shrubs and trees, saguaro boots and sometimes under leaf litter on the ground. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grasslands, desertscrub and wetland ecological formations. NOTES: The Red Bat feeds on moths including many crop pests. In Arizona this bat is associated with riparian corridors and wooded areas. *8, 14 (050312), 42 (061712), **55** (recorded as *Lasiurus borealis* (Muller). Red Bat. Uncommon solitary tree bat throughout the state in the region of trees.), 73 (recorded as *Lasiurus borealis*), 92 (recorded as *Lasiurus borealis*, color photograph of *Lasiurus borealis*), 100 (recorded as *Lasiurus borealis*, color photograph of *Lasiurus borealis*), 106 (050312 - color presentation), 118 (recorded as *Lasiurus borealis teliotis* (H. Allen) - Distribution: Probably statewide in riparian communities of the Upper Sonoran and Transitional Life Zones. Figure 21, Page 54), 148 (color presentation), 149*

***Lasiurus blossevillii* subsp. *teliotis* (H. Allen, 1891) - Invalid?: Western Red Bat**

SYNONYMY: *Lasiurus borealis teliotis* (H. Allen, 1891) - Invalid?. COMMON NAMES: Desert Red Bat; Red Bat; Western Red Bat. HABITS: The species feeds on insects (ants, beetles, cicadas, crickets, flies, moths, true bugs). Roosts in the foliage of herbs, shrubs and trees, saguaro boots and sometimes under leaf litter on the ground. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grasslands, desertscrub and wetland ecological formations. NOTES: The Red Bat feeds on moths including many crop pests. In Arizona this bat is associated with riparian corridors and wooded areas. *8, 14 (050312), 42 (061712 - no subspecies listed), 55 (recorded as *Lasiurus borealis* (Muller). Red Bat. Uncommon solitary tree bat throughout the state in the region of trees.), 73 (recorded as *Lasiurus borealis*), 92 (recorded as *Lasiurus borealis*, color photograph of *Lasiurus borealis*), 100 (recorded as *Lasiurus borealis*, color photograph of *Lasiurus borealis*), 106 (050312 - species, color presentation of species), **118** (recorded as *Lasiurus borealis teliotis* (H. Allen) - Distribution: Probably statewide in riparian communities of the Upper Sonoran and Transitional Life Zones. Figure 21, Page 54), 148 (color presentation of species), 149*

Lasiurus borealis subsp. *teliotis* (see *Lasiurus blossevillii* subsp. *teliotis*)

***Lasiurus cinereus* (Beauvois, 1796): Hoary Bat**

COMMON NAMES: Chauve-souris Cendrée (French)[42]; Hawaiian Hoary Bat (*L.c. semotus* H. Allen, 1890); Hoary Bat; Murcielago (Hispanic); Murciélago-cola Peluda Canoso (Spanish)[42]. HABITS: Feeds primarily on moths. Roosts in

buildings, caves, mines, in dense foliage in shrubs and trees and under leaves on the ground. HABITAT: Within the range of this species it has been reported from tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *8, 14 (050412 - subsp. *cinereus* (Palisot de Beauvois)), 42 (061712), **55** (recorded as *Lasiurus cinereus* (Palisot de Beauvois). Hoary Bat. Uncommon tree dwelling bat found throughout the state in the region of trees.), 73, 92 (color photograph), 100 (color photograph), 106 (050412 - color presentation), 118 (recorded as *Lasiurus cinereus cinereus* (Beauvois) - Distribution: Statewide. Figure 22, Page 55), 148 (color presentation)*

***Lasiurus cinereus* subsp. *cinereus* (Beauvois, 1796): Northern Hoary Bat**

COMMON NAMES: Chauve-souris Cendrée (French)[42]; Hoary Bat; Murcielago (Hispanic)[14]; Northern Hoary Bat; Murciélago-cola Peluda Canoso (Spanish)[42]. HABITS: The species feeds primarily on moths. Roosts in buildings; caves; mines; in dense foliage in shrubs and trees, and under leaves on the ground. HABITAT: Within the range of this species it has been reported from tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *8, 14 (050412 - subsp. *cinereus* (Palisot de Beauvois)), 42 (061712), 55 (species, recorded as *Lasiurus cinereus* (Palisot de Beauvois). Hoary Bat. Uncommon tree dwelling bat found throughout the state in the region of trees.), 73 (species), 92 (species, color photograph of species), 100 (species, color photograph of species), 106 (050412 - color presentation of species), **118** (recorded as *Lasiurus cinereus cinereus* (Beauvois) - Distribution: Statewide. Figure 22, Page 55), 148 (color presentation)*

***Lasiurus ega* (Gervais, 1856): Western Yellow Bat**

SYNONYMY: *Dasypterus ega xanthinus* (Thomas, 1897) - Invalid?; *Lasiurus ega* subsp. *xanthinus* (Thomas, 1897) - Invalid?; *Lasiurus xanthinus* (Thomas, 1897). COMMON NAMES: Murcielago Amarillo (Hispanic)[14]; Murciélago-cola Peluda de La Laguna (Spanish)[42]; Southern Yellow Bat; Western Yellow Bat; Yellow Bat. HABITS: Feeds on insects. Roosts in within dead fronds (skirts) encircling palm trees, in shrubs and trees (Arizona White Oak [*Quercus arizonica*], Arizona Sycamore [*Platanus wrightii*] and Frémont Cottonwood [*Populus fremontii*]) and under vines. HABITAT: Within the range of this species it has been reported from the woodland, grassland, desertscrub and wetland ecological formations. *14 (050412 - recorded as *Lasiurus xanthinus* (Thomas)), 42 (061712), **55** (recorded as *Dasypterus ega* (Gervais). Yellow Bat. Rare; known only from two specimens from Tucson.), 73, 92 (color photograph), 100, 106 (050412 -color presentation), 118 (recorded in the Hypothetical List as *Dasypterus ega xanthinus* Thomas - possibly may occur in southwestern Arizona as it has been recorded from southern California to the west and from Sonora to the southward., Page 258), 148 (color presentation), 149 (recorded as *Lasiurus* (*Dasypterus*) ega Gervais, 1856, Southern Yellow Bat; *Lasiurus* (*Dasypterus*) *xanthinus* Thomas, 1897, Western Yellow Bat)*

Lasiurus ega subsp. *xanthinus* (see *Lasiurus ega*)

Lasiurus xanthinus (see *Lasiurus ega*)

***Myotis californicus* (Audubon and Bachman, 1842): California Myotis Bat**

COMMON NAMES: California Bat; California Myotis; California Myotis Bat; Little California Bat (*M.c. californicus* Audubon and Bachman, 1842 - Invalid?); Miotis Californiano (Spanish)[42]; Murcielago de California (Hispanic)[14]; Stephen's Brown Bat (*M.c. stephensi* Dalquest, 1946 - Invalid?). HABITS: Feeds on arachnids and insects. Roosts in crevices and cracks in cliffs and canyon walls, caves, mine shafts and manmade shelters. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *8 (*Myotis californicus* N. Miller), 14 (050412 - subsp. *californicus*; subsp. *stephensi* (Dalquest)), 42 (061712), **55** (recorded as *Myotis californicus* Audubon & Bachman. California Myotis. Locally common throughout the state.), 73, 100 (color photograph), 106 (050412 - color presentation), 118 (recorded as *Myotis californicus californicus* (Audubon & Bachman) - Distribution: Eastern and southeastern Arizona, and *Myotis californicus stephensi* Dalquest - Distribution: Northern and western part of the state. Figure 16, Page 45), 148 (color presentation), 149*

***Myotis californicus* subsp. *californicus* Audubon and Bachman, 1842 - Invalid?: California Myotis Bat**

COMMON NAMES: California Bat; California Myotis; California Myotis Bat; Little California Bat; Murcielago de California (Hispanic)[14]. HABITS: The species feeds on arachnids and insects. Roosts in crevices and cracks in cliffs and canyon walls, caves, mine shafts and manmade shelters. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *8 (species: *Myotis californicus* N. Miller), 14 (051007 - subspp. *californicus* (Audubon & Bachman) and stephensi (Dalquest)), 42 (061712 - no subspecies listed), 55 (species, recorded as *Myotis californicus* Audubon & Bachman. California Myotis. Locally common throughout the state.), 73 (species), 100 (species, color photograph of species), 106 (050412 - species, color presentation of species), **118** (recorded as *Myotis californicus californicus* (Audubon & Bachman) - Distribution: Eastern and southeastern Arizona. Figure 16, Page 45), 148 (color presentation), 149*

Myotis ciliolabrum (see *Myotis leibii*)

Myotis ciliolabrum subsp. *melanorhinus* (see footnote 14 under *Myotis leibii*)

