

NEW MEXICO'S VOICE FOR NATIVE PLANTS



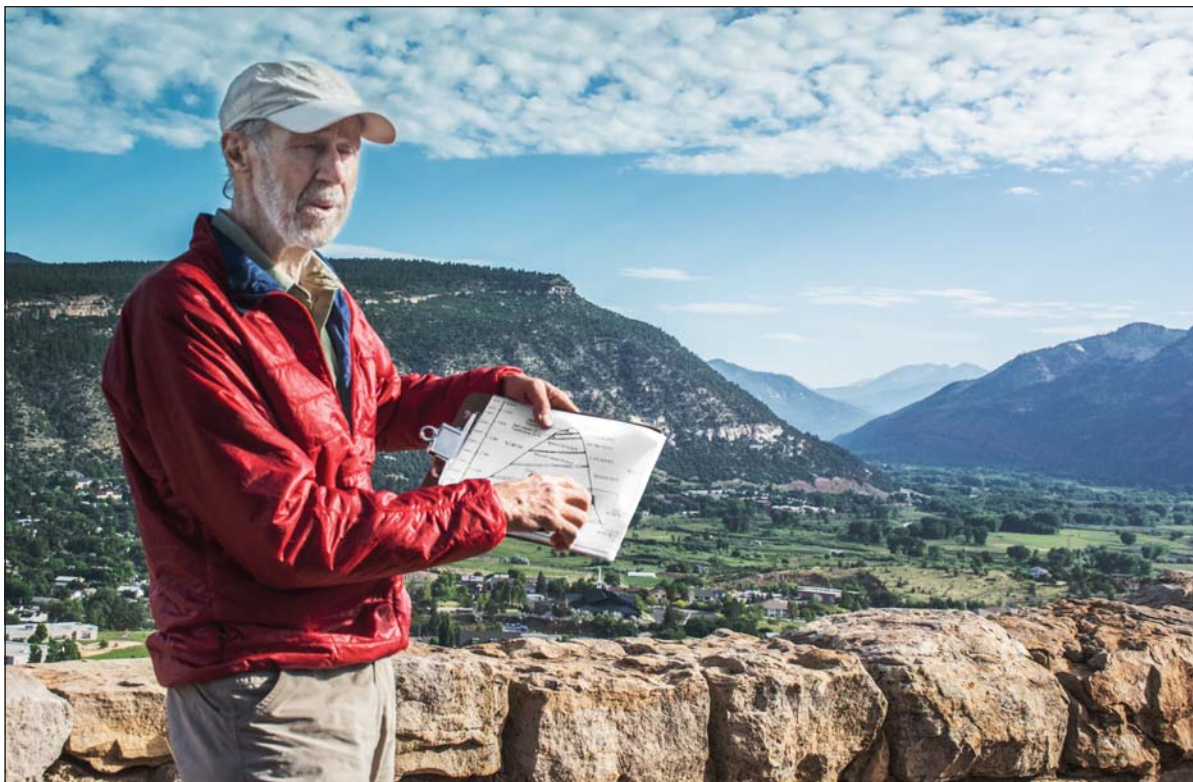
NEWSLETTER

of the

NATIVE PLANT SOCIETY
OF NEW MEXICO

OCTOBER, NOVEMBER, DECEMBER 2015

VOL. XXXX NO. 4



Will Rietveld, trip leader, explaining the concept of "life zones" during his July annual meeting field trip. See "Field Trip Field Notes," page 12. Photo: Vicky Ramakka

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From the President

by *Barbara Fix*

It was a good day, as the two before had been. It was my third field trip of the NPSNM annual meeting in Durango master-planned by Al Schneider. After slog-ging across fens and wetlands, our last stop was at Baker's Bridge, where, according to the trip co-leader Bob Powell, the Animas River gorge cuts into late Precam-brian granite, the basement to the sedimentary rocks in the valley that spreads below the bridge. Families with children were climbing around the nearby boulders. Co-leader Kara Hellige, a supervisor with the US Army Corps of Engineers, explained some of the intricacies and challenges of that site as well as the fen and wetlands we had explored. What a shock to the heart and soul when, less than three weeks later, that river ran yellow and orange with toxic heavy-metal sludge released from a mountain gold mine abandoned over 90 years before.



plant known in each county of the United States. (See his website, bonap.org. Such systemics are also avail-able at Al's own site, swcoloradowildflowers.com.) Long-term studies such as the one conducted by David Inouye at the Rocky Mountain Biological Laboratory near Crested Butte also are necessary for understand-ing and coping with climate change.

All levels of involvement contribute to our purpose. NPSNM is lucky to have volunteers willing to take on the tasks necessary to keep this organization functioning and thriving, skilled people like Rachel Jankowitz, representing our conservation concerns; Pam McBride, overseeing our finances and investments; and too many others to list here. With grace and confidence in science-based treatment of native plants, we will indeed succeed. ❖

From flooding following massive wildfires in misman-aged forests to other forms of habitat loss—this kind of hu-man destruction, in all its various forms, must prompt us to rededicate our efforts to educate about, conserve, and protect native plants. In the Anthropocene, this time of cli-mate and societal change, we each must find our own best ecological niche, where we are most functional and most comfortable.

