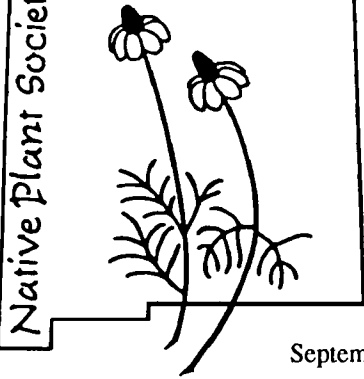


Native Plant Society of New Mexico



# NATIVE PLANT SOCIETY OF NEW MEXICO NEWSLETTER

September/October 1993

Volume XVIII Number 5

## HAVE YOU SEEN THIS GRASS?

by Kelly Allred, Curator, Range Science Herbarium, Rm. 202, Knox Hall  
New Mexico State University, Las Cruces, NM 88001. (505) 646-1042

There occur in New Mexico nearly 400 species of grasses. This is more than in any of the neighboring states except Texas and Chihuahua, and, if we include subspecies and varieties, the total number of different kinds of grasses climbs to over 460. Some, such as blue grama (*Bouteloua gracilis*), three-awn (*Aristida purpurea*), sandbur (*Cenchrus incertus* - ouch!), and little bluestem (*Schizachyrium scoparium*) are found in nearly every county. Others, such as soft chess (*Bromus hordeaceus*), cottagrass (*Cottapappophoroides*), balsamgrass (*Elionurus barbiculmis*), and pappusgrass (*Pappophorum vaginatum*) are found in only one or a few counties, but are rather common in local populations.

In the past 14 years of studying the grasses of New Mexico, numerous students, colleagues, and I have compiled what we trust to be an accurate list of the grasses of the state. This list is maintained on computer at the Range Science Herbarium, and is available to interested parties. But there remain several grass species for which we have little or no information as to their whereabouts. Many of these represent collections by early botanists and naturalist-explorers; others are from more recent collections, but searches for these species remain unrewarded by living populations. Sadly, some of these species are probably now extirpated from New Mexico. Fortunately, all of them are known from other states.

I list below what little information we have on these "orphans" of New Mexico agrostology, in the hope that the considerable energy and enthusiasm of the Native Plant Society of New Mexico may be brought to bear on their behalf. For ease of use, the species are

arranged by county. Herbaria where known specimens are housed are abbreviated as follows: ForSer = Forest Service Herbarium, Albuquerque; GH = Gray Herbarium, Harvard University; NMC = Department of Biology, New Mexico State University; NMCR = Range Science Herbarium, Department of Animal & Range Sciences, New Mexico State University; US = U.S. National Herbarium, Smithsonian Institution. I will be happy to assist in the identification of any grass species about which you might have questions.

### Bernalillo County:

*Sporobolus neglectus* Nash

Known localities: Albuquerque, 22 Los Arboles Road, 14 Oct 1951, J.M. Rominger 32 (specimen at UNM); Santa Fe County, San Ildefonso, alfalfa field, 19 Sep 1928, M.W. Talbot 763 (specimen at US). Identification: Annual; glumes equal or nearly so; the single floret glabrous. Very similar to the next.

*Sporobolus vaginiflorus* (Torrey) Wood

Known localities: Albuquerque, Oct 1937, E.W. Hardies 4868 (specimen at UNM); Albuquerque, mixed in plot of *Bouteloua gracilis*, Oct 1937, L.N. Goodding, 2368 (specimen at US). Also known from Dona Ana County. Identification: Annual; glumes equal or nearly so; the single floret hairy. Very similar to the preceding.

### Catron County:

*Muhlenbergia eludens* C.G. Reeder

Known locality: Gila National Forest, Long Canyon Mts, T7S R15W sec 13, woodland, 7800 ft, 12 Sep 1925, W.G. Koogler K1 (specimen at ForSer). Identification: Annual; spikelets appressed along the branches; glumes minutely hairy; lemma awned. Similar to the common *M. minutissima*, but with awned lemmas.

### Chaves County:

*Chloris subdolichostachya* C. Mueller

Known locality: Roswell, D. Griffiths 5710, 5746 (reported as *C. brevispica* by Wootton & Standley). Identification: Perennial; panicle branches digitate in a single whorl; lemma awned. This taxon is derived in part from hybridizations of *C. cucullata* and *C. verticillata*.

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**Colfax County:**

*Anthoxanthum odoratum* Linnaeus

Known locality: Philmont Scout Ranch, along North Fork Creek 1 mile west of Philmont Reservoir, 7600 ft, 21 June 1968. Reported by R.L. Hartman, "New plant records for New Mexico," South-western Naturalist 18:241-243 (1973). Identification: Perennial; panicle spikelike, golden brown; glumes large, surpassing the florets; 2 lower sterile florets scale-like and awned, upper fertile floret awnless.

**Dona Ana County:**

*Imperata brevifolia* Vasey

Known localities: 5 miles south of Radium Springs, 3900 ft, 27 Jun 1935, K.W. Parker 590; 10 miles north of Las Cruces on Albuquerque highway, 4000 ft, 14 Jun 1939, J.O Bridges 1300 (specimens at NMCR). These localities have been searched several times, to no avail, as the habitats have been converted to agriculture. Identification: Large perennial; panicles plume-like, silvery hairy, narrow; spikelets obscured by the hairs.

