

The Plant Press

THE ARIZONA NATIVE PLANT SOCIETY

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Native Seeds/SEARCH A Good Neighbor to ANPS

By M. A. Burgess

Native Seeds/SEARCH is an organization which is near and dear to many members of the Arizona Native Plant Society, and because of mutual interests in things native and botanical we wanted to make ourselves better known to the growing ANPS family. What's more, now that we are office neighbors (both renting beautiful space, appropriately, at Tucson Botanical Gardens), we thought it was time for a note of introduction. While ANPS is carefully and enthusiastically helping to save wild native plants and their habitats and is educating the public about native plants, Native Seeds/SEARCH is busily trying to conserve the native (Native American, that is) domesticated plants.

It is hard to believe that by talking and trading with elderly Native American gardeners we have secured for conservation well over 1,000 ancient varieties of corns, beans, squash, melons, gourds, fiber and dye plants, grains, greens and spices. These food and utility plants, domesticated by prehistoric people of the Southwest, still survive because of the tribal traditions of seed-saving and farming among a dwindling number of Indian families.

Why the search? SEARCH stands (seriously and bemusingly) for Southwestern Endangered Arid-land Resource Clearing House. Our mission is that—and more. Realizing the extreme scarcity and the near extinction of many of these crops, our founders were determined to not only bank the seeds USDA style but also to multiply them out, *in situ*, for Indians themselves who want the reconnection with tradition; for environment- and nutrition-conscious gardeners in the arid Southwest; and possibly most importantly, for the future of arid lands agriculture and the well-being of desert resources.

A word of note about Native Seeds/SEARCH (NS/S) founders—they have a web of connections with ANPS. One of them, Dr. Gary Nabhan, is now Assistant Director of the Desert Botanical Garden and has written four books of deep interest to native plant aficionados: *Gathering the Desert* (University of Arizona Press), *The Desert Smells Like Rain* and *Enduring Seeds* (both North Point Press) and *Saguaro* (Southwest Parks and Monuments). Dr. Barney Burns, anthropologist and Sierra Madre backcountry explorer, and his wife Mahina Drees (NS/S Director) are seen at many colorful fiestas teaching about native crafts and native gardening. And NS/S founder Karen Reichhardt is now our esteemed ANPS President.

Why the urgency about old seeds? The Native Seeds/SEARCHers realized that the genes contained in these heirloom seeds have the potential to program plants for many important results. Genes selected by generations of Indian farmers—before ground water pumping was dreamed of, before chemical fertilizers, before pesticides—have the potential to really beef up plant breeding for the future; or to improve agricultural yields in areas being hard hit by desertification. The genes in these seeds not only ensure fruition of plants in desert settings, but also provide superior nutrition: higher protein than many of our modern hybrids; higher mineral and vitamin content; and quality fiber, oils, and starches—without requiring the negative environmental manipulation of irrigation, fertilization, and pesticide spraying.

So save them we did! Native Seeds/SEARCH, after incorporation as a non-profit organization in 1983, is now growing out such a quantity of heirloom seed varieties that many have become available for purchase

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Notes from the President

By Karen Reichhardt

In the February 20 issue of the Tucson *Arizona Daily Star*, "The Great Cactus Rush" was headlined.

"...Hundreds left empty-handed, waiting for permits," the reporter wrote. At a Lake Pleasant construction site the Bureau of Reclamation had issued nearly 500 household permits for salvage of saguaros, barrels, ocotillo, prickly pears and other native plants. At least 600 would-be harvesters were turned away.

There is no question that Arizona citizens love native plants, which gives ANPS members increasing opportunities to educate an enthusiastic public about our indigenous plant life.

I wonder how many of the empty-handed and disappointed harvesters, who waited for hours, decided instead to obtain their wild plants clandestinely. Were the harvested plants carefully transplanted to prevent their eventual death? Did the harvesters know about the myriad of native trees and shrubs available in nurseries to compliment their prickly landscape materials? Are Arizona citizens informed about the revised Native Plant Law that ANPS members worked hard to achieve during 1988 and 1989? Truly, our work is just beginning. (See also Barbara Tellman's comments in this issue on the news media's reporting of saguaro theft.)

The new brochure version of the *Desert Trees* poster is available for distribution. (See Andrea Pook's Urban Landscape Committee report in this issue.) If you would like to help distribute these great educational tools in your area, contact Carol Shumaker, Urban Landscape Committee member and ANPS Recording Secretary.

The Conservation Committee has several new pressing issues. Gary Maskarinec is the new chairman. Any ANPS member is invited to serve on this committee, which meets monthly in Eloy, midway between Phoenix and Tucson. Active members with great drive and initiative write letters and attend meetings throughout the state. They do make a difference; and awareness of native plant issues is increasing in government agencies.

Phoenix and Tucson Chapters will be participating in Earth Day this April. We've also become active in Trees for Tucson/Global Re-leaf with the goal of planting enough trees to produce climatic changes locally.

The next annual meeting is scheduled for late September in the Flagstaff area, where several members hope to rekindle the local chapter. This will be a good time to experience the gold of turning aspens and perhaps travel to the Grand Canyon on the train.

With this issue there is a change of editors. Kevin Dahl has given his position to Karen Breunig so that he can finish his degree in ethnobotany. Thanks for your help, Kevin! Karen Breunig is an active ANPS member

who travelled to Washington, D.C. to represent us on the Arizona Wilderness Bill. Her combined editorial skills and horticultural and environmental background will be an asset for us.

With all these activities, I hope you'll be able to reserve time for the wildflowers this spring. With a bit more rain, we should have some promising shows.

Editor's Desk

I am grateful to President Karen Reichhardt, Editor Kevin Dahl and the ANPS Board of Directors for this opportunity to serve as *The Plant Press* editor. I hope to work with a broad cross section of ANPS members and I welcome contributions from all of you. I also welcome your feedback and critique.

This issue contains some new features—a book review by Susan Husband; a horticultural plant profile by Matt Johnson (which makes a nice companion piece to Sue Rutman's popular "Our Unique Arizona Flora" column); and The Conservation Page, a new concept for *The Plant Press*. With support from ANPS members, each of these could be retained as a permanent, quarterly feature. Reader contributions to the "Pressed Pages" book review column are especially welcome. Karen Reichhardt and other members have given me book titles which would be appropriate to review, and I will be happy to send this list to any potential reviewers. Or, submit a review of your own choice for consideration. Also, I am looking for feature editors for "The Conservation Page" and for "Chapter and Committee News". Please volunteer or recommend someone to me. Contributions to the summer issue of *The Plant Press* will be accepted through May 1st.

