The Plant Press

THE ARIZONA NATIVE PLANT SOCIETY

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THE IRONWOOD TASK FORCE:

Preserving Sonoran Life

by Balbir Backhaus

Its roots are anchored deep in the ground and its sturdy limbs hover protectively over the desert floor. The desert ironwood (*Olneya tesota*) seems steadfast in nature, so much so that one might be tempted to take this much seen desert tree for granted.

But south of the border into Mexico, an interesting story emerges that underscores the importance of the ironwood to the Sonoran Desert ecosystem and ultimately, the people who inhabit the area. At risk is the habitat of many plant species and wildlife as well as the economic well-being of the Seri Indians, one of the last groups of hunter-gatherers in North America.

Conservation International (CI), a global environmental organization, recently released a report citing the depletion of ironwood in Mexico's Sonoran Desert along the Sea of Cortez. A binational effort is now under way to address this issue. Interestingly, it is CI's first involvement with preserving a desert ecosystem.

In his travels to the area during the 80's, Dr. Gary Nabhan, noted Sonoran Desert ethnobotanist, observed the diminishing numbers of ironwood trees, or 'palos fierros' as they are known locally. Nabhan felt that a combination of pressures such as agriculture, grazing and wood used for carving were creating this problem. In order to determine the specific causes, he initiated the Ironwood Task Force under the auspices of CI and the Desert Botanical Garden in Phoenix. Members of the task force, which include Mexican and U.S. scientists, public agency officials, indigenous peoples and businesses met in Puerto Peñasco, Sonora, Mexico, in the fall of 1991 to propose ways of protecting ironwood in the future.

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IN THIS ISSUE:

NOTES FROM THE PRESIDENT

I would like to begin by saying a heartfelt "Thanks!" to our outgoing *Plant Press* editor, Karen Breunig, for all the really fine work she has done on our newsletter. During her editorship, Karen has brought the *Plant Press* to new levels of professionalism and relevance. I know that all ANPS members join me in voicing appreciation to Karen for her exertions and wish her all the best in her new endeavors. The production of the newsletter will now be ably taken up by a team comprised of Balbir Backhaus and Dean Brennan. Balbir is our new editor, and Dean will handle layout of the publication. Balbir has recently co-authored a book on arid landscaping in the Southwest with Jim Walters published by Timber Press. Thanks to both Balbir and Dean for their willingness to take on this important task.

As I am writing this, the long-awaited Earth Summit is entering its second week in Rio de Janeiro. However one may feel about specific treaties or measures to come out of the summit, two things about it seem clear and positive: many of the right questions are being addressed, and environmental and economic issues are being seen as fundamentally linked within and between countries of the world. Biodiversity and how to maintain it has proved to be one of the most contentious aspects of the summit.

Fostering appreciation for and preservation of Arizona's diverse native plants and their many habitats has always been basic to the mission of the ANPS. This past February the ANPS Board of Directors met at the Boyce Thompson Southwestern Arboretum near Superior to formalize a Statement of Purpose and Principles for the ANPS. I think that these hopefully momentous days of the Rio summit are a good time to present this Statement to you, the members, whose commitment and actions are the very embodiment of the Principles.

The purposes of the Arizona Native Plant Society are to increase awareness and appreciation of Arizona's native plants, to work towards protection and restoration of native plants and their habitats, and to promote the use of low-water-use landscaping, with emphasis on the use of native plants.

To that end, the Native Plant Society supports the following:

1. Preservation of native plants in their habitats through:
-passage of laws and ordinances intended to protect those plants;
-salvage of plants that cannot be preserved in their natural place;
-enforcement and strengthening of existing plant preservation laws.

2. Protection and/or restoration of:
-special habitats, such as riparian areas;
-areas containing threatened and endangered species;
-naturally diverse habitats with otherwise special combinations of native plant and/or animal communities.

3. Public education concerning the value of native plants, the importance of habitat preservation or restoration, and the legal requirements intended to protect those plants and their habitats.

4. Expansion of protected native plant habitats through:
-change of public land classification to more protective status;
-continued protection of those areas already designated with special protective status;
-fostering of acquisition of public or private sites by appropriate entities.

5. Collection and publication of information about native plants, their habitats, their conservation status, and/or culture through or by:
-fostering professional and amateur research;
-initiation and/or expansion of databases, herbaria, libraries, etc.

6. Expansion of the use of native rather than exotic

NOTES (Continued)

species in revegetation projects such as habitat restoration of abandoned farm land, highway projects and pipelines.

7. Promotion and dissemination of information about the use of native plants and locally non-invasive, desert-adapted plants in home, commercial and public landscaping through education and the development of appropriate local ordinances.

8. Promotion of environmentally ethical habits among ANPS members, adherence to all applicable laws, respect for the plants and their habitats, and striving for minimal disturbance to areas when traveling and hiking.

