NATIVE PLANT SOCIETY OF NEW MEXICO
NEWSLETTER

September/October 1994 Volume XIX Number 5

The Web of Life:

Complex Relationships in Desert Ecology

by Candice Miles

Reprinted with permission from *Phoenix Home & Garden* 14(10):56, August 1994

In the field of computers, high tech means everything. No one would consider wasting time and money on nonstate-of-the-art equipment when more efficient alternatives are available. So why doesn't the same logic apply to landscaping?

Native plants, animals, birds and insects— the high tech of the natural world—enjoy the highly evolved interdependent relationships that suit them in a uniquely customized manner to their home environment. Landscapers who use native plants—the most highly evolved for their particular place—are less likely to fail at horticulture and more apt to match the sophistication and durability of their hard material choices. In doing so, they are also bound to invite an encounter with the desert ecosystem in all its fascinating glory.

Thanks to the balance resulting from eons of natural selection, every type of yucca attracts its own exclusive variety of moth. The same rainfall that lures the winged insect from its cocoon also inspires the plant to flower for its convenience. Similar encounters repeatedly occur, involving flora and fauna of all kinds. The neat fit of nature's jigsaw puzzle pieces inspires wonder and excitement among those who chance upon the match-ups. Horned lizards—to offer the kind of simple illustration that has thrilled every naturalist since Darwin—have developed a specific tolerance only for the venom of the harvester ants that comprise the bulk of their diet.

The saguaro can be seen as a nexuspoint for innumerable such interrelationships. In its earliest stages, it needs a nurse plant—like a palo verde—to shade it from the harsh sun. When mature, its waxy white blossoms bloom at night for the convenience of long-nosed bats. By day, red-capped Gila woodpeckers carve cavities into its sides to nest. After the cactus heals itself by forming a tough callous, it turns into an irresistible condominium for snakes, rodents, insects and bats as well as birds. Chemical analysis of its stem reveals a host environment ideally suited to the one specie of fly that prefers a saguaro to any organ pipe or alternative type of cactus.

"People who want songbirds in their gardens had better use native plants," says Steve Martino, "because songbirds primarily eat insects, not birdseed. When you use native plants, you get an entire ecosystem." Martino—the multiaward-winning Phoenix based landscape architect whose projects range from small residences to

planned communities like Scottsdale's 8,000-acre Desert Mountain—asks questions not often posed in his circles: "Why do people landscape? Why plant ornamental plants?"

The answer he suspects from the unsurveyed general population is that everybody else is doing it. "I don't understand why people don't just plant corn in their front yards," he says. "They'd probably get more value and overall enjoyment out of it. Most landscaping is just a case of monkey see, monkey do." Martino's frustration-laced humor is a not-uncommon response from someone who appreciates desert ecology while living in one of America's fastest-growing low desert metropolitan areas. Armies of immigrants, some packing in their favorite trees and shrubs along with the heirloom furniture, have turned the Valley from a destination touted for its clean air ("Send your sinuses to Arizona!") into a cornucopia of pollens,

Inside...

molds and other allergens from introduced vegetation. Asphalt, urbanscape and neighborhoods that border artificial lakes and golf courses have replaced an environment once inhabited only by plants and animals adapted to scarce water supplies. "It's another version of the myth of Johnny Appleseed," says Martino. "The common perception is that the desert is a wasteland. Newspapers still use the terminology that things are 'made out of the desert' as if there's nothing there to begin with."

Landscaping that considers only human aesthetics—arranging vegetation to fit preconceptions about what a garden should look like, for example—ignores natural ecology. Non-native plants are, in Martino's terminology, "inert," since they do not connect with the existing system of pollinators and predators, the food chain that links species adapted to their habitat. He recalls a speaker he heard at a recent seminar who enumerated insect life in native and non-native host trees. In a native California live oak, the researcher found 124 guilds of insects, including twenty-two species of ants. The non-native tree, a blue gum eucalyptus, was host to none.