Karen Enyedj Breunig

Spring Plant Sales

Arboretum at Flagstaff	June 23rd 9:30am to 4:30pm
Arizona-Sonora Desert Museum	April 7th & 8th 9am to 4pm
Boyce Thompson Southwestern Arboretum	April 7th—15th 8am to 5pm
Desert Botanical Garden	
Members Preview	March 23rd 3pm to 5pm
Public Sale	March 24th & 25th 9am to 5pm
Tucson Botanical Gardens	March 24th & 25th 10am to 2pm

Pressed Pages

"Pressed Pages" is a new book review column debuting in this issue of *The Plant Press*

by Susan Husband

Announcing a Good Read for Desert Aficionados

The Mysterious Lands; A Naturalist Explores the Four Great Deserts of the Southwest, by Ann Haymond Zwinger.
New York: E. P. Dutton, 1959.

Ann Zwinger is firmly established as a premier Southwestern natural history author. Those who know her work will need no urging in seeking out this new book. For those who have not yet discovered her previous works (*Run River Run; Land Above the Trees, A Guide to the American Alpine Tundra; Beyond the Aspen Grove; A Desert Country Near the Sea*; and others), *The Mysterious Lands* is a fine place to begin.

This recent book, a well-researched study of the Chihuahuan, Sonoran, Mojave and Great Basin deserts of North America, is ambitious in scope. Its organization is straightforward, with a section of sixty to eighty pages devoted to each desert. Lyrical chapter titles provide a snapshot of the highlights of each region. For instance, the section on the Sonoran Desert includes "Of Desert Pavement and Kangaroo Rats," and "Of Sandfood and Palm Trees" while the Mojave section includes "Of Joshua Trees and Red Spotted oads," and "Of Alluvial Fans and Desert Tortoises." There is time and space in the text for both poetry and instruction, as represented in the following excerpts from the Chihuahuan Desert chapter "Of Barchans and Cottonwood."

The cottonwood leaves quiver without making a sound. I sense rather than feel the intangible wisp of a breeze, the one that just after dawn wanders through on its way somewhere else, heralding a subtle notice of change, a transition, a never-again-now, a good morning.

...Dunes form when wind blows and transports sands in one predominant direction. They usually develop in the downwind side of pluvial lakes, or playas, the common term for dried-up Pleistocene lakes, because the lakes contain a huge supply of fine dried deposits.

...Barchans form out of transverse dunes because sections of the latter move at different rates. Eventually one section lags behind or becomes vulnerable to wind breakthrough. When wind breaches a transverse dune at two points, it pushes curving horns of sand forward: barchan is the Arabic word for "ram's horn", a perfect description of their shape.

The illustrations are line drawings by the author and superbly convey the feeling of each desert; and the botanical illustrations are detailed and clear. Imagine being talented as both a writer and an artist!

An extensive appendix includes notes on each chapter, which I discovered by accident. Some reference to it early on would be helpful to the reader as there are no numbered footnotes. The annotated bibliography offers a grab bag of books and journal articles on deserts, and the indexing is detailed and well presented.

The Mysterious Lands is a splendid addition to the literature of the American Southwest, and offers a preliminary investigation of this rich region with very little sweat!

Susan Husband is an ANPS member and a librarian at the University of Arizona Science Library.



Mojave Desert Star
Monoptilon bellioides (to scale)

Illustration by A.H. Zwinger

Pesticides, Grasshoppers, and Native Plants in Arizona

by Sue Rutman

Most of us in ANPS have thought about the effects of livestock grazing, loss of riparian habitat, urban development, mining, and other types of actions that affect native plants. But how many of us have thought about the effects of pesticides on our native plants? As botanists and plant enthusiasts, some of us might not easily arrive at the notion that insect-killing chemicals could affect native plants. But remember how important it is for flowers to be pollinated, for seeds to be transported, soil to be aerated, or sap to be collected. All of these functions can be carried out by insects. On the other hand, let us also remember that large grasshopper (or other potentially detrimental insect) infestations have the potential for removing a lot of plant material. Let's take a look at some issues about grasshopper control that several federal and state agencies have been discussing recently.

What kinds of pesticides are being used? Several types of pesticides are used to control grasshopper infestations in Arizona. Malathion ULV (ultra-low volume), a general insecticide, is the most commonly used chemical treatment. Also used are the chemicals carbaryl ULV and acephate. These three chemicals are sprayed directly over the infested areas and are very effective at killing target (and, unfortunately, non-target) insect species. Carbaryl can be mixed with bran to form carbaryl bran bait which, when aerially applied to the target area, will be eaten primarily by the grasshoppers and other bran-eating insects and have a less harmful effect on the rest of the insect world. *Nosema locustae* is a protozoan parasite that is mixed with bran baits and applied aerially. Only grasshoppers seem to be affected by *Nosema* (trade name).

Who decides where grasshoppers need to be controlled? The following two government agencies have legal mandates to control insect pests in Arizona: Arizona Commission of Agriculture and Horticulture (ACAH), a state agency; and Animal and Plant Health Inspection Service (APHIS), a federal agency. ACAH surveys the State every year to locate grasshopper infestations in Arizona and can respond with chemical treatments if it feels they are necessary. APHIS's legislative mandate is to control grasshopper populations that reach an "economic level," defined as eight grasshoppers per square yard. In 1989, ACAH located several infestations in the State that were at APHIS's "economic level." APHIS/ACAH proposed to treat two areas on the Arizona Strip: more than 50,000 acres near Colorado City, and about 10,000 acres in House Rock Valley. The 1989 proposed treatment program did not occur because BLM would not grant APHIS/ACAH a permit on the grounds that the environmental effects were not fully understood. The same two areas are being considered for chemical treatment in 1990, in addition to other sites.

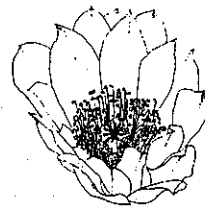
Who pays for these programs? If the treatment area is on Federal lands, APHIS (the federal taxpayer, ultimately) bears the cost under the current budget structure. APHIS pays for half of the treatment if the area occurs on state land and the State (taxpayer) pays for the other half with funds obtained wholly or in part from the State's Emergency Fund. If treatment is requested for private land, APHIS pays for one third, the State pays for one third, and the private landowner pays for a third.

Why do these grasshopper infestations occur? No one is really sure why outbreaks occur. Grasshoppers tend to reproduce more successfully during dry, warm springs. However, some researchers have hypothesized that the frequency and severity of outbreaks increases when the habitat is dominated by non-native plants, when the habitat is degraded, or in areas where pesticides have been applied before. Ongoing research being done by APHIS in the northwestern U.S. (Montana, Wyoming and Idaho) may help us learn whether or not these correlations are correct.

