NATIVE PLANT SOCIETY OF NEW MEXICO
NEWSLETTER

January/February/March 1999 Volume XXIV Number 1

A Rule of Thumb for Botanists:
the 1 in 20 Rule

By David H. Wagner
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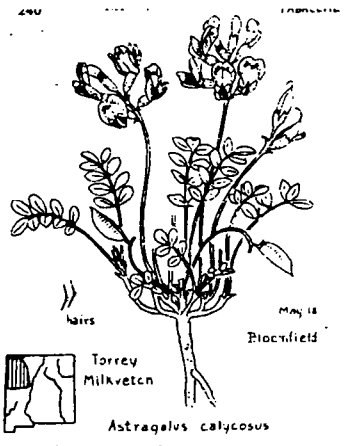
There have apparently been instances in the past where well-meaning botanists have destroyed plant populations through over zealous collecting. The case most familiar to me concerns one of the world's rarest ferns, the pumice grape-fern, Botrychium pumicola. A student searching for new sites found two individuals of this species on Oregon's Tumalo Mountain in 1954 which he collected to make herbarium specimens. In the late 1970s I searched the top of Tumalo Mountain with friends. We were experienced fern hunters, but we found no Botrychium. I strongly suspect that the two plants removed in 1954 eliminated the population at this location. Today we would hope that botanists finding only one or two plants at a site would document their discovery with photographs and notes. Good photographs and careful field notes are increasingly acceptable for recording plant discoveries.

Nevertheless, from time to time, a field worker may encounter a small population of a plant and feel it is necessary to collect a bit of it for positive identification and documentation. The Native Plant Society of Oregon's Guidelines and Ethical Codes for botanists urges that a collector use good judgement and rules of thumb when deciding whether or not to collect. But in this case, what is a good rule of thumb? During the past 10 years, I have been using what I call the "1-in-20 Rule."

The 1-in-20 Rule dictates that a botanist never collect more than one out of twenty plants. It means NOT collecting ONE plant UNTIL you have found at least TWENTY. Only if twenty are found should you consider collecting one plant. And forty should be present before two are taken, and so on. The rule applies to parts of plants, also: remove no more than five percent (one-twentieth) of a shrub, one fern frond from a clump of twenty, 5% of a patch of moss, 5% of seeds from a plant. I use the 1-in-20 Rule whether I am collecting voucher specimens for the herbarium, doing rare plant work, or gathering common species for classroom use.

The 1-in-20 Rule does not obviate the need for good judgement. Only when a botanist has the knowledge to assess whether collecting is both ecologically justified and legally permitted should a specimen be taken. Any pertinent factor relating to the survival of a population needs to be superimposed on the 1-in-20 Rule. The main value of this rule of thumb is to provide a clear point of reference from which to begin assessing a situation. It helps a botanist determine how much time should be spent inventorying before sampling is appropriate. I suggest the 1-in-20 Rule as a minimal criterion to be met before any taking of a plant be considered.



There is at least a modicum of scientific logic behind this rule. Statistically, a population sample of nineteen is not significantly different from a sample of twenty. One population geneticist I consulted advised me that contemporary statistical theory would support the 1-in-20 Rule. Another pointed out, however, that repeated collecting would tend to reduce every population to nineteen individuals. This caution serves to emphasize that the 1-in-20 Rule is a rule of thumb, not a license to ravage.

An interesting line of argument in support of the 1-in-20 rule has developed since I first published the idea in the Bulletin of the Native Plant Society of Oregon in 1991. First, I received a letter from James Grimes of the New York Botanical Garden querying whether or not I had picked up the idea from a similar article he and others had published in the newsletter of the Idaho Native Plant Society a few years before. I honestly cannot recall seeing their note. Then, last year, four botanists from Australia and New Zealand published an article in the international journal, Taxon, which made essentially the same recommendation. Thus, three botanists or groups of botanists, deliberating independently, have arrived at the same standard. I submit that this concurrence from three separate sources speaks strongly for the sensibility of the 1-in-20 Rule.

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

The New England Wildflower Society

announces its annual **Seed and Book Catalogue** with seeds available for more than 200 plants. These are primarily suitable for Northern N.M. Send $2.50 to Garden in the Woods, 180 Hemenway Rd. Framingham, MA 01701

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. Original articles from the *Newsletter* may be reprinted if fully cited to author and attributed to the *Newsletter*.

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. We encourage the use of suitable native plants in landscaping to preserve the state's unique character and as a water conservation measure. Members benefit from chapter meetings, field trips, publications, plant and seed exchanges, and educational forums. A wide selection of books is available at discount. The society has also produced two New Mexico wildflower posters by artist Niki Threlkeld. Contact our Poster Chair or Book Sales representative for more information. Call chapter contacts for local information.

Advertising Schedule

Approved advertisements will cost $50 per year.

Membership Fees

Dues are $12.00 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, NPSNM, POB 5917, Santa Fe, NM 87502-5917

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 March 1.

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Editorial

Single Species Ecology vs Ecosytem Ecology

Two hundred years ago this past year, in 1798, Thomas Malthus published his famous article, An Essay on the Principle of Population. In this relatively short article this British clergyman and political economist gave us fair warning that while the human population increases exponentially, our ability to increase the world food supply increases arithmetically. Based on simple observations over the past two centuries various individuals and organizations have continued to attempt to prove Malthus wrong, and at times it almost seems fair to say humankind, with the help of a wide range of new technologies has proven that food production can keep pace with the continuous increase in world population.

However, today we know there is a serious flaw in this approach to studying populations of humans or other individual species and the conditions under which they live. The Malthus model was based on species specific population ecology and not ecosystem ecology. Certainly Malthus had a limited view from what he could observe occurring around him, and based on his observations "misery and vice" would eventually bring the number of Homo sapiens into balance with resources. Although it does appear today that he was basically correct in his conclusions, there were few variables included in this rather simplistic model. Equally so, his critics have had a simplistic view involving few variables and most often their solutions are related to altering the social structure and world economics toward capitalism or socialism. We know now that the entire world being either capitalistic or socialistic will never begin to solve the most serious biological and social problems confronting living systems over planet Earth.

