



The Plant Press

THE ARIZONA NATIVE PLANT SOCIETY

VOLUME 17 NUMBER 4

FALL, 1993

COLLECTING AT FINGER ROCK/MT. KIMBALL

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Since 1983, Dave Bertelsen has been climbing Finger Rock Canyon to Mt Kimball in the Santa Catalina Mountains. What began as a love of photographing nature soon turned into a passion for collecting and recording the infinite variety of plant life to be found there.

Over the years, Bertelsen has recorded some 540 species and continues to add to his flora to this day. (A condensed version of this flora, containing abundant, very common and common species begins on pg. 7.) Nine species have been added this year. The University of Arizona Herbarium provides verification for his collections.

Along with collecting and identifying plants, he keeps track of their phenology, or flowering times as well. With his keen observation, he has discovered as many as 225 species in bloom one record day in September, 1992. The highest spring total was 157 species in mid-April, 1993. An especially treasured find was that of *Sarcostemma cristum*, which had not been collected in the Santa Catalinas since 1915. Two plants were observed in bloom this year.

The hike has an elevation change of 4152 ft., starting at 3100 ft. in Tucson and reaching 7258 ft. on Mt Kimball. Those interested in hiking this trail must be prepared for a very steep, narrow trail, slippery in places, loose rocks and high steps or scrambles. Plenty of drinking water is essential.

NOTES FROM THE PRESIDENT

Saved at the last minute by the moist breezes of Hurricane Hillary, the hot dry summer of 1993 is passing into history. The more refreshing morning temperatures remind those of us living at lower and middle elevations that there is hope for a cooler day. I trust that you have all had a healthy and enjoyable hot season and wish you all the best in the cooler, more hospitable months to come.

It is my pleasure to report that the ANPS has been recipient of an Award of Recognition by the Arizona Municipal Water Users Association Conservation Committee. The award is for the Society's "contribution to Xeriscape education...through production of your Desert Plant Brochure Series." The award was presented at the opening session of the 7th annual Xeriscape conference held on Friday, September 10, 1993 in Phoenix.

Receiving the award for the ANPS was Tucson chapter member Jane Evans, representing the Urban Landscape Committee whose members put in so many long hours to produce this wonderful series of publications. Congratulations to all who worked so diligently on this great project.

Bill Feldman

EDITOR'S COMMENTS

It's good to be back. OK, occasionally I long for a stroll down a cobblestone street, to a favorite cafe for a glass of ever-so-smooth Cote-du-Rhone and conversation. But then again, the kids were always making a scene wherever we went, so the glass was quickly downed and the conversation ended. The wonderful architecture - it remains etched in the mind forever. But on those cold, rainy March and April mornings as I waited for "spring," my thoughts would often wander back to the desert spring of light and warmth and wildflowers everywhere. So it's good to be back.

My thanks to Dean Brennan for taking over so ably in my absence.

To our Fall issue: we are pleased to include another plant list for members to use, this time for Finger Rock Canyon and Mount Kimball in the Santa Catalinas. Dave Bertelsen has put in years of work to compile this flora. Due to space limitations, only abundant and common species are included here.

The Arizona Native Plant Law was enacted in 1929 to protect our unique native flora. James McGinnis explains the evolution of this law: why it was created and how it has changed over the years.

And the always - interesting Sue Rutman takes us exploring in the Verde Valley limestone plant community.

You may have noticed a couple of new features -- "Notes in Brief" and "Focus on..." We hope these do a better job of communicating news items and announcements, highlighting people and activities. So if your chapter is up to something interesting, please let us know about it. That way we can all share in our progress and accomplishments.

Balbir

FALL CALENDER

October 1-31: Fall Plant Sale at Boyce Thompson Southwestern Arboretum, Superior. 8 am-5 pm daily. Special members-only days are October 16-18; good discounts available last day of sale, Saturday, Oct. 31.

October 2-3: Annual Fall Plant Sale, Tucson Botanical Gardens, 2150 N. Alvernon Way. Members pre-sale, Saturday 8-10 am; public hours Saturday 10 am-4 pm.