The above constitute Principles by which we here in Arizona hope to locally play a meaningful part in answering the great challenge which the Earth Summit is bringing into focus. Here as elsewhere, there exist interests who don't see things in the same light as we do in the ANPS. We must be advocates for those who can't speak up for themselves-- Arizona's native plants and their habitats. Let it not be said of us in the future that "they saw it coming but hadn't the wit to stop it happening" (Sara Parkin).

Finally, the 1992 ANPS Annual Meeting is fast approaching. This year's meeting will be held at the Hassayampa Hotel in Prescott on Saturday July 25, with area field trips on Sunday July 26. The program for the meeting will focus on Arizona's grassland plant communities. Many thanks to Signe Hurd of Sharlot Hall Historical Society of Prescott for organizing the meeting, and to Scott Wilkins of the ANPS State Board for developing a very exciting and topical program about these valuable and often controversial biotic communities. Information concerning the Annual Meeting will be sent out soon, so mark your calendars and plan to attend what I'm sure will prove to be a most interesting, relatively cool and enjoyable weekend. See you in Prescott!

Bill Feldman

CHIRICAHUA MOUNTAIN WORKSHOP

The 1992 ANPS Chiricahua Mountain Workshop will be held Sept. 4-7 at the American Museum of Natural History in Portal. Reservations for this popular event fill up quickly. As of this writing, a few inside spaces were still available, along with plenty of camping spots. The featured speaker this year will be Ted Fleming, who will discuss his research on the bats of Costa Rica and the Sonoran Desert. Other speakers/leaders include Kent Newland, John Wiens, Susan Fleming, Mark Dimmitt and Dan James. Look for invitations to this special annual event in early July. Or you can contact Sue Kuzmik at (602) 895-9207 or Marcia Francis at (602) 992-5435 for more information.

EDITOR'S DESK

I am delighted to serve as the new editor for The Plant Press and would like to thank President Bill Feldman, the ANPS Board and Karen Breunig for this opportunity. Karen has been very supportive and helpful in making the transition easier.

Well worth a close look in this issue is the President's timely column which stresses our goals as a society– to protect and appreciate our native plants and their habitats and to educate ourselves and others about them– something The Plant Press strives for as well. Our feature story on desert ironwood relates how simple human acts can have complex environmental consequences. In "The Native Landscaper," Matt Johnson gives us a detailed look at the desert smoke tree-- its features, habitat and why it should perhaps be used more in home landscapes. Of interest also is Julia Fonseca's report on the Southwest Rare and Endangered Plant Conference which she attended this spring. Sue Rutman's article on Navajo sedge is sure to have at least some of us seeking out this unusual "hanging garden" plant as we travel through the Navajo lands. In addition, a piece titled "Resources" updates the research and work at the University of Arizona Herbarium.

We welcome future articles and input from all of our members. Accompanying photos and/or artwork are greatly appreciated.

Balbir Backhaus

THE NATIVE LANDSCAPER; Introductions to Little Known and Seldom Grown Species

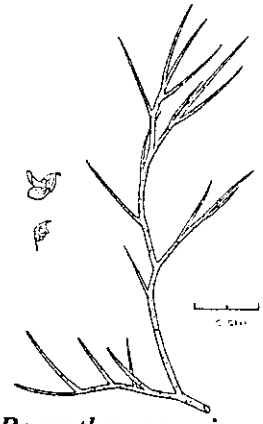
DESERT SMOKE TREE by Matthew B. Johnson

Nomenclature *Psorothamnus spinosus*
Synonym *Dalea spinosa* Family *Leguminosae*

Description: Densely branched, rounded shrubs or small trees to 6 (10) m tall. The bark of trunks and limbs is soft and pale gray. The twigs are stiff, pale blue-gray, photosynthetic, gland-dotted and end in a sharp point. Mature plants are mostly leafless but will produce sparse, small ephemeral leaves following rains. The leaves are simple, obovate, 1 to 5 (20) mm long, pale blue-gray and dotted with glands. Indigo flowers are borne in racemes and cover the plants with a profusion of color.

Flowering has been observed from February through October with peak flowering from May to July. The pea-like corollas are about 1 cm long. The calyces and pods are dotted with conspicuous orange-brown glands. The pods are single-seeded and are about 6 mm long. The seeds are 3 mm long, smooth and have a grayish to brown seed coat. The glands found on various parts of the plants contain pleasantly fragrant resins.