***Myotis leibii* (Audubon and Bachman, 1842): Western Small-footed Myotis**

SYNONYMY: *Myotis ciliolabrum* (Merriam, 1886); *Myotis subulatus* subsp. *melanorhinus* (Merriam) - Invalid? ; *Myotis subulatus* subsp. *subulatus* Say - Invalid?. COMMON NAMES: Chauve-souris Pygmée (French)[42]; Eastern Small-footed Bat (applied to *Myotis leibii*); Eastern Small-footed Myotis (applied to *Myotis leibii* after the splitting of *Myotis subulatus* (Small-footed Myotis) into two species *Myotis ciliolabrum* and *Myotis leibii* in 1984)[14]; Least Brown Bat; Miotis Cara Negra (Spanish: applied to *Myotis ciliolabrum*)[42]; Murcielago Patas Chicas (Hispanic: applied to *Myotis ciliolabrum*)[14]; Small-footed Bat; Small-footed Myotis; Western Small-footed Bat (applied to *Myotis ciliolabrum*); Western Small-footed Myotis (applied to *Myotis ciliolabrum* after the splitting of *Myotis subulatus* (Small-footed Myotis) into two species *Myotis ciliolabrum* and *Myotis leibii* in 1984)[14]; Western Small-footed Myotis. HABITS: Feeds on flying insects including bugs, flies and moths. Hibernates in caves and mines and roosts under bark, in buildings, rock bluffs, burrows, caves, cavities in cliffs, cracks; rock crevices, holes, mine shafts, hollow trees, and amongst and under rocks, and snags. Den sites may be buildings; caves; under rocks and trees. HABITAT: Within the range of this species it has been reported from tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: This bat may live to be from 5 to 12 years of age. Populations may be in decline. *8, 14 (061712 - recorded as *Myotis ciliolabrum*: subsp. *melanorhinus* (Merriam); subsp. *subulatus* (Say), color presentation), 42 (061712), **55** (recorded as *Myotis subulatus* Say. Small-footed Myotis. Uncommon but distributed throughout the state.), 100, 106 (061712 - recorded as *Myotis leibii*, color presentation and *Myotis ciliolabrum*, color presentation), **118** (recorded as *Myotis subulatus melanorhinus* (Merriam) - Distribution: Probably at higher elevations throughout the state. Figure 17, Page 46)*

Myotis lucifugus subsp. *occultus* (see *Myotis occultus*)

***Myotis occultus* Hollister, 1909 - Invalid?: Arizona Myotis**

SYNONYMY: *Myotis lucifugus* subsp. *occultus* - Invalid? COMMON NAMES: Arizona Myotis; Arizona Occult Bat; Fringed Myotis; Hollister Bat; Hollister's Bat; Little Brown Bat; Little Brown Myotis; Occult Little Brown Bat; Occult Little Brown Myotis Bat. HABITS: Feeds on insects, Roosts in buildings, caves, rock crevices, snags and holes in trees. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. ***8**, 14 (050412 - recorded as *Myotis occultus*), 42 (062212 - no record of species), 55 (recorded as *Myotis occultus* Hollister. Arizona Myotis. Rare; known from a few localities below the Mogollon Rim), 73 (species), 85 (053106), 92 (color photograph), 100 (color photograph), 106 (050412), 118 (recorded as *Myotis occultus* Hollister - Distribution: Unknown, probably throughout the central part of the state. Figure 12, Page 39), 148 (color presentation), 149*

Myotis subulatus subsp. *melanorhinus* (see *Myotis leibii*)

Myotis subulatus subsp. *subulatus* (see *Myotis leibii*)

***Myotis velifer* (J.A. Allen, 1890): Cave Myotis Bat**

COMMON NAMES: Cave Bat; Cave Myotis; Cave Myotis Bat; Mexican Brown Bat; Miotis Mexicano (Spanish)[42]; Murcielago de Cueva (Hispanic)[14]; Southwestern Cave Myotis (*M.v. brevis* Vaughan, 1954 - Invalid?). HABITS: Feeds on small moths and other small insects. Roosts in holes and pockets in caves, crevices, bridges, buildings, abandoned mine shafts, tunnels, and trees. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *8 (recorded as *Myotis velifer velifer* (J.A. Allen)), 14 (050412 - subsp. *brevis* (Vaughan); subsp. *incautus* (J.A. Allen)), 42 (061712 - no record of subspecies), **55** (recorded as *Myotis velifer* (J.A. Allen). Cave Myotis. Locally abundant in summer months at lower elevations (below 5,000 feet) throughout the southern and western parts of the state.), 73, 92, 100 (color photograph), 106 (050412 - color presentation), 118 (recorded as *Myotis velifer brevis* Vaughan - Distribution: Probably statewide. Figure 11, Page 37), 148 (color presentation)*

***Myotis velifer* subsp. *brevis* (Vaughan, 1954) - Invalid?: Southwestern Cave Myotis**

COMMON NAMES: Cave Bat; Cave Myotis; Cave Myotis Bat; Mexican Brown Bat; Murcielago de Cueva (Hispanic)[14]; Southwestern Cave Myotis. HABITS: The species feeds on small moths and other small insects. Roosts in holes and pockets in caves, crevices, bridges, buildings, abandoned mine shafts, tunnels, and trees. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050412 - subsp. *brevis* (Vaughan); subsp. *incautus* (J.A. Allen); subsp. *grandis* (Hayward)), 42 (061712 - no subspecies listed), 55 (species, recorded as *Myotis velifer* (J.A. Allen). Cave Myotis. Locally abundant in summer months at lower elevations (below 5,000 feet) throughout the southern and western parts of the state.), 73 (species), 92 (species), 100 (species, color photograph of species), 106 (050412 - species, color presentation of species), **118** (recorded as *Myotis velifer brevis* Vaughan - Distribution: Probably statewide. Figure 11, Page 37), 148 (color presentation of species)*

***Myotis yumanensis* (H. Allen, 1864): Yuma Myotis Bat**

COMMON NAMES: Fort Yuma Bat; Miotis de Yuma (Spanish)[42]; Murcielago de Yuma (Hispanic)[14]; Yuma Myotis; Yuma Myotis Bat. HABITS: Feeds on small soft-bodied insects (mainly moths). Roosts in caves, crevices and swallow nests in cliffs and rocky walls, tree cavities, under bridges and in buildings in close proximity to water. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *8, 14 (050412 - subsp. *yumanensis* (H. Allen), color presentation), 42 (061812), **55** (recorded as *Myotis yumanensis* (H. Allen). Yuma Myotis. Locally common, statewide in distribution.), 73, 100 (color photograph), 106 (050412), 118 (recorded as *Myotis*

yumanensis yumanensis (H. Allen) - Distribution: Probably statewide at low and medium elevation. Figure 10, Page 36), 148 (color presentation)*

***Myotis yumanensis* subsp. *yumanensis* (H. Allen) - Invalid?: Yuma Myotis Bat**

COMMON NAMES: Murcielago de Yuma (Hispanic)[14]; Yuma Bat; Yuma Myotis; Yuma Myotis Bat. HABITS: The species feeds on small soft-bodied insects (mainly moths). Roosts in caves, crevices and swallow nests in cliffs and rocky walls, tree cavities, under bridges and in buildings in close proximity to water. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *8, 14 (050412 - subsp. *yumanensis* (H. Allen), color presentation), 42 (061812 - no subspecies listed), 55 (species, recorded as *Myotis yumanensis* (H. Allen). Yuma Myotis. Locally common, statewide in distribution.), 73 (species), 100 (species, color photograph of species), 106 (050412), **118** (recorded as *Myotis yumanensis yumanensis* (H. Allen) - Distribution: Probably statewide at low and medium elevation. Figure 10, Page 36), 148 (color presentation of species)*

***Pipistrellus hesperus* (H. Allen, 1864): Western Pipistrelle Bat**

COMMON NAMES: Canyon Bat (*P.h. hesperus* H. Allen, 1864 - Invalid?); Flittermouse; Murcielago del Poniente (Hispanic)[14]; Pipistrelo del Oeste Americano (Spanish)[42]; Swift Bat (*P.h. apus* Elliot, 1904 - Invalid?); Western Bat (*P.h. hesperus* H. Allen, 1864 - Invalid?); Western Pipistrelle; Western Pipistrelle Bat. HABITS: Feeds on insects. Roosts in buildings, rock crevices in canyon walls, caves, cliffs, rocky outcrops, under rocks and in mine shafts. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *8, 14 (050412 - subsp. *hesperus*; subsp. *maximus* (Hatfield)), 42 (061812), **55** (recorded as *Pipistrellus hesperus* (H. Allen). Western Pipistrelle. Common throughout the state.), 73, 100 (color photograph), 106 (050412 - color presentation), 118 (recorded as *Pipistrellus hesperus apus* Elliot - Distribution: Southeastern Arizona, and *Pipistrellus hesperus hesperus* (H. Allen) - Distribution: Northern and western Arizona. Figure 19, Page 49), 148 (color presentation)*

Pipistrellus hesperus subsp. *apus* (see *Pipistrellus hesperus* subsp. *hesperus*)