Removed from their own biomes, transplanted individuals either struggle to survive or compete unfairly for resources, due to the absence of natural inhibitors. "If you see ants in your kitchen, they are probably African ants," says Martino. "Native ants find all their food outside." Johnson grass, the ubiquitous weed that thrives along irrigation ditches, arrived on this continent thanks to a slave trader named Johnson who saw the plant in Africa and thought it would make good cattle feed. Kudzu vine that covers much of the American South, grackles and starlings that dominate bird territories in various regions of North America and, of course, the infamous rabbits brought to Australia are other examples of imports as troublesome as tribbles.

The other extreme can be observed in such incongruous and sad sights as willow trees struggling to survive a scalding Phoenix summer. Martino also bemoans the ignorant wastefulness found in urban streetscapes lined with "Stepford trees"—specimens ill-suited for placement along sidewalks because of their need for imported water and "occasional whacking" to keep their growth from

The Newsletter is published six times per year by the Native Plant Society of New Mexico. The Society is composed of professional and amateur botanists and others with an interest in the flora of New Mexico.

Membership in the Native Plant Society of New Mexico is open to anyone supporting our goals. We are dedicated to promoting a greater appreciation of native plants and their environment, and to the preservation of endangered species. Members benefit from chapter meetings, field trips, publications, plant and seed exchanges and a wide selection of books available at discount.

We encourage the use of suitable native plants in landscaping to preserve the state's unique character and as a water conservation measure.

We maintain a register of business and professional people who are members and can supply information and services related to native plants. To be added to this roster or to request information, contact the Membership Secretary.

Advertising Schedule
Approved advertisements will cost $40 per year.

Schedule of Membership Fees
Dues are $10.00 annually for individuals or families. "Friends of the Society" include organizations, businesses, and individuals, whose dues of $25.00 or more provide support for long range goals. To join us, send your dues to Membership Secretary, 443 Live Oak Loop NE, Albuquerque, NM 87122

Newsletter Contributions
Please direct all contributions for the newsletter to Tim McKimmie, editor. See address below or email to tmckimmi@lib.nmsu.edu
Deadline for the next newsletter is October 1

interfering with power lines.

The purpose of a desert landscape, as Martino sees it, is primarily to provide shade. Privacy, delight and food production are secondary considerations. Most people, however, fail to accomplish even the first objective. "Architects would be sued for building the way landscape architects plant, with materials that either need annual replacement or maintenance once or twice each week," says Martino. "The important equation," he explains, "is the economy of shade. How much water and labor is required for a given plant to thrive and provide shade?"

Pruning—an activity he describes as 'unnecessary, irrational and cruel"—not only wastes energy, but "misshapes, stifles, stunts and weakens" a tree. A mesquite tree, he explains, is intended to have multiple trunks; trimming it back to a single one damages the tree permanently. Tropical palms, like coconut, grow like grasses in their native environments, where they self-prune by dropping old fronds—a process Martino describes as "majestic." "I remember driving a horticulturist from Florida around Phoenix about twenty years ago," says Martino. "He commented on all the odd-looking palm trees. When I told him they were pruned, he was stunned. He said, *'All* of them?' Think about it. How many palm trees are there in the Valley? Billions? That's a heck of a business somebody invented: poodling palm trees." The practice is not common in other low desert cities, such as Palm Springs.

"I'm puzzled by the things people do," says Martino. "Fertilizer needed for food crops is wasted on lawns. Landscape architects profess to be 'stewards of the environment,' but that's lip service. They expend tremendous energy and waste fortunes on useless efforts to make every place we turn look like a green theme park with fountains that erupt on the hour. People seem to want the whole world to look perfect and artificial, like Disneyland."