Is there an alternative to applying pesticides? An alternative method of controlling grasshopper outbreaks may be to follow the old adage "...an ounce of prevention is worth a pound of cure." If grasshopper outbreaks are worsened by pesticide use and habitats in poor condition, our best efforts should be focused on good land management practices rather than on temporarily effective and exacerbating chemical treatments. A new APHIS program, Integrated Pest Management (IPM), takes a step in this direction. The theory behind IPM is that grasshopper outbreaks will be prevented or controlled with good land management practices in combination with chemical treatments. The more our understanding of pesticides and their effect on the environment increases, the more carefully will we apply them in the future.

(To learn more about grasshopper control in Arizona see page 10 "The Conservation Page" in this issue.)

Sue Rutman is an ANPS Board member and is the botanist at the U.S. Fish and Wildlife Service Ecological Services Field Office in Phoenix.



1cm

Acuña Cactus flower

Our Unique Arizona Flora: Acuña Cactus

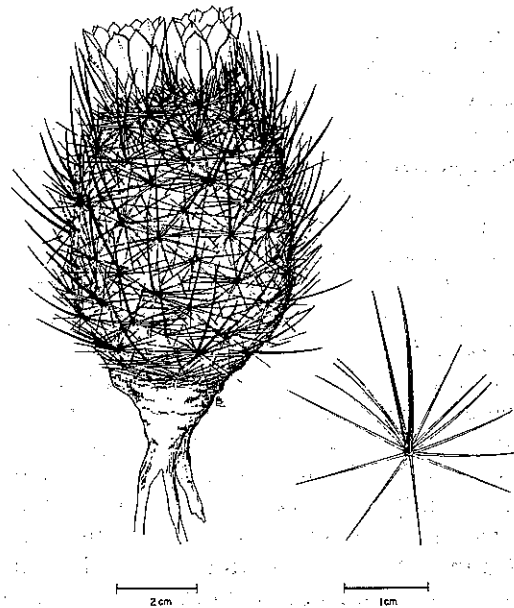
by Sue Rutman

Acuña cactus (*Echinomastus erectocentrus* var. *acunensis*) is one of those rare plant species whose rarity is difficult to explain. No one understands why acuña cactus is absent on many acres of what looks like suitable habitat within and between the four known, widely separated populations. Botanists have wondered if macro- or micro-nutrients in the soil may be the explanation for this species's odd distribution. Research may answer these questions; or the answer may elude us forever.

Crowned by a cluster of up to twenty-five lavender-purple flowers, mature acuña cacti are attractive plants. Juveniles are attractive as well; the spherical stems are covered with white spines and are reminiscent of *Pediocactus* plants. The mauve-maroon spines of mature plants look as if someone ran their hands up from the bottom of the plant leaving the spines pointed toward the sky.

Acuña cactus grows on flat-topped hills below 3,500 feet elevation in saguaro-palo verde-creosote-bursage communities. At one site, *Eriogonum fasciculatum* (shrubby wild buckwheat) is common. At two of the sites in Arizona, the igneous rock substrate is colored bright red or white. At the other site, the substrate is granite.

One of the odd characteristics of acuña cactus populations are the number of standing dead stems. In some spots, the number of dead plants is nearly equal to the number of living plants, giving the appearance of a cactus graveyard. No one currently knows why these plants died or if the mortality rate should concern us. Dr. Allan Zimmerman of the Desert Botanical Garden has postulated that the mature plants could have been killed by an insect predator whose larvae feed on the cactus pulp. Monitoring projects being conducted by



Echinomastus erectocentrus var. *acunensis*

the Bureau of Land Management and the National Park Service may offer some insights into this interesting hypothesis.

Acuña cactus is threatened by illegal collection. At one site that is well known to collectors, I have watched population numbers decline. The fate of plants removed from the wild is uncertain because they seem to be difficult to maintain *ex situ* (out of the wild). Road construction and expansion, recreation, and pesticide applications that reduce the populations of insect pollinators, are also threats to this species.

ANPS and Cactus Rustling

by Barbara Tellman

By amazing coincidence, ANPS distributed press releases to statewide media on cactus rustling matters the day before apprehension of 21 cactus thieves was announced by the Commission of Agriculture and Horticulture. The ANPS Board had become concerned about the manner in which the media covered a statement made the previous week by U.S. Representative Udall. A media impression was given that cactus theft is a highly lucrative—if illegal—occupation with little risk of arrest or fine. ANPS asked the press to correct this impression and bring to the public's attention several facts.

1. Most cacti are readily available legally in nurseries at reasonable prices. The prices quoted by the press were far beyond what the market ordinarily bears. The public should be alerted to buy only legal plants, either those raised in nurseries or those obtained through legal salvage with a state permit and affixed with a USDA plant tag and sold through a reputable dealer.

2. Mature saguaros are very difficult to transplant, especially if over 15 feet tall. Such plants may look alive for more than a year, while rotting from within. People who pay large sums for transplanted tall saguaros may be cheated, even if the plant comes with a one-year guarantee.

3. The greatest threat to the saguaro comes not from theft, but from the bulldozer. Saguaros and other native plants (including rare plants) can still legally be destroyed on site. The revised native plant law, which ANPS and others worked hard to pass last year, goes into effect this summer and will make it much easier to salvage these plants, thus increasing the legal market supply and further decreasing any cost competitive advantage of illegally obtained ones.

Three Tucson stations responded and adjusted their coverage by interviewing ANPS members Tony Burgess, Matt Johnson, and Barbara Tellman.

The Native Landscaper: *Introductions to Little Known and Seldom Grown Species*

Goodding Ash — *Fraxinus Gooddingii* (Oleaceae): by Matthew B. Johnson

Description: Unarmed, multiple-stemmed shrubs or small trees, 5-8 m height and 3-5 m spread with a trunk diameter to 20 cm. Smooth, gray bark becoming rough and slightly fissured at the base of old trunks. Briefly spring-deciduous, once-pinnate, leathery, leaves are 2.5-5 cm long with 5-9 narrow elliptic leaflets to 2.5 cm long. The leaf rachis is narrowly winged. Inconspicuous male and female flowers appear in February and March before the new leaves emerge. The single-seeded, winged fruit are borne in clusters and ripen in May and June.

Habitat and Distribution: Dry rocky slopes, ledges and arroyo margins in semidesert grassland, oak woodland and upper desertscrub, usually growing on rhyolite. 890-1590 m (2800-5000 ft) elevation. Western Santa Cruz County, Arizona (in the Pajarito, Atascosa and Tumacacori mountains) and extreme southeast Cochise County, Arizona to northcentral and northeast Sonora, Mexico. Populations are localized. The plants grow as scattered individuals or in small, open groves.

Propagation, Cultural Requirements and Maintenance: Goodding Ash is easily propagated by seed. No special treatment is necessary. Information on vegetative propagation is lacking but Nokes (1986) reports that the closely related *Fraxinus greggii* of Texas and northeastern Mexico has been rooted from semi-hardwood cuttings taken from juvenile plants. The cuttings were treated with rooting hormone and placed under intermittent mist.