***Pipistrellus hesperus* subsp. *hesperus* H. Allen, 1864 - Invalid?: Western Pipistrelle Bat**

SYNONYMY: *Pipistrellus hesperus* subsp. *apus* Elliot, 1904 - Invalid?. COMMON NAMES: Canyon Bat; Flittermouse; Murcielago del Poniente (Hispanic)[14]; Western Bat; Western Pipistrelle; Western Pipistrelle Bat. HABITS: The species feeds on insects. Roosts in buildings, rock crevices in canyon walls, caves, cliffs, rocky outcrops, under rocks and in mine shafts. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: This is the smallest of the western bats. *8, 14 (050412 - subsp. *hesperus*; subsp. *maximus* (Hatfield)), 42 (061812 - no subspecies listed), 55 (species, recorded as *Pipistrellus hesperus* (H. Allen). Western Pipistrelle. Common throughout the state.), 73 (species), 100 (species, color photograph of species), 106 (050412 - species, color presentation of species), **118** (recorded as *Pipistrellus hesperus apus* Elliot - Distribution: Southeastern Arizona. Figure 19, Page 49; *Pipistrellus hesperus hesperus* (H. Allen) - Distribution: Northern and western Arizona. Figure 19, Page 49), 148 (color presentation of species)*

***Plecotus townsendii* Cooper, 1837 (subsp. *pallescens* (Miller, 1897) is the subspecies reported as occurring in Arizona): Townsend's Big-eared Bat**

SYNONYMY: *Corynorhinus townsendii* (Cooper, 1837). COMMON NAMES: Lump-nosed Bat; Mule-eared Bat; Murcielago de Townsend (Hispanic)[14]; Ozark Big-eared Bat (*P.t. ingens* Handley, 1955 - Valid); Pale Lumped-nosed Bat (*P.t. pallescens* (Miller, 1897) - Valid); Pale Townsend's Big-eared Bat (*P.t. pallescens* (Miller, 1897) - Valid); Pallid Western Big-eared Bat (*P.t. pallescens* (Miller, 1897) - Valid); Townsend's Big-eared Bat (*P.t. townsendii* Cooper, 1837 - Valid); Virginia Big-eared Bat (*P.t. virginianus* Handley, 1955 - Valid); Western Big-eared Bat; Western Long-eared Bat; Western Lump-nosed Bat. HABITS: The species feeds on small moths and other small insects; roosts on open ceilings in caves and rock shelters, and under bridges and in water diversion tunnels, abandoned mines, mine tunnels and buildings. HABITAT: Within the range of this species it has been reported from tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: The Pale Townsend's Big-eared Bat is a rather sedentary species that is extremely sensitive to human disturbance and the vandalism of roost caves. *14 (061812 - recorded as *Corynorhinus townsendii* subsp. *pallescens* (Miller)), 42 (061812), **55** (recorded as *Plecotus townsendii* (Cooper). Lump-nosed Bat. Locally common throughout the state at elevations above 5,000 feet; rare at lower elevations.), 73, 92 (color photograph), 100 (color photograph), 106 (050512 - recorded as *Corynorhinus townsendii*, includes a listing of subspecies, color presentation), 118 (recorded as *Corynorhinus townsendii pallescens* Miller - Distribution: Probably more or less state wide but more abundant in the Upper Sonoran and Transitional Life Zones. Figure 24, Page 58), 148 (recorded as *Corynorhinus townsendii*, color presentation)*

Plecotus townsendii subsp. *intermedius* (see *Plecotus townsendii* subsp. *pallescens*)

***Plecotus townsendii* subsp. *pallescens* (Miller, 1897): Pale Townsend's Big-eared Bat**

SYNONYMY: *Corynorhinus townsendii* subsp. *pallescens* Miller, 1897; *Plecotus townsendii* subsp. *intermedius* (H.W. Grinnell, 1914). COMMON NAMES: Lump-nosed Bat; Mule-eared Bat; Murcielago de Townsend (Hispanic)[14]; Pale Lumped-nosed Bat; Pale Townsend's Big-eared Bat; Pallid Western Big-eared Bat; Western Big-eared Bat; Western Long-eared Bat;

Western Lump-nosed Bat. HABITS: The species feeds on small moths and other small insects; roosts on open ceilings in caves and rock shelters, and under bridges and in water diversion tunnels, abandoned mines, mine tunnels and buildings. HABITAT: Within the range of this species it has been reported from tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: The Pale Townsend's Big-eared Bat is a rather sedentary species that is extremely sensitive to human disturbance and the vandalism of roost caves. *14 (061812 - recorded as *Corynorhinus townsendii* subsp. *pallescens* (Miller)), 42 (061812), 55 (species, recorded as *Plecotus townsendii* (Cooper). Lump-nosed Bat. Locally common throughout the state at elevations above 5,000 feet; rare at lower elevations.), 73 (species), 92 (species, color photograph of species), 100 (species, color photograph of species), 106 (050512 - species, recorded as *Corynorhinus townsendii*, includes a listing of subspecies, color presentation of species), **118** (recorded as *Corynorhinus townsendii pallescens* Miller - Distribution: Probably more or less state wide but more abundant in the Upper Sonoran and Transitional Life Zones. Figure 24, Page 58), 148 (recorded as *Corynorhinus townsendii* subsp. *pallescens*, color presentation)*

CLASS REPTILIA: The REPTILES

Colubridae: The Colubrid Family

***Thamnophis eques* subsp. *megalops* (Kennicott, 1860): Northern Mexican Garter Snake**

COMMON NAMES: Mexican Garter Snake; Northern Mexican Garter Snake; Northern Mexican Gartersnake. HABITS: Feeds on native fishes, frogs, lizards, mice and tadpoles. Takes shelter in vegetation. HABITAT: Within the range of this species it has been reported from the woodland, grassland, desertscrub and wetland ecological formations where it is typically an aquatic species. ***8**, 14 (081912 - subsp. *megalops* (Kennicott, 1860), color presentation), 37 (species), 42 (081912), 55 (species), 73 (species), 87, 106 (081912 - no record of subspecies or species; genus record with a listing of species, color presentation)*

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FOOTNOTES and REFERENCES

(for the Species Distribution Listings compiled for Arizona)

(1) General Mapping:

Arizona Atlas & Gazetteer. 2002. DeLorme.
www.delorme.com

National Geographic Arizona Seamless USGS Topographic Maps. Maps created with TOPO! RC 2002 National Geographic.

Mount Lemmon, Arizona – 15 Minute Series Topographic 1957

Tucson North, Arizona – 7.5 Minute Series Topographic 1984

Sabino Canyon, Arizona – 7.5 Minute Series Topographic 1957

Tucson Metropolitan Street Atlas 2005 Edition. Wide World of Maps, Inc., Phoenix, Arizona.
www.maps4u.com

(2) Physiographic Province Mapping:

Walker, Henry P. and Don Bufkin. 1979. Historical Atlas of Arizona, University of OklahomaPress, Norman, Page 4A and Map.

(3) Soils Mapping:

Arizona General Soil Map, July 1975, United States Department of Agriculture, Soil Conservation Service and the University of Arizona Agricultural Experiment Station, compiled by J.E. Jay, Y.H. Havens, D.M. Hendricks, D.F. Post and C.W. Guernsey.

Richardson, M.L. and M.L. Miller. March 1974. United States Department of Agriculture - Soil Conservation Service in cooperation with the Pima County Natural Resource Conservation District, Report and Interpretations for the General Soil Map of Pima County, Arizona and General Soil Map Pima County Arizona. Arizona General Soil Map, July 1975, United States Department of Agriculture - Soil Conservation Service and the University of Arizona Agricultural Experiment Station, compiled by J.E. Jay, Y.H. Havens, D.M. Hendricks, D.F. Post and C.W. Guernsey.

(4) Biotic Communities Mapping and Definitions

Ecological formations used in the listings follow those presented in the mapping for the Biotic Communities of the Southwest.

Brown, David E. 1982. Biotic Communities of the American Southwest – United States and Mexico, Desert Plants, Volume 4, Numbers 1-4, Published by the University of Arizona for the Boyce Thompson Southwestern Arboretum, Tucson, Arizona.

Brown, David E. and Charles H. Lowe. Revised June 1983. Biotic Communities of the Southwest, August 1980, General Technical Report RM-78, United Stated Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station.

Brown, David E., Charles H. Lowe and Charles P. Pase. June 1980. A Digitized Systematic Classification for Ecosystems with an Illustrated Summary of the Natural Vegetation of North America, United States Department of Agriculture, Forest Service, General Technical Report RM-73

(5) Nomenclature:

for Plants:

Generally follows that presented by The Biota of North America Program of the North Carolina Botanical Garden (BONAP) with A Synonymized Checklist of the Vascular Flora of the United States, Puerto Rico and the Virgin Islands, Full Index 1998.
http://www.bonap.org/
http://www.csdl.tamu.edu/FLORA/b98/check98.htm

The International Plant Names Index (2004, 2005)
Published on the Internet:
http://www.ipni.org [accessed 2004, 2005, 2006]

(http://plants.usda.gov). National Plant Data Center, Baton Rouge, LA 70874-4490 USA

for Vertebrate Animals:

Section on Arizona Habitats, The University of Arizona Press, Tucson, Arizona and E. Lendell Cockrum. 1960. The Recent Mammals of Arizona: Their Taxonomy and Distribution, The University of Arizona Press, Tucson, Arizona.