Two examples of total dedication are the speakers Al Schneider invited to the annual meeting. John Kartesz has for years taken on the monumental task of listing every

Equal Protection for Plants

Along with over 60 other conservation organizations in the United States, the Native Plant Society of New Mexi-co, at its July 16 board meeting in Durango, endorsed the open letter calling for equal protection for plants under the federal Endangered Species Act. The text of the let-ter is on page 6, as well as on the NPSNM website under "Conservation, NPSNM Actions."

Please Note: Membership Dues Changes for 2016

by *Bettie Hines and Pam McBride, Albuquerque Chapter*

Because of a recurring deficit in the operating expenses, the NPSNM State Board voted that an increase in membership

dues is necessary. Effective January 2016, new memberships and renewal dues will be:

- Individual** \$ 30, an increase from \$25
- Family** \$ 45, an increase from \$30
- Friends of the Society** \$ 60, an increase from \$50
- Sponsor** \$125, an increase from \$100
- Patron** at \$250 and **Life Member** at \$1,000 remain the same.
- Students, Teachers, Seniors, and Limited Income** \$ 15

(Note that this category has added teachers and remains at the previous level.)

Thank you for your continued support and membership!

Conservation Corner

by Rachel Jankowitz, NPSNM Conservation Committee Chair

Message to the Membership

What's going on in your neck of the woods (or desert)? We would like to highlight chapter and individual member conservation activities and achievements. Please drop a line to npsnmconservation@gmail.com and let us know what you've been up to.

Castner Range

At the request of the El Paso chapter, NPSNM has sent comments to the Franklin Mountains Wilderness Coalition in support of conserving open space on a former military test range. Here is an excerpt of the comment letter:

"The Castner Range is a parcel of approximately 7000 acres within the city of El Paso, formerly used as a firing range. Clearance of unexploded ordnance would be required before public access is possible. The property comprises mid to lower elevations on the east side of the Franklin Mountains. It is bordered on the north and northwest by Franklin Mountains State Park, the nation's largest urban state park, and otherwise surrounded by densely developed private residential and commercial property. NPSNM supports conserving the Castner Range by adding it to the state park, or by pursuing alternative mechanisms such as a new urban National Wildlife Refuge or state Wildlife Management Area.

"The topographic relief and complex geology of the Franklin Mountains, as well as the presence of active springs, results in high biodiversity within the northern Chihuahuan desert setting. Botanically, the area is best known for spectacular floral display from extensive fields of Mexican poppy, and it appears to be at or near the easternmost range limit for Southwestern barrel cactus, another conspicuous and esthetically pleasing plant. According to Dr. Richard Worthington (ret.) of UTEP, the granite substrate in El Paso County is uncommon and isolated from other igneous rock mountain masses and supports species from Sonoran areas to the west. A number of species that are found in the Castner Range occur in Texas only on the granite substrate. The species are not rare elsewhere but constitute a state resource. Good examples are the poppy and the barrel cactus. Something close to 20 species enter Texas on the granite of Castner Range.

"Other values which would be promoted by conserving the Castner Range include scenic beauty (from Highway 54 and from residential neighborhoods of El Paso), urban open space, wildlife movement corridors and the potential for recreation and education. NPSNM supports increased opportunities for access and appreciation of the natural world by urban populations."

State Wildlife Action Plan (SWAP)

NPSNM has provided the NM Department of Game & Fish with input on the SWAP revision. Our comments centered on the following issues:

- A botanical counterpart to the SWAP is forthcoming, to be called the NM Rare Plant Conservation Strategy. We requested that NM Dept. of Game and Fish (NMDGF) mention this document in the SWAP, and add an appendix listing NM rare plants and/or a reference to the Rare Plants Technical Council website, in order to inform users interested in comprehensive biodiversity conservation.
- Climate change will be of central importance to biodiversity conservation in the upcoming 10-year plan period, and it is not clear how this section will be integrated with the rest of the document. In particular it is important to specify which climate change scenarios were used to make quantitative predictions regarding species and habitats.
- The SWAP Conservation Opportunity Areas (COA) map now highlights specific locations, replacing the statewide gradient map in the older Comprehensive Wildlife Conservation Strategy. It does seem that this approach will facilitate targeting of efforts to protect habitat. The map shows the northern half of the state, and the northeast in particular, relatively lacking in such opportunities. If possible at least one northeastern location could be added in the interest of serving the needs of the entire state. We requested that NMDGF explicitly identify the existence of the Endangered Species Act-listed Pecos sunflower in the Middle Pecos River COA and Zuni fleabane in the Zuni Mountains COA. There may be opportunities to benefit both Species of Greatest Conservation Need wildlife and rare plants in these locations. The Rare Plant Conservation Strategy will have a very different COA map, which will at the least include the Santa Rosa artesian basin.
- We made comments focused on improving the readability of the SWAP format, in particular the Threats to Habitat and Conservation Actions sections. We recommended that the Terrestrial and Aquatic habitat maps will need to be interactive so that users can zoom in to identify habitat categories on a project scale.

Continued page 5

The Newsletter of the NPSNM

October–December 2015. Vol. 40 No. 4. This newsletter is published quarterly by the Native Plant Society of New Mexico (PO Box 35388, Albuquerque, NM 87176) and is free to members. The NPSNM, a nonprofit organization, 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 attributed to the author and to this newsletter.

Views expressed are the opinions of the individual authors and not necessarily those of NPSNM.