Up until the 1950s most of us who were studying ecology talked about ecosystem ecology, but our research centered on population ecology. In other words, the problems we were attempting to solve involved a single or few species and a few limiting resources such as water, soil, insect pests, human intrusions, etc. Over the past 40 years, thanks to new technologies and especially computer modeling techniques we are now in the era of examining total ecosystems, biomes, planet Earth and the cosmos through a wide range of variables. Today we now recognize the power in Garrett Hardin's famous statement that, "We can never do one thing," (be it in an ecosystem or a society), without altering that system. Multiple variables surround practically every major problem we can identify on Earth and throughout the cosmos.

We all know that intrusions into our personal lives and the lives of all other living things come in all kinds of packages and create all kinds of interrelated problems. As the human population increases from 6 billion to somewhere between 8.5 or 10 billion between now and the year 2050, biodiversity will be severely altered, as will such variables as available fresh water, changes in the climate, pollution, available energy, forests, croplands, food, jobs, housing, natural recreation areas, education and many other factors. Those who would make recommendations for changes that alter our environment, be these changes in our neighborhoods, natural areas, cities, New Mexico or the United States, must provide sound scientific explanations for their recommendations, and also be held accountable for the outcomes. Political leaders at all levels of government tend to make rather quick, simplistic decisions that often make short term sense, but involve the consideration of few long term variables. One is left with the feeling humankind has learned very little about the nature of living systems over the past 200 years. Each of us individually, and collectively through the Native Plant Society of New Mexico, have an obligation to make certain public officials, as well as economists and environmentalists can defend the impact of their recommendations on the long term biological future of planet Earth.

Jack Carter President, NPSNM

Conservation Clips

—Why native plant conservation? From the quiet meditator to the keenest student of plants, each of us knows a "why" of our own. To actively accomplish movement toward conservation on the land, we attend meetings on issues of concern. At those times a reasoned scan of the purposes of conservation is helpful.

—Department of Interior's Minerals Management Service reports in People, Land & Water, that $87M in oil, gas, and mineral production revenue was distributed to the State of New Mexico during the first six months of this year. For the majority of federal lands states and the federal government share the revenues: 50 percent to the state, 40 percent to the Reclamation Fund for water projects, and 10 percent to the U.S. Treasury.

—I hope you will borrow, beg, purchase or otherwise obtain The Ice-Age History of Southwestern Parks, by Scott A. Elias (1997). These are the stories of scientists now in the field: Canyonlands, Grand Canyon, Anasazi, and Big Bend. Elias concludes, "...the ecosystems of the American Southwest follow cycles in response to climate change brought on by glacial and interglacial periods. This is true up to a point, but it must be emphasized that the current interglacial is different from the many that preceded it, because of the presence of mankind".

—For New Mexicans, conservation begins with knowledge of your bioregion(s) and plant habitats. Important over the state strategically for 1999 are riparian and wetland areas, the control of noxious weeds, mining and industrial reclamation. We have recently participated in a public scoping meeting on a proposed riparian habitat management plan for the Albuquerque Field Office of BLM.

—Now forming, a working group of chapter conservation persons can share information and bring attention to all our efforts. Send notes and news to the coordinator for 1999: Grace Mason, PO Box 2936, Santa Fe, NM 87504. Conservation needs all chapters' eyes, ears, and presence over New Mexico.

CALENDAR

GILA

January 15, 1999 - " Geology and Plants" by Dr. Mary Dowse, WNMU Geology Professor, 7:00 PM, Harlan Hall, WNMU

February 19, 1999 - "Activities of the Malpais Borderlands Group" by Bill McDonald, President. 7:00 PM, Harlan Hall, WNMU

March 19 "Planning the 75th Anniversary of Aldo Leopold Wilderness The World"s First Wilderness" by Alice Cohen, Education Specialist, Gila National Forest. 7:00 PM, Harlan Hall, WNMU

SANTA FE

Jan. 20 "Landscaping for butterflies and wildlife" by Nancy Daniel. 7:30 pm. Rm 122, Evens Science Lab, St. Johns College

Feb. 17 "Bosque del Apache" by Roger Peterson. 7:30 pm. Rm 122, Evens Science Lab, St. Johns College

March 17 "The Landscaping Revolution" by Andy Wasowski. 7:30 pm. Rm 122, Evens Science Lab, St. Johns College

ALBUQUERQUE

Jan. 7 "New Mexico Japanese Gardens" by Beth Herschman. 7:30 pm, Albuquerque Garden Center, 10120 Lomas.

Feb. 4 "New Mexico plant fossils" by Sydney Ash. 7:30 pm, Albuquerque Garden Center, 10120 Lomas.

March 4 "Landscaping with Natives" by Gail Haggard. 7:30 pm, Albuquerque Garden Center, 10120 Lomas.

March 28 Field trip to Tent Rocks with Bill Dodson.

LAS CRUCES

Feb. 27 Highway cleanup. Meet 10:00 AM. St. James Church parking lot.
March 10: 7:00 PM. Bob Girard, "Gardening in an Arid Land". SW Environmental Center, 1494 S. Solano
March 14: Field Trip to Valles Canyon. Meet 9:00 AM, Fairacres Post Office.
Sunday, March 28: Field Trip to Wynn Anderson's Garden in El Paso. Meet 9:00 AM, Pan Am Center lot.

OTERO

Feb. 13 "Studying the Chihuahuan Desert" by Jennifer Atchley. 7:00 pm. Sat. Grace United Methodist Church, Alamogordo.
March 20 "Report on Spellenberg Oak research trip to Mexico" by Len Hendzel. 6:00 pm. Rod Beckett's home.

Texas Madrone (*Arbutus texana* Buckl.): A native plant that merits more attention

by Ralston St. Hilaire

Texas Madrone is an ornamental plant that horticulturists identify as one of the most underused plants in southwestern landscapes. Although this plant can be propagated from seeds, layering, cuttings, and tissue culture of actively growing shoots, the greatest challenge to enjoying a beautiful landscape specimen is establishment of the plant after transplanting. The Texas Madrone has very few root hairs so plants do not recover well from the stress of transplanting.