October 9-10: Desert Survivors Native Plant Sale, 1020 W. 22nd St., Tucson. Saturday and Sunday, 8 am-4 pm (pre-sale for members Friday starting at 4 pm).

October 23-24: Fiesta de Los Chiles, put on by the Tucson Botanical Gardens and Native Seed/Search at TBG. Saturday and Sunday, 10 am-5 pm. Admission fee: \$3 in advance, \$4 at the gate; children under 12 free as are TBG and Seed/Search members.

October 22-24: Fall Landscape Plant Sale at the Desert Botanical Garden, 1201 N. Galvin Parkway, Phoenix. Members only sale Friday 3-6 pm and Saturday 8-9 am. Open to the public Saturday and Sunday 9 am-5 pm.

NOTES IN BRIEF

Congratulations once again to the ANPS and especially the Urban Landscape Committee for receiving AMWUA's Award of Recognition this year for the brochure series on desert plants for landscaping. **Jane Evans** was on hand at this year's Xeriscape Conference at the Phoenix Civic Plaza to receive the award.

Despite some car trouble, the Chiricahua Workshop weekend was enjoyed by a full house, according to **Marcia Francis**. "The trip leaders were very impressive this year. And the mushroom hike yielded some nice specimens that were savored at happy hour," she said. Organizers **Susan Fleming, Lee Benson, Chris Renner, Kent Newland** and **Mark Dimmitt** did a great job. If anyone is interested in organizing next year's workshop, all the how-to-do-it material has been put on IBM and Apple-compatible computer disks to make the job easier. Contact Horace Miller at (602) 297-4633.

Thanks to the **South-Central Chapter**, "A Guide to Central Arizona College's Desert Gardens" is now available for those wishing to tour the gardens on the Signal Peak Campus. The gardens were planted between 1970 and 1980 as an outdoor education

laboratory. The guide includes a map of the gardens along with descriptions of 72 species native to North American deserts, mainly the Sonoran and Chihuahuan. The Signal Peak Campus can be reached by taking exit 190 off I-10. Go east to the stop sign and drive one mile north. The guide should be available in the Student Union Building.



Jane Evans and the AMWUA's Award of Recognition.

A BRIEF HISTORY OF THE ARIZONA NATIVE PLANT LAW

by James McGinnis

Arizona has had an active native plant program since 1929 for the purpose of protecting native plant species from mutilation, destruction and illegal takings. Over the years the Arizona Department of Agriculture, or ADA (formerly the Arizona Commission of Agriculture and Horticulture), has developed a native plant program to 1) categorize native plants as to their susceptibility to human encroachment; 2) implement a permit system to control collections, cutting/harvesting and destruction of plants; 3) provide plant identification services for the agency and the public; 4) increase public awareness of different groups such as schools, engineering and contract firms, botanical organizations, municipalities and special interest groups; 5) increase training programs for other law enforcement agencies (city police, park rangers, sheriffs' departments, the Department of Public Safety, game deputies, etc.); and 6) the enforcement of the Arizona Native Plant Law.

Furthermore, there is an active database housed in the Department of Game and Fish that manages information on the native plants of Arizona (location, population size and general information) that is available to ADA for its continuance in the efforts of plant protection and preservation.

There are approximately 250 threatened, endangered and candidate species that require basic biological information and protection efforts. A small fraction of these have received extensive biological study from either federal or state agencies. In most cases, adequate protection and management for the perpetuation of these species is in need of assistance.

The following briefly outlines the changes and developments that have occurred with our Native Plant Law over the years:

On February 15, 1929 Senate Bill No. 3, the first law to protect Arizona native plants, was approved. It contained six sections. Violations were designated a misdemeanor

with a fine of not less than \$50.00 and no more than \$300.00 for each violation. It also covered all plants excluding noxious weeds growing within 200 yards of any highway.

In 1933 the law was revised and consisted of nine sections. This revision empowered the Commission to issue permits and to collect a fee. It also provided enforcement authority.

In 1937 the law was revised again to limit the length of time to use a permit to 30 days. Yucca plants could be now collected for commercial purposes.