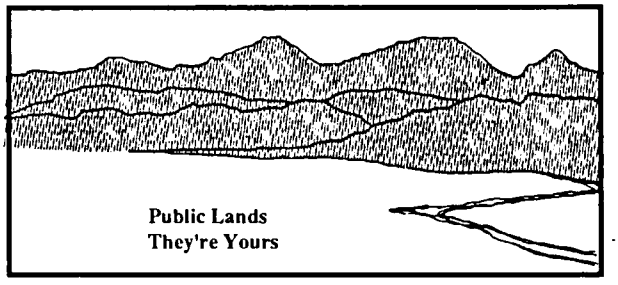
Martino counts among his most successful projects the Phoenix Cardinals' Training Facility in Tempe. Located on a former alfalfa field, the site benefited from the benign neglect of overseers who did not wish to be bothered with landscape maintenance. The native plants Martino placed there have reseeded themselves and returned the property to desert—an accomplishment that, much to Martino's delight, recently drew a botany class on a desert field trip.

"I personally believe the landscape industry is more destructive than strip mining or engineering," says Martino. "Those guys merely rape hillsides and move rivers, but landscaping does real damage because of its scale. Its end result is a displaced environment."

Fire in the Mountains: New Mexico 1994

Forest fires and grassland fires have been frequent during early summer 1994 due to dry weather. For example, a large fire burned much of the smaller trees and shrubs in the Organ Mountains near Las Cruces. The main fire began on June 12 from a lightning strike. Not only was there no immediate decision on whether to fight the fire, the BLM, Fort Bliss, and White Sands Mille Range could not agree on who was to make the decisions. By June 20 the fire was declared contained and on July 22 fire restrictions went into effect at all of the National Forests in New Mexico. The Organ Mountains fire flared again and on June 23 firefighters again "claimed victory" over it. Within a few days the Organs fire was again "out of control". It seems that the old juniper and oak stumps just smoldered until a wind picked up and spread hot coals to new areas. By July 3 Fire units from all over southern New Mexico were fighting the Organs blaze. The last of the firefighters pulled out around July 8 and a total of about 12,000 acres were affected. It took a good rain to really put the fire out. Generally, as in most forest fires, the results will be beneficial in recycling nutrients, creating new habitat, and for growth of grasses and forbs which will benefit wildlife. One possibly detrimental effect could be erosion if heavy storms appear. The effect on large mammals and birds was minimal although nesting birds were inconvenienced. Some smaller animals and reptiles surely perished.
TM

Many thanks to Robert Dewitt Ivey for permission to use his wonderful drawings from *Flowering Plants of New Mexico*, second edition, in our *Newsletter*.



CALENDAR

OTERO

Sept. 3-5. Cottonwood Festival, Alameda Park.

Sept. 24. Sacramento's trip. 9 a.m. Mayhill Ranger Station.

Oct. 15. Otero Mesa trip. 9 a.m. Alamogordo Holiday Inn. Need reservations! call Jean Dodd. 434-3041

GILA

Sept. 11 Field trip to Allen Spring WNMU Fine Arts Bldg. 8 a.m.

Oct. 16 Ft. Cummings Ruins. WNMU Fine Arts 8 a.m.

ALBUQUERQUE

Sept. 1. "Constructed Wetlands" by Ross Coleman. 7:30 p.m. Albuquerque Garden Center

Oct. 6. "Native Grasses" by R.D. Ivey. 7:30 p.m. Garden Center.

LAS CRUCES

Sept. 14 "Fungi" by Craig Liddell. 7:30 p.m. SW Environmental Center. 1494 S. Solano.

Sept. 16-18. Field trip to search for Fungi, probably in the Lincoln NF. Call Tim 524-0401 or 646-7483 or Alice 523-5179 for camping info or meet at Pan Am 7 a.m. sunday.

Oct. 12 Meeting 7:30 p.m. SW Environmental Center. 1494 S. Solano. Speaker TBA.

Oct. 16 Fall color trip. 7 a.m. Pan Am Center.