Goodding Ash appears to be hardy to at least -12.5 C (10 F). Established plants require occasional deep irrigation in warm weather. They grow naturally in areas which receive about 400 mm (16 in) of precipitation annually, and prefer well-drained soil. The plant has a moderate growth rate. No information is available on pests or diseases. Mature plants need infrequent pruning. Young plants may be pruned to develop a desired form. The small leaves are shed in the late winter and do not present a significant litter problem.

Landscape Application: Goodding Ash is suitable for small areas. It makes an excellent patio tree. The foliage is moderately dense and provides shade while allowing sufficient light for other plants to grow beneath it. The generally upright growth form, bark, and foliage are attractive. Goodding Ash is appropriate for subtropical, transition and mini-oasis plantings while being compatible with many desert plants. It may be used effectively as a specimen plant or in small groups with other plants.

This attractive small ash is highly recommended for wider landscape use. Heat tolerance, low maintenance and low water use are among the positive characteristics of this versatile tree. With increased interest in and publicity of this tree, native plant

growers may begin to propagate it. Through marketing efforts, and over time, this native tree may find a place in the landscape palette.

References:

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Native Seeds/SEARCH

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via a rich and indeed enlightening seed catalog. (If you are interested in the catalog send \$1.00 to Native Seeds/SEARCH, 2509 N. Campbell Avenue, #325, Tucson, AZ, 85719 or stop by the public education office any Tuesday or Thursday, 10 AM to 4 PM, on the east side of the Tucson Botanical Gardens.)

NS/S also is doing lots of research into nutrition, horticulture, native farming methods, etc. Out of its Education Office and Mini-Museum comes a stream of newsletters, articles, information sheets, slide programs for education groups, traditional recipes, and a colorful new awareness about ancient ways to enhance our own lives and gardens.

Through public events such as "La Fiesta de los Chiles," NS/S is helping to develop our contemporary tastes by opening our minds and tastebuds to the important nutrition and delectable flavors of these ancient foods. A related goal of NS/S is to show commercial farmers that by using these open-pollinated (non-hybrid) seeds they can "make it" economically. We seek to demonstrate that there is a growing market for good organic produce; that commercial farmers can save by not using chemicals, by using less water and by the shorter growing seasons of these crops; and then—tah-dah!—that their soils end up better, not worse, the next year. Another goal is to someday have a living history demonstration farm where the public could see these native seeds from the past proving themselves for the future.

Native plant enthusiasts who wish to support NS/S efforts to conserve genetic diversity can join as members by writing to the Campbell Avenue address above. Or, come by to volunteer at the public education office (Tucson Botanical Gardens grounds) on Thursdays when you'll be treated to a native food potluck lunch and a head-full of excitingly arcane gardening information. (For details call 602-327-9123.)

PROVISIONAL PLANT LIST OF WHITE CANYON, PINAL CO., ARIZONA; NOVEMBER, 1989
 COMPILED BY HORACE MILLER, W. R. FELDMAN, KENT NEWLAND
 AND LOYAL MEMBERS OF THE ARIZONA NATIVE PLANT SOCIETY

MONOCOTS

AGAVACEAE	Agave	palmeri	Agave
AGAVACEAE	Dasyliion	wheeleri	Sotol
GRAMINEAE	Aristida	adscensionis	Six-weeks Three Awn
GRAMINEAE	Aristida	purpurea	Purple Three Awn
GRAMINEAE	Avena	barbata	Slender Oat
GRAMINEAE	Avena	fatua	Wild Oat
GRAMINEAE	Bothriochloa	barbinodis	Cane Beardgrass
GRAMINEAE	Bouteloua	curtipendula	Side Oats Grama
GRAMINEAE	Bromus	carinatus	California Brome
GRAMINEAE	Bromus	rubens	Red Brome
GRAMINEAE	Cynodon	dactylon	Bermuda Grass
GRAMINEAE	Eragrostis	intermedia	Plains Lovegrass
GRAMINEAE	Hordeum	glaucum	Wild Barley
GRAMINEAE	Hordeum	leporinum	Wild Barley
GRAMINEAE	Lamarkia	aurea	Goldentop
GRAMINEAE	Muhlenbergia	porteri	Bush Muhly
GRAMINEAE	Muhlenbergia	rigens	Deer Grass
GRAMINEAE	Polypogon	monspeliensis	Rabbitfoot Grass
GRAMINEAE	Schismus	barbatus	Mediterranean Grass
GRAMINEAE	Tridens	muticus	Slim Tridens

DICOTS

ACANTHACEAE	Anisacanthus	thurberi	Chuparosa
ASCLEPIADACEAE	Sarcostemma	arizonica	Climbing Milkweed
BERBERIDACEAE	Berberis	haematocarpa	Red Mahonia
BORGAGINACEAE	Amsinkia	sp.	Fiddleneck
BORGAGINACEAE	Cryptantha	sp.	
CACTACEAE	Carnegia	gigantea	Saguaro
CACTACEAE	Echinocereus	fasciculatus	Hedgehog
CACTACEAE	Ferocactus	acanthodes	Barrel Cactus
CACTACEAE	Ferocactus	acanthodes var. Eastwoodiae	Barrel Cactus
CACTACEAE	Opuntia	acanthocarpa	Buckhorn Cholla
CACTACEAE	Opuntia	fulgida	Jumping Cholla
CACTACEAE	Opuntia	phaeacantha	Prickly Pear
CAMPANULACEAE	Triodanus	biflora	Small Venus Looking Glass
CARYOPHYLLACEAE	Silene	antirrhina	Sleepy Catchfly
CHENOPODIACEAE	Atriplex	canescens	Four-wing Saltbush
COMMELINACEAE	Tradescantia	occidentalis	Spiderwort
COMPOSITAE	Ambrosia	ambrosiodes	Canyon Ragweed
COMPOSITAE	Artemisia	ludoviciana	Wormwood
COMPOSITAE	Baccharis	glutinosa	Seep Willow
COMPOSITAE	Baccharis	sarothroides	Desert Broom
COMPOSITAE	Brickellia	californica	Pachaba
COMPOSITAE	Encelia	farinosa	Brittle-bush; Incienso
COMPOSITAE	Ericameria	laricifolia	Shinners
COMPOSITAE	Erigeron	divergens	Spreading Fleabane
COMPOSITAE	Gutierrezia	sarothrae	Broom Snakeweed
COMPOSITAE	Hymenoclea	salsola	Burro Brush
COMPOSITAE	Isocoma	acradenia (Happlopappus acradenius)	
COMPOSITAE	Machaeranthera	spinulosus	Aster
CROSSOSOMATACEAE	Crossosoma	bigelovii	
CRUCIFERAE	Lepidium	sp.	Pepper Grass
CRUCIFERAE	Thysanocarpus	amplectens	Lacepod
CUPRESSACEAE	Juniperus	monosperma	One-seeded Juniper
EPHEDRACEAE	Ephedra	sp.	Mormon Tea
EUPHORBIACEAE	Euphorbia	albomarginata	Spurge