The law was not changed again until 1967 and was reduced to four sections. The Commission was authorized to issue tags along with permits. Fee amounts were not specified-- only that they could be collected.

By 1972, seals were required along with tags and permits and fees were designated for plants. Also included was a penalty of imprisonment not to exceed 90 days.

An important clause was added in 1974. Annual public hearings were now required to determine if any plants should be added or removed from the protected plant list. A 1975 revision added mesquite, ironwood and palo verde to the protected list.

Fines were raised in 1976 and a paragraph was added regarding permits to be revoked upon conviction.

A 1978 revision made a distinction between the first and second offense and fee amounts were increased.

In 1981, the law was changed from five sections to ten. The length of time to use a permit was increased to one year and authority was given to enforce Title 41, the Antiquities Act.

On July 1, 1990 the new Department of Agriculture was empowered to enforce the Arizona Native Plant Law effective

January 1, 1991. On September 21, 1991 Article 2 was amended to include felony violations for the theft of native plants.

For the future, ADA looks forward to conducting research, surveys, developing management strategies, educational actions, preparation of status reports and listing packages on taxa of special concern to help the state and federal government to enhance its knowledge of sensitive species. ADA is continuously reviewing and updating current policies and regulations to meet the continual needs of the State to reduce the destruction and illegal trade of native plants.

James McGinnis is the manager of the Native Plant Law and Antiquities Act for the Arizona Department of Agriculture.

Plant Press Newsletter Contributions

Contributions of articles, artwork, and letters to the editor are gladly received and may be handwritten, typed, or on disk, ASCII preferred. Disk and diskettes will be returned if requested.

Please send to:

**Balbir Backhaus
1530 W. Juanita Circle
Mesa, Az. 85202
(602) 831-0120**

Next Deadline: December 1, 1993

Please direct all inquiries regarding the Arizona Native Plant Society to the Secretary at the official address:

**P.O. Box 41206 Sun Station
Tucson, Az. 85717**

ENVIRONMENTAL ETHICS AND HISTORY CONFERENCE SET FOR PRESCOTT

"The Second Opening of the West: 'Ideas of Nature' in Arizona" is the title of a conference being sponsored by the Arizona Humanities Council in Prescott on November 13-14. The conference is part of a 22-month program made possible by a grant from the National Endowment for the Humanities.

The conference includes a mix of keynotes, panel discussions, films, museum tours and chautauqua presentations by scholars in the roles of historical characters who contributed to the land ethic in the West. The historical characters are Brigham Young, John Muir, John Wesley Powell, Gifford Pinchot, Mary Austin, William Mulholland, and Aldo Leopold.

Keynote historians include Roderick Nash, professor of history, Uni. of Cali.-Santa Barbara; Dan Flores, professor of history, Uni. of Montana; Helen Ingram, director of the Udall Center for Studies in Public Policy; and Donald Worster, professor of history, Uni. of Kansas.

Keynote philosopher/ethicists include Holmes Rolston, professor of philosophy, Uni. of Colorado-Boulder; J. Baird Callicott, professor of philosophy, Uni. of Wisconsin; and Eugene Hargrove, Professor of philosophy, Uni. of Texas.

Conference registration materials will be available in September. Cost for the program, including lunch and dinner, is \$40, with a \$30 student rate. To receive registration materials, write or call Laura Stone, Arizona Humanities Council, 1242 N. Central Avenue, Phoenix, AZ. 85004, 602-257-0335.

OUR UNIQUE FLORA: VERDE VALLEY LIMESTONE PLANT COMMUNITY

by Sue Rutman

When I see the Verde Valley plant community, I also see a time about 20 million years ago during the Tertiary Period, when giant lakes filled central Arizona. These lakes left behind a fingerprint on the earth: the white or pink limestone deposited when the ancient, lake dwelling animals died, and their calcium rich remains accumulated on the lake bottom. The calcium that was dissolved in the water also added to the accumulated lime. Over time, the calcium deposits were compacted into what we know today as the Verde Formation. Look for the bright-white deposits from these old lakes as you pass through the Verde Valley on Interstate 17 between Phoenix and Flagstaff.