Biota Information System of New Mexico (BISON-M), New Mexico Game and Fish, New Mexico Natural Heritage Program
http://nmnhp.unm.edu/bisonm/bisonquery.php

for Invertebrate Animals:

Arizona Game and Fish Department. Unpublished Abstracts Compiled and Edited by the Heritage Data Management System, Arizona Game and Fish Department, Phoenix, AZ.
http://www.gf.state.az.us/w_c/edits/species_concern.shtml

Biota Information System of New Mexico (BISON-M), New Mexico Game and Fish, New Mexico Natural Heritage Program
http://nmnhp.unm.edu/bisonm/bisonquery.php

(6) Growth Habits of Plants:

Generally coincides with that presented by the National Plants Database. USDA, NRCS. 2004. The PLANTS Database, Version 3.5 (http://plants.usda.gov). National Plant Data Center, Baton Rouge, LA 70874-4490 USA. Common names identified in the USDA NRCS database have been printed in bold lettering. A few of the plants were not provided with a common name in the USDA NRCS database.

The following sources were used to help identify common names of plants:

Arizona Game and Fish Department. Unpublished Abstracts Compiled and Edited by the Heritage Data Management System, Arizona Game and Fish Department, Phoenix, AZ. *8*

Baboquivari Mountain Plants: Identification, Ecology and Ethnobotany by Daniel F. Austin with linguistic consultant David L. Shaul. 2010. The University of Arizona Press, Tucson, Arizona. *140*

Common (Vernacular) Names Applied to California Vascular Plants" compiled by Elizabeth Painter, link located in *44*

Historical Common Names of Great Plains Plants *124*

Sonoran Desert Plants An Ecological Atlas, Raymond M. Turner, Janice E. Bowers and Tony L. Burgess. 1995. The University of Arizona. *91 *

Sunset Western Garden Book Kathleen N. Brenzel, 2001, Sunset Publishing Corporation, Menlo Park, California. *18*

Vascular Plants of Ragged Top, compiled by John F. Wiens from 1987 - 2000, The Arizona Native Plant Society, The Plant Press, Volume 25 Number 1, Spring 2001. *102*

(7) Arid Zone Trees, A Resource for Landscape Professionals, dedicated to providing quality trees to the Landscape Industries that are appropriate to the Desert Southwest
http://www.aridzonetrees.com/index.htm

(8) Arizona Game and Fish Department. Unpublished abstracts compiled and edited by the Heritage Data Management System, Arizona Game and Fish Department, Phoenix, AZ.
http://www.gf.state.az.us/w_c/edits/species_concern.shtml

Amphibians: 2002. *Bufo microscaphus*, Arizona Toad; 2005. *Bufo retiformis*, Sonoran Green Toad; 2001. *Eleutherodactylus augusti* subsp. *cactorum*, Western Barking Frog; 2003. *Gastrophryne olivacea*, Great Plains Narrow-mouthed Toad; 2002. *Hyla arenicolor*, Canyon Treefrog; 2003. *Pternohyla fodiens*, Lowland Burrowing Treefrog; 2001. *Rana chiricahuensis*, Chiricahua Leopard Frog, and 2001. *Rana yavapaiensis*, Lowland Leopard Frog.

Arachnids: 2004. *Albiorix anophthalmus*, a cave obligate Pseudoscorpion.

Birds: 2003. *Accipiter gentilis*, American Goshawk; 2003. *Aimophila quinquestriata*, Five-striped Sparrow; 2002. *Aimophila ruficeps* subsp. *rupicola*: Yuma Rufous-crowned Sparrow; 2001. *Ammodramus bairdii*, Baird's Sparrow; 2001. *Ammodramus savannarum* subsp. *ammolequs*, Arizona Grasshopper Sparrow; 2001. *Anthus spragueii*, Sprgaue's Pipit; 2002. *Aquila chrysaetos*, Golden Eagle; 2000. *Asturina nitida*, Northern Grey Hawk; 2001. *Athene cunicularia* subsp. *hypugaea*, Western Burrowing Owl; 2001. *Buteo regalis*, Ferruginous Hawk; 2001. *Buteo swainsoni*, Swainson's Hawk; 2005. *Buteogallus anthracinus*, Common Black-hawk; 2003. *Caracara cheriway*, Crested Caracara; 2002. *Ceryle alcyon*, Belted Kingfisher; 2001. *Chloroceryle americana*, Green Kingfisher; 2002. *Coccyzus americanus* subsp. *occidentalis*, Western Yellow-billed Cuckoo; 2001-08-27. *Colinus virginianus* subsp. *ridgwayi*, Masked Bobwhite; 2002. *Dendrocygna autumnalis*, Black-bellied Whistling-duck; 2001. *Dendrocygna bicolor*, Fulvous Whistling-duck; 2002. *Dolichonyx oryzivorus*, Bobolink; 2002. *Egretta thula*, Snowy Egret; 2002. *Elanus leucurus*, White-tailed Kite; 2003 *Empidonax fulvifrons* subsp. *pygmaeus*, Northern Buff-breasted Flycatcher; 2003. *Empidonax hammondii*, Hammond's Flycatcher; 2002. *Empidonax traillii* subsp. *extimus*, Southwestern Willow Flycatcher; 1998. *Falco peregrinus* subsp. *anatum*, American Peregrine Falcon; 2001. *Glaucidium brasilianum* subsp. *cactorum*, Cactus Ferruginous Pigmy-owl; 2002. *Haliaeetus leucocephalus*, Bald Eagle; 2004. *Lanius ludovicianus*, Loggerhead

Shrike; 2005. *Otus flammeolus*, Flammulated Owl; 2002. *Pandion haliaetus*, Osprey; 2002. *Plegadis chihi*, White-faced Ibis; 2002. *Polioptila nigriceps*, Black-capped Gnatcatcher; 2001. *Rallus longirostris* P. Boddaert subsp. *yumanensis*, Yuma Clapper Rail; 2002. *Setophaga ruticilla*, American Redstart; 2005. *Strix occidentalis* subsp. *lucida*, Mexican Spotted Owl; 2001. *Trogon elegans*, Elegant Trogon; 2003. *Tyrannus melancholicus*, Tropical Kingbird, and 2002. *Vireo bellii* subsp. *arizonae*, Arizona Bell's Vireo.

Dicots: 2000. *Abutilon parishii*, Pima Indian Mallow; 2004. *Ammoselinum giganteum*, Sand Parsley; 2003. *Amoreuxia gonzalezii*, Saiya; 2003. *Amsonia kearneyana*, Kearney's Blue Star; 2004. *Arenaria* aberrans, Mt. Dellenbaugh Sandwort; 1995. *Aster potosinus*, Lemmon's Aster; 2004. *Berberis harrisoniana*, Kofa Barberry; 2000. *Boerhavia* megaptera, Tucson Mountain Spiderling; 2004. *Bursera fagaroides*, Torch Wood Copal; 2003. *Capsicum annuum* var. *glabriusculum*, Chiltepin; 2004. *Cardiospermum corindum* L. Faux Persil; 2005. *Castela emoryi*, Crucifixion Thorn; 2004. *Cirsium mohavense*, Mohave Thistle; 2001. *Cleome multicaulis*, Playa Spider Plant; 2001. *Colubrina californica*, California Snakewood; 2001. *Coryphantha scheeri* var. *robustispina*, Pima Pineapple Cactus; 2005. *Coryphantha scheeri* var. *valida*, Slender Needle Corycactus; 2004. *Croton wigginsii*, Dune Croton; 2005. *Cryptantha ganderi*, Gander's Cryptantha; 2001. *Dalea tentaculoides*, Gentry Indigo Bush; 2005. *Desmanthus covillei*, Coville Bundleflower; 2004. *Echinocactus horizonthalonius* var. *nicholii*, Nichol Turk's Head Cactus; 2005. *Echinocactus polycephalus*, Cotton-top Cactus; 2005. *Echinocereus fasciculatus*, Magenta-flower Hedgehog Cactus; 2003. *Echinocereus triglochidiatus* var. *arizonicus*, Arizona Hedgehog Cactus; 2004. *Echinomastus erectocentrus* var. *acunensis*, Acuna Cactus; 2003. *Echinomastus erectocentrus* var. *erectocentrus*, Needle-spined Pineapple Cactus; 2001. *Erigeron arisolius*, Arid Throne Fleabane; 2003. *Eriogonum capillare,* San Carlos Wild-buckwheat; 2005. *Eriogonum ericifolium* var. *ericifolium*, Heathleaf Wild-buckwheat; 2004. *Euphorbia gracillima*, Mexican Broomspurge; 2005. *Euphorbia platysperma*, Dune Spurge; 2005. *Ferocactus cylindraceus* var. *cylindraceus*. California Barrel Cactus; 2001. *Graptopetalum bartramii*, Bartram Stonecrop; 2000. *Hackelia ursina*, Chihuahuan Stickseed; 2000. *Hedeoma dentata*, Mock-pennyroyal; 2000. *Hermannia* pauciflora, Sparseleaf Hermannia; 2001. *Heterotheca rutteri*, Huachuca Golden Aster; 2005. *Ibervillea tenuisecta*, Texas Globe Berry; 2000. *Ipomoea tenuiloba*, Trumpet Morning-glory; 2003. *Lilaeopsis schaffneriana* var. *recurva*, Huachuca Water Umbel; 2000. *Lupinus huachucanus*, Huachuca Mountain Lupine; 2004. *Mammillaria mainiae*, Counter Clockwise Fishhook Cactus; 2004. *Matelea cordifolia*, Sonoran Milkweed Vine; 2006. *Passiflora arizonica*, Arizona Passionflower; 2003. *Pectis imberbis*, Beardless Chinch Weed; 2005. *Peniocereus striatus*, Dahlia Rooted Cereus; 2004. *Penstemon superbus*, Superb Beardtongue; 2005. *Perityle ajoensis*, Ajo Rock Daisy; 2005. *Petalonyx linearis*, Longleaf Sandpaper-plant; 2004. *Pholisma sonorae*, Sand Food; 2004. *Plagiobothrys pringlei*, Pringle Popcorn-flower; 2005. *Rhus kearneyi*, Kearney Sumac; 2005. *Stenocereus thurberi*, Organ Pipe Cactus; 2005. *Stephanomeria schottii*, Schott Wire Lettuce; 2004. *Stevia lemmonii*, Lemmon's Stevia; 2004. *Tragia laciniata*, Sonoran Noseburn; 2004. *Tumamoca macdougalii*, Tumamoc Globeberry; 2005. *Vauquelinia californica* subsp. *sonorensis*, Sonoran Mountain Rosewood, and 2004. *Viola umbraticola*, Shade Violet.