*Setaria verticillata* (Linnaeus) Beauvois

Known locality: Mesilla Valley, 2 Aug 1907, E.O. Wooton & P.C. Standley s.n. (specimens at UNM & US). Identification: Annual; bristles with downward-pointing barbs; margins of upper sheaths not translucent, but membranous and hairy. Very similar to the more common *S. adhaerans* (Forsskal) Chiovenda, both of which have clinging bristles.

*Sporobolus vaginiflorus* (Torrey) Wood

Known locality: Las Cruces, Aug 1895, E.N. Plank 3 (specimen at US). Also known from Bernalillo County, q.v.

**Grant County:**

*Bothriochloa wrightii* Hackel

Known localities: Two specimens of this grass have been discovered, both in Grant County. The first was the original collection as described by Eduard Hackel in 1885: "Pine hills from the Mimbres to the Cobre, large patches with scattered culms." These plants

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.

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.

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.

**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.

**Deadline for the next newsletter is Oct. 1.**

**Advertising Schedule**

Approved advertisements will cost \$40 per year.

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were collected by Charles Wright (numbers 890 and 891) and duplicates are at GH. The last known collection was by Orrick Baylor Metcalfe: 2 miles west of Hillsboro, granite hills, 6000 ft, 16 Sept 1904, O.B. Metcalfe 1371 (specimens at NMC and US). Identification: Perennial; nodes hairy; foliage glaucous; panicle subdigitate; sessile spikelets awned, the pedicelled spikelet about as large as the sessile, but awnless. Similar to *Bothriochloa barbinodis*, but the panicle less hairy.

Guadalupe County:

*Spartina gracilis* Trinius

Known locality: Guadalupe County, Santa Rosa, sandstone cliffs and seeps, 8 Oct 1945, R.A. Darrow 3364 (specimen at US). Identification: Rhizomatous perennial; blades 2-5 mm wide; panicle of 2-8 spike-like branches. Similar to *Spartina pectinata*, which is also uncommon.

*Tripsacum lanceolatum* Fournier

Known locality: Guadalupe Canyon, E.C. Merton 2035, reported by Wooton & Standley, but no specimens have been located. I have searched Guadalupe Canyon several times; this species is probably now extirpated from New Mexico. Identification: Large, tussocky bunchgrass with broad blades; sexes divided, the male in tassle-like spikelets at the tips of the panicle, the female in bony bead-like units at the base of the panicle.

Hidalgo County:

*Bouteloua rothrockii* (Vasey) Gould

Known localities: 19 miles north of Rodeo, in mesquite/ocotillo/yucca dominated vegetation, granitic area with coarse sand and gravel soil, 4350 ft, 4 Oct 1966, F.W. Gould 12022 (specimen at US); 3 mi N of Rodeo, 19 Sep 1935, K.W. Parker 720 (specimen at NMCR). Identification: Tufted perennial; stems erect; panicle branches spike-like, persistent; glumes persistent. Similar to *Bouteloua barbata* but perennial, and to *B. gracilis* but with numerous panicle branches.

Otero County:

*Panicum lepidulum* Hitchcock & Chase

Known locality: Mayhill, 5500 ft, July 1950, H. Benham s.n. (specimen at UNM). Identification: Tufted perennial; panicle open; spikelets 4-5 mm long, pointed; first glume about 1/2 as long as the spikelet. Similar to *Panicum hallii*, which has smaller spikelets and curly blades.

Sandoval County:

*Muhlenbergia arsenei* A.S. Hitchcock

Known locality: Jemez Springs, soda dam, 10 Aug 1938, L.N. Goodding 329 (specimen at NMC). Identification: Perennial from a spreading base; culms wiry; blades involute; panicle narrow, purplish; glumes shorter than the floret, pointed; lemma sparsely pubescent on the lower half; awn 6-10 mm long. Similar to *M. pauciflora*, which has a glabrous or slightly scaberulous lemma.



San Miguel County:

*Bromus briziformis* Fischer & Meyer

Known locality: Pecos National Forest, 7000 ft, south slopes, July [no year, but before 1913], M. Gregory 103 (specimen at ForSer). Identification: Tufted annual; foliage pilose; panicle open, lax or drooping; glumes and lemmas broad, papery, awnless, the spikelets resembling a rattlesnake rattles. An introduced species from the Mediterranean region.

*Bromus sterilis* Linnaeus

Known locality: Las Vegas, 15 June 1977, Br. G. Arsene 18909 (specimen at US). Identification: Tufted annual; foliage, especially the sheaths, pilose; panicle open, drooping, the primary branches mostly with a single spikelet; glumes and lemmas narrow, membranous; lemmas 14-20 mm long; awns 15-30 mm long. Easily confused with cheatgrass (*Bromus tectorum* L.), which has shorter awns and lemmas.