Several plant species live only on these Tertiary lakebed deposits. The "flagship species" of the Verde Valley limestone plant community is the endangered Arizona cliffrose (*Purshia subintegra*). This spreading, mid-sized woody shrub in the rose family reaches its glory in April, when its covered with simple, fragrant white flowers. Later in the season, fruits with short, curled, plumed tails develop. The leaves are very small (1/4 inch), usually unlobed, and evergreen. Arizona cliffrose does not have resin-filled glands on the leaves and stems, unlike the more common cliffrose of higher elevations, *Purshia stansburiana*. No one knows how long Arizona cliffrose plants can live, but we guess that some can live for more than a century.

Found only in or near the Verde Valley, the Verde Valley sage (*Salvia dorrii* ssp. *meamsii*) is a small shrub (usually under two feet tall) that has linear (narrow) or oblanceolate (narrow but wider towards the tip) silvery-green leaves. The appealing aroma of the crushed leaves is a hint that this species belongs to the mint family (*Lamiaceae*). The combination of sky-blue flowers and purplish bracts, contrasted with the silvery-green leaves, is strikingly beautiful.

The Ripley wild buckwheat (*Eriogonum ripleyi*) grows in several places in central Arizona where limestone soils are exposed, including the Verde Valley. This small, perennial member of the wild buckwheat family (*Polygonaceae*) is usually less than one foot tall. The leaves are very hairy, giving them a whitish-grey appearance. The tiny pink and white flowers are born on short, much-branched stalks. One of the ways this species reproduces is to "walk". Where branches of the

"We don't understand why certain species occur only on limestone. Perhaps it is an ingredient in the soil, such as the high concentration of calcium, that they can tolerate but other species cannot."

"mother plant" touch the ground, they root and produce a new plant with the same genetic makeup as the mother. When the mother plant grows old and dies, the younger plant survives. By "walking" this way, the mother plant ensures reproduction. The plants also can reproduce by seed.

Some of our favorites are also on the Verde Formation. Creosote bush is here, but it is not very common. For some unknown reason, creosote bush is not a very good competitor with other species on these soils. If you want to find Arizona cliffrose, Ripley wild buckwheat, and Verde Valley sage, start looking when you see less of creosote bush.

We don't understand why certain species occur only on limestone. Perhaps it is an ingredient in the soil, such as the high concentration of calcium, that they can tolerate but other species cannot. Maybe they have evolved a dependence on calcium or certain micronutrients or trace elements and can not live where they are not provided in sufficient concentrations. Maybe this soil retains water better than surrounding soils. Or maybe there is a reason (or reasons) that we will never know.

The Verde Valley limestone plant community, with its unique assemblage of plant species, occurs nowhere else in the world. However, a lot of this habitat has been lost to homesites, trailer parks, businesses, roads, off-road vehicles, and other disturbances. Fortunately, a lot of this habitat has been protected within the Coconino National Forest and Dead Horse Ranch State Park. If we apply good land stewardship, many future generations will be able to enjoy this plant community.



Arizona cliffrose (*Purshia subintegra*)

COMMON FLORA OF FINGER ROCK CANYON/MOUNT KIMBALL

COMPILED BY C. DAVID BERTELSEN (1993)