Texas Madrone is commonly called madrone, naked indian, lady's legs, or manzanita and is indigenous to the Edwards Plateau in south central Texas to the east, Trans-Pecos Texas and southeastern New Mexico to the west, and south through Mexico. The madrone is found between elevations of 4,000 to 7,000 feet and is prevalent in canyons, mountain slopes, arroyos and in mixed stands at the heads of canyons.

A member of the heath (ericaceae) family, the Texas Madrone has some signature characteristics of the family such as red exfoliating bark, relatively thick evergreen leaves, and berry-like fruit. In spring, plants bear a shower of creamy white flowers and the red bark exfoliates to reveal a smooth inner white bark that can serve as contrast to its dark green foliage. Deep red berries hang from the plant's canopy in fall and winter. The madrone grows slowly, but it can reach fifty feet.

The plant has year round interest because of its bark, foliage, flowers, and fruit. The columnar shape and large canopy with twisting branches makes it an ideal shade plant for southwestern styles homes. The plant also could serve as background for other native plants. Wildlife feast on the red berries so it is a good plant to add to a landscape designed to attract wildlife.

Texas Madrone does well in well-drained, slightly acidic to alkaline soils. Because the roots of the madrone may have a symbiotic relationship with root fungi, fertilizers with copper which may be toxic to fungi, should be avoided. The plant thrives on 16 to 30 inches of precipitation in its natural environment. Reseachers at New Mexico State University plan to initiate experiments to evaluate relative drought resistance and water use of the plant. The madrone will tolerate full sun to partial shade.

Potential problems of this plant in managed landscapes include transplant failure, slow growth, fruit drop onto walkways, and attack by pest such as the European bark borer. The splendor of this plant outweighs these potential limitations. Once techniques to successfully transplant the madrone and relative drought resistance are determined, the madrone can become a fixture in southwestern landscapes.

Madrone - Arbutus xalapensis

CHAPTER REPORTS

Gila-Martha Carter

The October 23 program was presented by Michael Moore, Director of the Southwest School of Botanical Medicine, Bisbee, AZ. He discussed some of the more prominent plants used in treating the various problems associated with women's health such as: Monardella odoratissima, Pennyroyal, a vasodilator; Monarda menthaefolia, Wild Oregano or Oregano de la Sierra; Monarda fistulosa, Wild Bergamot; Monarda punctata, Beebalm or Horsemint; and Hedeoma hyssopifolia, Arizona pennyroyal. The pennyroyals are traditionally used to bring sweat and American Pennyroyal, the "official", true pennyroyal oil is used as a repellant of insects. Moore pointed out that Corydalis aurea, Golden Smoke, is used primarily by the Hopi and Navajo to diminish tremors and nervousness. Scutelleria spp., Skullcap, fresh leaves and flowers made into a tea can be a sure treatment for almost any nervous system malfunction of a mild or chronic nature. He told of locations around plants.

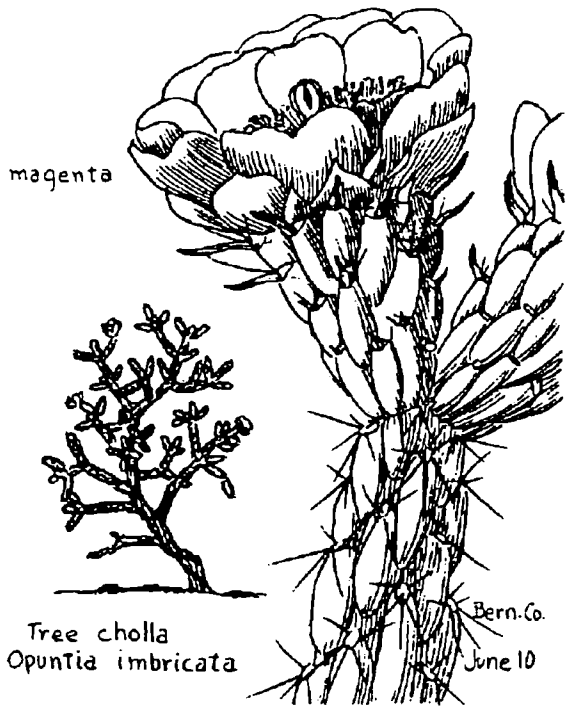
Bob Sivinski, chief botanist with the New Mexico Forestry and Resources Conservation Division, Energy, Minerals and Natural Resources Department, presented the November 20 program on endemic plant species that are threatened or endangered in New Mexico. Bob is also serving as Vice-President of the NPS-NM. Using slides to illustrate his point, Sivinski took the audience on a clockwise tour of New Mexico beginning in the northwest corner and emphasized the plants that are identified as narrowly endemic. That is, plant taxa that have distribution range lengths of less than 100 miles. These plants constitute three percent of the native NM flora, or 66 listed plants, with the Asteraceae having 27 taxa and Fabaceae, twenty. Eleven of the twelve New Mexico plant taxa listed as threatened or endangered under the federal Endangered Species Act are narrow endemics. Some of the narrow endemics are endangered species and all deserve special consideration in our land use and management practices.Two factors with the greatest influence on plant endemism in New Mexico are geology and topography.

The November 7-8 overnight to Boyce Thompson Arboretum in Superior, AZ, was attended by eight members and 3 guests. Saturday afternoon was spent enjoying the plant diversity from desert to riparian, from an English Herb Garden to plants surrounding Ayer Lake to the towering Boojum tree native to Baia California. After a fine restaurant meal in Globe and a good night's rest, several of the party returned to the Arboretum for another look around before returning to Silver City.