The Wildlands Project

The Wildlands Project (TWP) consists of a coalition of organizations and individuals throughout the United States and Mexico who are dedicated to the preservation of "big" wild and wilderness areas. **The Present system**, they believe, represents too few ecosystems. Native forests, for example, have been drastically reduced, and Tall and Short grass prairies almost entirely destroyed. "Umbrella" species such as the Griz and wolf are wide roamers and need large areas to sustain populations. Deep forest specialists like goshawk also suffer from fragmentation. The more "edge" (caused by fragmentation) the more "weed species" like raccoons and starlings thrive. As forest habitat contracts, many of the forest dwellers depart. Competitors and predators evict others. Populations dwindle as food diminishes and extinction roulette begins.

Fragmented islands are at risk of catastrophic events and then may fail to recruit replacement individuals due to isolation of populations. This is a prescription for extinction. According to some "No existing national park or wildlife refuge is big enough. None are maintaining their native biological diversity." "We really don't know what we're doing", meaning that we don't know what endemic genes, populations, species, or processes we may eliminate when we develop an area. eg. a favorite sunning spot of a pair of snakes.

Because biology has been absent from design decisions, park boundaries do not conform to ecological boundaries and most parks and other reserves are too small to maintain populations of wide-ranging animals over the long term or to perpetuate natural processes.

The Wildlands Project then, seeks to **Defend what remains** and begin transformation of the natural American landscape such that the full complement of species can thrive. This will occur on a long term time scale, eg., 100+ years. Such thinking will come about only by a change in political reality that ceases to look at landscapes primarily as economic resources to be developed and extracted.

The Wildlands Project has several **Goals** 1. Represent all native ecosystem types. 2. Maintain viable populations of all native species in natural patterns of abundance and distribution. 3. Maintain ecological and evolutionary processes.

The means of accomplishing these goals require Core Reserves surrounded by buffers and connected by corridors (for dispersal and migration of species). The journal *Wild Earth* publishes articles regarding the Wildlands Project. ***Wild Earth*'s role** is to record on paper (recycled of course) the needs and wishes of every "allele, genotype, phenotype, population, deme, metapopulation, race, subspecies, species, guild, biotic community, ecosystem, landscape, bioregion, continent, hemisphere, and planet" that TWP aims to save.

Some specific actions that need to be taken are land and mineral rights acquisitions, wilderness or other designation, road closures, or modifications, cancellation of some grazing leases and timber sales, timber planting, dam removals, and stream restoration.

NREPA, the Northern Rockies Ecosystem Protection Act, has recently been introduced in Congress. It is the first legislation to reflect the new ecosystem mode of preservation. For more information contact *Wild Earth*, POB 455, Richmond, VT 05477 or The Wildlands Project, 1955 W. Grant Rd., Tucson 85745.

TM

CHAPTER REPORTS

Otero-Jean Dodd

6-30-94 Otero's trip to the Gila Catwalk in the Gila National Forest had the least attendance of any of our trips but was a total delight. In the midst of an unprecedented heat wave June 24,25,26, we were actually cold at night at the Pueblo Park Campground off Hwy 180. Sheltered by the tall pines with their reddish bark we enjoyed privacy even with an Outward Bound group nearby. Their courtesy, cooperative attitude, and respect for the forest was impressive. By the spring near the campground were masses of yellow monkeyflower blooming next to a dry riverbed. Scattered throughout the area were red flowered penstemon. Rows of upright, small rabbitbrush grew along the roadside on the way to the Catwalk in Whitewater Canyon. When Jack Carter of Silver City arrived, he immediately involved us in a fascinating discussion of the flora of the canyon. Jack is an excellent botanist and it was a privilege to tour the canyon with him. The first plant to command our attention was the Arizona Sycamore (*Platanus wrightii*). We had seen them when we went out with Ralph Fisher in '91 but we are not used to seeing these large trees that grow to 70' high and 4' diameter. The Arizona Oak and the Gray Oak hybridize in the canyon. We learned to tell the difference between the Gray Oak and the Wright Silktassel (*Garrya wrightii*). Silktassel has opposite leaves and the Gray Oak has alternate leaves. Many plants were familiar to us-grape vines,hop tree, elderberry,Tree of Heaven, mesquite, turpentine bush, *Aloysia wrightii*,feather peabush,littleleaf sumac,etc. If you have not been to the Catwalk, there is a metal mesh walkway suspended 25 to 30' above the stream in the canyon where visitors can walk to admire the flora and massive boulders below. In the 1890's an 18" pipeline was installed to carry water to a nearby ore mill. The present catwalk is above the pipes.