Next deadline is December 1, 2015. Articles and high-resolution artwork supporting the NPSNM's mission are welcomed and can be sent to the editor, Sarah Johnson, at sarita@gilanet.com, or PO Box 53, Gila, NM 88038.

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Mission The Native Plant Society of New Mexico (NPSNM) is a non-profit organization that strives to educate the public about native plants by promoting knowledge of plant identification, ecology, and uses; fostering plant conservation and the preservation of natural habitats; supporting botanical research; and encouraging the appropriate use of native plants to conserve water, land, and wildlife.

Conservation Corner (continued from p. 3)

Santa Fe Cholla

From a State Forestry Division press release:

A very rare cactus found only in three areas between Santa Fe and Chimayo has a new home thanks to volunteers who transplanted nearly 200 Santa Fe cholla, or *Cylindropuntia viridiflora*, on Aug. 1 at the Santa Fe Institute.

State Forestry Division's endangered plant program coordinator Daniela Roth coordinated the effort between the Santa Fe Institute (SFI), NPSNM, the Cactus Rescue Project, and the Santa Fe Botanical Garden to establish a permanent conservation site for the cholla, which can't be found anywhere else in the world. The Cactus Rescue Project propagated all the cacti and provided them for this conservation effort.

"We thank the Santa Fe Institute for generously donating the time and planting site for this important conservation effort that not only helps provide a place safe from future development for these rare cacti to grow, but also serves to educate the public on the topic of threatened and endangered plant issues happening around New Mexico," Roth said.

The SFI campus solar orientation and soil composition make it an ideal location for the Santa Fe cholla. While SFI visitors, staff, and faculty may view the endangered plants, they are prohibited from collecting cuttings, plants, or seeds without a permit.

Roth said she predicts a 70 percent success rate and will monitor all transplanted cholla once a year for dead plants, reproduction, vigor, disease and seedlings.

The Santa Fe cholla has salmon colored flowers and is bushier than the tree cholla, which has magenta-colored flowers. ❖



Top: Volunteers get monitoring instructions; middle row, L to R: CRP's Obie Oberhausen; NPSNM President Barbara Fix; CRP's Joe Newman; bottom row, L to R: State Botanist Daniela Roth and former State Botanist Bob Sivinski; the Cactus Rescue Project truck. Photos: Rachel Jankowitz



Equal Protection for Plants Campaign

December 17, 2002

Few people realize that the federal Endangered Species Act (FESA) provides almost no protection to most federally endangered and threatened plants. In fact, although FESA protects federally listed animals everywhere, it allows nearly unlimited destruction of federally listed threatened and endangered plants outside of federal lands—where more than 80% of federally listed plants live in California.

This outdated policy flies in the face of biological reality. Science tells us that plants and animals are inextricably intertwined and contribute equally to the health and survival of the ecosystems that sustain us all. If we are to conserve healthy ecosystems and bio-

logical diversity, we cannot pick some species to save and ignore others.

For these reasons, [California Native Plant Society] and the Native Plant Conservation Campaign launched the Equal Protection for Plants Campaign. Our goal is to amend FESA, and state species protection laws where necessary, to provide plants with the same protections that are currently provided to animals. We have launched a public education campaign and a petition drive to build support for this idea. For more information on the Equal Protection for Plants Campaign, contact Emily Roberson, EMILYR@plantsocieties.org.

Open Letter calling for Equal Protection for Plants under the Federal Endangered Species Act

Plants and animals contribute equally to the stability, health, and functions of the ecosystems on which we all depend for survival. However, plants and animals are not treated equally under the Federal Endangered Species Act.

Federally listed plant species are among the rarest and most imperiled species in our nation. But although the Federal Endangered Species Act prohibits the unauthorized destruction or even harm of Federally listed animals everywhere they occur, it allows many listed plants to be killed, without limit, on non-Federal lands, except in restricted circumstances*. In fact, some plant species can be knowingly driven to extinction without violating the Federal Act.

Lesser protection for plants is unsupportable bio-

logically. It disregards our current understanding that plants and animals are inextricably intertwined in the structure and functioning of healthy ecosystems.

Unless plant species are protected from extinction as vigorously as animals, efforts to conserve biological diversity will inevitably fail. Plants and animals depend upon each other for food, habitat, indeed for their very survival. We cannot arbitrarily pick only one kingdom to protect. Ecosystems cannot survive with only one group or the other.

For these reasons, the undersigned organizations urge that the Federal Endangered Species Act be amended to provide the same protection for plants that it currently provides for animals through all of its policies, programs, and penalties.

Signed (as of June 1, 2015),

[62 signatories]

*Section 9 (a) (1) of FESA (16 U.S.C. § 1531 et seq.) gives animals full protection from destruction “within the United States or the territorial sea of the United States” or “upon the high seas.” But Section 9(a)(2)(B) of FESA prohibits destruction of Federally listed plant species only on “areas under Federal jurisdiction.” Plants also cannot be killed in knowing violation of state law, while trespassing, or in violation of Section 7 of FESA which governs Federal agency actions.

Therefore, listed plants are only protected (1) on Fed-

eral lands or during activities that are funded, permitted, or carried out by a Federal agency and are therefore under Federal jurisdiction, or (2) in the unlikely event that it can be proved that they are destroyed in knowing violation of state law or during trespassing. Logging, housing development, mining, and other activities may all kill unlimited numbers of Federally listed plants, even cause extinction of a species, as long as the destruction does not meet these conditions.