FAGACEAE	Quercus	arizonica	Arizona White Oak
FAGACEAE	Quercus	turbinella	Scrub Oak
FOUQUIERIACEAE	Fouquieria	splendens	Ocotillo
JUGLANDACEAE	Juglans	major	Arizona Walnut
LABIATAE	Hyptis	emoryi	Desert Lavender
LABIATAE	Salvia	sp.	Sage
LABIATAE	Scutellaria	potosina ssp. platyphylla	Skull-Cap
LABIATAE	Stachys	coccinea	Betony
LEGUMINOSAE	Acacia	gregii	Catclaw Acacia
LEGUMINOSAE	Calliandra	erriophylla	Fairy Duster
LEGUMINOSAE	Cologania	angustifolia	
LEGUMINOSAE	Dalea	sp.	
LEGUMINOSAE	Lotus	rigidus	Desert Rock Pea
LEGUMINOSAE	Macroptilium	atropurpureum	
LEGUMINOSAE	Melilotus	albus	White Sweet Clover
LEGUMINOSAE	Phaseolus	sp.	Bean
LEGUMINOSAE	Prosopis	juliflora	Common Honey Mesquite
LEGUMINOSAE	Vicia	sp.	Vetch
LOASACEAE	Mentzelia	pumila	Blazing Star
LORANTHACEAE	Phoradendron	californicum	Desert Mistletoe
LORANTHACEAE	Phoradendron	villosum ssp. coryae	Mistletoe
MALVACEAE	Abutilon	sp.	Indian Mallow
MALVACEAE	Sphaeralcea	sp.	Globe Mallow
OLEACEAE	Fraxinus	velutina	Velvet Ash
ONOGRACEAE	Zauschneria	latifolia	Hummingbird Trumpet
POLEMONIACEAE	Eriastrum	diffusum	
POLEMONIACEAE	Phlox	tenuifolia	Phlox
POLYGONACEAE	Eriogonum	wrightii	Wild Buckwheat
RANUNCULACEAE	Clematis	sp.	
RHAMNACEAE	Rhamnus	crocea var. ilicifolia	Buckthorn
RHAMNACEAE	Zizyphus	obtusifolia var. canescens	Greythorn
RUBIACEAE	Galium	stellatum	Bedstraw
SALICACEAE	Populus	fremontii	Fremont Cottonwood
SALICACEAE	Salix	exigua	Coyote Willow
SALICACEAE	Salix	gooddingii	Goodding Willow
SAPINDACEAE	Dodonaea	viscosa	Hopbush
SAPINDACEAE	Sapindus	saponaria var. Drummondii	Western Soapberry
SCROPHULARIACEAE	Maurandya	antirrhiniflora	Maurandya
SCROPHULARIACEAE	Penstemon	sp.	Beard Tongue
SCROPHULARIACEAE	Stemodia	durantifolia	
SIMMONDSCEAE	Simmondsia	chinensis	Jojoba
SOLANACEAE	Lycium	exertum	Wolf Berry
SOLANACEAE	Nicotiana	glauca	Tree Tobacco
SOLANACEAE	Nicotiana	trigonophylla	Tobacco
TAMARICACEAE	Tamarisk	ramosissima	Salt Cedar
ULMACEAE	Celtis	pallida	Desert Hackberry
ULMACEAE	Celtis	reticulata	Netleaf Hackberry
VERBENACEAE	Lippia	wrightii	Bee Brush; Aloysia
		FERNS	
POLYPODIACEAE	Notholaena	sp.	Cloak Fern
POLYPODIACEAE	Pellaea	sp.	Cliff Break

*Additions or corrections are appropriate and should be accompanied by specimens or descriptions. Send to:
William R. Feldman, Ph.D., Director, Boyce Thompson Southwestern Arboretum, PO Box AB, Superior, AZ 85273*

EARTH DAY 1990 — ARIZONA

FLAGSTAFF — Earth Day Film Festival—March 16th through March 20th, 6-9PM at the University Union, NAU • Earth Day Coalition Event—April 21st, 10AM-6PM at Slide Rock State Park in Oak Creek Canyon • Earth Day Celebration all day Sunday, April 22nd at City Hall and City Library grounds featuring environmental speakers including former U.S. Representative Pete McCloskey • Recyclathon March 24th, 9AM-4PM at Basha's Market • Planting of 12,000 trees by students in the Flagstaff School District. For further information contact Roger Hartstone, Northern Arizona Earth Day Coalition, PO Box 22471, Flagstaff, AZ 86002.

PHOENIX — Sunday, April 22nd: "Walk En Masse" from Carefree to Cave Creek, enjoy natural refreshments and take shuttle back to Carefree or to the Eco Fair • Eco Fair at Wesley Bolin Plaza, State Capitol grounds, all day—solar, battery-powered and other alternatively fueled cars and various energy-saving devices on display; hands-on recycling center and hands-on children's activities; food; top-name entertainment and celebrities; shuttles from outlying areas are being planned and celebrants are encouraged to use alternative transportation to reach the Eco Fair. For further information contact Diana Jennings at 262-4440, City of Phoenix Mayor's Office.

TUCSON — Saturday, April 21st, Walk for the Earth—Meet at 5PM at Hi Corbett Field and walk to the Reid Park Bandshell for Rally and "Earth Tones Concert" featuring several bands from 7:30 to 9:30. Participants are encouraged to wear green, carry posters and banners for the Earth, dress as endangered species, or otherwise identify themselves with the Earth. • Sunday, April 22nd, Earth Day Celebration—full day of events from 10AM-4PM at El Presidio Park including displays by environmental groups, workshops, demonstrations, films, slide programs, children's activities, musicians, puppeteers, food and more all focusing on the theme "What Can I Do on Monday?"; closing ceremony will bring participants together in a celebration of commitment. ANPS will have a booth at this El Presidio Park event; contact Marie Lynn Hunken at 577-1672 to help out. For general information on Earth Day in Tucson, contact Carol Cochran, Earth Day 1990—Tucson, 2021 Kinney Road, Tucson, AZ 85743. Phone 883-1380.

NATIVE PLANT LAW UPDATE

Regulations to implement the Native Plant Law are now being drawn up by the Arizona Commission of Agriculture and Horticulture. It is important that ANPS members remain involved and request copies of the draft regulation from the commission. Write to Larry Richards at 1688 W. Adams, Phoenix, AZ 85007 or call him at 542-4373.

RARE PLANT PUBLICATIONS

U.S. Fish and Wildlife Service has just printed a thirty-four page document entitled "Handbook of Federally Listed Endangered, Threatened, and Candidate Species of Arizona". The handbook was compiled and written by ANPS member Sue Rutman. For a copy write to Sue Rutman, USFWS Botanist, 3616 W. Thomas Rd., Suite 6, Phoenix, AZ 85019.