Habitat and Distribution: Sandy and gravelly arroyo margins and channels in Sonoran Desert scrub, -70 to 400 m (-230 to 1310 ft.) elevation. Desert smoke tree is found in western Arizona, southeast California, extreme northwest Sonora and in eastern Baja California Norte north of 28° latitude. It is almost exclusively confined to arroyos. Highway shoulders and water diversion berms are secondary man-made habitats where desert smoke tree can take advantage of the addtitional moisture provided by these situations. Desert smoke tree is often locally abundant. It sometimes forms pure stands but commonly grows with other species including catclaw acacia (*Acacia greggii*), blue palo verde (*Cercidium floridum*), desert willow (*Chilopsis linearis*), desert lavender (*Hyptis emoryi*), desert ironwood (*Olneya tesota*) and western honey mesquite (*Prosopis glandulosa*



Psorothamus spinosus

Illustration by Matthew B. Johnson

var. *torreyana*). These plants form woodlands along arroyo channels which contrast sharply with the adjacent sparse desert vegetation. The region in which desert smoke tree is found is arid with very hot summers and mild winters. Average yearly rainfall within much of the area is 50 to 150 mm (2 to 6 in.). Temperature extremes of -9° C (15° F) and 52°C (126° F) have been recorded in portions of its range.

Propagation, Cultural Requirements and Maintenance: Seeds of desert smoke tree will germinate without scarification; however, scarification slightly improves germination. Germination percentage is often over 80%. It has proven efficient to plant seeds directly into 1-gallon containers due to high germination and rapid growth of the seedlings. Seedlings emerge in 5 to 7 days. Plants can reach 30 cm tall within 6 months. Seeds should be planted in a well drained media. Young seedlings frequently rot at the soil line in the greenhouse in heavier soils and with high humidity. Up to 60% mortality was experienced during early plantings of desert smoke tree. Mortality was reduced to less than 2% by the use of a sandy soil mix which is mounded in the center of the container to provide additional drainage where the seed is placed, by sowing the seeds during warm weather and by moving containers to a shadehouse when the seedlings begin to develop their spinescent twigs, usually within 6 weeks. Overhead watering of seedlings in the greenhouse may also increase the chances of rotting. This does not appear to be a problem outside with lower humidity and good air

NATIVE (Continued)

movement. Germinating the seeds in a shadehouse is feasible during warm weather. In limited rooting trials, stem tip cuttings 8 to 10 cm long taken in the spring and summer were treated with 1000 to 4000 ppm of IBA rooting hormone. Rooting percentage was less than 5% (D. Palzkill pers. com. 1990).

Desert smoke tree appears to be hardy to -6.5° C (20° F). Young cultivated plants in Tucson survived an overnight low of -7° C (19° F) under burlap in December 1990 with only 3 cm of dieback on some growing tips. An established tree in a Tucson landscape survived similar temperatures without damage in December 1978 (R. Engard pers. com. 1988). Desert smoke trees typically grow in deep, sandy soil but seem to tolerate rocky soils and soils with a high clay content in cultivation so long as drainage is adequate. Periodic deep irrigation in warm weather will permit rapid growth. Trees which are moisture stressed will suffer considerable twig dieback. Plants in the ground can grow 1 m per year and often flower in their second year. Those less than 8 months old have flowered in 1-gallon containers in the nursery. The plants may be pruned to develop a tree form and to remove dead twigs. Desert smoke tree should be planted in a sunny location. It will tolerate hot south and west exposures. The spinescent twigs are not dangerous but the plants should be located away from traffic areas. The plants produce minimal litter. The dried and fallen flowers could become a problem near swimming pools. Bees are attracted to the flowers. Red spider mites are an occasional problem in the greenhouse. No pests or diseases have been observed on plants growing in the ground.

Landscape Application: Though hardly "little known," desert smoke tree is seldom seen in landscapes. The reason may in part be the perception that the plants are difficult to propagate and that they are cold sensitive. Recent experience has shown that with a sandy, well drained soil and a few basic cultural precautions, the plants are easy to propagate. While further cold evaluation is desirable, it is likely that the plants would do well in most areas of the Sonoran Desert which seldom experience minimum winter temperatures below -6.5° C (20° F), including much of Tucson and the Phoenix area. Desert smoke tree gets its name from the appearance of the plants when viewed from a distance. Larger individuals appear much like the smoke rising from a campfire. The distinctive form, striking floral display, tolerance of extremes of heat and low humidity, and its desert character are ideal for low-water-use landscapes in the hot, low deserts of Arizona, California and northwest Mexico. Desert smoke tree can be planted as a focal point in a desert landscape or may be grouped for maximum effect when flowering. It is compatible with most native desert plants. The dense, spiny growth habit of this plant makes it suitable for use as a barrier hedge. It may also be useful in plantings to stabilize sandy soil.

Comments: Several other species of *Psorothamnus* including *P. emoryi*, *P. fremontii* and *P. scoparius* are worthy of evaluation for their landscape potential.