*Muhlenbergia andina* (Nuttall) A.S. Hitchcock

Known locality: Upper Pecos River, Winsor's Ranch, 8400 ft, 16 Jul 1908, P.C. Standley 4559 (specimen at NMC). Identification: Tall rhizomatous perennial, 0.5-1 m tall; blades flat; panicle narrow and spike-like, silky-hairy; glumes very narrow; floret with long silky hairs as long as the body of the lemma.

Sierra County:

*Eragrostis hypnoides* (Lamarck) B.S.P.

Known locality: 300 yds below high water mark, and 2-3 miles below mouth of Monticello Canyon on the beach of Elephant Butte Dam, 10 Jul 1941, J.O. Bridges 1654 (specimen at NMCR). Identification: Stoloniferous annual, creeping and mat-like; panicles few-flowered, small, 1-5 cm long; spikelets with several florets.



Taos County:

*Poa wheeleri* Vasey

Known locality: Carson National Forest, Gold Hill, 11,500 ft (fide R. Soreng). Identification: Plants unisexual, all the spikelets either male or female, rhizomatous; panicle open, the branches drooping or reflexed; lemmas strongly nerved, pubescent on the nerves but glabrous between, without a cobwebby base.



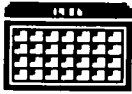
Six-weeks grama  
*Bouteloua barbata*

may be awnless.

Torrance County:

*Tridens flavus* (Linnaeus) A.S. Hitchcock

Known locality: Hagerman Ranch, northwest of Cline's Corners, summer 1950, H.P. Benham s.n. (specimen at UNM). Identification: Tufted perennial; basal sheaths compressed-keeled; blades flat; panicle open, pyramidal, purplish, the branches drooping and sticky-viscid; spikelets with several florets; lemmas 3-nerved, pubescent on the nerves,



# CALENDAR

## OTERO

- 27-29 August. Magdalena trip.
- 4-6 September. Cottonwood Festival in Alameda Park.
- 10-12 September. NPS State Meeting in Las Cruces
- 2 October. Potluck and seed exchange at Claypools in Bent.

## GILA

- September 12. McMillan Creek. 8 a.m. WNMU Fine Arts.
- Sept. 10-12 NPS State Meeting in Las Cruces
- Sept. 23. "Southwest Floristic History" by Ralph Fisher. 7 pm. Carter House.
- 24 October Tres Hermanas field trip. 9 a.m WNMU Fine Arts Bldg.
- 28 October. "Teaching Botany" 7 pm. WNMU Biology Lecture Hall

## LAS CRUCES

- 28 August Florida Mtns. Field trip. Pan Am lot 7 a.m.
- 8 September "Historic Changes in NM Vegetation" by Dick-Peddie 7:30 NMSU Ag. bldg. Rm 200
- 10-12 September. NPS State Meeting Host.
- 13 Oct. "Las Cruces Nature Park" by Paul Hyder. Ag. Bldg. Rm 200.
- 17 October. Robledo Mtns. Field Trip. 8 am Pan Am Lot.

## SANTA FE

- 10-12 September. NPS State Meeting, Las Cruces
- 25 September. Ball Ranch Field Trip. W. Pera Lot at 9 a.m or Budagher's I-25 exit at 9:45.

## ALBUQUERQUE

- August 21-22. Plant Sale. Albuquerque Garden Center.
- 10-12 September. NPS State Meeting. Las Cruces.

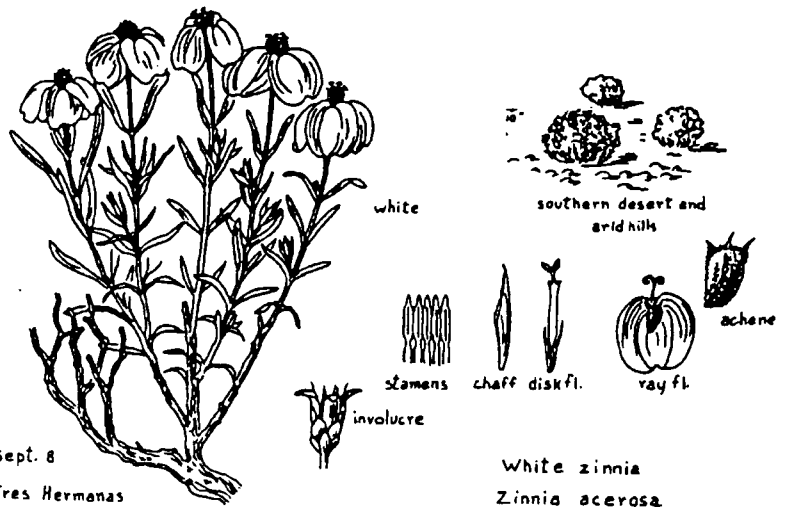
## Housekeeping Notes

Thanks to Paul and Betty Shelford for attaching the corrections to the calendar for last months newsletter. That took a lot of extra time in addition to the time they spend in getting the *Newsletters* mailed.

NPSNM, as previously noted, currently lacks a vice-president. The board will be electing someone to fill out the term (one year) of the vacancy. If you are interested or know anyone who is, please contact any board member.