The Silver City Chapter has put out a booklet "Native Plants for Lawns and Gardens of Southwestern New Mexico" with a forward by Jack Carter. The booklet will be at the state meeting.

7-19-94 Member Linda Barker prepared Forest Service hand-outs for our first joint Forest Service-NPS field trip meeting at Smokey Bear State Park in Capitan. Because of record heat levels, severe drought, many forest fires in the area, we had to make a decision where to go from Capitan. We decided on Sierra Blanca near Ruidoso stopping at Oak Grove part way up the mountain. Along the way we saw one N.M. Locust in bloom and clumps of green-flowered macromeria (*Macromeria viridiflora*). At Oak Grove we saw both the red and the yellow cinquefoil, nodding onions,large flowered blue flax, patches of Heal-All (*Prunella vulgaris*), Harebells, N.M. Penstemon, pink Monarda, geraniums, and Mt. Spray (Rock Spirea-*Holodiscus dumosus*). After lunch some started looking at campgrounds for their own future use. At the ski area were *Penstemon whippleanus*, Sierra Blanca Lupine-also a white one-Mt. Bluebell (*Mertensia franciscana*),red paintbrush,N.M. Elderberry, Meadow Chickweed (*Cerastium arvense*), Purple Monkshood, Tobacco root (*Valeriana edulis*), Yellow Thistle (*Cirsium pallidum*), and Corn Lily (*Veratrum californium*). Many thanks to Linda, Len Hendzel, John Stockert, John Mangimeli, and Scott Lerich for all helping to make it a great trip.

Las Cruces-Paul & Betty Shelford

6/8/94 Patrick Crist, Project coordinator for New Mexico GAP Analysis spoke. The Endangered Species Act is not working. We need to use science, not politics, to make sound decisions. The "GAP" looked at is that between the occurrence of species and protected habitat. By comparing richness to management we can identify gaps in occurrence. Currently there are 593 animal species being modelled.

6/11/94 Ten members made the camping trip to Rocky Canyon in the Gila NF. Among the flora seen were Veronica, Puccoon, St. John's Wort, Salsify, Argemone, Viola, Castilleja, and lupine.

7/13/94 Tom Wootten described the pro bono assistance he has been receiving from the New Mexico Environmental Law Center in pursuit of conservation activities. The majority of members attending the meeting were so impressed that we voted to donate $100. from our treasury to that organization.

Jean Heflin came down from Albuquerque to tell us about Penstemons. As members of the Snapdragon Family they have five anthers and five petals. There are over 300 varieties of penstemons in North America, many of which are found in New Mexico. Of particular interest to Jean is the Southwestern Penstemon (*Penstemon barbatus*) which is promiscuous in that wherever she goes in the state she finds the same plant with slight variations. The talk was illustrated with a striking selection of slides.

7/17/94 Greg Magee led a group of 12 members on a field trip to the Aguire Springs area. Due to the drought the selection of wildflowers was slight, so they concentrated on trees and shrubs.. Of particular interest were the Buckthorn and the Western Soapberry tree.