Ferns: 1997. *Cheilanthes pringlei*, Pringle Lip Fern and 2003. *Notholaena lemmonii*, Lemmon Cloak Fern.

Fishes: 2002. *Agosia chrysogaster*, Longfin Dace; 2002. *Catostomus clarki*, Desert Sucker; 2002. *Catostomus insignis,* Sonora Sucker; 2001. *Cyprinodon eremus*, Quitobaquito Pupfish; 2001. *Cyprinodon macularius*, Desert Pupfish; 2002. *Gila intermedia*, Gila Chub; 2002. *Gila robusta*, Roundtail Chub; 2001. *Poeciliopsis occidentalis* subsp. *occidentalis*, Gila Topminnow, and 2001. *Poeciliopsis occidentalis* subsp. *sonorensis*, Yaqui Topminnow.

Gastropods: 2003. *Tryonia quitobaquitae*, Quitobaquito Tryonia.

Insects: 2001. *Agathymus aryxna*, Arizona Giant Skipper; 2001. *Agathymus polingi*, Poling's Giant Skipper; 2004. *Anthocharis cethura*, Desert Orangetip; 2001. *Calephelis rawsoni* subsp. *arizonensis*, Arizona Metalmark; 2002. *Heterelmis stephani*, Stephan's Heterelmis Riffle Beetle; 2001. *Limenitis archippus* subsp. *obsoleta*, Obsolete Viceroy Butterfly, and 2001. and *Neophasia terlootii*, Chiricahua Pine White.

Mammals: 2002. *Antrozous pallidus*, Pallid Bat; 2002. *Antilocapra americana* subsp. *mexicana*, Chihuahuan Pronghorn Antelope; 2002. *Antilocapra americana* subsp. *sonoriensis*, Sonoran Pronghorn Antelope; 2004. *Bassariscus astutus*, Ringtail; 2001. *Canis lupus baileyi*, Mexican Gray Wolf; 2003. *Choeronycteris mexicana*, Mexican Long-tongued Bat; 2004. *Eptesicus fuscus*, Big Brown Bat; 2003. *Euderma maculatum*, Spotted Bat; 2002. *Eumops perotis* subsp. *californicus*, Greater Western Bonneted Bat; 2003. *Eumops underwoodi*, Underwood's Mastiff Bat; 2004. *Herpailurus yaguarondi*, Jaguarundi; 2004. *Lasionycteris noctivagans*, Silver-haired Bat; 2003. *Lasiurus blossevillii*, Western Red Bat; 2004. *Lasiurus cinereus*, Hoary Bat; 2004. *Leopardus pardalis* subsp *sonoriensis*, Ocelot; 2003. *Leptonycteris curasoae* subsp. *yerbabuenae*, Lesser Long-nosed Bat; 2002. *Lontra canadensis* subsp. *sonora*, Southwestern River Otter; 2001. *Macrotus californicus*, California Leaf-nosed Bat; 2003. *Myotis auriculus*, Southwestern Myotis; 2004. *Myotis californicus*, California Myotis; 2003. *Myotis ciliolabrum***,** Western Small-footed Myotis; 2003. *Myotis occultus*, Fringed Myotis; 2003. *Myotis yumanensis*, Yuma Myotis; 2003. *Nyctinomops femorosacca*, Pocketed Free-tailed Bat; 2003. *Nyctinomops macrotis*, Big Free-tailed Bat; 2003. *Myotis thysanodes*, Fringed Myotis; 2002. *Myotis velifer*, Cave Myotis; 2004. *Panthera onca*, Jaguar; 2004. *Pipistrellus hesperus*, Western Pipistrelle; 2007. *Puma concolor*, Mountain Lion; 2005. *Sciurus arizonensis*, Arizona Gray Squirrel; 2003. *Sigmodon ochrognathus*, Yellow-nosed Cotton Rat, and 2004. *Tadarida brasiliensis*, Brazilian Free-tailed Bat.

Monocots: 2005. *Agave* x *ajoensis*, Ajo Agave; 2003. *Agave murpheyi*, Hohokam Agave; 1994. *Agave parviflora* subsp. *parviflora*, Santa Cruz Striped Agave; 2005. *Agave schottii* var. *treleasei*, Trelease Agave; 2005. *Agave utahensis* var. *kaibabensis,* Kaibab Agave; 2005. *Allium bigelovii*, Bigelow Onion; 1999. *Allium gooddingii*, Goodding Onion; 2005. *Allium parishii*, Parish Onion; 2004. *Carex chihuahuensis*, Chihuahuan Sedge; 2000. *Carex ultra*, Arizona Giant Sedge; 2004. *Cathestecum erectum*, False Grama; 2004. *Hexalectris revoluta*, Chisos Coral-root; 2005. *Hexalectris spicata*, Crested Coral Root; 2001. *Lilium parryi*, Lemon Lily; 2005. *Listera convallarioides*, Broadleaf Twayblade; 2000. *Muhlenbergia xerophila*, Weeping Muhly, and 2005. *Schiedeella arizonica*, Fallen Ladies'-tresses.

Reptiles: 2001. *Aspidoscelis burti* subsp. *stictogrammus*, Giant Spotted Whiptail; 2003. *Aspidoscelis burti* subsp. *xanthonotus*, Redback Whiptail; 2002. *Chionactis occipitalis* subsp. *klauberi*, Tucson Shovel-nosed Snake; 2003. *Chionactis palarostris* subsp. *organica*, Organ Pipe Shovel-nosed Snake; 2001. *Crotalus lepidus* subsp. *klauberi*, Banded Rock Rattlesnake; 2001. *Gopherus agassizi*, Desert Tortoise; 2002. *Heloderma suspectum* subsp. *cinctum*, Banded Gila Monster; 2002. *Heterodon nasicus* subsp. *kennerlyi*, Mexican Hog-nosed Snake; 2005. *Kinosternon sonoriense*, subsp. *longifemorale*, Sonoyta Mud Turtle; 2003. *Lichanura trivirgata* subsp. *gracia*, Desert Rosy Boa; 2003. *Phrynosoma mcallii*, Flat-tailed Horned Lizard; 2005. *Sauromalus ater*, Common Chuckwalla; 2001. *Thamnophis eques* subsp. *megalops*, Mexican Garter Snake; 2003. *Uma rufopunctata*, Yuma Desert Fringe-toed Lizard, and 2003. *Xantusia arizonae*, Arizona Night Lizard.

(9) Arizona Rare Plant Committee. Arizona Rare Plant Field Guide, A Collaboration of Agencies and Organizations.

(10) Arizona Sonora Desert Museum, Migratory Pollinators Program, Spring 2003 Update, Table 3. Plants Visited by Hummingbirds in Sonora
http://desertmuseum.org/pollination/table_3.html

(11) Barnes, Will C. 1988. Arizona Place Names, The University of Arizona Press, Tucson, Arizona.

(12) Benson, Lyman. 1981. The Cacti of Arizona, The University of Arizona Press, Tucson, Arizona.

(13) Benson, Lyman and Robert A. Darrow. 1981. Trees and Shrubs of the Southwestern Deserts, The University of Arizona Press, Tucson, Arizona.

(14) Biota Information System of New Mexico (BISON-M), New Mexico Game and Fish, New Mexico Natural Heritage Program
http://nmnhp.unm.edu/bisonm/bisonquery.php

(15) Bowers, Janice E. and Steven P. McLaughlin. 1987. Flora and Vegetation of the Rincon Mountains, Pima County, Arizona. Desert Plants, Vol. 8, No. 2, pp. 50-95, 1987.