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SOUTHWEST RARE AND ENDANGERED PLANT CONFERENCE

by Julia Fonseca

The first-ever Southwest Rare and Endangered Plant Conference was held March 30-April 2 in Santa Fe, New Mexico. The New Mexico Native Plant Society and the New Mexico State Land Department hosted the event.

As one of the few non-professionals in attendance, I am perhaps not the best qualified person to summarize the scientific import of the more than forty papers presented at this conference. However, one of the most prominent messages was political in nature: scientists in academia, the consulting world and state and federal government must engage in more advocacy for rare species.

In the concluding panel discussion, speaker after speaker emphasized the need for political action in defense of the Endangered Species Act (ESA). The ESA is facing severe attacks from a well-organized, well-financed "wise-use coalition" funded by extractive industries. The wise-use movement seeks to gut endangered species protection by requiring that listing decisions be based on economics rather than science. In addition, they want to amend the ESA to prevent protecting "non-adaptive" and endemic species.

Even if the ESA is reauthorized without weakening amendments, the Forest Service is evidently seeking to abandon the "sensitive species" list and policy, which require project surveys and mitigation for projects that affect sensitive species. Forest Service staff are being told that the lists are too big and that they impose burdensome requirements on the agency and land users.

The ESA and the Forest Service's Sensitive Plant Program together are responsible for funding much of the research presented at the conference. One participant estimated that at least half of the research was funded by the U.S. Fish and Wildlife Department's Endangered Species Program. Some funding was also provided by development interests fulfilling survey or monitoring requirements.

Brief summaries of what I learned about Arizona's rare plants follow:

Tumamoca macdougalii (Tumamoc globeberry)-- Because of the vast geographic area to be studied, Frank Reichenbacher used climatological data to design a survey for this plant. The survey extended the known range of the species far into Sonora and provides a scientific basis for removing the plant from the endangered species list. Globeberry was found not only in creosote-bursage habitat, but also in saltbush and thornscrub communities.

Astragalus cremnophylax var. *cremnophylax* (Sentry milkvetch)-- Joyce Maschinski and Sue Rutman collected and analyzed data from the single population of this species located at an overlook of the Grand Canyon. Data confirmed that foot traffic was killing the plants and causing population decline. Although park officials were aware of this, they failed to fence off the plants until the species was listed as endangered in 1990. The population continues to decline.

Purshia subintegra-- John Anderson explained the distribution of Arizona cliffrose in terms of faulting, uplift and subsequent dissection along the Mogollon Rim and post-glacial plant migration. These events resulted in isolation of the species. It typically occurs on limestone lakebed deposits low in phosphorus and organic matter.

Toumeya papyracantha (Paper-spined cactus)-- The 1975 Smithsonian report recommended listing this rare cactus, which grows in blue grama, sacaton and gypsiferous badland habitats. Impacts of livestock grazing, loss of habitat due to development and illegal collecting combine to reduce its reproductive success.

Pediocactus paradinei (Kaibab pincushion cactus)-- Studies by The Nature Conservancy indicate this species can survive light to moderate fires. However, suppression of range fires may have led to the invasion of sagebrush and consequent loss of grassland habitat for this slow growing, long lived cactus. Collectors are also known to steal the plants.

RARE (Continued)

Pediocactus sileri and *P. bradyii* (Siler and Brady pincushion cactus)-- The Arizona Strip BLM supports delisting *P. sileri* because it is more abundant than originally thought. They would prefer to manage it as a rare endemic by closing certain areas to off-road vehicles. As with *P. paradinei*, natural herbivory is a major cause of mortality.

Lillium parryi (Lemon lily)-- Six of the seven populations are stable, but most of the lemon lilies in Ramsey Canyon are gone due to dessication of the moist microsites that the plant needs.

Lilaeopsis shaffneriana ssp. *recurva* (Huachuca water umbel)-- These grass-like plants can quickly recolonize streambeds after floods, probably through vegetative growth. The species seldom flowers, except when its habitat dessicates.

Spiranthes delitescens (Canelo ladies' tresses)-- This cienega-dwelling orchid is very vulnerable to water diversions. At The Nature Conservancy's Canelo Hills Preserve, where livestock are excluded, the population has nearly disappeared. It persists outside the Preserve under a light grazing regime. Removal of the vegetative mat by either grazing or fire may be beneficial to the species. Only four populations are known.

Rumex orthoneurus (Blumer's dock)--David Mount and Brian Logan used "genetic fingerprinting" via rapid marker analysis to determine that plants within a population are genetically similar, while populations on various "sky-island" mountain ranges are genetically distinct. Future work will expand the sample size to determine statistical significance. The results will assist in determining conservation needs and priorities.