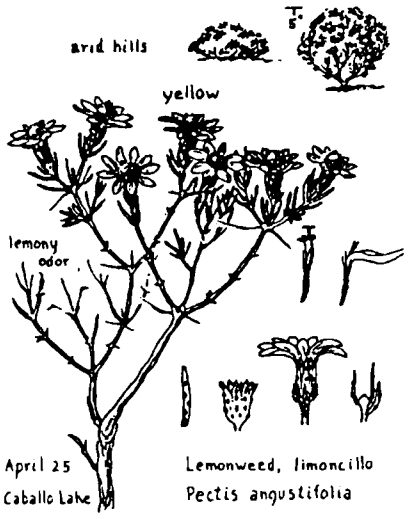
7/31/94 This was Garden Tour and Potluck Sunday. The first garden was in Picacho Hills where Greg Magee gave us a tour of the desert landscaping which he had designed and supervised at the Chornesky home. There were many native trees, shrubs and wildflowers, including Green Cloud Sage, Purple Verbena, Silver Mound, Texas Mountain Laurel, Cherry Sage, Arizona Rosewood, and Fountain Grass to name but a few. We then drove to the home of Pam and Bob Pick in the Jornada area, and from there walked to the home of her neighbors, Elbert and Barbara Jaycox. This home was an oasis of what can be done with native plants along with vegetable gardens and an occasional accent of temperate zone garden plants. A small lawn of Buffalo Grass was followed by Lithia ground cover. There were Jerusalem Sage and Fringe Sage mixed with Creosote Bush, Mesquite and Little Leaf Sumac; Desert Marigold was next to Orange Marigold and clumps of Indian Rice Grass and other ornamental grasses. Hordes of gourds were followed by a lush vegetable garden. After a good potluck supper at the Picks' home, we explored the many native and domestic wildflowers in Pam's walled yard, and then outside the wall for a nurtured collection of native trees, shrubs, yuccas and grasses.

Views From the South

(One Member's Opinion) by Tom Wootten

Perhaps the **most endangered species** at this time is the **Endangered Species Act** itself.

The Endangered Species Act was enacted in 1973 to address the problem of the accelerating extinction of species caused mainly by destruction of their habitat. After 20 years do we have anything to show for the problems (?) the act has caused? You bet, although it is important to keep in mind that species can be destroyed much faster than they can be restored. Just recently we have received the good news about the bald eagle and the fact that its population has recovered to the point over most of the country that the special designation of "endangered" could be lowered. The gray whale has been removed from the endangered species list, the Aleutian Canada goose has made significant recovery in numbers, the black footed ferret and California condor have been reintroduced into the wild, and good progress is being made on pup numbers so that soon Mexican gray wolf may be reintroduced. A detailed report which evaluates the recovery process of all US listed species and whether the species' status are improving, stable, declining, unknown or extinct was recently given to Congress by the US Fish and Wildlife Service.



The anxiety over the Endangered Species Act comes because Congress is currently considering reauthorization of the Act and there are organized attempts to both strengthen and weaken the Act. Hearings have been held on the scientific rationale for conserving species, the role of federal lands and agencies in conserving T & E species, and on conserving species on private lands. Hearings are to be held on the lag in development and realization of recovery plans and preventing species endangerment this month and next.

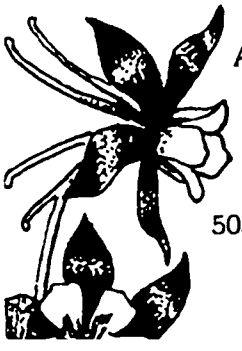
Bills have been introduced by Reps. Gerry Studds and John Dingell (HR 2043) and Sens. Max Baucus and John Chafee (S 921) which have really good provisions included, such as considering ecosystem approaches to species protection, expediting the listing process, speeding up the process for recovery, encouraging public participation in the entire process and providing incentives to private landowners to protect species on their land. I urge you to support these bills by calling or writing to your Senators and your Representative.

Opposing bills have been introduced by Reps. Billy Tauzin and Jack Fields (HR 1490) and Sens. Richard Shelby and Slade Gordon (S 1521) which propose to relax limitations on activities that may harm endangered species as long as the harm is not directed at an individual of the species. As an example, a tree holding a bald eagle's nest could be cut down if the eagle was off the nest at the time. Secondly attempts are continually being made to slow down (bog down) the already slow process of protecting listed species and those proposed for listing. The ESA already holds safeguards and additional protection from so-called "takings" are not needed.