ACANTHACEAE

Siphonoglossa longiflora

ADIANTACEAE

Bommeria hispida

Cheilanthes fendleri

C. lindheimeri

C. wrightii

Notholaena aurea

N. cochisensis

var. *cochisensis*

N. sinuata

N. stanleyi

Pellaea wrightiana

P. truncata

Pityrogramma triangularis

AGAVACEAE

Agave chrysantha

A. schottii var. *schottii*

Dasyllirion wheeleri

Nolina microcarpa

Yucca schottii

AMARANTHACEAE

Amaranthus fimbriatus

A. palmeri

Iresine heterophylla

AMARYLLIDACEAE

Zephyranthes longifolia

APIACEAE

Bowlesia incana

Daucus pusillus

APOCYNACEAE

Haplophyton crooksii

ASCLEPIADACEAE

Matelea arizonica

Sarcostemma cynanchoides

ASTERACEAE

Acourtia wrightii

Ambrosia ambrosioides

A. confertiflora

Artemisia dracunculus

A. ludoviciana

Bahia dissecta

Brickellia betonicaefolia

B. californica

B. coulteri

Cirsium neomexicanum

Encelia farinosa

Ericameria laricifolia

Erigeron divergens

E. oreophilus

Eupatorium solidaginifolium

Filago californica

Gnaphalium wrightii

Gymnosperma glutinosum

Heterosperma pinnatum

Hymenothrix wrightii

Machaeranthera tephrodes

Microseris linearifolia

Porophyllum gracile

P. ruderale

Rafinesquia neomexicana

Senecio lemmoni

S. neomexicanus

Solidago sparsiflora

Sonchus oleraceus

Stephanomeria pauciflora

Trixis californica

Viguiera dentata

var. *lancifolia*

BORAGINACEAE

Amsinckia intermedia

Cryptantha barbigerata

C. pterocarya

Pectocarya recurvata

BRASSICACEAE

Descurainia pinnata

Lepidium medium

Sisymbrium irio

Streptanthus carinatus

Thysanocarpus curvipes

var. *elegans*

CACTACEAE

Carnegiea gigantea

Echinocereus triglochidiatus

var. *neomexicanus*

Ferocactus wislizeni

Mammillaria microcarpa

M. viridiflora

Opuntia bigelovii

O. chlorotica

O. phaecantha

var. *discata*

O. versicolor

CARYOPHYLLACEAE

Silene antirrhina

CHENOPODIACEAE

Chenopodium graveolens

C. neomexicanum

COMMELINACEAE

Tradescantia occidentalis

CONVOLVULACEAE

Evolvulus alsinoides

Ipomoea barbatisepala

I. cristulata

I. leptotoma

Jacquemontia pringlei

CRASSULACEAE

Crassula connata

CROSSOSOMATACEAE

Crossosoma bigelovii

CUPRESSACEAE

Juniperus deppeana

CUCURBITACEAE

Marah gilensis

CYPERACEAE

Cyperus fendlerianus

C. mutisii

C. squarrosus

ERICACEAE

Arctostaphylos pungens

EUPHORBIACEAE

Euphorbia arizonica

E. florida

E. hyssopifolia

E. melanadenia

Jatropha cardiophylla

FABACEAE

Acacia angustissima

A. greggii

Astragalus nothoxys

Calliandra eriophylla

Cercidium microphyllum

Coursetia glandulosa

Dalea albiflora

D. pringlei

Erythrina flabelliformis

Lotus humistratus

L. oroboides

L. rigidus

Lupinus concinnus
L. sparsiflorus
Marina parryi
Medicago polymorpha
 var. vulgaris
Nissolia schottii
Phaseolus acutifolius
Prosopis velutina
Vicia ludoviciana

FAGACEAE

Quercus arizonica
 Q. chrysolepis
 Q. emoryi
 Q. hypoleucoides
 Q. oblongifolia

FOUQUIERIACEAE

Fouquieria splendens

GARRYACEAE

Garrya wrightii

GERANIACEAE

Erodium cicutarium

HYDROPHYLLACEAE

Eucrypta chrysanthemifolia
 E. micrantha
Phaceliadistans
 P. ramosissima

LAMIACEAE

Hedeoma dentatum
Hyptis emoryi

LILIACEAE

Dichelostemma pulchellum

LOASACEAE

Mentzelia asperula
 M. jonesii

MALPIGHIACEAE

Janusia gracilis

MALVACEAE

Abutilon abutiloides
 A. incanum
Gossypium thurberi
Herissantia crispa
Hibiscus biseptus
Sphaeralcea fendleri
 S. laxa