RESOURCES... The University of Arizona Herbarium

When the University of Arizona first opened its doors to students in October of 1891 the Herbarium already had a collection of 700 native plant specimens from southern and central Arizona. The collection had its beginning when James W. Toumey, the first resident botanist in Arizona, arrived at the newly constructed university to assume the position of Assistant Professor and Botanist for the College of Agriculture. Arriving in June to find that University Hall (now Old Main) was not ready for occupancy, Toumey began collecting plant specimens from the Tucson, Casa Grande and Phoenix areas.

At the present time the Herbarium contains over 292,000 mounted and identified specimens. It is the largest herbarium in Arizona and the largest between Austin, Texas and Claremont, California. Although plants of all regions of the world are represented, specialization has been concentrated on the flora of the southwestern United States and northern Mexico. Several extensive collections have been incorporated into the Herbarium. The 30,000 voucher specimens assembled by Forrest Shreve in his studies of the Sonoran Desert, and the extensive collection made by Thomas H. Kearney, Jr. and Robert H. Peebles while writing *Arizona Flora* are deposited in the Herbarium. In addition, the collections made by J.J. Thornber during his 43 years as Professor of Botany, and L.N. Goodding from various parts of the state have given the Herbarium an outstanding representation of southwestern plants. A recent acquisition has been the H.S. Gentry herbarium made by Dr. Gentry from around the world during his many years as botanist for the Department of Agriculture. As a result of Dr. Gentry's interest in agaves, Arizona now has one of the most extensive collections of that group of plants available.

Since 1988 we have been collaborating with the staff of the Arizona State University Herbarium to produce a new manual for identification of Arizona flora. Approximately 100 specialists around the world have volunteered to contribute sections for this new book, which will replace Kearney and Peebles' classic, now out of date, *Arizona Flora.*

The Herbarium has also begun to computerize records for its Arizona specimens. So far, the database includes the ferns, composites and legumes. Researchers can retrieve data by family, county, location, habitat, elevation, collector name or date of collection. Volunteer Julie Harris has been instrumental in the project's progress, but more volunteers are welcome. Hours are flexible. If you are interested in helping enter specimen records into the database or in mounting or filing specimens, please call the Herbarium at 621-7243.

OUR UNIQUE ARIZONA FLORA:

Carex specuicola (Navajo sedge)

by Sue Rutman

In the distant, remote canyons of northern Arizona and under the dominating presence of Navajo Mountain, lives the threatened Navajo sedge (*Carex specuicola*), a federally listed species. This sedge grows only where water seeps out of vertical sandstone cliffs. These seeps are created when water from rainfall and snow melt is absorbed by the sandstone, filters down through the rock several hundred feet, and flows slowly out of the vertical cliffs of canyons in isolated spots. The dramatic red sandstone cliffs, dotted with green "hanging gardens" of plants create a spectacular and expansive landscape.

Navajo sedge has narrow, grass-like leaves, 5-8 inches (12-20 cm) long and <1/4 inch (0.5 cm) wide, that droop downward. The flowering stem is erect and up to 18 inches (46 cm) long. The flowers are arranged in spikes, with 2-4 spikes per stem. The terminal spike has both male and female flowers, with the female flowers situated above the male ones. Navajo sedge is unusual in having two-branched styles with lenticular (lens-shaped) achenes, or fruits, and three-branched styles with trigonous achenes. During the cold months, Navajo sedge leaves turn a golden brown and are noticeable from a distance.

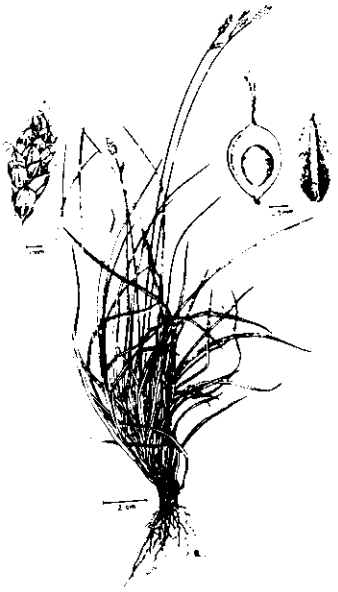
The plants take root on the surface of the wet sandstone and attach themselves firmly to the cliff face. Other plants, such as monkey flower (*Mimulus eastwoodiae*), weed orchid (*Epipactis gigantea*) and thistles (*Cirsium* sp.), grow in the hanging gardens with Navajo sedge. The hanging garden is supported by the slowly flowing water and nutrients seeping from the cliff face. The plants may actually help to maintain the flow of water by "pulling" water out of the rock by capillary action.

Surveying for Navajo sedge is a challenging proposition. Spotting scopes, helicopters and fixed-wing aircraft are used to locate what seem to be sedge populations. Verifying these populations is a much more difficult task. The Navajo Natural Heritage Program, which has been surveying for this species, has had rock climbers rappel to some sites to collect specimens for verification by botanists.