NPSNM DOLLARS AT WORK

NPSNM Grant Report: Sandia Mountain Natural History Center

by *SMNHC Staff*

The Native Plant Society of New Mexico funded a grant to install native plants in the meadow areas of two bird blinds at the Sandia Mountain Natural History Center (SMNHC or “the Center”) in Cedar Crest, NM. The SMNHC is an environmental education center that is owned by the Albuquerque Public School System (APS) and is run by APS and the New Mexico Museum of Natural History and Science.

Using the outdoors and a hands-on scientific approach, the SMNHC teaches students about the interconnectedness of the biotic and abiotic parts of ecosystems. The Center also offers periodic programs in which the public is invited to participate in self-guided hikes, attend lectures and hands-on activities related to specific topics in conservation and ecology, and spend time enjoying exhibits in the visitor center. The SMNHC has over five miles of hiking trails, serves approximately 18,000 people a year, and provides exciting experiences with a variety of programs for people of all ages. Visit www.facebook.com/SMNHC1 to learn more.

The Center has two bird blinds in meadow areas that include seating areas to view wildlife and depressions to catch rainwater. Students and other visitors to the Center are

welcome and encouraged to utilize the blinds to view and learn more about the birds that call the Sandia Mountains home or perhaps are transient migratory species. Before the project was started, both bird-blind areas were in a relatively natural state and native vegetation was slowly returning to the disturbed soils. The purpose of the project was to install native shrubs and other perennials and to sow native grass and wildflower seeds at the bird blinds to provide food and shelter that would draw in more birds and other wildlife. This will provide students and other visitors the opportunity to learn to identify native plant species and learn more about how those plants are utilized by our feathered friends and other wildlife that frequent the area.

Native plants, native grass seed, and native wildflower seed were purchased from Plants of the Southwest. Irrigation supplies and labor were provided by SMNHC staff and volunteers. On April 23, 2015, four SMNHC staff and four volunteers dug holes, installed plants, spread seed and mulch, and put in place irrigation systems at each bird blind. Center staff maintained the irrigation system and removed weeds, primarily clover, throughout the summer. We were fortunate to have had rain for several days before and after planting in addition to a fairly wet summer. We are very happy to report that the plants and seed have flourished, and wildlife is frequenting the areas. ❖



The upper bird blind: (clockwise from top left) before project; on planting day; installing irrigation lines; and in June 2015.



The New Mexico Wildlife Center Is “Going Native”!

by Betty Sperlich, Santa Fe Chapter

A great deal of cross-pollination is happening in northern New Mexico! The Santa Fe Master Gardeners has undertaken an ambitious project to landscape, with only native plants, the 20-acre New Mexico Wildlife Center south of Española. The center is a nonprofit that rehabilitates injured wildlife; provides homes for the birds, bears, and other critters that can no longer live in the wild; and educates the public about both.

Liz Kulka, both a master gardener and a volunteer at the wildlife center, has organized and superintended the project, which will take at least five years, in stages, to complete. Master gardeners earn required credit for community service by volunteering. Many of the volunteers are also members of the NPSNM, some as a result of taking the Master Gardener course on native plants.

Highlights so far have included a planting workshop



Pollinator/Rock Garden: (left) before; (right) in process. (All photos in this article are by Betty Sperlich.)



Liz Kulka does a mulch run in the center's pick-up truck. A top dressing of composted wood chip mulch was the only soil amendment used for planting.

held at the center in April, at which Barbara Fix and Susan Westbrook discussed landscape design using native plants. Following the discussion, around 20 volunteers planted approximately 190 bare-root native shrubs at the center. The shrubs, previously purchased from the Forest Service, included Apache plume (*Fallugia paradoxa*), western sand cherry (*Prunus pumila* var. *besseyi*), silver buffaloberry (*Shepherdia argentea*), winterfat (*Krascheninnikovia lanata*), golden currant (*Ribes aureum*), chamisa (*Chrysothamnus nauseosus*), smooth sumac (*Rhus glabra*), three-leaf sumac (*Rhus trilobata*), and four-wing saltbush (*Atriplex canescens*). This event was followed in May with a planting at the center of native wildflowers plus a number of the endangered Santa Fe cholla (*Cylindropuntia viridiflora*). Labels for these plants were provided by the Santa Fe NPSNM chapter. The project's goal is not only to beautify the wildlife center and provide habitat for pollinators, including birds, bees, and other wildlife, but also to inspire people with the beauty and practicality of native plants. Stay tuned for more updates on this exciting project.

Note: The president of the Master Gardeners of Santa Fe is Deb Farson, the NPSNM administrative coordinator and webmaster-bookkeeper-organizer *par excellence*. ❖



Entrance to the NM Wildlife Center on August 22, 2015.



Barbara Fix explains how to plant bare-root native shrubs. Native plant specialist Susan Westbrook, in the red pullover, is among those in attendance.



Entrance garden to the Wildlife Center. Many of these wildflowers were already here, but we supplemented with mulch, a reworking of the drip system, and planting of more native shrubs and flowers in this section.