NYCTAGINACEAE

Allionia incarnata

Boerhaavia coccinea
 B. erecta
Mirabilis bigelovii

ONAGRACEAE

Camissonia californica
Oenothera hookeri
Zauschneria californica
 ssp. latifolia

PINACEAE

Pinus discolor

P. ponderosa

PLANTAGINACEAE

Plantago patagonica
 var. gnaphalioides

POACEAE

Aristida adscensionis
 A. parishii
 A. ternipes
Avena fatua
Bothriochloa barbinodis
Bouteloua aristidoides
 B. curtipendula
 B. hirsuta
 B. repens
Bromus rubens
Cottea pappaphoroides
Cynodon dactylon
Digitaria californica
Enneapogon desvauxii
Eragrostis cilianensis
 E. intermedia
 E. lehmanniana
Heteropogon contortus
Hordeum murinum ssp.
 glaucum
Koeleria nitida
Lycurus setosus
Muhlenbergia emersleyi
 M. longiligua
 M. microsperma
 M. monticola
 M. porteri
Pennisetum setaceum
Piptochaetium fimbriatum
Poa bigelovii
 P. fendleriana
Schismus barbatus
Setaria leucopila
 S. macrostachya
Tridens muticus
Vulpia microstachys
 var. ciliata
 V. octoflora var. hirtella

V. octoflora var.
 octoflora

POLEMONIACEAE

Eriastrum diffusum
Gilia stellata
Ipomopsis multiflora
Microsteris gracilis
Phlox tenuifolia

POLYGONACEAE

Erigonum abertianum
 E. wrightii

PORTULACACEAE

Claytonia perfoliata
Portulaca retusa
 P. suffrutescens
 P. umbraticola

RANUNCULACEAE

Anemone tuberosa
Delphinium scaposum

RHAMNACEAE

Zizyphus obtusifolia

ROSACEAE

Vauquelinia californica

RUBIACEAE

Galium aperine
 G. mexicanum
 ssp. asperimum
 G. proliferum
 G. wrightii
 var. rothrockii

SANTALACEAE

Commandra umbellata
 ssp. pallida

SAXIFRAGACEAE

Fendlera rupicola
Heuchera sanguinea

SELAGINELLACEAE

Selaginella arizonica
 S. rupicola

SCROPHULARIACEAE

Castilleja tenuiflora
Cordylanthus wrightii
Mimulus guttatus
 M. rubellus
Penstemon parryi
 P. pseudospectabilis

PRESSED PAGES

REMAKING THE NATURAL WORLD

A REVIEW OF *ECOLOGICAL IMPERIALISM: THE BIOLOGICAL EXPANSION OF EUROPE, 900-1900* by Alfred W. Crosby (Cambridge University Press)

In learning about plant and animal communities of southern Arizona, I've often been troubled by obvious imbalances. Some plant species can be seen spreading through and overwhelming localized ecosystems where one would expect stability (consider the tamarisk, for example). Likewise, the presence of some animals almost guarantees an impoverished and unhealthy community (and they moo).

I've learned that the common factor is often the exotic origin of the species, But I never understood the implications and context of it until reading *Ecological Imperialism*.

As historian Alfred Crosby describes it, European explorers and settlers deliberately set out to create what he calls "neo-Europes." Their ships were stocked with "fellow life forms, their extended family of plants, animals, and microlife - descendants, most of them, of organisms that humans had first domesticated or that had first adapted to living with humans in the heartlands of Old World civilizations." This collection represented "a scaled down simplified version of the biota of Western Europe," and was critical to their success in colonizing the rest of the world.

The livestock they brought provided reliable supplies of meat, the vegetation provided familiar plant foods or was tolerant of grazing by livestock, and the microlife (viruses and bacteria) was essential in weakening or destroying any indigenous human opponents. Many of these species were astoundingly successful in their new homes, and made dramatic changes in whole landscapes. Crosby goes into the reasons for their success, and thereby provides the ecological context for the world we see today.

In the process, of course, he tells us a bit about the losers - native cultures, the endemic grasses, the local birds - who could not survive the invasion.

This books provides the long perspective needed when we consider further use of exotic species for our own ends, be they landscaping or livestock. I can think of few lessons more important for the native plant society.