Navajo sedge was added to the threatened species list in 1985, when only a few Arizona populations were known. The Navajo Natural Heritage Program has located several more populations, including one in Utah. Threats to the population include livestock grazing and possibly groundwater pumping. Livestock (primarily sheep) have eaten plants at two accessible populations. One hanging garden was lost because a livestock corral was built around the seep; all the plants were eaten and the seep dried up. The potential effects of groundwater pumping are still being evaluated.

Visiting Navajo sedge populations is always a pleasure. The trip across the rolling sandstone plateau covered with gnarled pinyons and junipers, fleeting glimpses of remote, red-walled canyons, discoveries of ancient cliff-dwellings, and screaming falcons overhead combine to make an unforgettable trip.

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.



Carex specuicola

The Ironwood Task Force (continued from Page 1)

The ironwood is a slow growing, remarkably long lived tree, reaching an age of up to 800 years. Much like the mesquite tree, it is an important nurse plant for many species, including cacti, vines, shrubs and annual wildflowers. Bees, reptiles, birds and mammals depend on it for nutrition and shelter. It is found in many parts of the Sonoran Desert, but becomes abundant in central Sonora along the coast, where the Seri Indians have resided for centuries.

Long before they began making carvings from it, the ironwood was already an integral part of the lives of the Seri Indians. They used it for firewood and fashioning tools and incorporated it in many of their traditions. It wasn't until the early 60's that an enterprising, if somewhat mythical man named Jose Astorga began experimenting with carving figures from ironwood. The hard, dense wood is difficult to work but the finished product has a rich, brown, polished look.

Over the years, the carvings have become increasingly popular with tourists. Today the Seris realize an annual profit of about $50,000 from this source. Seeing the income potential, other non-Seri groups of the area have begun producing machine-made carvings in mass quantities. This has placed an additional pressure on ironwood populations, which in turn threatens the livelihood of the Seris.

Humberto Suzán, a graduate student in botany at Arizona State University's Center for Environmental Studies and a member of the task force, explains that carving may not be the main culprit in over-harvesting. "Conversion of land to agricultural uses and grazing is a major threat," he says. Ironwood, along with mesquite, is prized for charcoal production, and is sometimes even preferred to mesquite due to its longer burning flame, he adds.

Suzán is currently trying to estimate the impact of these different uses on ironwood populations and regeneration. According to Suzán, ironwood has a good germination rate, but regeneration has been low due to its slow growth and conditions such as overgrazing.

"A mature ironwood is usually the oldest tree in the community," Suzan says. "By cutting ironwood, you are removing a critical component of the plant community." Some of the plants threatened by its removal include night-blooming cereus, mammilaria, saguaro and organ pipe cactus, senita (*Lophocereus schottii*) and the Tumamoc globeberry (*Tumamoca macdougalii*). Also, pesticide use on crops such as cotton is detrimental to pollinators of certain plants, including the moths which pollinate night-blooming cereus.

To protect this desert ecosystem and the economic livelihood of the local peoples, the task force is proposing the following conservation measures:

*reducing the harvest of ironwood and mesquite for charcoal;

*salvaging wood from land cleared for agricultural use;

*introducing alternative craft materials to Seri and non-Seri carvers;

*discouraging the removal of ironwood from pasturelands;

*launching an education campaign for tourists and others on the origins of Seri carvings and the ecological importance of ironwood.

Other scientists such as Dr. Eric Melink of CICESE, a Mexican university in Ensenada, Baja California, are studying the impact on wildlife. The Centro Ecologico de Sonora in Hermosillo is handling the education campaign through the distribution of posters and localized conferences.

The Ironwood Task Force is convening again this June in Bahia Kino, Sonora to discuss their preliminary findings. For more information about this project, contact the Center for Environmental Studies at Arizona State University at 965-0868.

CONSERVATION PAGE

by Corinna Gries--Feature Editor

There are many important issues on the horizon, not the least of which is reauthorization of the Endangered Species Act in Congress. Meanwhile, the ESA was dealt a potentially serious blow with the U.S. Supreme Court decision of June 12 which states that environmentalists cannot challenge federal policies based on threats to plants and wildlife but rather must prove personal harm. This decision overruled an earlier lower-court ruling supporting the protection of endangered species outside the U.S., and has dire implications for domestic cases as well.