Otero - Jean Dodd

10-10-98

Otero revisited Alamo Canyon in the foothills Of Sacramento Mountains. We haven't visited the canyons for awhile. You tend to forget how beautiful they are with so many things to see-rocks,wildlife, caterpillars,birds, the scenery both where you are walking and in the distance high above us. What could make a hole in rock big enough for a nice size den? The Alamogordo pipeline runs along the rocks part of the way sometimes resulting in a drip for the birds. Some hillsides are covered with soltol, We saw very few ocotillos in this area, Lush growth in the floodplain included huge Apache plumes, leaf sumac-Rhus micropbylla, Rhus trilobata, and Aloysia wrightii with its good smelling white flowers. Golden-eye-Vigueria stenoloba grew in profusion. They were past their prime. Hop trees seem to be in trouble this year both in the canyon and on the Trestle Trail. Leaves are sparse and in some cases don't look good. Needed a botanist to tell us what a dark green leaf bush is that is covered with very large seed beads like huge cottonballs. Grape vines with shiny green leaves draped down the rocks. Saw them at Oliver Lee and many other places, Milkweeds had gone to seed as had Sacramento Prickly Poppy. Saw one very large plant of bright pink 4 o'clocks with blossoms closed-could just see what the color had been. 4 o'clock Boerhaavia sp were seen in several places. Tbey too had finished blooming except for a tiny, very bright carmine colored flowers. Spreads all over a large area. They are in the Desert Foothills Park too. Lots of wild currant bushes. Desert Willows from huge to new shoots. One small wire lettuce was in bloom-Stephomeria panciflora. One winterfat in bloom, one Dyssodia papposa, and bright orange mallows. Didn't see any Turpentine bushes. They have just started to bloom in the area-even the little ones people bought at the plant sale this year.

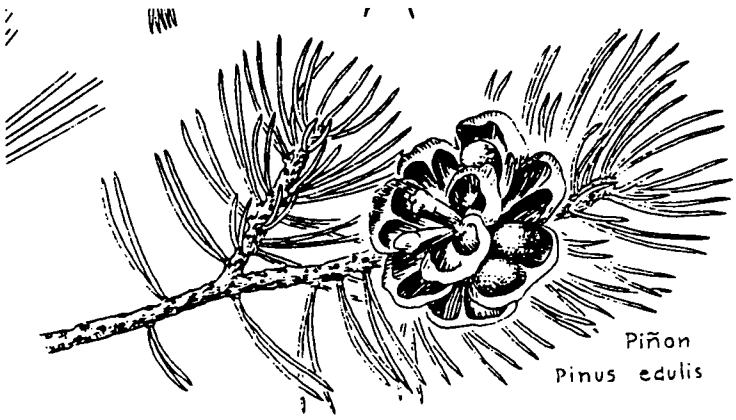


Fall Board meeting

Saturday, September 12, fourteen members of the Native Plant Society including outgoing and newly elected Officers, Board members and representatives of our chapters met in Castetter Hall Herbarium Conference Room of the University of New Mexico for our semi-annual Board business meeting. This was the first time we have ever met in this location - and Prof. Tim Lowery, Curator of the Herbarium and Director of the Museum of Southwestern Biology welcomed us. The Herbarium contains about 95,000 specimens of plants mostly from New Mexico, and continues to access specimens at the rate of about 2,000 per year. It is one of two large plant research collections for New Mexico - the other herbarium is located at New Mexico State University, Las Cruces. Contained within the facility is an excellent research library and map collection; Prof. Lowery invited the members of the NPS-NM to make use of the facility and its extensive library.

Membership Secretary Mary Goodman reviewed our continued growth in membership - we registered over 50 new memberships for individuals and families state-wide and another 63 in the Taos area. Twenty-three memberships were not renewed and they will be dropped from our mailing list. "Friends of the Society" account for 25 memberships. Our total membership is at almost 600 with three chapters having over 100 memberships (Albuquerque, Santa Fe and Otero). We also have six Life Memberships, and maintain 54 complimentary exchanges with other groups and affiliates (including other NPS from other states, wildflower organizations and Botanical Gardens). Treasurer Babs Peck presented a very healthy interim financial report. We voted to transfer an additional $5,000 from our checking account into our investment account, the interest of which will promote small grants and scholarship awards. The production of the "Chihuahuan Desert Garden" (CDG) publication accounted for expenses exceeding income this year. Continuing expenses include printing and postage costs for the newsletter, and office expenses (telephone and postage) for officers, posters and membership. Rebates to chapters will be made in November. Greg Magee reported about the CDG booklet. We have had several very complimentary reviews in local and regional publications. In the first four months sales exceeded 1,500 copies. He anticipates recovering the production costs from sales in the next year or so. Anyone wishing to purchase a copy can contact Book Sales chair, Lisa Johnston. Unfortunately the position of Conservation Chair is currently vacant, and there should be a representative from each Chapter to the Conservation Committee. Grace Mason, new member of the Santa Fe Chapter made a strong presentation to the Board about what she would like to do to increase conservation efforts in New Mexico. Officers of the newly formed Taos Chapter were introduced: Sandra Ross, President and Andy Wasowski, Vice-President. Following their presentation the chapter was officially accepted as our seventh NPS-NM chapter. We welcomed the new members, and applauded the enthusiasm and publicity the group has generated in Taos area for promoting native plants. This is our first new chapter in a number of years. Board members expressed the hope that we can continue to promote NPS activities in other parts of the state. Perhaps the Taos Chapter can suggest to us ways we can encourage the development of new activities.

Under Old and New Business we discussed and acted on a number of topics including: 1) developing a list of plant books for children; 2) Annual Meeting in Amarillo with Texas and Oklahoma Native Plant Societies on October 16-19, 1998; 3) our next Annual Meeting in Albuquerque, August 20-22, 1999; 4) our Annual Meeting schedule for next five years: 2000 in Las Cruces; 2001 (our 25th anniversary) in Santa Fe; 2002 in Silver City; 2003 in Otero; 2004 in Taos; 5) plans for expanding our small grants program with income from an investment account which will be implemented in 1999; 6) review of Summer Teachers Institute at Western NM University, July 1998; 7) grant request proposal form; 8) future publications for NPS-NM; 9) Festival of the Cranes, Nov. 20-22, 1998; 9) report from the Rare and Endangered Species Advisory Board, Bob Sivinski; 10) development of a new web site; 10) election of the new Board. Following a "thank you" to retiring Board members for serving the Society with devotion and energy, the meeting adjourned. We accepted with reluctance the resignation of Recording Secretary John Stockart. Robert Hilton of the new Taos Chapter has agreed to fill out John's term. The next Board meeting will be held at Sevilleta Research Station (north of Socorro), on February 13, 1999. Submitted to Newsletter, Mary Whitmore



Call for Papers

New Mexico Native Plant Society 1999 Annual Meeting

Howard Johnson Convention Center Albuquerque, New Mexico August 26-29, 1999

The Native Plant Society of New Mexico invites proposals for papers and presentations for its 1998 annual meeting to be held, August 26-29, in Albuquerque, NM. The theme of the meeting is "Wetland and Riparian Plant Communities of Central New Mexico."