Reviewed by Dale Turner.

Flora of Finger Rock Canyon (Cont'd)

SIMMONDSIACEAE
Simmondsia chinensis

SOLANACEAE
Lycium berlandieri
L. fremontii

STERCULIACEAE
Ayenia filiformis

ULMACEAE
Celtis pallida

URTICACEAE
Parietaria hespera

VERBENACEAE
Verbena ciliata
V. gooddingii
var. nepetaefolia

VISCACEAE
Phoradendron californicum
P. villosum

VITACEAE
Cissus trifoliata

CORNER

GOOD NEWS FOR THE SANTA CLARA CIENEGA

by Julia Fonseca

The Santa Clara Cienega's future looks brighter than ever, thanks to flooding this spring (and a new Secretary of Interior). In March, many ANPS members toured the huge wetland during a field trip scheduled at the annual meeting in Yuma. The 40,000 acre cienega is located in the former Colorado River delta south of San Luis, Mexico.

The cienega was threatened by operation of the Yuma Desalting Plant, which was reducing flows and increasing the salinity of water flowing into the wetland.

However, flooding in January reduced the salinity of flows into the Colorado River, thus providing a reason to shut down the desalting plant. The Bureau of Reclamation estimates that they will not need to operate the plant for an entire year.

In the meantime, Secretary of Interior Bruce Babbitt and Bureau Director Dan Beard are considering permanently closing the desalting facility, or at least preventing it from ever reaching full operating capacity.

In addition, the Governor's Task Force on CAP is mulling over ways to assure a permanent flow of water into the cienega in exchange for concessions on CAP financing.

The president of Mexico has recently established a biological reserve in the upper Gulf of California, including the Santa Clara Cienega. This adds increasing recognition of the value of the wetlands for endangered species, migratory waterfowl and shorebirds.

ANPS members Richard Felger, Dale Turner, Andy Laurenzi and doubtless others should be congratulated for bringing attention to the marsh's plight.

FOCUS ON... Southeast Sub-Chapter's Salvage Work

South of Sierra Vista there is a hillside covered with an exceptionally dense population of *Agave palmeri*, an excellent food source for nectar-feeding bats. With the city's recent expansion, the firm KE & G purchased this hillside with the intent to develop it.

Several members of the Sierra Vista sub-chapter of the Arizona Native Plant Society were concerned about this loss of habitat for the Sanborn and Mexican long-tongued bats, noted pollinators of our state cactus, the saguaro. With the cooperation of Karol George, owner of KE & G, the US Forest Service and the Department of Agriculture, it was agreed that three days in July and August would be set aside to transplant several protected species from private land to the adjoining Forest Service land.

A total of 35 volunteers helped with the relocation of 957 protected plants, primarily *A. palmeri*, but also *Coryphantha vivipara*, *Echinocereus pectinatus* var. *rigidissimus*, *Echinocereus fendleri* and *Echinomastus*.

Cathy Wertz of the Arizona Department of Agriculture sold permits to those volunteers wishing to add to their native plant gardens. Many plants went to the Coronado National Monument to enhance their nature walk and for revegetation purposes.

Other plants went to schools for outdoor classrooms. In addition, a number of non-protected plants (*Jatropha macrorhiza*, *Talinum aurantiacum*, *Anthericum torreyi*, *Phaseolus heterophylla*, *Nothoscordum texanum* and *Dyschoriste decumbens*) were available to those wishing to add to their wildflower gardens.

This report was filed by Nancy Stallcup.

CHAPTER NEWS AND EVENTS

FLAGSTAFF CHAPTER:

Regular meetings are held on the 4th Tuesday of every month at 7 pm on the NAU campus in Rm. 313 of the Biological Sciences Building.

News: The chapter remained busy throughout the summer, including hikes along the Rio de Flag and to the Inner Basin of the San Francisco Peaks where members enjoyed many wildflowers and located Bebb willow. New officers have been elected: Jean Searle--President, Jack Petersen-- Secretary, Randy Scott--Programs. *Contact Jean Searle, Chapter President, at (602) 282-4484 for more information.