(16) Bowers, J.E., and R.M. Turner. 1985. A Revised Vascular Flora of Tumamoc Hill, Tucson, Arizona. Madrono, Vol.32, No.4, pp. 225-252, 20 December 1985.

(17) Breitung, August J., The Agaves, The Cactus and Succulent Journal 1968 Yearbook, Abbey Garden Press, Reseda, California.

(18) Brenzel, Kathleen N. 2001. Sunset Western Garden Book, Sunset Publishing Corporation, Menlo Park, California.

(19) Brown, David E. 1982. Biotic Communities of the American Southwest – United States and Mexico, Desert Plants, Volume 4, Numbers 1-4, Published by the University of Arizona for the Boyce Thompson Southwestern Arboretum, and associated map: Brown, David E. and Lowe, Charles H., Biotic Communities of the Southwest, August 1980, General Technical Report RM-78, United Stated Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station Revised June 1983.

(20) Bull, John and John Farrand, Jr. 1977. The Audubon Society Field Guide to North American Birds: Eastern Region, Alfred A. Knopf, Inc., New York, New York.

(21) Catalogue of New World Grasses
http://mobot.mobot.org/W3T/Search/index/nwgctA.html

(22) Chambers, Nina – Sonoran Institute & Hawkins, Trica Oshant - Environmental Education Exchange. Invasive Plants of the Sonoran Desert, A Field Guide.

(23) Checklist of North American Butterflies Occurring North of Mexico
http://www.naba.org/pubs/enames2.html

(24) Checklist of Plants, Organ Pipe Cactus National Monument, August 2005.

(25) Dollar, Derrick; Scott Richardson and Erin Deely. 2000. Mammal Survey for the Mason Audubon Center, Tucson, Arizona USA.

(26) Duffield, Mary Rose and Warren D. Jones. 1981. Plants for Dry Climates, HP Books, Los Angeles, California.

(27) Earle, W. Hubert. 1963. Cacti of the Southwest, Rancho Arroyo book distributors, Tempe, Arizona.

(28) Epple, Anne Orth. 1995. A Field Guide to the Plants of Arizona, Falcon Press Publishing Co., Inc., Helena, Montana.

(29) Erickson, Jim. 1998. 2 Areas Near Santa Ritas Sought for Conservation, Park, the Arizona Daily Star, Tuesday, 17 November 1998.

(30) Especies con Usos No Maderables en Bosques de Encino, Pino y Pino-Encino en los Estados de Chihuahua, Durango, Jalisco, Michoacan, Guerrero y Oaxaca.
http://www.semarnat.gob.mx/pfnm/indices.htm

(31) Felger, Richard S. 1997. Checklist of the Vascular Plants of Cabeza Prieta National Wildlife Refuge, Arizona, Drylands Institute, Tucson, Arizona.

(32) Florida Nature
http://www.floridanature.org/
http://www.floridanature.org/copyright.asp

(33) Gould, Frank W. 1951. Grasses of Southwestern United States, University of Arizona Press, Tucson, Arizona.

(34) Hawksworth, Frank G. and Delbert Wiens. March 1996. United States Department of Agriculture, Forest Service. Agricultural Handbook 709 - Dwarf Mistletoes: Biology, Pathology, and Systematics.
http://www.rmrs.nau.edu/publications/ah_709/index.html

(35) Haynes, Lisa and Susan Schuetze. 1997. Pamphlet: A Sampler of Arizona's Threatened and Endangered Wildlife, Arizona Game and Fish Department and Arizona Department of Agriculture.

(36) The Hermannia Pages: American Species
http://www.meden.demon.co.uk/Malvaceae/Hermannia/American.html

(37) Heymann, M.M. 1975. Reptiles and Amphibians of the American Southwest, Doubleshoe Publishers, Scottsdale, Arizona.

(38) Hodge, Carle. 1991. All About Saguaros, Arizona Highways Magazine, Arizona Department of Transportation, Phoenix, Arizona.

(39) Hoffmeister. 1980. *Ursus arctos*, Specimens in Collections

(40) Housholder, Bob. 1966. The Grizzly Bear in Arizona

(41) Howery, Larry D. and Gina Ramos. Arizona's Invasive Weeds, The University of Arizona, Cooperative Extension Service and United States Department of the Interior, Bureau of Land Management.

(42) Retrieved (month, day, year), from the Integrated Taxonomic Information System (ITIS) on-line database:
http://www.itis.usda.gov.

(43) The International Plant Names Index (2004), accessed 2005 and 2005, published on the Internet:
http://www.ipni.org

(44) Jepson Flora Project

Includes a link to "Common (Vernacular) Names Applied to California Vascular Plants" compiled by Elizabeth Painter

http://ucjeps.berkeley.edu/
http://ucjeps.berkeley.edu/copyright.html

(45) Johnson, Matthew Brian. 2004. Cacti, other Succulents, and Unusual Xerophytes of Southern Arizona, Boyce Thompson Southwestern Arboretum / Arizona Lithographers, Tucson, Arizona.

(46) Kearney, Thomas K., Robert H. Peebles and collaborators. 1960. Arizona Flora. Second Edition with Supplement by John Thomas Howell and Elizabeth McClintock and collaborators, 4th printing 1973, University of California Press, Berkeley, Los Angeles, California.

(47) Krausman, Paul R. and Michael L. Morrison. 2003. Wildlife Ecology and Management, Santa Rita Experimental Range (1903 to 2002), USDA Forest Service Proceedings RMRS-P-30.2003 Pages 59 thru 67.

(48) Landscaping with Native Arizona Plants. 1973. Natural Vegetation Committee, Arizona Chapter, Soil Conservation Society of America, The University of Arizona Press, Tucson, Arizona.

(49) Las Cienegas National Conservation Area - Records and Reports.

(50) Laymon, Stephen A. Paper: Yellow-billed Cuckoo.

(51) Lellinger, David B. 1985. A Field Manual of the Ferns and Fern-Allies of the United States and Canada, Smithsonian Institution Press, Washington, D.C.

(52) Little, Elbert L. 1980. The Audubon Society Field Guide to North American Trees – Western Region, Alfred A. Knopf, New York, New York.

(53) Little, Elbert L., Jr. December 1950. Southwestern Trees - A Guide to the Native Species of New Mexico and Arizona, Agriculture Handbook No. 9, United State Department of Agriculture, Forest Service, U.S. Government Printing Office, Washington 25 D.C.

(54) Lowe, Charles H., Cecil R. Schwalbe and Terry B. Johnson. 1986. The Venomous Reptiles of Arizona, Arizona Game and Fish Department, Phoenix, Arizona.

(55) Lowe, Charles H. 1964. The Vertebrates of Arizona with Major Section on Arizona Habitats, The University of Arizona Press, Tucson, Arizona.

(56) Maus, Kathryn. October 12, 2001. Plants of the West Branch of the Santa Cruz River, The West Branch Flora, Arid Lands Resource Sciences, University of Arizona, Tucson, Arizona.
http://www.co.pima.az.us/cmo/sdcp/sdcp2/reports/WB/pflora.htm

(57) Maus, Kathryn. September 9, 2002. "Checklist for the Plants of the West Branch of the Santa Cruz, Tucson, Arizona..
http://eebweb.arizona.edu/HERB/WESTBRANCH/westbranch.html

(58) McLaughlin, Steven P. July 18, 1990. Flora of Buenos Aires National Wildlife Refuge (including Arivaca Cienega), Office of Arid Land Studies, University of Arizona.

(59) Medina, Alvin L. 2003. Historical and Recent Flora of the Santa Rita Experimental Range, USDA Forest Service Proceedings RMRS-P-30.2003 Pages 141 thru 148.

(60) Milne, Lorus and Margery. 1980. The Audubon Society Field Guide to North American Insects and Spiders, Alfred A. Knopf, New York, New York.

(61) Minckly, W.L. 1973. Fishes of Arizona, Sims Printing Company, Inc., Phoenix, Arizona.

(62) Missouriplants.com
http://www.missouriplants.com/index.html

(63) National Plants Database: USDA, NRCS. 2004. The PLANTS Database, Version 3.5, National Plant Data Center, Baton Rouge, LA 70874-4490 USA.
http://plants.usda.gov

with links to the following sites:

Burke Museum of Natural History and Culture
http://www.washington.edu/burkemuseum/

The Center for Plant Conservation

Flora of North America
www.efloras.org

Grass Manual on the Web

Kemper Center for Home Gardening
http://www.mobot.org/gardeninghelp/plantinfo.shtml

Native American Ethnobotany, University of Michigan. A database of plants used as drugs, foods, dyes, fibers and more, by native peoples of North America.
http://herb.umd.umich.edu/

United State Department of Agriculture Forest Service, Fire Effects Information System
http://www.fs.fed.us/database/feis/index.html

USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. URL:
http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?447394 (29 November 2008)
http://www.ars-grin.gov/npgs/aboutgrin.html

(64) Native Grasses from South Texas, Texas A&M University System, Agricultural Program.
http://uvalde.tamu.edu/herbarium/grasses.htm

(65) Olin, George. 1975. Mammals of the Southwest Deserts, Popular Series No. 8, Southwest Parks and Monuments Association.