MOVED (virtually)?
Please let Lindsey know your new email address!
npsnmembership@gmail.com

Chapter Activities & Events

For further information on the following events, notify the contact person listed, or visit the chapter's web page: First go to www.npsnm.org; click on Local Chapters; then

Albuquerque

All scheduled monthly meetings are normally the first Wednesday of the month at 7 p.m. in the NM Museum of Natural History, 1801 Mountain Rd. NW. For more info on programs contact Jim McGrath at 505/286-8745 or sedges@swcp.com.

Oct 7 Meeting. Impacts of Wildfire on Rare Plants in the Gila and Lincoln National Forests. Daniela Roth, Endangered Plant Program Coordinator for the NM Forestry Division.

Nov 4 Meeting. Folk Healing Practices in the Southwest and Mexico: Plants Used by the Curanderos. Dianne Rand, herbalist, gardener, and family nurse practitioner.

Dec 5 Annual Holiday Potluck. 11 a.m.–2 p.m. Saturday. Pam McBride's house, 5409 9th St. NW. Pam will provide some vegetarian posole. Everyone bring a dish to share. Contact Pam (505/343-9472) for directions.

El Paso

All programs are second Thursdays at 7 p.m. (coffee social at 6:30) at El Paso Garden Center, 3105 Grant Ave. unless otherwise noted. All events free unless a fee is specified. Nonmembers always welcome. Info: Jim Hastings, 915/240-7414.

Oct 8 Annual plant and seed exchange by members.

Oct 17 Native Plant Appreciation Day. Day-long series of educational programs and tours of the Chihuahuan Desert Gardens at UTEP.

Nov 12 Meeting. What's Bugging Us. Salvador Vitanza, PhD, Texas AgriLIFE Extension Agent for Integrated Pest Management.

December 10 Holiday Potluck.

Gila (Silver City)

All programs are free and open to the public. Meetings are third Fridays at 7 p.m. at WNMU's Harlan Hall, with refreshments following the program. Updates posted on www.gilanps.org.

Oct 16 Meeting. Native Plants for Food, Fun and Beauty—For Today and a Global Dry Future. Dr. Richard Felger, of the University of Arizona Herbarium and Sky Island Alliance. Promising examples of local native food plants.

Nov 20 Meeting. Adaptations in Photosynthesis Occur-

select the chapter. **Hikers** should always bring plenty of water, hat, sun protection, lunch and/or snacks, field guides, and wear sturdy shoes, suitable for rough, uneven ground.

ring in Many of Our Native Plants. Dr. Keller Suberkropp, former chapter president.

Las Cruces

Meetings and workshops are second Wednesdays (unless otherwise noted) at 7 p.m. in the conference room of the Social Center at the University Terrace Good Samaritan Village, 3011 Buena Vida Circle, Las Cruces. Field trips are Saturdays; most last into the afternoon. Participants must sign a release-of-liability form. Children must be accompanied by their parents. Programs and field trips are free; nonmembers always welcome. Contacts: Carolyn Gressitt, 575/523-8413; Tom Packard, 575/202-3708.

Oct 14 Meeting. Area Lizards and Snakes. Dr. Patrick Alexander, botanist.

Oct 17 Field Trip. Secret Canyon, in the Organ Mountains. Tom Packard, leader. Meet 8 a.m. at First National Rio Grande, on corner of Telshor and University.

Oct 24 Potluck Lunch at La Cueva, Dripping Springs Natural Area. 1:00 p.m.

Nov 11 Meeting. Plants and Their Amazing Microbes. Dr. Donovan Bailey.

Nov 14 Field Trip. Destination TBA. 9 a.m.

December No events. Happy Holidays!

Otero (Alamogordo)

For field trip information, contact William Herndon, laluzlobo@gmail.com, 575/437-2555; or Elva Osterreich, echoofthedesert@yahoo.com, 575/443-4408; or Helgi Osterreich, hkasak@netmdc.com, 575/585-3315 or 443-3928. More



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Oct 10 Field Trip. Bridal Veil Falls. Will drive to High Rolls and take the trail to the Falls. Bring snacks, water, hiking shoes, and whatever clothing you will need, according to the weather. Meet 8:30 a.m., SW corner of N. Florida and Hwy 82.

Nov 7 Annual meeting of NPSNM–Otero chapter, potluck. Beth Anne and John Gordon house in Laborcita Canyon, noon. Info, directions to come.

December No activities.

San Juan (Northwest NM & Southwest CO)

To be announced.

Santa Fe

Meetings are third Wednesdays at 6:30 p.m. at Christ Lutheran Church, 1701 Arroyo Chamiso (in the triangle of Old Pecos Trail, St Michael's Dr., and Arroyo Chamiso; across street from fire station). For more information, contact Tom Antonio, tom@thomasantonio.org, 505/690-5105. Meetings and talks are free and open to all.

Oct 21 Meeting. Plants of the Region. Dr. Ken Heil, lead author, *Flora of the Four Corners Region*.

Nov 18 Meeting. A Promising Future for Native Plants and Pollinators in New Mexico. Melanie Gisler, Southwest Program Director, Institute for Applied Ecology.

Dec 6 Holiday potluck, time and location TBA.

Taos

Meetings are third Wednesdays at 7 p.m. in conference room, Kit Carson Electric Cooperative, 118 Cruz Alta Rd. Check NPSNM website for updates and additional information on activities, or contact Jan at TaosNPS@gmail.com or 575/751-0511.