Proposals that relate to the ecology, history, geology, geography, archaeology, and interactions of plants and animals of the Bosque, wetlands, acequias or riparian areas of Central New Mexico will be considered. Suggestions for related tours/ field trips will be welcomed. NPSNM membership is not required to participate.

In addition, the Native Plant Society of NM will host an adjunct session on August 26th which will feature papers specifically dealing with topics of a floristic or systematic nature, such as taxonomy, classification, diversity, rarity, and distribution of the New Mexico flora. This session is not limited to wetland or riparian topics. and all NM botanists are encouraged to participate. All accepted papers will be published in a proceedings volume to be distributed to the attendees and sold through our book sales program.

Applicants must submit the following on or before February 20, 1999:

Name, Title, Institution, and short Vitae of the Presenter; Address, Phone, e-mail, fax (if available); Title and short one page abstract of the presentation.

For further information, or to submit proposals, contact:
Beth Herschman Native Plant Society 4125 Shiloh Drive NE Albuquerque, NM 87111 (505) 296-0763 e-mail: Bherschman@aol.com
or
Bob Sivinski NM Forestry Division P.O. Box 1948 Santa Fe, NM 87504 e-mail: bsivinski@state.nm.us

Please publish, post, or pass on to colleagues!

Report on the 1998 Annual Meeting

Peter Loos, President of the Native Plant Society of Texas and the NPSoT Chapter in Amarillo, Texas welcomed 225 registrants from Texas, Oklahoma and New Mexico to the first Joint Annual Meeting of our three Native Plant Societies. (You may recall that in 1996 we had a shared meeting with NPSoT in El Paso which focused on the Chihuahuan Desert.) This year the theme was -"The Llano Estacado/ Southern High Plains and Its Many Ecosystems" - territory represented in all three states. Individuals representing all seven chapters of NPS-NM were sighted. We enjoyed extended mild fall weather which only added to the wonderful field trips. The fun began with a pre-meeting field trip to Caprock/Canyonlands State Park on Thursday which was enjoyed by persons from all three states. An extensive plant list to the Park is included in the meeting Proceedings. Everyone raved about the trip and if you missed the meetings you may want to schedule a trip that way next spring. Carolyn and Bill Dodson, Albuquerque, can suggest options. Friday morning registrants had to choose between five different workshops featuring Native Plants: Flower Arranging, Propagation, School Yard Programs, Edible Natives and Photography. All five received good marks.

The afternoon schedule featured 30 minute presentations about geography and topography of the Llano, with a brief look at wetlands and water resources and a very interesting talk on Agriculture and Environmentalism. In the evening Zoe Kirkpatrick showed wonderful slides from her book, "Wildflowers of the Western Plains". There were plenty of opportunities to meet old and new friends at the ice cream social. Lisa Johnston's collection of native plant book display area attracted lots of attention! The Silent Auction area featured a large varied assortment of native plants and other choice items. Saturday kept everyone busy with lectures and presentations from 9 to 4. Our state business meeting principally featured a discussion about next year's Annual Meeting which will be hosted by the Albuquerque Chapter in mid-August. Exhibits from Oklahoma, Texas and New Mexico filled the areas adjacent to the Ball Room and gave us a chance to circulate, talk and compare notes.

That evening, the meeting banquet featured excellent food and numerous awards. Sunday, before heading home, we had a choice of five different field trips: Palo Duro State Park near Canyon, McBride Canyon and Alibates Flint Quarries near Lake Meredith, Wildcat Bluff Nature Center in NW Amarillo, Duncan Ranch or Figure 3 Ranch to the south of Amarillo. Each trip provided a different look at the unique areas of the Texas Panhandle/Llano. Even though it was late in the fall, there were many plants in bloom plus glorious cottonwoods in full golden color. Many thanks to the NPSoT for hosting a very rewarding weekend.

CHAPTER REPORTS

Las Cruces - Lisa Mandelkern

September Meeting Wynn Anderson, president of the El Paso chapter of the NPS of Texas, was our speaker. He informed us about his involvement in plans to build a Chihuahuan Desert Demonstration Garden. It will be on two acres of land on the campus of UTEP. The project, which will be an important resource for the Southwest, will include an amphitheater and gardens. There will be a wall garden, a contemplative garden, rocky areas resembling Hueco Tanks State Park and an assembly garden. His slides showed native plants for cultivation that were a little less common. For sandy soils he recommended native bulbs such as rainlily, desert hyacinth, sego lily and wild onions. For thin rocky soils, which occur in arroyos and canyons, he pointed out twinpods (Menodora scabra), sages and Penstemon fendleri. Wynn gave many tips on growing plants from seed. At the end of his talk he invited our chapter to visit his garden in El Paso in 1999, which we look forward to do!

On September 13, our chapter was again invited to a fieldtrip to WSMR. Dave Anderson lead our group to some interesting landmarks in roughly the southern part of the San Andreas Range. Also joining us were Debbie Bingham, a WSMR public affairs officer, Dave and Dana, two geologists, and Ted Williams, reporter for the "Missile Ranger". Along range road 7 Dave pointed out a very beautiful blooming grass, Cloris virgata (Feather fingergrass). The next stop was an agave roasting pit site, dated to be from 1580. Then we stopped at a hillside, where Dave had found in January of this year a small population of Peniocereus greggii (Queen of the Night cactus), 7 plants to be exact. These plants had been tagged by Dave, and our group went out and found 5 additional specimens. Next we stopped at a cliff that faced north. This area was in the shade eighty percent of the day and therefore created a very unique environment. The cliffs were literally hanging gardens. One plant well worth mentioning is the small endangered crossrock daisy (Pterophyle sp.), which clings to the smallest cracks in the vertical rock. The rocks had sponge fossils embedded in them, which was brought to our notice by the geologists. We had lunch under a small cottonwood stand, (Populus fremontii), next to a dried up spring. Dave aptly called this place "Cottonwood Heaven." Next to this site we looked at some four hundred years old pictographs. The rock paintings were delicate and small and showed among other things a horseman and a dragonfly in great detail. Then we drove on to Hembrillo basin. In the middle of the basin sits Victoria Peak. It was fascinating to listen to all the tangled facts and folklore about hidden gold. Hembrillo basin is also a battle field, where in 1880 the U. S. Cavallary lost a battle to Victorio and his band. Once again, our heartfelt thanks go to WSMR and especially Dave Anderson for giving us the opportunity to visit this beautiful and interesting part of Southern New Mexico.