The threatened and endangered rare plant book project undertaken by ANPS members Dr. Barbara G. Phillips and Dr. Arthur M. Phillips III is entering its final stages of manuscript preparation. Portions of the book have been sent out for review. The Plant Press will keep ANPS members updated on its progress

THE ARIZONA HERITAGE FUND INITIATIVE

Twenty million dollars in Arizona lottery fund monies will be set aside for the protection of state natural areas and historic sites if 100,000 signatures (needed to place the Arizona Heritage Fund Initiative on the November ballot) are gathered and if voters approve the initiative. If the initiative passes, the Heritage Fund will provide \$10mm annually to the Arizona State Parks Board and \$10mm annually to the Arizona Game and Fish Department.

The State Parks monies would be used for new state parks and better facilities; local and regional parks and recreational facilities; trail construction, maintenance and environmental education; historic and archaeological preservation; and acquisition and protection of natural areas. The Game and Fish monies would help provide protection for critical habitats for Arizona's fish and wildlife, protection for threatened and endangered species, public access to recreational areas and environmental education. Of the \$10 million allocated to the Game and Fish Department, \$2.1 million would be used for the acquisition and maintenance of natural areas and \$2.5 million for habitat acquisition for state threatened fish, wildlife and biotic communities.

Petitioners are needed—contact Barbara Tellman in Tucson at 621-7601 or Joan Welty in Phoenix at 256-6712 and ask for a petition to take with you to work, to class, or to your next meeting, field trip, etc.

"VEGETATION MANAGEMENT"

A complex and sometimes confusing assemblage of interested parties are studying and promoting the idea of vegetation manipulation or "vegetation management" for Arizona's high country. "Vegetation Management" would involve burning, herbicide treatment, clear-cutting and thinning of expansive areas of chaparral and ponderosa pine and mixed conifer forests above and along the Mogollon Rim for the purpose of increasing water run-off and water yield in the Phoenix area. Through the U.S. Watershed Protection Act (P.L. 566), the Arizona Department of Water Resources received \$575,000 in federal funds (matched with \$132,000 in state funds for a total sum of \$707,000) to study the potential for increased water yields through vegetation manipulation in seven of Arizona's watersheds. The study is being conducted by the U.S. Soil Conservation Service with help from the Arizona Department of Water Resources and the Salt River Project. Supportive of the concept of "vegetation management" are the following entities: Arizona Public Service Co., the Central Arizona Project Association, the Salt River Project, SAFE (Save Arizona's Future Economy) and various water development groups representing cities and industries in the Phoenix area.

These parties have invented slick environmental-like language through which they present "vegetation management" plans. "Vegetation management" proponents claim that Arizona forests were more open and park-like one hundred years or more ago, and that water run-off from them was greater than it is today. They claim that a former mix of more ground covers and fewer trees and deep-rooted shrubs yielded significantly more run-off than does the dense tree cover (resulting from the current era of fire control and management for tree yields) existing now. They recommend reducing the number of trees and deep-rooted shrubs to increase water run-off into watersheds feeding the Phoenix area. They expect a water yield increase of 2% to 6%. However, continuous vegetation reduction would need to be scheduled to prevent re-growth of trees and deep-rooted shrubs. Further, it would seem logical that any vegetation reduction capable of significantly increasing water run-off would also result in soil erosion.

"Vegetation managers" claim that Arizona forests need thinning; but whether or not they do is beside the point. Thinning should be undertaken only for the health of the forest habitat itself. Forest (and chaparral) thinning done for the purpose of increasing water run-off for Phoenix area consumption erodes the very foundation of sound soil, water, plant, and wildlife management.

For more information contact John Wright, Arizona Forest Watch Coalition, Wilderness Society, 234 N. Central, Suite 430, Phoenix 85004; your local chapter of The Sierra Club; or the Coconino Forest Watch/Hart Prairie Preservation League, c/o Ed Smith, Box 1424, Flagstaff, AZ 86002.

AGENCY REVIEWS AND COMMENTS APHIS/ACAH Grasshopper Management

To learn about control of grasshoppers in Arizona first read Sue Rutman's article on page 4 in this issue of The Plant Press. Then to learn more, read APHIS's Rangeland Grasshopper Management Program Environmental Impact Statement published in 1987. You can obtain a copy by writing to USDA/APHIS-Plant Protection and Quarantine, Federal Building, Rm. 663, Hyattsville, MD 20782. If you would like to contact ACAH about the State's program, call Karl Meyer at 542-4373 or write to Dr. Ivan Shields, Director, Arizona Commission of Agriculture and Horticulture, 1688 W. Adams St., Phoenix, AZ 85007. If you would like to receive the publicly available environmental assessments for the spring 1990 application program, write to J. Bruce Thornley, Officer in Charge, APHIS-PPQ, 522 N. Central Ave., Rm. 201, Phoenix, AZ 85004.

Arizona Strip BLM RMP/EIS

The deadline for comments on the Bureau of Land Management (BLM) Arizona Strip District Draft Resource Management Plan and Environmental Impact Statement has been extended to April 16, 1990. Let your response show that this extension is appreciated. Attend one of the following open houses: **St. George, Utah**, BLM Area Offices, 225 N. Bluff, March 22nd, 2-4PM and 7-8PM; **Page**, John Wesley Powell Memorial Museum, 6 N. Lake Powell Blvd., March 27, 6-8PM; **Flagstaff**, Adult Center, 245 N. Thorpe Rd., March 28, 2-4PM and 7-8:30PM; **Phoenix**, BLM State Office, Rm. 204, 3707 N. 7th Street, March 29, 2-4PM and 7-8:30PM. To request a copy of the draft RMP/EIS or to comment on it, contact Dennis Curtis, Team Leader, Arizona Strip District, 390 N. 3050 E., St. George, Utah 84770 (phone 801-673-3545).

Safford BLM RMP/EIS

April 6, 1990 is the postmark deadline for the BLM Safford District Draft Resource Management Plan Environmental Impact Statement comments. Request document from and/or address comments to Steve Knox, RMP Team Leader, BLM, 425 E. 4th Street, Safford, AZ 85546.

Glen Canyon Dam EIS

Support a plan that will control erratic fluctuations in water release from Glen Canyon Dam and improve habitat for native plants along the Colorado River. Call Roger Clark at 527-6115 or Bob Lippman at 774-0130 for further information.