(66) Owensby, Clenton. 2002. Line Drawings of Kansas Grasses
http://spuds.agron.ksu.edu/ksgrasskey/linedraw.htm

(67) Page, Lawrence M. and Brooks M. Burr. 1991. A Field Guide to Freshwater Fishes – North America North of Mexico, Peterson Field Guides, Houghton Mifflin Company, Boston, Massachusetts.

(68) Parker, Kittie F. 1982. An Illustrated Guide to Arizona Weeds, University of Arizona Press, Tucson, Arizona.

(69) Peterson, Roger Tory. 1961. A Field Guide to Western Birds, Houghton Mifflin Company, Boston, Massachusetts.

(70) Pima Community College – Desert Ecology of Tucson, Arizona
http://wc.pima.edu/Bfiero/tucsonecology/plants/wflow_heri.htm

(71) Pima County Parks and Recreation Department, Cienega Creek Natural Preserve Bird Checklist, Tucson, Arizona.

(72) Pima County Sonoran Desert Conservation Plan Threatened and Endangered Species
http://www.pima.gov/cmo/sdcp/sdcp2/fsheets/facts.html

(73) Ransom, Jay Ellis. 1981. Harper and Row's Complete Field Guide to North American Wildlife, Western Edition, Harper and Row, New York, New York.

(74) Raven, Peter H., Ray F. Evert and Helena Curtis. 1976 Biology of Plants, Second Edition, Worth Publishers, Inc.

(75) Richardson, M.L. and M.L. Miller. March 1974. United States Department of Agriculture, Soil Conservation Service in cooperation with The Pima County Natural Resource Conservation District, Reports and Interpretations for the General Soil Map of Pima County, Arizona and General Soil Map Pima County Arizona.

(76) Richmond, D.L. and M.L. Richardson. January 1974. United States Department of Agriculture, Soil Conservation Service in cooperation with the Natural Resource Conservation Districts in Mohave County, General Soil and Interpretations, Mohave County, Arizona and General Soil Map Mohave County, Arizona.

(77) Rondeau, Renee, Thomas R. Van Devender, C. David Bertelson, Philip Jenkins, Rebecca K. Wilson, Mark A. Dimmitt. December, 1996. Annotated Flora of the Tucson Mountains, Pima County, Arizona, Desert Plants, Volume 12, Number 2.
http://eebweb.arizona.edu/herb/TUCSONS/tucsonsA-C.html

(78) Rosen, Philip C. 15 October 2001. Biological Values of the West Branch of the Santa Cruz River, With an Outline for a Potential River Park or Reserve, Including a Preliminary Flora by Kathryn Maus (Plants of the West Branch of the Santa Cruz , The West Branch Flora has been recorded separately as Footnote 56), School of Renewable Natural Resources, University of Arizona, Tucson, Arizona.
http://www.co.pima.az.us/cmo/sdcp/sdcp2/reports/WB/WestB.htm

(79) Rosenberg, Gary H. and Russel, Ruth. 1999. Checklist of North American Birds United States and Canada Including Hawaii 2000, Tucson Audubon Society.

(80) Schmutz, Ervin M., Barry N. Freeman, Raymond E. Reed. 1968. Livestock- Poisoning Plants of Arizona, The University of Arizona Press, Tucson, Arizona.

(81) School of Botanical Medicine - Checklist of the Vascular Plants of Arizona (excluding grasses and their allies)
http://www.ibiblio.org/london/alternative-healthcare/Southwest-School-of-Botanical-Medicine/HOMEPAGE/Floras/AZchklst.txt

(82) Southeast Arizona Butterfly Association (SEABA), Plant List - SEABA's Butterfly Garden at the Tucson Audubon Society's Mason Center
http://www.naba.org/chapters/nabasa/home.html

(83) Southwest Parks and Monument Association. 1991. A Checklist of Mammals, Amphibians and Reptiles of Organ Pipe Cactus National Monument, Tucson, Arizona.

(84) Southwest Parks and Monument Association. 1999. A Checklist of the Birds of Organ Pipe Cactus National Monument, Tucson, Arizona.

(85) Southwest Environmental Information Network (SEINet)
http://seinet.asu.edu/collections/selection.jsp?cat=plantae

(86) Spellenberg, Richard. 1979. The Audubon Society Field Guide to North American Wildflowers - Western Region, Alfred A. Knopf, New York, New York.

(87) Stebbins, Robert C. 1985. A Field Guide to Western Reptiles and Amphibians, Peterson Field Guides, Houghton Mifflin Company, Boston, Massachusetts.

(88) Texas Native Shrubs
http://aggie-horticulture.tamu.edu/ornamentals/nativeshrubs/indexscientific.htm

(89) Thornber, J.J. Vegetation Groups in the Desert Laboratory Domain *in* Spalding. 1909. The Distribution and Movements of Desert Plants, Carnegie Institution of Washington, Publication No. 113: 103 - 112.

(90) Tohono Chul Park, Field Checklist of Birds, Tucson, Arizona.

(91) Turner, Raymond M., Janice E. Bowers and Tony L. Burgess. 1995. Sonoran Desert Plants An Ecological Atlas, The University of Arizona.

(92) Tuttle, Merlin D. 1988. America's Neighborhood Bats, University of Texas Press, Austin, Texas.

(93) Udvardy, Miklos D.F. 1977. The Audubon Society Field Guide to North American Birds: Western Region, Alfred A. Knopf, Inc., New York, New York.

(94) United States Fish and Wildlife Service, Cabeza Prieta National Wildlife Refuge: Listing of Amphibians (April 15, 2002 Update), Listing of Birds (March 2004), Listing of Mammals (April 15, 2002 Update), Listing of Plants (April 15, 2002 Update) and Listing of Reptiles (April 15, 2002 Update).
http://www.fws.gov/southwest/refuges/arizona/cabeza.html

(94 ES 1998) United States Department of the Interior, Endangered Species on Cabeza Prieta National Wildlife Refuge (October 1998).

(94 ETCS 1994) United States Department of the Interior, Endangered, Threatened and Candidate Species Cabeza Prieta National Wildlife Refuge (June 1994).

(95) University of Arizona

Herbarium, P.O. Box 210036 Herring Hall, 1130 East South Campus Drive, Tucson, Arizona 85721; 520-621-7243; FAX: 520-621-7186
http://ag.arizona.edu/herbarium/

Department of Entomology, Forbes 410, PO Box 2100: (36), Tucson, Arizona 85721-0036; 520-621-1151; FAX: 520-621-1150
http://ag.arizona.edu/ento/insectid.htm

(96) University of Michigan, Animal Diversity Web
http://animaldiversity.ummz.umich.edu/

(97) Venomous Creatures of the Southwest, Arizona-Sonora Desert Museum and the Arizona Poison Control System. University of Arizona, Poison and Drug Information Center, College of Pharmacy, Tucson 1-800-222-1222, and the Samaritan Regional Poison Center, Good Samaritan Medical Center - Phoenix and the Arizona Department of Health Services - Emergency Medical Services Division.
http://www.pharmacy.arizona.edu/outreach/poison/
http://www.pharmacy.arizona.edu/outreach/poison/venom.php
http://www.pharmacy.arizona.edu/outreach/poison/plants.php

(98) Walker, Henry P. and Don Bufkin. 1979. Historical Atlas of Arizona, University of Oklahoma Press, Norman, Page 4A and Map.

(99) Walters, James W. R3 78-9, A Guide to Forest Diseases of Southwestern Conifers, Forest Insect and Disease Management, State and Private Forestry, Southwestern Region, Forest Service, United States Department of Agriculture, Albuquerque, New Mexico.

(100) Whitaker, John O., Jr. 1996. National Audubon Society Field Guide to North American Mammals, Alfred A. Knopf, New York, New York.

(101) Whitson, Tom D., Larry C. Burrill, Steven A. Dewey, David W. Cudney, B.E. Nelson, Richard D. Lee, Robert Parker. 1996. Weeds of the West, Pioneer of Jackson Hole, Jackson, Wyoming.

(102) Wiens, John F. Vascular Plants of Ragged Top, compiled by John F. Wiens from 1987 - 2000, The Arizona Native Plant Society, The Plant Press, Volume 25 Number 1, Spring 2001.

(103) Wildflowers and Other Plants of Southern California, with Photographs by Michael L. Charters
http://www.calflora.net/bloomingplants/index.html

(104) Lehr, J. Harry. 1978. A Catalogue of the Flora of Arizona, Desert Botanical Garden, Phoenix, Arizona. Northland Press, Flagstaff, Arizona.

(105) Humphrey, Robert H., Albert L. Brown and A.C. Everson. April 1956. Bulletin 243, Common Arizona Range Grasses, Agricultural Experiment Station, University of Arizona, Tucson, Arizona.

(106) Wikipedia, The Free Encyclopedia
http://en.wikipedia.org/wiki/Main_Page

(107) McGinnies, William G. 1981. Discovering the Desert, Legacy of the Carnegie Desert Botanical Laboratory, The University of Arizona Press, Tucson, Arizona.