Our slide presentation in Las Cruces after saturday's banquet promises to be a lot of fun. Please feel free to bring any slides that you think the other members will enjoy. In order to keep the program at a reasonable length, however, please do not bring more than 2 or 3 slides per person.

You may ignore this note unless you're planning to move (Americans move once every five years on the average). Each person who moves without notifying the NPS of the address change in advance costs the society nearly \$2.00!



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## CHAPTER REPORTS

Las Cruces-Paul & Betty Shelford

Otero-Jean Dodd

6-28-93

Red Cloud, near Corona, is an excellent place for camping, picnicking or an NPS field trip in the Cibola National Forest. The entrance is approximately 9 miles south of Corona. Cholla were blooming along the roadsides as were verbena, fleabane, green thread (*Thelesperma magapotamicum*), yucca, doneflower, and red paintbrushes. As we approached the forest we began to see pink phlox and lupine. Near the campground were snowberry, Mexican squaw root (*Conopholis mexicana*, broomrape family) yellow puccoon, vetch, and mountain parsley.

The group that gathered at Timberon 7-17-93 included members from Alamogordo, LaLuz, the surrounding canyons, Tularosa, Mayhill, Cloudcroft, Ruidoso, Timberon, and Lubbock, Tx. We all enjoyed the hospitality of Frank & Judy Holcomb Medieros and daughters. The Holcomb Ranch in Monument Canyon is pretty much untouched, at least where we went, so consequently the mature size and variety of trees and shrubs is a joy.

Some of the trees are Chokecherry, Hop Tree, Velvet Ash, Box Elder, SW White Pine, Ponderosa Pine. Some of the shrubs are Mt. Mahogany, Pink wild roses, Louisiana Sage-*Artemisia ludoviciana*, fragrant mock orange, Jamesia, Mt. Spray, Baneberry with its eye-catching bright, red poisonous berries, and buckthorn. Wildflowers were everywhere along the road to Timberon as well as on the ranch. Green-flowered macromeria-*Macromeria viridiflora* is one of the plants we see only in the mountains. An as yet unidentified mushroom was indeed a find. The white stalk held up a quite large bell-shaped off white mushroom with black spots. The bottom edge looked like a lady's ruffled skirt.

Albuquerque - Lu Bennett

In June the Albuquerque Chapter joined the Albuquerque Wildflower Club at the lovely Native plant garden of Phyllis Scott. Following a tour of the garden, Brett Bakker of Native Seed Search gave a very informative presentation.

On June 28, 1993 the Albuquerque Chapter had a field trip to Cactus Hill near Las Vegas, New Mexico to see the *Penstemon ambiguus* in bloom. This is a very beautiful sight to see.

The July regular meeting of the Albuquerque Chapter featured Dr. Lynn Ellen Doxon, the "High Desert Gardener" seen at noon on Channel 13 and columnist in Albuquerque newspapers. Dr. Doxon gave an excellent slide presentation of Xeriscape. She showed what xeriscape isn't as well as many slides of xeriscapes. The slide show is one she uses for various groups including the Master Gardeners at the Albuquerque Garden Center. It is highly recommended.

Our guest speaker for the June 9th meeting was Ted Floyd, graduate student from Penn State, who is doing his second summer of dissertation research in the Journada Ranch area. His topic was "Avian-Plant Interaction on the Journada." This is one of the "Long-Term Ecological Research" projects sponsored by the National Science Foundation. Mr. Floyd's particular specialization in this area is "The Ecology of Creosote Bush Insects." Vegetation volume is not a good predictor of bird density, but insect density is. Both the cactus wren and the black-throated sparrow forage creosote bush for crab spiders, grasshoppers and twig caterpillars. When nothing grows around creosote bush, it is not because of the chemistry of this particular bush, but rather because the soil is so poor that nothing else can grow in that area.

On June 13th, Tom Wootten led a field trip up into the Karr Canyon area near Cloudcroft. There were locust trees in bloom along the road. Blooming wildflowers included Southwestern penstemon, desert rose, red and yellow columbines, red-osier dogwood, milk vetch, Jacobs ladder, Canada violet, wild iris, thimbleberry, choke cherry and fivefinger cinquefoil.

The presentation at our July 14th meeting on wolves was led off by Wayne Suggs, local folksinger and guitarist, who had written a song, "Let Them Cry," after reading Aldo Leopold's writing of the cry of the Mexican wolf. This evocative song set the tone for the presentation on reintroduction of the Mexican wolf by Vickie O'Toole, project manager for the Mexican Wolf Advocacy Program, a part of Defenders of Wildlife. We watched a slide presentation prepared by the U. S. Fish and Game Commission on the Mexican wolf, a subspecies of the gray wolf. Minnesota has 1,500 gray wolves, and the annual loss to ranchers of that state is five cows out of 10,000 and 12 sheep out of 10,000. Even the livestock growers of that state approve of maintaining the wolf population since only the sick and elderly stock fall prey to the wolf. Polls show overwhelming citizen support for reintroduction of the Mexican wolf to the Southwest, however, the New Mexico Park and Wildlife Service has yet to respond to the U. S. Fish and Game Commission's overtures. There is even a fund set up to reimburse ranchers who lose stock to the Mexican wolf should it be reintroduced, yet the prejudices of ranchers prevail. Many voices speaking out will pressure politicians to allow the reintroduction of the Mexican wolf to the White Sands Missile Range.

