



NEWSLETTER

of the

NATIVE PLANT SOCIETY OF NEW MEXICO

OCTOBER, NOVEMBER, DECEMBER 2017

VOL. XXXXII NO. 4

Poaceae Grasses of North-Central New Mexico

by Charlene R. Johnson, Taos chapter

Every semester, Professor John Ubelaker guides a group of students from the main Dallas campus of Southern Methodist University through a botany project at SMU-in-Taos at Fort Burgwin, near Taos. During the spring semester, five students worked on the expansion of an herbarium at the college. Each student chose one family of plants to work on, so that the herbarium has now expanded to include the families Gentianaceae, Cannabaceae, Liliaceae, Rosaceae, and Lamiaceae. This herbarium and its associated research papers are now available to the public through the library at SMU-in-Taos.

Student Jaqueline P. Lara loved the spring class so much she came back to participate in the August semester as well. She and Connor Cole, Harleen Kaur, Jordan J. Fox, and William Moseley spent three intense weeks researching the grass family, Poaceae, as it pertains specifically to Taos and surrounding counties. The end result would be a monograph covering many species and sub-species within the family.

All five flatlanders were astounded at the variety and

quantity of grass species to be found at elevation. Each student chose between 17 and 20 species as a personal project. They then did extensive research on habitat, the difference in the leaves, flowers, or fruits, and whether Native Americans traditionally used them, such as for food, medicine, clothing, or toys. They included common and scientific names and compiled several pages of illustrations showing how to identify grasses, explaining botanical terms and showing the various components of a grass. A field trip to Santa Fe nurseries, to determine species of grass sold and finding their way to the Taos area, was part of the class.

All loved best learning the uses of the plants. "Once we learned the components of grasses and how they grow, that part was pretty redundant between

the species," said Jordan. "But it was fascinating to learn how many different uses mere grasses can be put to!"

The group enjoyed learning how to make brooms, hairbrushes, and baskets, weave mats, and make roof thatching.

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Bouteloua gracilis.

Photo: Patrick Alexander

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From the President

by Tom Stewart

Don't skip dessert!

Do you remember why you became interested in this organization? I believe that I started attending local meetings hoping to learn more about gardening with native plants. Before long I found that I was in a minority—but so was everyone else! Yes, there were several gardeners, but the motivations of others were as varied as is the Southwest landscape itself.

I might not have lasted very long as an active member if the main benefit to me was only a series of colorful slide shows. What kept me involved was being able to participate in field trips, exploring our amazing region in the company of exceptional people, discovering the diversity of plants in their wild communities, witnessing the plants' interactions with insects, birds, and the physical features.

Let's not forget that along with our excellent, free presentations, our educational outreach and "inreach" include the field experiences we offer. Monthly talks are wholesome food for thought, but our outdoor excursions are a dessert that will not add an inch to your waist. And while many



groups sponsor hikes, you will rarely find such knowledgeable and patient company as you will have in the Native Plant Society.

Although the flowering season is waning, I was prompted to write these comments for two reasons. The first is my lasting impression of the richness of this past spring and summer's visits to beautiful places not that far away, where we still can stand in awe and learn new things. The second reason is my regret that not more people partook of these opportunities. Of course, the annual conference, held this year in Taos, is a chance to do some catching up.

Let's also plan more outdoor sessions in the nice weather that remains this year and certainly for next year, and avoid the spirit-dulling effects of nature-deficit disorder. A chapter can only organize a limited number of trips, so find folks to go out with you informally. You don't need a wilderness; try a park, visit gardens. And if anyone says they are getting bored with the Native Plant Society, tell them to "take a hike!" ❖

Legacy: What we leave behind, we give to the future.

NPSNM encourages members to consider including NPSNM in their wills.

For further information, contact nativeplantnpsnm@gmail.com

Outreach Update

by Sara Digby, NPSNM Outreach Coordinator

Your Outreach Coordinator has been visiting the northern chapters and speaking with members, and many ideas have come to the table about different ways the NPSNM can reach out to its communities in the different regions. It is exciting to hear all the ideas that members have, and we are looking forward to continuing our outreach efforts.

Our most recent event series, "A Celebration of Native Seed," happened in partnership with the NPSNM Santa Fe chapter, Plants of the Southwest, the Santa Fe Farmer's Market, the Master Gardeners Santa Fe SNAPP Program, and the City Parks and Watershed Committee—and it was a success. This event series consisted of two community seed-ball-making workshops: one at Plants of the Southwest-Santa Fe, and the other at the Southside Farmer's Market. The event series culminated with a seed-ball throw in celebration of Native Plant Day on August 19. We also partnered with another local organization, YouthWorks, to provide an

opportunity for youth to learn about native seed production, collection, and restoration, as well as how to make seed balls. These events invited all members of the community to learn about native seed, create something together, and help increase native plant populations in the Santa Fe community. In total, we made *over 2,500* seed balls!

Leftovers that were not thrown will be used as conference goodies at the state conference this year.

We hope to make this an annual event, and we invite other chapters to participate if they feel that this could be a fun thing for their communities. Outreach is happy to help plan, promote, and find partners for this event if you are interested in hosting one for your chapter next year.