October 14 our speaker was Kelly Gallagher, a member of our chapter, but more importantly, a graduate student in biology at NMSU. Kelly studies columbines (Aquilegia sp.) and her talk presented some aspects of her research. There are about 70 species of Aquilegia in North America. The common name for this plant derives from the latin word columbinus, which means dove. The botanical name comes from the latin aquila (eagle), because the flower was thought to resemble eagle talons. The species that we see most often in the Southwest is Aquilegia chrysantha. The pollinators for this plant are hawkmoths. Columbines belong to the buttercup family (Ranunculacae). American Indians used the seed of this plant to treat fevers. Kelly talked about the evolution of flower color and length of spurs in Columbines. Among many questions that she studies are: Are small plant populations more vulnerable to inbreeding depression, and Are plant populations affected by the canopy layers under which they grow? She also thanked the T&E Foundation, which funds her research. In other news from our chapter, we learned that Tom Wooten, a longtime member and friend to many of us, will relocate to Tucson. Many thanks to you, Tom, for all your contributions to this chapter and we hope that we hear occasionally from you! We all wish you and your wife the best for your new endeavors in Tucson! 1998 was a good year for our local chapter: Every activity took place as planned with good attendance. We sold hundreds of "Chihuahuan Desert Gardens" booklets; the public response was just great. Some new members joined our group, but we still would like to grow a little more. The landscaping project for a median in Las Cruces was planned by several members, and now needs to be approved in writing by the city council. We are all grateful to Terry Peterson for doing so much work on this project. In addition, his xeriscape garden was featured on the garden page of the "Sun News" on August 30. He was also instrumental in gaining permission to sell our booklet at the local farmer's market on several occasions. One of Greg Magee's residental landscape designs was submitted by the customer, and won one of the City's annual Xeriscape Awards. For 1999 we decided on a new format for our meetings. The meeting will now start at 7 PM. The business meeting will end at 7:45, at which time the invited speaker will promptly be given the floor. Unfinished busines will be dealt with after the lecture. Last not least, we all miss Alice Anderson, especially on our field trips. She has been ill for quite a while. We all wish her well and hope that she will get better in 1999!

On October 4, the Las Cruces chapter went to San Diego mountain. This small mountainous area is near Hatch and can be reached from Las Cruces by car in about twenty minutes. Terry Peterson, our leader, brought along a field guide to petroglyphs. The rock carvings still remained quite mysterious to us, although there were some beautiful recognizable images. There was a fish, masked faces, a silhouette of a head, sun symbols, goat-like animals and many line drawings. Terry also lead us to a rocky area where we observed a collection of numerous circular deep holes in the horizontal rock. The holes were made and used by Indians to grind grain. In the same place John Freyermuth almost stepped on a big rattlesnake. Fortunately he missed it and the snake slithered quickly away to hide in the rocks. Later we also observed a kangaroo rat that made no attempt to run away while we were looking at it. John picked up a plant that promptly irritated the skin of his hand, similar to a nettle sting, he reported. He identified it later as Tragia stylaris or noseburn. Flowering plants observed were: Tidestromia lanuginosa, Ambrosia sp. (Ragweed), Flourensia cernua (Tarbush), Gutierrezia sarothrae (Snakeweed), Melampodium leucanthum (Blackfoot Daisy), Pectis filipes var. subnuda (Threadstem Chinchweed), Dyssodia acerosa (Dogweed), Trixis californica, Viguiera cordifolia (Rough Goldeneye), Viguiera longifolia (Annual Goldeneye), Hibiscus denudatus, Boerhavia coccinea (Scarlet Spiderling), Eriogonum wrightii (Buckwheat). Some of us explored the hillsides, which were so full of small cacti, especially Mammilaria grahamii, that we had to watch where we walked.

OTERO TRIP TO MCDONALD RANCH

On Saturday, September 19, members of the Otero NPS had the great privilege of visiting the McDonald Ranch thirty miles east of Douglas, Arizona (the dirt road was impossible!). From the living room of his ranch home, Bill McDonald talked about the Malpai Borderlands Group and their innovative approach to rangeland management.

A tall man with a large frame, McDonald is built like the Arizona landscape where he and his family have lived for 5 generations. He says the ranch is a part of his being. From his appearance, it would not enter your mind that this man had not long ago received the 'Genius Grant' as a MacArthur Fellow. Recipients of this award receive from $220,000 to $375,000 to pursue their groundbreaking work. In this case, the groundbreaking work is being done by the Malpai Borderlands Group, a nonprofit organization made up of 35 ranching families. This group implements a new approach to rangeland management on nearly one million acres of the Southwest desert. Instead of a divisive, confrontational approach to dealing with the concerns of government agencies and conservationists, The Malpai Borderland Group is working in harmony with these and other interests to help solve the rangeland problems that exist in the area. The Nature Conservancy, the University of Arizona, and the Forest Service Rocky Mountain Research Station are among those who participate in the Malpai Group.

An instrumental aspect of their plan is grass banking. The Animas Foundation (who bought the Gray Ranch a few years ago) plays the key role here. In exchange for granting conservation easements over their private land, ranchers who participate in the program are allowed to graze their cattle on the healthy grasslands owned by the Animas Foundation when the grasslands on their own allotments are too dry or overgrazed to support cattle. The conservation easements will protect the land from future subdivision or other intensive development.