(108) Dodge, Natt N. 1964. Organ Pipe Cactus National Monument / Arizona, Natural History Handbook Series, No. 6, Washington, D.C.

(109) Grow Native! Don't Plant a Pest, A Guide to Invasive Landscape Plants and Their Native Alternatives - Southeastern Arizona. Arizona Native Plant Society.
www.aznps.org

(110) United States Fish and Wildlife Service, Ecological Services Field Office, Endangered and Threatened Species of Arizona - Summer 1991.

(111) California Register of Big Trees
http://www.ufei.org/BigTrees/index.html

(112) Kitt Peak Handouts: Common Trees and Shrubs on Kitt Peak; Common Birds of Kitt Peak; Common Mammals of Kitt Peak, and Common Reptiles and Amphibians of Kitt Peak.

(113) Halbedel, E. June 2005. The Birds of Kitt Peak, Revised 3rd Edition.

(114) Nearctica.com, Inc. 1999, The Natural World of North America.
http://www.nearctica.com/
http://www.nearctica.com/nomina/nomina.htm

(115) The Firefly Forest
http://fireflyforest.net/firefly/

and Wildflowers of Tucson, Arizona
http://www.fireflyforest.com/flowers/index.html

(116) Krausman, Paul R. and Michael L. Morrison, Wildlife Ecology and Management, Santa Rita Experimental Range (1903 to 2002), USDA Forest Service Proceedings RMRS-P-30.2003: 59 - 67.

(117) Medina, Alvin L., Historical and Recent Flora of the Santa Rita Experimental Rage, USDA Forest Service Proceedings RMRS-P-30.2003: 141 - 148.

(118) Cockrum, E. Lendell. 1960. The Recent Mammals of Arizona: Their Taxonomy and Distribution, The University of Arizona Press, Tucson, Arizona.

(119) Stockwell, William Palmer and Lucretia Breazaele. April 1, 1933. Arizona Cacti, University of Arizona Bulletin, Vol. 4, No. 3, Biological Science Bulletin No. 1, University of Arizona, Tucson, Arizona.

(120) Duncan, Russell B. Two Rare Plants and the Warm Season Flora of a Unique Habitat in Pima County, Arizona: The Pantano Formation, Claystone Member Deposits, The Arizona Native Plant Society, The Plant Press, Autumn 2003: 7-14.

(121) Reichhardt, Karen. *Triteliopsis palmeri* - Blue Sand Lily, an Elusive Plant of the Sand Dunes, The Arizona Native Plant Society, The Plant Press, Volume 30 Number 2, October 2006: 10-11.

(122) Kaiser, Jack. Common Ferns of Southern Arizona, The Arizona Native Plant Society, The Plant Press, Volume 18 Number 2, Spring 1994: 5-12.

(123) McDonald, Christopher. Pima Pineapple Cactus, The Arizona Native Plant Society, The Plant Press, Volume 31 Number 1, April 2007: 1-4.

(124) Historical Common Names of Great Plains Plants
http://www.unl.edu/agnicpls/gpcn/index.html

(125) Munson, T.V. Foundations of American Grape Culture, T.V. Munson & Son, Denison, Texas, 1909.

(126) Adams, Robert P. *Juniperus* of Canada and the United States: Taxonomy, Key and Distribution, Biology Department, Baylor University, Box 727, Gruver, TX 79040 USA, December 2008.
Robert_Adams@baylor.edu
http://www.juniperus.org/AdamsPapersPDFFiles/218-Phyto90(3)255-314AdamsKeytoJuniperusCanadaandUS.pdf

(127) Native American Ethnobotany, University of Michigan. A database of plants used as drugs, foods, dyes, fibers and more, by native peoples of North America.
http://herb.umd.umich.edu/

(128) Desert-Tropicals.com, Philippe Faucon
http://www.desert-tropicals.com/index.html

(129) Plants of the Southwest, Santa Fe, New Mexico 87501 U.S.A.
http://www.plantsofthesouthwest.com/

(130) Little, V.A. 1963. General and Applied Entomology, Harpers and Row, Publishers, Inc. New York, N.Y.

(131) The University of Arizona, Cooperative Extension, Pima county Home Horticulture.
http://ag.arizona.edu/pima/gardening/gardening.html

(132) The Gymnosperm Database
http://www.conifers.org/index.html

(132) PIER, Pacific Island Ecosystems at Risk, Plant threats to Pacific ecosystems
http://www.hear.org/pier/index.html

(133) USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland.URL:

http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?447394 (03 October 2009)
http://www.ars-grin.gov/npgs/aboutgrin.html

(134) Austin, Daniel F. Baboquivari Mountain Plants, The Plant Press, The Arizona Native Plant Society, Volume 33, Number 2, Fall 2009: 1-4.

(135) Encyclopedia of Life. Available from
http://www.eol.org.

(136) Flora of North America
www.efloras.org

(137) Kleinman, Dr. Russ, Associate Botanist, Dale A. Zimmerman Herbarium. Vascular Plants of the Gila Wilderness
http://www.wnmu.edu/academic/nspages2/gilaflora/index.html

(138) Van Devender, T.R. and R.K., Phelps, V., Thayer, D. and ASDM Docents, Paper - 15 April, 2 Oct., 23 Dec. 1986; 11 April 1987; Waterman Mountains: limestone ridges and lower slopes; 2400-2700 ft. elev.; T12S, R8E Sec. 32+33; 32D20'30-35"N; 111D 26-27' W.

(139) Householder, Bob. Arizona's Mr. Big - Johnny Nutt, Arizona Wildlife Sportsman, August 1960: 18-20.

(140) Austin, Daniel F. 2010. Baboquivari Mountain Plants: Identification, Ecology and Ethnobotany, The University of Arizona Press, Tucson, Arizona: 281 - 307.
http://aznps.com/documents/BaboquivariMountainPlants.Austin.pdf

Austin, Daniel F.; with linguistic consultant David L. Shaul. 2010. Baboquivari Mountain Plants: Identification, Ecology and Ethnobotany, The University of Arizona Press, Tucson, Arizona.

(141) Xeriscape Landscaping Plants for the Arizona Desert Environment Pictures, Photos and Information, George and Audrey Delange
http://www.delange.org/Xeriscape/Xeriscape.htm

(142) Introducing the Phenology Database, presented in the Arizona-Sonora Desert Museum, A Newsletter for Members of the Arizona-Sonora Desert Museum, Volume 12, Issue 1, January-February-March 2011.
www.desertmuseumdigitallibrary.org/public/phenology

also noted The National Phenology Network at www.usanpn.org

(143) Saguaro: Historic Resource Study
http://www.nps.gov/history/history/online_books/sagu/hrs/hrst.htm

(144) Tucson Bird Count
http://www.tucsonbirds.org/index.html

(145) Hoffmeister, Donald F. 1986. Mammals of Arizona, The University of Arizona Press, Tucson, Arizona.

(146) Roy P. Drachman, Agua Caliente Park, Bird List, Pima County Natural Resources, Parks and Recreation
www.pima.gov/nrpr

(147) The Internet Bird collection (IBC)
http://ibc.lynxeds.com/content/about-us

(148) Mammals Planet
http://www.planet-mammiferes.org/drupal/en/node/20

(149) Don E. Wilson & DeeAnn M. Reeder (editors). 2005. Mammal Species of the World. A Taxonomic and Geographic Reference (3rd ed), Johns Hopkins University Press, 2,142 pp. (Available from Johns Hopkins University Press, 1-800-537-5487 or (410) 516-6900, or at http://www.press.jhu.edu).
http://www.bucknell.edu/msw3/

(150) Blossom, Philip M. 1933. Description of a New Rock Pocket-mouse and a new Desert-mouse from Southern Arizona, Occasional Papers of the Museum of Zoology, University of Michigan, Number 265, June 21, 1933, The University of Michigan Press, Ann Arbor, Michigan.

(151) ASDM (Arizona-Sonora Desert Museum) Digital Library
http://www.desertmuseumdigitallibrary.org/public/index.php

(152) Avibase - The World Bird Database
http://avibase.bsc-eoc.org/avibase.jsp?lang=EN&pg=home

(HR) Historical Record (possibly without author and/or observation date)

(TC) Tucson Citizen (Month Day, Year Section and Page Number)

(ADS) Arizona Daily Star (Month Day, Year Section and Page Number)

(AHS) Arizona Historical Society

(ANN) Anonymous

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(MBJ) Matthew B. Johnson, Program Manager and Curator of the Desert Legume Program - Boyce Thompson Southwestern Arboretum

(PCM) Personal Communication (Date)

(PDJ) Philip D. Jenkins, Assistant Curator of the University of Arizona Herbarium

(RGM) G. Meades

(TBL) Township Bird Listing

(WTK) William T. Kendall

(ANPS) Arizona Native Plant Society

(KGUN) Channel 9 (ABC - Month Day, Year & Program)

(KOLD) Channel 13 (CBS - Month Day, Year & Program)

(KVOA) Channel 4 (NBC - Month Day, Year & Program)

(MIX FM) 94.9 MIX fm (Month Day, Year & Program)