On July 18th, Herb Ruetzel led a field trip up to the Springtime Campground in the San Mateo Mountains of the Cibola National Forest. From there we hiked up a trail into the Apache Kid Wilderness. Trees identified in the forest were Arizona walnut, mountain mahogany, alligator juniper, ponderosa pine, Arizona oak, Gambel oak, aspen and spruce. We were rewarded with a good selection of wildflowers including barberry, chocolate flower, mallows of pink, orange and purple, buckwheat, rue, pinnate-leaved daisy, prairie bluet, wild cosmos, mintleaf beebalm and skyrocket. The road back through Luna Park was often lined with prickly poppy.

# Back to Basics: The Zen of Green Living

by John Naar

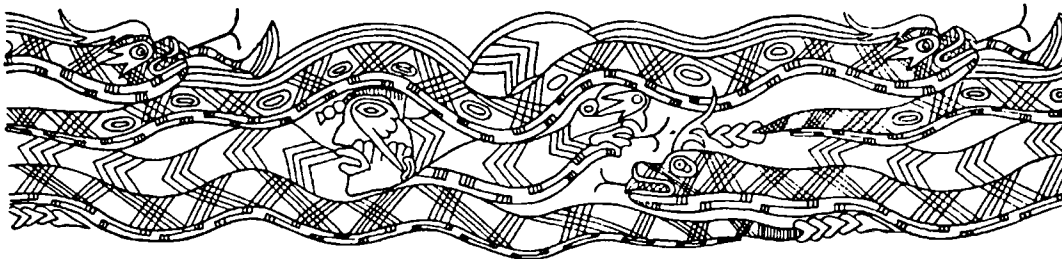
excerpted from the *Audubon Activist*, June 1993

Like many *Activist* readers, I think I do my bit for green living—shopping with a string bag, recycling paper and plastic, and often traveling by bike instead of bus or automobile. Yet, I keep wondering, do all these things really make a difference? U.S. production of waste increases relentlessly at 7 percent a year. The ozone hole gets bigger. Forests and other ecosystems are more endangered than ever.

Some gains are made, but so often the good news is offset by the bad. Paper recycling means cutting down fewer trees, but the export of lumber to the Far East causes many more trees, including ancient forests, to be clearcut. Bike riding is up but so is the number of cars and trucks on the road, producing more air pollution. Are we fighting a losing battle, or perhaps the wrong war?

According to some experts, much of what we do to save the environment is ineffective because it deals with symptoms, not causes. The basic task, they emphasize, should be to eliminate pollution, not to control it, and certainly not to recycle it back into the environment. Many things we live in close proximity with are toxic time bombs, says architect William McDonough, citing television sets as an example. "Each TV set contains 4,060 chemicals, including 18 grams of highly toxic mercury," he says.

Even something as beneficial as energy conservation cannot alone provide salvation from global warming and other long-



range problems, warns biologist Barry Commoner. In China, for instance, plans to cut fossil fuel use, and thus carbon dioxide emissions, by 25 percent are likely to be nullified by the country's desire to increase economic production by 50 percent in ten years.

Before we throw in the (natural-cotton) towel, however, let me suggest a way out of this dilemma. As a basic principle of green living, we might begin by reexamining our relationship to the environment. Simply put, **the earth does not belong to us; we belong to it.** With this realization comes the equally important recognition that our acts have a palpable impact on the immediate environment—the "bioregion" where we live, and a cumulative impact on the biosphere. By taking responsibility for our actions, we embark on a process of personal and societal regeneration, which in turn will allow nature's self-healing process to continue.

Back to the string bag—why save an ounce of plastic every week if we fill it with cleaning products that have water-polluting chlorine bleach, or unrecyclable packages? Why not eschew such "convenience" products when we can get healthier alternatives—such as baking soda for cleaning, or food in bulk—at half the price?

We can even influence the system of production and distribution of goods and services by actions like buying from farmers' markets and food co-ops or educating local supermarket managers to carry locally grown produce.

But a nagging question remains: Can these piecemeal efforts reverse the business-as-usual course that is the crux of our ecocrisis? Given the magnitude of the environmental threats, it may be that radical action is needed. Radical literally means "getting back to the roots". So before we go out and change the world it is imperative that we get in touch with our own "roots" and reconnect with the natural world we are part of. By practicing "green living" in our own lives, we build a base from which we can individually and collectively take action. Within this context, the following Back to Basics guide may serve as a starting point toward a "Zen of Green Living":

1. Redefine your purpose. In yoga we learn that if you don't have a goal you won't reach it.

2. Realign yourself at the heart center. Meditate on who you are and how you relate to the universe. You are not separate from the environment but an integral part of it. In the words of Aldo Leopold, "We are only fellow voyagers with other creatures in the odyssey of evolution."