LEGISLATIVE ISSUES

The so-called "Private Property Bill" has passed and was signed by the Governor. Senator David Bartlett has called this bill the "worst piece of environmental legislation" he has seen this year. One of the most startling aspects of this bill is that it is so vaguely written that new regulation and enforcement may be held up endlessly in court while lawyers argue its meaning. This applies to all state regulation, not just environmental issues. There is talk of a referendum. The ANPS has not considered whether or not to pursue this course but members may wish to find out more by calling the Sierra Club office in Phoenix or Tucson. Riparian Area Protection-- Riparian legislation was soundly defeated in the Legislature primarily by rural legislators, Mesa Representative Mark Killian and others. What seemed to be a rather innocuous bill was deemed a threat to rural lifestyles among other things. ANPS member Eva Patten, a lobbyist for The Nature Conservancy, tried valiantly to beat back amendments that would have seriously damaged the instream flow process and to salvage something worthwhile. Money for studies by state agencies will be authorized.

One small riparian bill passed, enabling Nogales to take steps to protect riparian areas along the Upper Santa Cruz.

Changes in Arizona's Legislature-- At least 16 members of the House and eight members of the Senate will be retiring from politics or seeking other offices. Leadership positions and key committee assignments will change dramatically next year. This offers the opportunity to elect a more environmentally sensitive Legislature.

BEYOND THE BORDER

The Santa Clara Slough-- Just south of Yuma, across the border in Mexico, thrives a rich wetland with copious marsh vegetation and wildlife. But the estuarian life in what is known as the Santa Clara Slough has been repeatedly threatened. After the construction of the Hoover Dam in 1935, the Colorado River Delta began to dry up, too seldom replenished by floods or sediment. In 1977, after lengthy negotiations with Mexico, the U.S. agreed to deliver brackish irrigation water into the slough as a temporary solution. Now, with completion of the Yuma Desalting Plant, this renewed marsh is in danger. Brine from the plant will be discharged into the canal, threatening the fragile ecosystem. A number of scientists, including ANPS member Richard Felger, are actively involved in gathering information and reexamining management decisions, including operation of the desalting plant. Watch for national news coverage of this issue. Logging in the Sierra Madre-- The World Bank's "Sierra Madre Forestry Development Project" remains largely on hold. Additional field work will be done to determine the location and extent of old-growth forests or significant forest areas lacking road access. The World Bank wants more information about any endangered species within the proposed project area. The Native Seed/SEARCH is sending out a "Sierra Madre Biodata" questionnaire and still needs recommendations of endangered sites for preservation, especially in southern Chihuahua/Durango. For more information, contact Native Seed/SEARCH, 2509 N. Campbell Ave. #325. Tucson, AZ 85719.

OTHER

Water Conservation Videos and Brochures-- Videos and brochures on subjects such as "Managing Arizona's Water," Groundwater, Water Follies, Desert Lawns, Trees, Shrubs, Wildflowers (ANPS brochures) are available free of charge from the City of Tempe. Call 350-2668.

NOTE: As Corinna Gries will be leaving for a sabbatical year beginning in August, a new feature editor for this page is needed. If you are interested call her at 831-9641 or Balbir Backhaus at 831-0120.

CHAPTER AND COMMITTEE NEWS

FLAGSTAFF CHAPTER:

Note: chapter meetings have been changed to the fourth Tuesday of every month. They are held at 7:00 pm on the N.A.U. campus in Rm. 313 of the Biological Sciences Building. Events: A hike is scheduled for June 27th to Humphrey's Saddle in the San Francisco Peaks. Contact Bob Wilson for further details at 774-1441 (days).

PHOENIX CHAPTER:

Regular meetings are held September through May on the second Monday of each month at 7:30 pm in Webster Auditorium at the Desert Botanical Garden. News Items: Members enjoyed field trips to Clarkdale for the Verde River Railroad ride and to Muleshoe Ranch over Memorial Day weekend. For 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).

PRESCOTT CHAPTER: Temporarily inactive

SOUTH CENTRAL CHAPTER:

Meetings are held on the first 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 in Casa Grande. Contact Chapter President Muriel Savage at 450 Sun West Dr. #235, Casa Grande, AZ 85222, (602) 836-7360 for more information.

SOUTHEAST CHAPTER:

ANPS members in Graham and Cochise County are currently operating as a sub-chapter of the Tucson Chapter. Regular monthly meetings will continue throughout the summer on the fourth Wednesday of the month at 6:30 pm at the Oscar Yrun Community Center in Sierra Vista. Events: June 24-- How to press plants as herbarium specimens; July 22 and August 26--Slide show of plants that need identification.

TUCSON CHAPTER;

Regular meetings are held on the second Wednesday of each month September through May at 7:30 pm at the Tucson Botanical Gardens, 2150 N. Alvernon Way, Tucson. Events: A number of summer field trips are planned. July 18-- Continuation of a plant survey at Gold Gulch Canyon, a desert riparian area in Bisbee; Aug. 2-- Arizona Sonora Desert Museum plant tour led by Mark Dimmitt, followed by a potluck; Aug. 16-- Annual Mount Graham Excursion, this year led by Steve McLaughlin of the Natural Resources division at the U of A; Aug. 22-- Annual hike into Garden Canyon in the Huachuca Mountains, led by Nancy Stallcup, to observe wildflowers; Aug. 28, 29, and 30-- Chiricahua Mountains, led by Mark Fishbein to conduct plant survey at a burn site; Sept. 19-- Muleshoe Ranch with Kristen Johnson and Sam Friedman.