PHOENIX CHAPTER:

Regular meetings are held the 2nd Monday of the month September through May in Webster Auditorium at the Desert Botanical Garden.

Oct. Events: Meeting - "Environmental Mitigation of Riparian Habitat," Henry Messing of CAP; Annual wildflower seed release by Rita Jo Anthony;

Nov. Events: Meeting - "Great Deserts of the World - The Chihuahuan Desert" by Tom Van Devender; Nov. 20 - Field trip to Cave Creek Recreation Area;

Dec. Events: Meeting - Holiday party/potluck/plant exchange; "Natural oils and Fragrances," Tom Janca.

*For further information on the Phoenix chapter, contact Chapter President Kent Newland at 8376 Cave Creek Stage, Cave Creek, Az 85331, (602) 585-3630 (H) or Marcia Francis at (602) 992-5435 (H/Ans. Machine).

SOUTH CENTRAL CHAPTER:

Meetings are held on the 1st Saturday of each month at 9:30 am in the Community Room of the Student Activities Center on the Signal Peak campus of Central Arizona College.

Events: Meeting - Oct. 2, fall events will be planned.

*For more information, contact Chapter President Muriel Savage at 450 Sun West Dr. 3235, Casa Grande, AZ 85222, (602) 836-7360.

SOUTHEAST SUB-CHAPTER:

These meetings are held at 6:30 pm at the Sierra Vista campus of Cochise College, Building P4 (Administrative Bldg.) on the dates below:

Oct. Events: Meeting, Oct 27 (Wed.) - "Restoring the Grasslands in a Floodplain," with Jeffrey Cooper of The Nature Conservancy;

Nov. Events: Meeting, Nov. 17 (Wed.) - Dan Robinette, USDA Soil Conservation Service, will speak on "Fire and Native Vegetation in Southeastern Arizona";

Dec. Events: Meeting, Dec. 15 (Wed.) - "Ethnobotany in the Huachuca Mountains."

*For field trips, see under Tucson chapter.

TUCSON CHAPTER:

Regular meetings are held on the 2nd Wednesday of each month at 7:30 pm at the Tucson Botanical Gardens, 2150 N. Alvernon Way, Tucson.

Oct. Events: Meeting - Karen Novak, landscape architect at Pima County, will talk about the use of native plants in county river parks and roadways; Field trips - Oct. 2, to Patagonia Sonoita Creek with Jeffrey Cooper, manager of the Nature Conservancy's Patagonia-Sonoita Creek Preserve; Oct. 16, to Sahuaro National Monument East with Margaret Livingston who will focus on grasses and other species along the Cactus Forest Trail;

Nov. Events: Meeting - Janice Bowers, U.S. Geological Survey botanist, speaks on flowering phenology (timing) of Sonoran Desert plants; Field trips - Nov. 6, to Picacho Peak with John Wiens; Nov. 13, to Pima Canyon with Peter Warren, botanist with the Nature Conservancy; Nov. 24 to 28, Thanksgiving weekend trip to Cabeza Prieta;

Dec. Events: Meeting - "Dryland Plants of Northeastern Argentina" with Matt Johnson, desert legume specialist.

*For more information on Tucson chapter, contact Chapter President Cindy Salo at (602) 623-5120.

YUMA CHAPTER:

Regular meetings are held on the 3rd Monday of each month at 7:30 pm at the U of A Agricultural Station on 8th St. in Yuma Valley.

Events: Meetings will resume in October, at which time a fall schedule will be planned.

News: It has become difficult to maintain the Desert Depot Trail (of native plants) since the Fine Arts Building burned down in late spring - there is no source of water. Also, if anyone going to the Yuma area wishes to give a program, please contact Chapter President Pat Callahan at (602) 627-2773.

TUCSON SPEAKER SERIES

October 13: Karen Novak, "Native Plants in Tucson's River Park - A Converts Perspective"

November 10: Janice Bowers, "Phenology of Sonoran Desert Flowers"

December 8: Matt Johnson, "Dryland Plants of Argentina"

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