As a reminder to our group, over half of the species listed as threatened or endangered under the Endangered Species Act are plants. So often we get caught up in the news media with its focus on animal species, our attention to plants get short shrift.

The Endangered Species Act and the protections it affords is the single most environmental protection tool in the opinion of this member. Please contact your chapter conservation chair for more information on HR 2043 and S 921, let your elected representatives know you support reauthorization of a very strong Endangered Species Act , that you oppose the attempts at weakening the act by the "Wise Use Movement" through "Taking" proposals, and you support efforts to expedite the listing and recovery planning process to include scheduling deadlines to ensure each step of the listing and recovery process is carried out on a timely basis.

Editors Note: Of the more than 700 species currently listed as endangered more than 450 are plants. Sixty percent are either decreasing in numbers or their condition is unknown. Although this battle is wearisome, those with economic interests in land development are leading a charge to weaken the ESA. One argument has it that species should be "sacrificed" if their survival means that peoples interests will be compromised. "Takings" legislation would compensate people for **not** harming species. Eventually, the courts will have to deal with the issue of whether landowners and lessees have a responsibility to the community at large or whether property rights give one absolute rights. The debate is very complicated.



PLANT SPECIES OF US STATES AND CANADIAN PROVINCES

John T Kartesz - North Carolina Botanical Garden, Chapel Hill, NC

Reprinted from: *Biodiversity Network News* 5 (3),1993, and the *Northern Nevada Native Plant Society Newsletter*, May 1994.

The table below summarizes the state and province totals for native full species of US and Canadian vascular plants from the current review-draft version of my data set on geographical distributions of the taxa recognized in my Synonymized Checklist (Timber Press, due early 1993). This information, in development for over 20 years, comes primarily from floras, monographs, plant conservation reports, and many voucher specimens. Substantial revisions have been made in response to reviews by floristic and taxonomic specialists, including many Heritage Program botanists. These counts may differ to some extent with published totals in various floras, due to differences in taxonomic treatments, additions from recent research. and handling of questionable reports. Since these totals are approximate, they are here rounded to the nearest ten.

The count for each state or province considers full species only: infraspecific taxa and hybrids are excluded. The three districts of Canada's vast Northwest Territories are separately tabulated, and mainland Labrador is reported separately from insular Newfoundland. In these preliminary tabulations, species are considered native if they are native somewhere in the US or Canada. The relatively rare instances of species that are native in part of the continent but present only as exotics in other areas are not addressed here. The five US states with the highest numbers of native vascular plant species are: California (5,090), Texas (4,510), Arizona (3,250), Oregon (2,930), and Florida (2,870). The five states with the lowest numbers are: North Dakota (1,140), Hawaii (1,150), Alaska (1,250), Rhode Island (1,350). and Iowa (1,390) I thank the Nature Conservancy for assistance in preparing this summary for publication.

Estimated Native Vascular Plant Species by State and Provinces:

Alabama	2,420	Minnesota	1,720	Vermont	1,490
Alaska	1,250	Mississippi	2,030	Virginia	2,320
Arizona	3,250	Missouri	1,890	Washington	2,330
Arkansas	2,170	Montana	2,110	West Virginia	1,730
California	5,090	Nebraska	1,460	Wisconsin	1,620
Colorado	2,640	Nevada	2,680	Wyoming	2,080
Connecticut	1,670	New Hampshire	1,420		
Delaware	1,580	New Jersey	1.910	Alberta	1,600
Florida	2,870	New Mexico	2,810	British Columbia	2,170
Georgia	2 760	New York	2,190	Franklin (NWT)	340
Hawaii	1,150	North Carolina	2.450	Keewatin (NWT)	460
Idaho	2,310	North Dakota	1,140	Labrador	610
Illinois	2,060	OhiO	1,920	Manitoba	1,290
Indiana	1,840	Oklahoma	2,280	Mackenzie (NWT)	910
Iowa	1,390	Oregon	2.930	New Brunswick	970
Kansas	1,690	Pennsylvania	2,030	Newfoundland (insular)	820
Kentucky	2,020	Rhode Island	1.350	Nova Scotia	1,030
Louisiana	2,090	South Carolina	2,190	Ontario	1,930
Maine	1,490	South Dakota	1,400	Prince Edward Island	640
Maryland	2,040	Tennessee	2,110	Quebec	1,810
Massachusetts	1,650	Texas	4,510	Saskatchewan	1,180
Michigan	1,950	Utah	2,590	Yukon	1,000