Oct 21 Meeting/Talk. Bats and Bees: How to Attract Our Native Pollinators. Zach & Jasmine Cecelic of Wildhood Farms, Truchas.

Nov 19 Meeting/Talk/Social. Wildflowers of the Northern and Central Mountains of New Mexico. Larry Littlefield of Albuquerque will talk about his new book of this title. Presentation followed by a social hour with a silent auction to end up our year.



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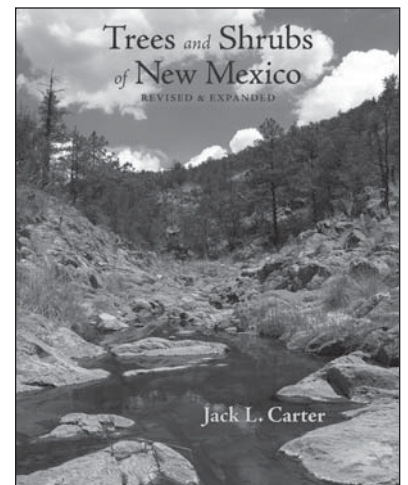
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2015 Annual Meeting: Field Trip Field Notes

by Vicky Ramakka, Aztec, NM

In July I attended the NPSNM annual conference in Durango. In registering prior to the conference, I found it difficult to choose among the many field trips listed. All three I attended turned out to be very worthwhile, with knowledgeable trip leaders and compatible participants. The following is my summary of the trip listed as Introduction to Life Zones: Vegetative Communities Stratified by Elevation and Latitude.

This informative, well-organized trip was led by Will Rietveld, retired from the US Forest Service. I knew right away that this was going to be a good day when Will brought out coffee, breakfast bars, and chocolate chip cookies for us, courtesy of Janet Rietveld. Janet was one of the local volunteers contributing the conference's great hospitality. That, plus Will's great store of ecological and historical knowledge, made this trip a highlight for me.

We started at the Rock Shelter Overlook near Ft. Lewis College. As we sipped coffee and enjoyed the bird's-eye view of Durango below us, Will described the concept of life zones, first proposed by C. Hart Merriam in the 1880s and influencing the life sciences ever since. Merriam's tenet was that as elevation increases, rainfall increases and vegetation changes. According to Merriam, the effect of elevation on vegetation zones from the bottom of the Grand Canyon to the top of the San Francisco Peaks is equivalent to the effect of latitude on vegetation zones from Sonora, Mexico, to the Alaskan Peaks.

The concept of life zones is the foundation for *vegetation types*, the term used today by land-management agen-

cies to classify and map vegetation. By the time I'd finished munching my second breakfast bar, Will had begun to illustrate the concept within a few yards of the overlook. He pointed out trees and bushes typical of mountain shrubland type, such as Utah juniper, Rocky Mountain juniper, pinyon pine, Gambel oak, squaw bush, mountain mahogany, and cliff Fendlerbush.

Will related that the dense Gambel oak groves have as much mass underground as above. Thus, Gambel oak out-competes slower-growing trees for space, moisture, and minerals. It is also adapted to sprout back prolifically after a fire. "It's a formidable competitor," he said.

Next stop was near Lake Nighthorse to experience a pinyon-juniper vegetation type. Here, Will fine-tuned the generic description of P-J by pointing out that junipers are more drought resistant, making them dominate on southern exposures, whereas pinyon pine are more common on cooler, moister sites.

As the day progressed, Will guided us to higher elevations to investigate the Ponderosa pine forest, warm-dry mixed conifer forest, and cool-moist mixed conifer forest types. A heavy downpour lent credence to that "cool-moist" label. Despite Will's prior scouting for a scenic spot for lunch, we ended up eating in his vehicle, glad to be cozied inside while hail pounded all around us.

Through the afternoon, we pretty well managed to dodge between cloudbursts to visit aspen forest and mountain grassland types. The formal part of the field trip culminated with a visit to the spruce-fir type at Coal Bank Pass at 10,640' elevation. We'd covered seven vegetation types, experienced different plant communities as we went up in elevation, and certainly agreed with Merriam about more moisture at higher elevations.

Not forgetting his teaser from earlier that morning, Will asked if we still wanted to see the monument plant in bloom that seemed to be the buzz among conference goers. Of course! We crossed the highway, parked at the trailhead to Engineer Mountain, and donned raincoats. Within a few yards' walk along a muddy trail, we were in a meadow thick with wildflowers. Ankle high, waist high, shoulder high, flowers of every color surrounded us. But even in this most



Rain did not deter participants on the Life Zones field trip from viewing the wildflower display at Coal Bank Pass.

Photo: Vicky Ramakka

abundant wildflower show that I have seen in recent years, the monument plant, or green gentian, stood out.

According to Al Schneider's Southwest Colorado Wildflowers website, a monument plant, *Frasera speciosa*, produces flowers only once in its lifetime of 20 to 80 years, and then it dies. The thick stalks, taller than myself, were decorated up and down with hundreds of exquisite flowers. Those who have studied this unique plant have observed that every few years large numbers of them flower in unison. This was certainly one of those years. What a privilege to be in the right place at the right time to see this extraordinary show. (For more photos and details, see <http://www.swcoloradowildflowers.com>, and type "monument plant" in the common name search box.)