Review of ADEQ Water Quality Standards

The comment period for the triennial review of Arizona Department of Environmental Quality (ADEQ) draft water quality standards has been extended to April 13, 1990 in order to provide an opportunity for public comment on the aquatic and wildlife designated uses of Arizona waters. Address comments and/or request a copy of the draft from: Surface Water Quality Standards Triennial Review, c/o Steve Pawlowski, ADEQ, 2005 N. Central Ave., Phoenix, AZ 85004 (phone 602-257-2319). The deadline for the submission of proposed rules is May 16, 1990 and the Governor's Regulatory Review Council Hearing is scheduled for June 5, 1990. Concerns may also be addressed to the federal level of government: Administrator William G. Rosenberg, Environmental Protection Agency, 401 M Street SW, Washington, DC 20460 (202-382-4700).

ANPS member Harry Tate alerts us to the fact that ADEQ currently plans to regulate only 109 of the 126 substances that the Environmental Protection Agency (EPA) has designated as priority pollutants of water. Concerned parties should familiarize themselves with the remaining 17 contaminants (all of which are organics) and examine the reasons behind their omission. Of the 126 EPA priority pollutants of water 13 are metals such as lead, arsenic and beryllium and the remaining 113 are organics. Organics include pesticides and industrial solvents such as TCE and TCA. There are also thousands of other organic

chemicals (more are being invented all the time) with the potential to seriously affect water quality which are not on the EPA's "priority pollutant list". In addition to the names and addresses above Harry suggests contacting Mr. Jack B. Bale, Manager, Water Assessment Section, Arizona Dept. of Environmental Quality, 2655 E. Magnolia, Suite 2, Phoenix AZ 85034.

"Reach 4" Project

ANPS member Elizabeth Lewis reports that the North Bank of the Arizona Canal from 12th Street to 40th Street, "a tranquil bit of country with native mesquites that offers refuge from urban Phoenix is in jeopardy. Enjoy it now because it's another part of Phoenix soon to fall prey to the blaster and the bulldozer," says Elizabeth "as the Army Corp of Engineers extends the Arizona Canal Diversion Channel (ACDC—an enormous open concrete ditch 36 feet wide and 25 feet deep) in the name of flood control." Its costs are said to outweigh its flood control benefits by 2 1/2 times, and the project will cost \$80 million when complete. For more information call Marlyne Jones at 956-3613.

WILDERNESS BILL

The Arizona BLM desert wilderness bill, a compromise version of HB2570, passed in the U.S. House of Representatives by a 356 to 45 vote on February 28, 1990. The Arizona Wilderness Coalition is still working to have the boundaries for Cactus Plain and Upper Burro Creek amended before the bill goes to vote in the Senate (although the Goodwin Mesa area of Upper Burro Creek was included just before the vote). HB2570 released two-thirds or more of the unique Blank Peak Sand Dune State Natural Area (habitat for *Pholisma arenarium* and other sensitive plants) for multiple use management when the WSA boundary for Cactus Plain was re-drawn. The USFWS-managed game refuge bill (HB2571) is scheduled for mark-up on March 13th and for a floor vote in the House on March 24th. Potentially, it will elevate the status of 1.4 million acres of already protected game refuge lands to wilderness.

In total, HB2570 grants wilderness status to 1.1 million acres of former BLM Wilderness Study Areas (WSAs). Of the 71 WSAs up for decision, 39 received protection as wildernesses. Two areas (Cactus Plain and Baker Canyon) will remain WSAs and 20,900 acres of the Gila Box has been designated a National Conservation Area. There are some wilderness victories in House Bill 2570. Ten of the WSAs not recommended for wilderness by the BLM became, in whole or in part, wildernesses.

There are also heavy losses. Five WSAs that the BLM had already recommended for wilderness designation were dropped from the bill and the acreage of the 39 that were included was trimmed in total by 348,569 acres or 24%. Some ANPS members are particularly unhappy about the lack of protection for Crossman Peak, Ragged Top, Lower Burro Creek, Saddle Mountain, Face Mountain, the Little Horns, E. Clanton Hills, Black Mesa, Planet Peak, Black Mts. North and Burns Springs. House Bill 2570 is not the wilderness victory that the press and congressional delegates have reported it to be. It is a flat out compromise: Wilderness advocates achieved protection of certain areas with special values that were not recommended by the BLM; wilderness opponents achieved the satisfaction of knowing that the total acreage designated approximates the overall BLM recommendation.

Letters, phone calls and visits to Senators DeConcini and McCain asking them to amend the Senate Bill to: 1.) include all BLM-recommended WSAs; 2.) keep Goodwin Mesa in and add Negro Ed to the Upper Burro Creek Wilderness; 3.) include all of the Black Peak Sand Dunes State Natural Area within the Cactus Plain WSA boundary; and 4.) to include wilderness protection for Ragged Top are urgently needed. Above all, let's keep the ANPS commitment to Ragged Top and Cactus Plain alive!

Chapter & Committee News

PHOENIX CHAPTER:

Meetings are held on the second Monday of each month at 7:30 at the Desert Botanical Garden's Webster Auditorium, located in Papago Park at 1201 N. Galvin Parkway. • **Special Project:** The Phoenix Chapter has been helping horticulturist Judy Mielke at the Desert Botanical Garden and Rita Anthony, owner of Wild Seed (a Tempe-based seed growing and distribution business) with a wildflower bed project at the Desert Botanical Garden. • **April Events:** The regular April chapter meeting will feature a talk on "The Urban Heat Island and Urban Tree Planting Programs" by Greg McPerson. • **May Events:** Spring potluck in the McDowell Mountain Regional Park at 4 p.m. on May 6th will take the place of the regularly scheduled May meeting. Also in May, a Memorial Day Extravaganza is being planned to Big Bend National Park. • For information about Phoenix Chapter events contact Phoenix Chapter President Kent Newland at 8376 Cave Creek Stage, Cave Creek, AZ 85331; (602) 261-8369(W) or 585-3630(H).

PRESCOTT CHAPTER:

For information contact Patrick Boles, Chapter President, 372 Dogwood Lane, Prescott, AZ 86301; (602) 778-1128.

SOUTH CENTRAL CHAPTER:

Meetings are held on the first Saturday of each month at 9:30 a.m. in the Community Room of Central Arizona College in Casa Grande. • **Special Project:** An ongoing project of the South Central Chapter is to develop and install signage for over 200 plants on the Central Arizona College campus. • **April Events:** A mid-April field trip is being planned. • For information about South Central Chapter events contact South Central Chapter President Velma Adams at 450 Sunwest Dr. No. 30, Casa Grande, AZ 85222; (602) 426-9172.