MEETING ANNOUNCEMENT

Tucson Arizona will be the sight for .the conference ***Botanical Gardens in the 21st Century: An Endangered Species?*** The meetings will take place Sept. 22-25. There will be speakers as well as tours and discussion groups at the Arizona-Sonora Desert Museum, Tucson Botanical Gardens, Tohono Chul Park, Boyce Thompson Southwestern Arboretum, the "Biosphere", the Santa Catalina Mountains, and the Desert Botanical Gardens in Phoenix.. Registration fees range from $20 to $85. Call (602) 883-3022 for more information.

Book Review

PLANT IDENTIFICATION TERMINOLOGY, An Illustrated Glossary by James G. Harris and Melinda Woolf Harris. Spring Lake Publishing, Payson, Utah, 1994. 197 pp.

The days have turned cooler. Autumn wildflowers are casting their golds and purples across fields and roadsides. Seed heads of grasses bend low as the wind passes. It all makes you want to grab your pack, your hand lens and a new plant key and head out for a hike. Soon you find an interesting grass you would like to identify, only to meet up quickly with this description: "sheaths pubescent to villous or if glabrous or scabrous then margins not ciliate." Perhaps none of these terms is familiar or maybe one or two are, but the result of encountering so many in one phrase is often discouragement. You may stuff the key in your pack and go on, never to learn the name of the grass in question.

That's why this new book by the Harrises fills a gap in the existing literature for plant identifiers, whether students of field botany or native plant enthusiasts out for the afternoon. The book not only identifies 2400 terms in the extensive and complex language of taxonomy but also provides more than 1700 line drawings to illustrate them. This is its most valuable feature. For instance, the term "villous" means "bearing long, soft, shaggy, but unmatted, hairs." This then is illustrated with a drawing that shows the hairs as they might appear under magnification. "Scabrous," which means "rough to the touch," is illustrated with a leaf drawn so that you can see as well as feel exactly what the term means.

The book is divided into two parts—the main illustrated glossary and then specific terminology for plant parts such as roots, stems, flowers, and fruits. Keys and field guides often include glossaries, usually with some illustrations, but most are brief. This book provides in Part Two many more definitions and illustrations, for example, of leaf shapes than I have encountered elsewhere. The illustrations in the section on surfaces are especially useful, clearly showing the visual difference between, say, hispid and hirsute, or lanulose and lepidote.

The book is in paperback (for easier field use and is priced quite reasonably at $17.95. However, the publisher is offering it at the special price of $15.95 to native plant society members, postage paid. Members of the Native Plant Society of New Mexico may write to the publisher at Box 266, Payson Utah 84651 and request a copy, indicating their affiliation with the society. The publisher does not accept credit cards or telephone orders but will be glad to accept a personal check.

by Sandra D. Lynn

FESTIVAL OF THE CRANES

The 1994 Festival of the Cranes will be held Nov. 17-20. Speakers will include Pete Dunne. Contact the Socorro Chamber of Commerce, POB 743-B, 87801 or call 835-0424 for more information.

The Native Plant Society of New Mexico
465 Salopek #8
Las Cruces, New Mexico 88001

ADDRESS CORRECTION REQUESTED

Non-profit
Organization
U.S. Postage
PAID
Permit #946
Las Cruces, New Mexico