YUMA CHAPTER:

Regular meetings, which resume in September, are held on the third Monday of each month at 7:30 pm at the U of A Agricultural Station on 8th St. in Yuma Valley. News: Spring activities included a field trip to view the gorgeous wildflower displays and a talk by Fred Croxen of Arizona Western College about a petrified tree recently unearthed at the Army Proving Ground near Yuma. New officers were elected: Pres.-Pat Callahan, V.P.-Dr. Ralph Irwin, Sec.-Elizabeth Moody, Treas.-Pat Burtch, Newsletter Ed.-Virginia Horton, Corr. Sec.-Ross Rodney. For information on Yuma Chapter activities contact Chapter President Pat Callahan, Rt. 1, Box 28M, Somerton, AZ 85350, (602) 627-2773.

CONSERVATION COMMITTEE

The Conservation Committee is looking for a chairperson. This committee needs fresh, enthusiastic new leadership to help further goals in the Legislature, Congress, federal and state agencies and elsewhere. If you are interested in helping ANPS preserve native plants, please call Barbara Tellman at 792-4515.

URBAN LANDSCAPE COMMITTEE

Contact Jane Evans, 2945 N. Fontana, Tucson, AZ 85705, 628-8773(D), 792-1592(E) for information on committee activities.

Faith Campbell of the National Resources Defense Council filed the following report:

The General Accounting Office (GAO) recently evaluated the Bureau of Land Management's (BLM) grazing program in the Sonoran, Chihauhuan, and Mohave Deserts. There are 113 listed or candidate plant species on BLM lands in these deserts. In the districts surveyed by the GAO, BLM is either not monitoring the impact of grazing or not evaluating monitoring data from a total of 85% of grazing allotments--potentially 10.5 million acres! This is why NRDC supports increased funding to hire

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(Defense Council-Continued from Page 11)
botanists for BLM's wildlife program and grazing fees charged ranchers to help pay for monitoring and other management.

Even if BLM were acquiring and analyzing impact data, that might not be sufficient, since BLM's management objectives themselves are flawed-- they are based almost entirely on short-term production of livestock forage. Members of the public must become involved in grazing decisions if the livestock industry's domination of our lands is to be reduced.

Livestock grazing takes place on more than 318 million acres of our (federal) lands and is a major contributor to destruction of habitat for plant and animal species. As long as grazing decisions are dominated by the industry, neither BLM nor the Forest Service is likely to make the needed reforms. But these are your lands, so you have a right to influence how they are managed. NRDC has issued a "user-friendly" booklet describing how you can become an effective participant in grazing decision-making on BLM lands. To obtain a copy of How Not to be Cowed, send $3 to Johanna Wald, NRDC, 71 Stevenson St., San Francisco, CA 94105.

Plant Press Newsletter Contributions

Contributions of articles,artwork, and letters to the editor are gladly received and may be handwritten, typed, or on disk, ASCI format preferred. Disks and diskettes will be returned.

Please send submissions to:

The Plant Press
c/o Balbir Backhaus
1530 W. Juanita Circle
Mesa, AZ 85202
(602) 831-0120

NEXT DEADLINE: AUGUST 15, 1992

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

New Brochure from the Urban Landscape Committee

The Urban Landscape Committee of ANPS has just released the fifth booklet in its series on arid-adapted plants for landscape use. In *Desert Accent Plants*, the focus shifts to plants which, through their form and/or foliage, provide an accent in the landscape. Succulents such as agaves and aloes, cacti, palms, yuccas and cycads are featured. Included in the 52-page brochure are 15 groups of plants, 48 color plates and 9 pages of comparative tables. Enthusiasts of unusual plants will be happy to see many, more recently introduced species listed. Examples are *Aloe karasbergensis*, *Aloe candelabrum*, senita (*Lophocereus schottii*), *Yucca grandiflora*, and *Dasilyrion acrothriche*. Container plants are also thoughtfully included.

Through this series of booklets, the Urban Landscape Committee hopes to promote the use of arid-adapted native and non-native plants in the landscape. It is their goal to provide educational information to homeowners, landscape professionals and hobbyists alike. The committee is currently putting together what it thinks will be its last booklet, *Desert Grasses*.

Desert Accent Plants is another welcomed addition to this fine series of concise, informative booklets. It is available for $2 through the society and at various botanical gardens.

The Arizona Native Plant Society
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