3. Remember that nature knows best. Major changes wrought by humans on a natural system are likely to be harmful. Left alone, these systems provide inexhaustible benefits to humans.

4. Respect the community of all species. Again to quote Leopold, "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise."

5. Reacquaint yourself with nature. Look at the stars and the moon. Listen to the songs of birds and the sounds of frogs. Appreciate the importance of trees in connecting earth, water, and air, as well as for

their own power and beauty.

6. Help preserve the natural world. Without it, we lose ecological richness and native biodiversity. To stem the mass extinction of species caused by human activity, we must allow the recovery of ecosystems in every region of America. Work with National Audubon and other conservation groups in what may be the most important priority of our generation.

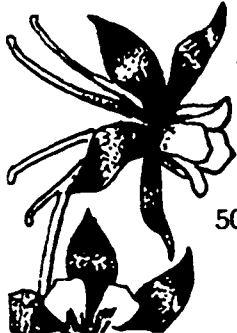
7. Rejoice in living more lightly on the planet. A lifestyle closer to nature will feel better physically and spiritually. Eating low on the food chain will make you healthier, as will living and working in buildings designed to take advantage of orientation, climate, and natural conditions.

8. Join with others. As an Audubon activist, you already know the power of working with others to influence policies and politics at local, state, federal, and international levels. Increase your partici-

pation. Mobilize your family, friends, and colleagues to bring about social change and environmental justice.

9. Read or reread: Lao-tzu's *Tao Te Ching*; John Muir, especially *Wilderness Essays*; Ralph Waldo Emerson and Henry David Thoreau; Aldo Leopold's *A Sand County Almanac*; Rachel Carson, especially *Silent Spring*; Barry Commoner's *The Closing Circle*; David Ehrenreich's *The Arrogance of Humanism*; Arne Naess' *Ecology, Community, and Life Style*; Kirkpatrick Sale's *Dwellers in the Land*; Murray Bookchin's *Ecology of Freedom*; and (with some lack of modesty) Jon and Alex Naar's *This Land Is Your Land*. Keep using that string bag!

Jon Naar is the author of *Design for a Livable Planet* and the recently published *This Land Is Your Land*.



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and perennials

of it is from a gift to the chapter from Bill. The Otero Board recently decided to give some of this money to the NMSU Herbarium to be used for student employment at the Herbarium. Specimens processed by the student contracted under the Memorial Fund will bear the label

"This specimen was prepared with the assistance of a donation from the New Mexico Native Plant Society, Otero Chapter, in memory of Bill Mayfield."

Since collections are borrowed by Herbariums all over the world, it is possible that Bill's name will be well travelled on specimen sheets for a very long time to come. For those of you who knew Bill, we hope you are pleased. If any of you would like to add to this fund, you can do so by sending a check to:

Biology-Herbarium Fund  
Dr. Richard Spellenberg  
Curator of the Herbarium Department of Biology  
New Mexico State University  
Las Cruces, New Mexico 88003-0001 (505) 646-3732

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


## BILL MAYFIELD

by Jean Dodd

He was a home builder and land developer in El Paso who believed in fitting the house into the existing landscape with as little disturbance as possible to the natural setting. Some said he was before his time. Both during and after his retirement he promoted causes such as: to encourage parks people to use plants with low water requirement; seed wildflowers around the El Paso airport to welcome people coming into the city; and highway beautification. After his retirement to Bent, N. M. he would take off in his old car rigged to blow wildflower seeds out onto the roadsides. We could depend on him to come back with a large supply of native plants both for himself and to sell to the rest of us. This was our only source of supply at the time.

The El Paso Native Plant Society was started by Bill as was the Lincoln-Otero Chapter in New Mexico; later the Roswell Chapter, too. Note your collection of NMSU Extension Service Bulletins to see how many were sponsored by Bill. Local libraries were furnished with books about native plants both during his lifetime and after he died of cancer (through his will). You could pick out Bill in a group. He was the one with a wildflower in his shirt pocket, usually a *Baileya*.

The Otero Chapter of the Native Plant Society of New Mexico has had a memorial fund in Bill Mayfield's name since his death. Much



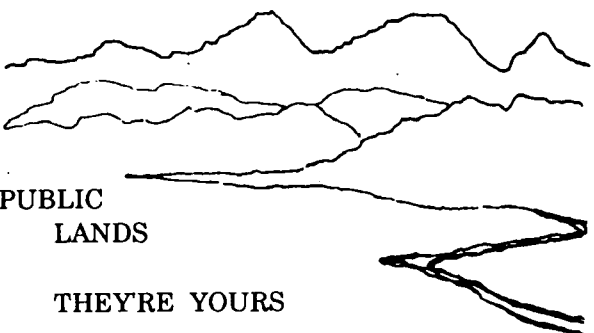
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# Flora Neomexicana:

## Weed: A Four-Letter Word

by Robert Sivinski

The word "weed" tends to evoke images of unkempt and disordered landscapes where the good and natural world is under attack by something evil and insidious. Anyone who has suffered allergic reactions to kochia pollen (*Kochia scoparia*: an escaped ornamental of Eurasian origin) or walked barefoot through a patch of puncture vine (*Tribulus terrestris*: Mediterranean in origin) will have no trouble calling these plants weeds in the most derogatory sense of the word. Labeling a plant as a "weed" will often encourage people to reach for a shovel or herbicide to effect its immediate removal. I have always defined the term "weed" as any plant that is growing in a location where it does not belong. This applies mainly to non-native species and artificial situations like cultivated ground where food or ornamental plants are being nurtured. Any unwanted plants will contaminate or compete with this highly controlled effort. Since weeds can be an economic detriment to intensive agriculture, the discipline of Weed Science was established to combat plant pests and the word "weed" has become synonymous with "pest". It appears, however, that Weed Scientists are becoming a little too loose with the "weed" label.

I recently picked up a copy of the book *Weeds of the West* (Whitson *et al.*, 1992) to learn which plants had been condemned as weeds. I expected to find an assemblage of non-native, really obnoxious agricultural pests such as field bindweed (*Convolvulus arvensis*). Much to my surprise, almost half of the plants listed in this weed reference book are native taxa. It seems any native plant that was ever suspected of making a cow sick is now considered to be a weed. Several native plants (*Glycyrrhiza*, *Lappula*, etc.) are given weed status by Weed Scientists simply because they are guilty of producing burs that stick to sheep wool (I have personally had these annoying little fruits stick to my socks, but I never called them weeds). Some seem to be designated as weeds only because they are common and livestock will not eat them. For instance, the first weed illustrated on page one of this book is *Yucca glauca*. This is our state flower, the phytological symbol of New Mexico. Why has it been relegated to the list of common plant pests? Even the seemingly innocuous scarlet globe-mallow (*Sphaeralcea coccinea*) and bee-balm (*Cleome serrulata*) are listed as weeds. I can think of no reason why these lovely, even desirable, native species should be considered problem plants.

To find the criteria for inclusion in this weed book, I flipped back to the introduction in search of a definition for "weed". I found a quote from J.M. Torell defining a weed as "A plant that interferes with the management objective for a given area of land at a given point in time." This is, no doubt, a correct definition, but it is too inclusive for a word with such derogatory connotations. Even a ponderosa pine tree is a weed if it occurs within the approach path of an airport runway. All rare plant species listed under the Endangered Species Act are, by this definition, weeds because they can interfere with industry objectives for natural resource extraction from our public lands.

Since all the potential weeds (all plants) are not included in this book, it becomes obvious that most of the native species named as weeds are only objectionable to a few people in the ranching industry.

This is understandable when native species such as death camas (*Zigadenus* sp.), milkvetch (*Astragalus* sp.), crazyweed (*Oxytropis* sp.) or larkspur (*Delphinium* sp.) are poisonous to livestock, but not sufficient reason to advocate herbicide eradication. Most poisonous plants are highly unpalatable and will not be eaten when other suitable forage is available. If a rancher's cattle or sheep are forced to forage on toxic plants for lack of anything better, is it not the management that is interfering with the objective? The above genera each contain some very rare species and Weed Science tends to lump them all together as bad actors. Ranchers and Weed Control Technicians are unlikely to make species distinctions between the look-alike rare *Astragalus ripleyi* (nontoxic/palatable) and the common *Astragalus lonchocarpus* (poisonous). We could potentially lose populations of the rare Ripley's milkvetch to herbicide spraying for weed control.

Many native species such as snakeweed (*Gutierrezia sarothrae*), mesquite (*Prosopis glandulosa*), big sagebrush (*Artemisia tridentata*), prickly poppy (*Argemone* sp.), iris (*Iris missouriensis*), prickly pear (*Opuntia polyacantha*), etc. tend to become more numerous on overgrazed ranges because they are unpalatable and easily become established in disturbed conditions. These are labeled as increaser weeds and are often mistakenly accused of out-competing the more desirable, palatable vegetation. In natural grasslands, their numbers are relatively low. On overgrazed rangelands, where the grass is removed

and the soil laid bare, the species that are not palatable will quickly fill the void. Therefore, the relative densities of these plants are symptomatic (and an indictment) of the type of grazing management. These are opportunistic native species and are called weeds only because they are not useful for livestock production. It is, however, this land use (read: abuse) that has created the new habitats which encourage their proliferation.



I really take exception to the weed label being applied to native plants that occupy a narrow range of habitat types and are the naturally dominant species in their respective vegetation communities. For instance, sand sagebrush (*Artemisia filifolia*) is on the weed list, but is actually a beneficial plant in New Mexico. This shrub stabilizes sand dunes and grows only on deep, sandy soils which are susceptible to wind erosion. Hopefully, no sand sagebrush populations will be subjected to weed control programs. We could soon have several active sand dunes slowly marching across the landscape. Other so-called weeds are the rushes (*Juncus*: all species). Rushes are some of the natural dominant species of wet, boggy soils and belong exactly where they are on stream banks and spring cienegas. They are not very edible, but they are also not pests.