I want to thank Will and Janet Rietveld for providing a great day in spectacular scenery. Will and Janet are advocates of ultralight backpacking and operate the website southwestultralight.blogspot.com. ❖

Right: Flowers of the unique monument plant, also called green gentian, *Frasera speciosa*.
Below: Carolyn Dodson, author of *Mountain Wildflowers of the Southern Rockies*, helped participants on the Life Zones field trip identify wildflowers. Photos: Vicky Ramakka



Silva Creek Botanical Garden in Silver City

by Keller Suberkropp, Gila Chapter

The Silva Creek Botanical Garden was originally a train stop between Silver City and Pinos Altos; it then became a vehicle storage yard for the town of Silver City. Some nine years ago, efforts to convert the land into a botanical garden were initiated primarily by students from Aldo Leopold High School, the Youth Conservation Corps, Lone Mountain Natives native plant nursery, and volunteers from the town, with Charles Holmes, a member of the Gila Chapter of the NPSNM, as volunteer director. Several years ago, the chapter adopted the garden to showcase native plants and their use in landscaping, water conservation, and attracting birds and pollinators. Betsy Kaido organized volunteers from the chapter to care for the original plant beds. During the initial phases of development, several water-harvesting features were constructed to divert rainwater runoff into the garden.

Last year, the Gila Chapter received grants from PNM (a Power Up Grant) and the Wetterau family fund to improve the garden and construct plant beds in the central portion of the garden. Projects organized by Elroy Limmer included

construction of a small amphitheater/outdoor classroom, an information kiosk, artwork created by Denise Friedrich around the historic (1906) railroad water tower that still stands in the garden, soil for new beds, and native plantings. We have worked with the Town of Silver City, which owns the land and advocates improvements of public spaces by citizen groups. Since adopting the garden, we have held classes in the garden for public school students and for adults in association with the Western Institute of Lifelong Learning. Currently, the kiosk presents information on the

Gila Chapter, a "Plant of the Month," and a pictorial guide to butterflies in the area. Native plants grown by members or purchased from Lone Mountain Natives and Mountain States nurseries have been planted in the central area of the garden. This year the Gila Chapter has had a number of work days with members contributing their time to plant, weed, move gravel, and otherwise improve the garden. The garden now

contains a variety of native trees, shrubs, flowers, and grasses that are common in the area.



Metal artwork around water tower. Photo: Elroy Limmer

Right: Aldo Leopold students in outdoor classroom. Photo: Elroy Limmer



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Two years ago, a new bed was established and a tree was planted as a memorial for a member of the chapter. Recently, students from Aldo Leopold School constructed a butterfly garden in a portion of the garden as a memorial for three students lost in an airplane accident last year. The planting included a number of native plants that will attract pollina-

tors. We have also worked to garner the interest of the local neighborhood, and members of the neighborhood are in the process of constructing and mounting a Little Free Library in the garden. Additional information about the garden is available at www.gilanps.org/Garden.html. ❖



Above: Gila Chapter members working on the path in the garden.

Below: The garden entrance. Photos: Dennis Lane



In Memoriam: Charles Wood

by Helgi Osterreich, Otero Chapter

I am very sorry to inform you of Charles Wood's passing. Here is what was written by Wendy Justice, Park Manager at Oliver Lee Memorial State Park: "It is my sad duty to report that Charles Wood, retired Park Ranger Specialist, passed away on Thursday, July 30, at 9:30 p.m. I just received word yesterday evening, and I wanted to pass it along to all of you. I have spoken with one of his cousins, and per Charles' wishes no funeral service is planned.

"Charles' 17+ years of service and dedication will never be forgotten, nor will his kindness and friendship. I am saddened by his passing, but am grateful that he is no longer suffering."

As many of you know, our chapter helped to build the Chihuahuan Desert Garden at Oliver Lee Memorial State Park. Our chapter has donated plants, usually those left over from our plant sale, but also some special-order ones that Charles specifically wanted. Charles was the person who was largely responsible for the garden's staying beautiful and growing. ❖

Postcard from the Edge of My Known Universe

by Renée West, Former NPSNM President

Stuck in the gigantic city of Houston for a long, hot July weekend with nothing to do . . . So Steve and I decided there were plenty of wildlife refuges to visit. I hadn't even heard of them: Attwater Prairie Chicken National Wildlife Refuge in the prairie west of the city, where a few dozen of the endangered birds hang on. And Anahuac NWR to the east—a delightful marshy, swampy, hot and humid place with bald cypress and huge spiders with gigantic webs. I love boardwalks in swamps, and this place was wonderful. Then, the air-conditioned visitor center offered many interesting books. What a delight to see a bunch of books by New Mexico's Sally and Andy Wasowski. (They might have lived in Texas before coming to NM.) The books were mostly about landscaping with native plants in Texas, of course. But they also had my all-time favorite: *Requiem for a Lawnmower*. It was a nice reminder that the community of native plant people is never very far away. ❖

New and Recent Books

***Laudato Si': On Care for Our Common Home—An Encyclical Letter.* By Pope Francis. 184 pp. Vatican Press. 2015.**

Review by Jack Carter

The recently published Encyclical Letter, written by Pope Francis and titled *Laudato Si': On Care for Our Common Home*, challenged me to listen carefully to the words of a religious leader. Pope Francis has the knowledge and values that I believe could lift a nation that identifies itself as Christian to a level that I never thought possible. This publication speaks not only to the one billion plus Catholics over planet earth, but to all people of all religions, to agnostics, and even to atheists like myself.