Additional programs implemented by the Malpais Group include a) protection of endangered species such as the Chiricahua leopard frog; b) monitoring a series of test plots to ascertain grass conditions - this helps the ranchers decide where the cattle should graze; and c) researching the effect of fire on grasslands - the thinking now is that a fire is needed every 7-10 years to keep down woody growth. Independent scientists will advise the group on how to best manage fire, taking into consideration human uses, watersheds, and wildlife habitats.

It was inspiring to listen to this man who, with the rest of the Malpais group, are reaching out to others to find common ground in the controversial issue of grazing in the Southwest. We all might learn an important lesson from their example.

Cooking Wild Workshop

The Otero Native Plant Society presented for the second time its Cooking Wild Workshop, this time to the New Mexico Garden Clubs at their annual state meeting hosted by the Alamogordo Chapter on September 18 and 19. The garden club learned through Lucille Wilson about the successful workshop presented at the 1996 Texas/New Mexico Native Plant Joint Meeting and Symposium and requested the Cooking Wild Workshop. The annual two-day seminar began with native-plant garden tours in the Alamogordo, La Luz and Bent areas. The following day the workshop presented the methods of gathering and preparation of wild edibles, followed by a complete meal prepared from wild edibles.

Next on the agenda was a demonstration of paper making using recyclable materials. Cookbooks using the hand-made paper as covers with pressed flowers contained recipes prepared for the luncheon and were available for purchase/donation. The beautiful home of Lucille and Toad Wilson in Cottonwood Canyon provided a natural setting for the Cooking Wild Workshop and Eating Wild Luncheon. Hors d'oeuvres of Watercress/Cream Cheese Tea Sandwiches, Basil/Pinon Pesto on Tortilla Triangles, Crab/Cream Cheese on Crackers topped with Wild Mint/Jalapeno Jelly was served with samplings of Prickly Pear Wine. Lucille welcomed the groups and introduced Betty Claypool as coordinator for the native plant group. Betty substituted for speaker Mame Carl, who was unable to attend, and presented Mame's specialties-cooking with Yucca Plants and Black Walnuts. Cleo Harris of La Luz followed with her topic, Flavoring with Wild Herbs. She discussed their many beneficial and flavorful qualities. Lucille filled in for Pat Hendzel who was away with her husband Len on the Native Plants annual, three-day outing. Pat's interesting topics included Algerita Berries and Prickly Pear Wine. Len, who produced the Prickly Pear Wine, donated eight bottles for the event from his private wine cellar.

May Ann Descamps of Alamogordo was the next speaker and she discussed The Versatility of Amaranth. Henrietta Mitchell of Tularosa explained on the topic with her subject, Cooking with Wild Greens. Lucille followed with her expertise-Watercress, Delightful and Delicious. Nancy Hutto of Tularosa was next with the harvesting and preparation of New Mexico's ubiquitous Prickly Pear and its Tuna. Betty Claypool of Bent presented how to grind and make flour of The Mesquite Bean and Herb Teas. The final speaker was Judy Tribble of Tularosa with The Tasty Nut of the Pinon as her topic. A one-of-a-kind culinary experience followed the hour-long program with a delightful Eating Wild menu of Cream of Watercress and Cream of Asparagus Soups, Salads of Quelites, Watercress and Beet, Southwest Cactus Napolitos, and Tabboule with Wild Mint and Wild Onion. The Entrees included Amaranth Cheese Casserole and sliced cold Juniper-Berry Lamb. An assortments of breads-Mesquite Pan Breads and Mesquite and Indian Corn Muffins were served with a wide array of jellies-Algerito, Mint, Prickly Pear, Mesquite, Crab Apple, Mulberry, Elderberry, Raspberry, and Red and Green Chili.

A variety of desserts were offered- Prickly Pear Crisp, Black Walnut Cake and Black Walnut Cookies, Prickly Pear Sugar Cookies and Mesquite Chocolate Chip Cookies along with Pinon Tarts, Pinon Pies and a Sampler of Pinon Goodies. Beverages accompanying the bill of fare included Mint Tea, Blackberry/Rose Hip/Mint Tea Blend and Coffee and Chicory New Orleans Blend. Judy Tribble provided the grand finale for the event with a demonstration of the process of paper making from junk mail catalogues and used pressed flowers for decorations. Judy then handled the door prize drawings of the many hand-made gifts. Other members of the Otero Native Plant Society assisting in making the project, which began in June, a success, included Chris Baker, Dee and Nona Umberson, Don Tribble, Jim Claypool, and Toad Wilson. Proceeds from the project are donated to the native plant organization to be used for scholarships.
Submitted by Betty Claypool and Lucille Wilson

The New Mexico Natural Heritage Program.

By Juanita A. R. Ladyman, Ph.D. The New Mexico Natural Heritage Program. Biology Dept. University of New Mexico.

The Nature Conservancy (TNC) established the Natural Heritage Program Network in 1975 in order to track and organize information about native plant and animal species, natural ecological communities, and other information important to biological conservation. There are now almost 100 Natural Heritage Programs around the world, from the Americas to Micronesia. As is the case for many of the 58 Natural Heritage Programs in North America, the New Mexico Natural Heritage Program (NMNHP) was established in the mid 1970s. It was first located in Santa Fe as part of the State of New Mexico's Department of Game and Fish. For lack of funding it was disbanded after several years. However, a fortunate outcome of this initial program was the passage of the New Mexico Endangered Species Act and the establishment of the botany program in the New Mexico Energy, Minerals and Natural Resources Department. In 1990 the Heritage Program was restarted and is now a part of the Biology Department at the University of New Mexico in Albuquerque.

The primary mission of the NMNHP is to serve as a center of excellence in the understanding and conservation of New Mexico's biological heritage. This is achieved through student training, research, public and private partnerships, and by providing objective information on the bio-diversity of the state and its ecological regions. Central to the mission is the development of a biological conservation database that specifically summarizes and makes readily accessible information accrued on the States rare and threatened species and its viable and restorable ecosystems.