Since "weed" has become such a four-letter word, we should be more careful when we use it. Truthfully, some native plants can become significant agricultural pests (*ex.* pigweed: *Amaranthus retroflexus*). However, most of our other native plants (out in their natural habitats) do not deserve this disparaging label. In the past, the word "weed" also indicated something that was common, so it shows up quite regularly in our popular names for native plants. Maybe it is time to change a few of these names (common names are not subject to rules in the International Code of Botanical Nomenclature). For instance, we could change dogweed to dogdaisy or simply dyssodia. Snakeweed could become golden soil-savior since it has almost single handedly saved millions of tons of topsoil on New Mexico's historically overgrazed rangelands from washing down the Rio Grande.



# The Sacred Apple

by Michael Plagens

reprinted from *The Plant Press*, AZ NPS, Fall 1990

For many biologists and nature lovers Arizona is a paradise. The unrivaled diversity of plants and animals allows for fascinating discoveries on every outing to the deserts and mountains. One of the more fascinating of Arizona's plants is *Datura meteloides*, also called "The Sacred Apple" or "Angel's Trumpet." Wanting to enjoy this plant closer at hand I transplanted a potato-like tuber from this plant to the small garden at our Phoenix condo. (The underground tubers contain an alkaloid that can produce hallucinations and death, thus the source of the common name.)

At first the tuber didn't sprout any shoots and I feared I had injured it too severely during transplant, but a month later dark green leaves appeared and grew rapidly to produce a plant two feet tall. That first year it didn't bloom, but instead recovered its strength and developed a large root store. The winter's frost killed the plant back to the roots but with spring it again grew rapidly, even wildly. Soon I was cutting it back or else it would have taken over my whole patio.

But still it didn't bloom. By April, buds had begun to form and then would wither. This was disappointing because datura's flowers are truly spectacular. The lily-white blossoms are fully five inches across and have a long graceful funnel; in fact they bear a striking resemblance to the Easter Lily. Finally the buds grew long and stout but remained green until at last they began to fade to white. Any day they would open. It was late May and the evening had cooled sufficiently for us to open the windows and doors. Just after the sun set, as we were finishing dinner, a strong perfume came in on a breeze. At once we knew the datura had bloomed. We rushed out to see a glorious white blossom greeting the dusk air. All night the flower stood beckoning a pollinator with strong perfume and a reward of nectar at the bottom of the funnel. Not bees for this night-blooming flower—instead this plant requires the visit of a large sphinx moth. Only the sphinx moth with its long tongue (up to six inches) can reach the nectar. Bees and ants which visit the next day find themselves trapped at the bottom of the long, waxy and slippery tube. By 10:00 A.M. the flower wilts under the hot sun and turns brown.

If no sphinx moth visits and cross-pollinates the flower, the fruit and seeds will not develop. Cross pollination means the sphinx moth must carry pollen from another datura plant. For two weeks we watched at dusk as one to several flowers magically popped open like clockwork as the sun went down. None were pollinated until one night in late June there were twenty-five flower buds all ready to open at once. To me it was a grand show of beauty but the

plant was making a major effort to attract the needed pollinator. The fragrance was overwhelming...from several houses down the street I could detect the characteristic perfume. Would this be the night a sphinx moth would find this isolated plant? The next morning I inspected the flowers, still magnificent in the cool dawn. Ah ha! There! On the white throat of a blossom was a dusting of minute dark hairs that had rubbed off the big moth as it entered the flower for a welcome reward of nectar. How far the moth had come I couldn't know, but now the datura fruit could develop if the moth had brought pollen from another datura plant.

Soon the fruits began to develop...odd spiny things that look rather like castor bean fruits. But at the same time holes began to appear in the leaves. Datura needs the sphinx moth for pollination, but then the moth lays eggs that turn into caterpillars that eat datura's leaves. Sphinx moths can lay many eggs and there were probably visits by more than one moth. Soon there were hundreds of rapidly growing caterpillars. Within two weeks of the initial visit by the sphinx moth, the entire plant, which had covered most of my patio area, was stripped clean of leaves. The huge green worms then gnawed the stems and unopened flowers. I trimmed the naked stems all back to the base, figuring the other plants in the garden needed a chance to grow anyway. The caterpillars crawled away to pupate in underground cells.

It seems ironic that the plant's needed pollinator also causes its destruction. But springtime brings new life as the underground

tubers send forth abundant new growth and more beautiful flowers, while the hidden caterpillars have also completed development into large gray moths that hatch and fly off in search of mates and more *Datura* plants.

This spring, as the datura entered its third year of growth in our garden, aphids also found the plant suitable to feed on. They sucked sap from tender shoots and the undersides of leaves. Just as the plant began to show signs of the aphids' ever increasing numbers, a pair of verdins discovered the bonanza and began making daily visits to glean a meal of aphids. These delightful little birds would also take most of the caterpillars before they grew large enough to do significant damage.

Native Arizona plants are thus anything but dull scraggly shrubs. They are fully alive and present

fabulous dramas of ecology from the natural desert that surrounds us. By planting native plants in our yards and gardens we can bring at least a part of Arizona's natural heritage into our daily lives.