TUCSON CHAPTER:

Meetings are held on the second Wednesday of the month at 7:30 p.m. at the Tucson Botanical Gardens, 2150 N. Alvernon Way, Tucson, AZ. • **Special Projects:** The Tucson Chapter recently co-sponsored two forums on local issues of environmental concern—the expansion of the Mt. Lemmon ski lift area and rezoning of 4,000 acres of land adjacent to Saguaro National Monument. They also commented on proposed local ordinances on revegetation of bulldozed land, management of floodplains, and a new city landscape ordinance including provisions for salvage and preservation; and they alerted ADOT to a failure to comply with a guideline regulating the excessive elimination of mature trees along highways (in this case I-10). Lastly, the Tucson Chapter replanted a wildflower garden at the Tucson Botanical Gardens. It will continue to help with horticultural maintenance of TBG throughout the spring. • **March Events:** ANPS Tucson Chapter Taxonomy Class led by instructor Dr. Charles Mason begins March 20. Five sessions will be held on Tuesday evenings from 7:00 to 9:00 p.m. \$20.00 fee. Call Carol Shumaker for reservations and information at 326-6992. **Arroyo Chico Hike** on March 24; **Agua Caliente Wash Hike**, March 31st. • **April Events:** ANPS Earth Day Booth at El Presidio Park on Sunday, April 22; contact Marie Lynn Hunken at 577-1672 to help out. **Finger Rock Canyon Hike**, April 21; **Dragoon Mts. Hike**, April 28. • **May Events:** **San Pedro River Natural Riparian Conservation Area Hike**, May 5; **Madera Canyon—Super/Old Baldy Trails Hike**, May 19. • For more information on Tucson Chapter activities contact Tucson Chapter President, Barbara Tellman at 127 E. Mabel, Tucson, AZ 85705 (602) 792-4515.

YUMA CHAPTER:

Regular meetings are held the third Monday of each month at 7:30 p.m. at the University of Arizona Agricultural Station in Yuma Valley on 8th St. • **Special Projects:** Betty's Kitchen Protective Association—The Yuma Chapter, along with the Audubon Society and Sierra Club, has participated in the development and maintenance of a one-half mile signed nature

walk on a ten acre site along the backwaters of Mitty Lake about ten miles northeast of Yuma on county road 7E (Avenue 7E) near Laguna Dam. To learn more about this project contact May Foerstner at 1333 S. 11th Ave., Yuma, AZ 85364. The Yuma Chapter also maintains a native plant demonstration garden near the Yuma Train Depot and has developed a trail guide for this demonstration garden. • For more information on Yuma Chapter activities contact any of the following people: Pat Callahan, Rt. 1, Box 28M, Somerton, AZ 85350 (602) 627-2773; Mr. & Mrs. Robert Moody, 1700 W. 32nd St., Yuma AZ 85364 (602) 726-0522; Ross and Helen Rodney, 2025 Cottontail Ave., Yuma AZ 85364 (602) 343-1492; Pauline Smith, 2045 S. 14th Ave., #45, Yuma, AZ 85364 (602) 783-4026; or May Foerstner at 1333 S. 11th Ave., Yuma, AZ 85364, (602) 782-2497.

CONSERVATION COMMITTEE:

The Conservation Committee, headed by Gary Maskarinec, held its first meeting of the year on Thursday, February 15th. In attendance were Chairman Gary Maskarinec, Paul Bakke, Andy Laurenzi, Bob Perrill, Sue Rutman and Barbara Tellman. Topics of discussion included the Arizona Native Plant Law, the ANPS position on the use of exotic species, water resources within our state, pesticide spraying practices of the USDA and APHIS and the status of the Arizona [desert] Wilderness Bill.

Chairman Gary Maskarinec emphasizes that the Conservation Committee is open to all members of ANPS and he encourages those interested to attend the next meeting. Call Gary at 829-0627 for time and place. The Conservation Committee is sponsoring a survey trip into the Black Peak Sand Dune area of the Cactus Plain BLM Wilderness Study Area to study the rare biotic community there and to look for the federally listed Category II plant *Pholisma arenarium*. Call Gary at 829-0627 or Karen Breunig at 274-9737 for reservations.

URBAN LANDSCAPE COMMITTEE REPORT:

by Andrea Pook

The Urban Landscape Committee published the *Desert Trees* poster two years ago, in an effort to educate the public about the use of desert-adapted plant materials. The success of this poster (which has been sold out at 30,000 copies) followed by the well-received *Desert Shrubs* brochure (which has been sold out at 40,000 copies) has prompted us to reprint both. We have redesigned *Desert Trees* as a thirty-two page booklet, similar in format to *Desert Shrubs*, with added information on design and planting, as well as expanded sections on mesquite, palo verde and acacia. This publication is the result of a joint effort between the ANPS Urban Landscape Committee (ULC) and the Desert Tree Selection Committee of Trees for Tucson/Global Re-leaf. The ULC was responsible for the text, graphic format, and fund raising, and the Tree Selection Committee provided a new plant matrix which describes characteristics for fifty-four low water use trees. Booklets became available in February for the spring planting season.

Since we are now sold out of the *Desert Shrubs* brochure, we are presently obtaining price quotes for a second printing. The design and content will remain the same, but this printing will be on recycled paper, as will the *Desert Trees* brochure and the rest of the publications in this series, consistent with our environmental focus.

The ULC is in the process of producing the third brochure in this series, *Desert Groundcovers & Vines*. The text is being edited and photographs are being gathered and selected as we work towards a late summer or early fall printing.

The prices for the two new brochures will be the same as those for *Desert Shrubs*: \$2.00 for 1-9 copies, \$1.50 for 10-49 copies, and \$1.00 each for purchases of 50 or more copies.

Many thanks to the members of the committee—especially Greg McPherson (Co-chairperson), Gene Joseph (editor of *Desert Groundcovers & Vines*), Greg Starr, Mark Dimmitt, Carol Shumaker and Rick Larke for all their time and effort.

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CHAPTER PRESIDENTS

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 PRESCOTT: Patrick Boles 778-1128
 372 Dogwood Lane, Prescott, 86301
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 Michael Kuzmik 968-0969
 1544 W. 6th St., Tempe 85281
 Andy Laurenzi 622-3861
 300 E. University #230, Tucson 85705
 Gary Maskarinec 829-0627
 Conservation Committee Chair
 PO Box 212, Tucson 87502-0212
 Kathryn Michel 627-2410
 Box 475, Somerton, AZ 85350
 Meg Quinn 883-1380
 524 E. 4th St., Tucson 85705
 Sue Rutman 379-4720
 U.S. Fish and Wildlife Service
 3616 W. Thomas Rd., #6, Phoenix 85019
 Nancy Stallcup 378-1169
 RR 1, Box 31C, Hereford 85615

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Contributions of articles, artwork, and letters to the editor are gladly received. Please send to:
 Karen Enyedy Breunig, Editor

The Plant Press

1540 W. Flower Cir. South
 Phoenix, AZ 85015
 (602) 274-9737

NEXT DEADLINE IS: MAY 1, 1990

Please direct all other inquiries regarding the Arizona Native Plant Society to the Secretary at our official address: PO Box 41206 Sun Station, Tucson, AZ 85717

The Arizona Native Plant Society

P.O. Box 41206

Tucson, AZ 85717

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