The Biological and Conservation Data System (BCD) was originally a software package designed by TNC and used by the majority of the Heritage Programs including the one in New Mexico. The current BCD is a collection of interrelated databases that contain information (e.g. occurrence locations, protection status, land ownership, population status, natural history, etc.) about species and natural communities. The databases are cross-referenced so that questions relating to conservation issues can be answered. The BCD is now being updated and expanded so that it can be used directly by geographic information systems (GIS). A single plant or animal species, or natural community type is referred to as an element. Active data collection on an element is referred to as "tracking". The elements that are tracked are, generally, relatively rare (i.e. they may be sensitive due to low numbers of individuals or populations). However they may also be tracked if their habitat is in significant decline or they are endemic to a region. Approximately 300 plant and 300 animal species are being tracked by the NMNHP. Of this group more than one half have no Federal or State of New Mexico legal protection status. New Mexico has five plant species Federally listed as threatened, seven Federally listed as endangered, 53 species designated as Federal "species of concern". Thirty-six plant species are protected from unauthorized collection or take under the New Mexico State Endangered Species Act.

In addition to agency personnel and organizations in the private sector, private individuals can receive or contribute information on individual species. For example, when individuals wish to build on a property the NMNHP can list the rare species that may be found on that property. In addition, we welcome input from individuals that have noticed rare or endemic species within New Mexico. We request that a standardized form (at the end of this article) be completed, if possible, by the observer of any relatively rare plants, cryptogams, invertebrates, birds, or other vertebrate animals. The plants that are tracked can be found on the internet at: http://nmnhp.unm.edu. We also encourage individuals to bring to our attention any species that they feel should be, but is not, on our list.

As well as the collection and maintenance of documented observations on individual species, the current activities of the NMNHP include the classification of natural communities, the production of landscape-scale maps using Geographic Information Systems (GIS), monitoring and research on rare, threatened, endangered, and declining species, and research on cryptogamic crusts. As part of the Biology Department of UNM there is a major commitment to education, and undergraduate and graduate students are involved in on going projects. The students participate in a wide range of projects; from assisting with building and managing the databases to participating in the field data collection and research activities. One important facet of the Program is to provide data to resource management agencies. To that end there are many co-operative efforts between the NMNHP and land management agencies, e.g. New Mexico Department of Game and Fish, the Department of Defense, the New Mexico Army National Guard, the US Fish and Wildlife Service, the Bureaus of Land Management and Reclamation, the USDA Forest Service, and the New Mexico State Land Office.

In summary, the NMNHP participates in the objective observation, collection and science-based analysis of bio-diversity in New Mexico. Working in collaboration with TNC, the other Natural Heritage Programs, government agencies, private organizations and private individuals the NMNHP is able to provide information on the biological resources in the State. This information can then be used in a way that can help sustain the abundant natural heritage of New Mexico.

Please help us help conserve the biodiversity of New Mexico by being a cooperator. For each site that you find any rare species please complete the following form. This form can be found on our web page at http://nmnhp.unm.edu/eorfrm.html. A list of the plants we would like information on can be found on the internet at: http:// nmnhp.unm.edu/allplant.dbm. Please note that we would like information on any plant listed in the working list, not only those that appear on the tracked list.

New Mexico Natural Heritage Program Rare Species Reporting Form

New Mexico Natural Heritage Program Phone: (505) 272-3545 x231 University of New Mexico Fax: (505) 272-3544
851 University SE, Ste. 101 E-mail: altenbac@sevilleta.unm.edu Albuquerque, NM 87131

PLANT/ANIMAL OCCURRENCE RECORD (contributor's form) EOCode _____
(New Mexico Natural Heritage Program Use Only)

Scientific Name_____

Common Name (Optional) _____

Date Observed_____ County_____

Quad Name_____ Latitude_____ Longitude_____

Township_____ Range_____ Section(s)_____ Quarter_____

UTM Northing_____ Easting_____Zone__GPS(Y/N)__ (Corrected/Raw) ___

Location and specific direction from nearest landmark _____
_____
_____
_____

Description of Habitat, Slope, Aspect, Associated Species _____
_____
_____
_____

Elevation in feet_____ Number acres inhabited_____

Comments_____
_____

Population data (number of individuals, relative abundance, reproductive stage):
_____

Managed area (forest, resource area, preserve)_____

Land Owner (e.g.BLM,USFS,PVT) _____

Site name (canyon, spring) _____

Disturbances or threats to population _____
_____

Observer's name _____ Collection number _____ Museum where any specimens are deposited
_____

**PLEASE ATTACH COPY OF TOPO MAP WITH SITE MARKED OR MAKE SKETCH MAP ON BACK

6TH XERISCAPE CONFERENCE

Sponsored by the Xeriscape Council of New Mexico and the New Mexico Water Alliance
March 5 and 6, 1999 ALBUQUERQUE, NEW MEXICO

"The Process Of Xeriscaping" *PLANNING *DESIGN *CONSTRUCTION *MANAGEMENT

Key Speakers: Tom Ash - Water Manager, Irvine Ranch, CA
Ron Gass - Owner, Mountain States Plants, Phoenix, AZ
Jim Knopf - Landscape Architect, Author, Boulder, CO
Helen Stone - Publisher, SW Trees and Turf, Las Vegas, NV
Ken Ball -"Father of Xeriscaping," Denver, CO
Sid Goodloe - Rancher, Capitan, NM
Judith Phillips - Landscape Designer, Author, Grower

CONFERENCE REGISTRATION Deadline: February 12, 1999

CONFERENCE COST: $75.00 (includes lunch and refreshments both days, conference materials and access to 20 exhibits.)

CONTACT: Scott Varner, Xeriscape Council of New Mexico, P.O.Box 14311 Albuquerque, New Mexico 87191-4311
E-mail: Iscott@thuntek.net Phone: (505) 294-7791

NPSNM OPENS WEB SITE

The Native Plant Society of New Mexico has joined the internet with the establishment of it's web site as of December 18, 1998. Please direct your comments and suggestions to NPSNM editor Tim McKimmie. At present the site consists of a calendar of events, Organization info, and links to other NPS sites. The URL is: http://www.zianet.com/npsnm

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