As I read this little book, which includes basic and important modern-day information concerning the future of all life on earth, all of a sudden it came to me that I had read such important suggestions for living life, written 2,000 years ago, in the teachings of Paul, the apostle of Jesus Christ. While in college I completed several Bible courses, one of which was titled something like *The Travels and Letters of Paul the Apostle*. The letters we studied were written to such people as the Romans, Corinthians, and Galatians,

and they all made important suggestions for living life in that time. It occurred to me that what Pope Francis has produced is a new modern-day book that could be added to the Holy Bible for Catholics and would also be appropriate for Protestants, Jews, Hindus, Muslims, and Humanists.

In this new epistle of six short chapters, we are led down a path of goodness and wisdom concerning the earth, the only home we will ever have. We are reminded that we are not only our brother's keeper, but we are responsible for protecting all living things and caring for the least of these. As we must care for the earth, we must care for the plants of the field that provide the oxygen we breathe and that turn the CO₂ into carbohydrates that nurture all other living systems.

This important work gives special meaning to the study, care, and protection of the world's flora and fauna because "the Bible tells us so." The point is made in the second chapter that God directed us to protect the earth and all its creatures just as we should protect humankind. *Laudato Si'* is a powerful lesson in ecology that makes clear that we should protect air, water, and soil and make their use available to the poor as well as to the rich. Consider the following:

In some places there is a growing tendency, despite its

scarcity, to privatize water, turning it into a commodity subject to the laws of the market. Yet access to safe, drinkable water is a basic and universal human right, since it is essential to human survival and, as such, is a condition for the survival of other human rights. (p. 25)

Where does this idea stand when we consider the price of water in our cities today, where millions of gallons of water are sprayed into the air for our lawns, while on many parts of the planet children die of thirst? Among natural resources, water must be placed near the top of our list of priorities for protection, not only for people but for all life and living systems. Protection must include the safeguarding of agriculture, forestry, and aquatic systems.

What this religious leader understands, and the apostle Paul need not address, is modern science and technology. He challenges us to bring science and religion into a meaningful relationship as he encourages us to critically examine every new technology. There are both good and bad technologies, and at this point Pope Francis is joining with Mahatma Gandhi in pleading with us to carefully study each new technology and its impact on a world of limits. Does it actually improve the lives of millions of people, improving their economic conditions by protecting their jobs, health, diet, and level of living? Or does it serve only to produce limitless wealth for a few? Certainly as we examine capitalism and the place of new technologies in the lives of all living things, and the condition of planet earth, we can see that we may be losing this never-ending battle to human greed.

Chapter 3, addressing biodiversity, reads like a textbook in conservation ecology. The following four quotes provide an introduction to the chapter.

The loss of forests and woodlands entails the loss of species which may constitute extremely important resources in the future, not only for food but also for curing disease and other resources.

Each year sees the disappearance of thousands of plant and animal species which we will never know, which our children will never see, because they have been lost forever.

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The good functioning of ecosystems also requires fungi, algae, worms, insects, reptiles and an innumerable variety of microorganisms.

A sober look at our world shows that the degree of human intervention, often in the service of business interests and consumerism, is actually making our earth less rich and beautiful, ever more limited and grey, even as technological advances and consumer goods continue to abound limitlessly.

Ecologists and earth scientists could not make more forthright statements than these.

I am reminded of the early 1950s when Sir Charles Snow (Lord Snow) described the Two Cultures and the scientific revolution. He spoke of literary intellectuals and scientists as poles apart. He stated that the "gulf of mutual incomprehension" must be crossed if humankind were to survive, and that it was still up to education to bring this about. We have yet to cross this great divide by improving education for literally billions of people. However, Pope Francis comes closer to describing how it might happen than anything I have read or studied, with one exception: E. F. Schumacher's *Small Is Beautiful: Economics as if People Mattered*. This important publication (published in 1973) was on the reading list in my botany courses for 40 years, and it is obvious to me that Schumacher, Gandhi, and the current pope have all encouraged us to hear another drummer.

Please read *Laudato Si': On Care for Our Common Home*, and think on these things.

~Jack Carter
apacheplume29@gmail.com
720/626-0285 ❖

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The generous financial support from so many NPSNM members and friends of the flora of New Mexico will make it possible for the Board to approve more funding for workshops throughout the state, additional basic research on a variety of critical plant taxa, continued support for the state's major herbaria, and hopefully for the development and sup-

port of more early education programs from K-12 in New Mexico schools.

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~Jack & Martha Carter

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Walter Henes, left, of Southwest Seed, Inc., shows a Palmer's penstemon to annual meeting participants, in the field trip Behind the Scenes of the Native Plant Seed Industry.

Photo: Vicky Ramakka

Membership in the NPSNM is open to anyone supporting our goals of promoting a greater appreciation of native plants and their environment and the preservation of endangered species. We encourage the use of suitable native plants in landscaping to preserve our 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. Members also qualify for membership in New Mexico Educators Federal Credit Union. The Society has also produced two New Mexico wildflower posters by artist Niki Threlkeld and a cactus poster designed by Lisa Mandelkern. These can be ordered from our poster chair (contact information listed on page 4).



New Mexico wildflower posters: \$8 (nonmembers, \$10)
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