Check out the awesome write-up of the seed-ball throw, by Tim Rogers of the Santa Fe Conservation Trust: www.sfct.org/trails/sfct-trail-events-in-2017/seed-ball-throw-native-plant-day-aug-19-2017 ❖

Conservation Corner

by Rachel Jankowitz, NPSNM Conservation Committee Chair

DOI National Monuments Review

The Native Plant Society of New Mexico submitted comments to the Department of Interior regarding their recent review of National Monuments designated under the Antiquities Act of 1906. We focused on the two Monuments under review that are located within the state of New Mexico: the Rio Grande del Norte (RGDN) NM and the Organ Mountains–Desert Peaks (OMDP) NM.

The five mountain ranges and intervening grasslands of the OMDP NM are exceptionally rich in biodiversity, hosting a very high density of special status species. There are five species of plants endemic to the Organ Mountains range alone. The area surrounding OMDP NM has been identified as an Important Plant Area under the state Rare Plant Conservation Strategy, with the highest possible rank of Outstanding for biodiversity, and one of the highest biodiversity scores. The Monument as a whole also includes a very high level of what is known as beta diversity, meaning diversity of vegetation types—some of them unusual, unique, or of very high habitat value for wildlife. Thus the large size of the Monument is necessary, due to a high diversity of biotic communities in unique proximity to one another, in order to conserve ecologically functional wildlife corridors, transition zones, and resilience to climate change. In addition to the assemblage of plant communities in close proximity and generally good condition, the Monument protects high-value paleontologic, prehistoric, historic, wildlife, and geological resources.

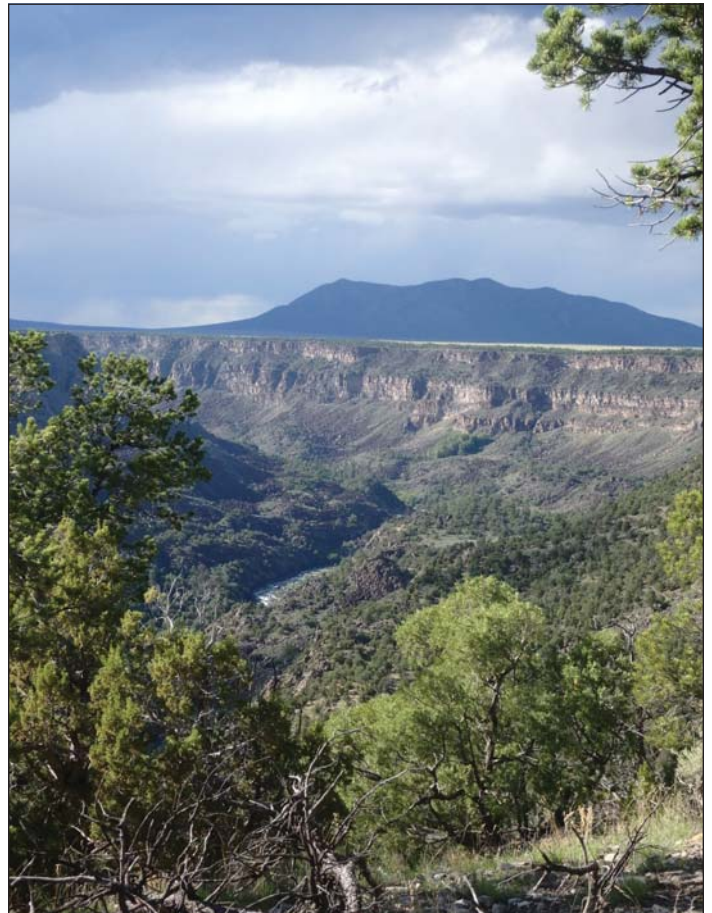
The RGDN NM includes three BLM-designated Sensitive plant species; however, in terms of vegetation, this Monument's greatest value lies in its large expanses of valuable wildlife habitat, such as sagebrush flats and riparian zones. Migratory animals such as elk, and many bird species, need large unfragmented expanses to support their life-history strategies. Native plants also provide the basis for ongoing cultural practices of regulated firewood gathering and pinyon nut collection by the public. In addition to important wildlife habitat and cultural landscape, the Monument protects high-value prehistoric, geologic, and recreational resources.

The proclamations establishing both National Monu-

ments direct that they be managed as part of the BLM's National Conservation Lands system. The NCLS offers the American people exceptional opportunities for recreation, solitude, wildlife viewing, history exploration, scientific research, and a wide range of traditional uses. The program's mission is to conserve, protect, and restore nationally significant landscapes that are recognized for their outstanding cultural, ecological, and scientific values. The NCLS was created in 2000, but without congressional authorization there was no guarantee that the system would be permanent. In 2009, former New Mexico senator Jeff Bingaman introduced, and Congress passed, the Omnibus Public Lands Management Act, which provides a statutory basis for the NLCS.

Both of our current New Mexico senators, along with two of our three congressional representatives, have written to Interior Secretary Ryan Zinke to express their strong support for the National Monument designations. Congressman Steve Pearce, on the other hand, has proposed a 90% reduc-

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Rio Grande gorge at the Wild Rivers Recreation Area in Rio Grande del Norte National Monument. Photo: Rachel Jankowitz

The Newsletter of the Native Plant Society of New Mexico

October–December 2017. Vol. 42 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, 2017. Articles and high-resolution artwork supporting the NPSNM's mission are welcomed and can be sent to the editor, Sarah Johnson, at 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.

New Mexico Close-Up: Chocolate Flower (*Berlandiera lyrata*)

by Keller Suberkropp, Gila Chapter

Chocolate flowers are common perennial wildflowers in New Mexico. They are quite hardy and thrive in full sun, require very little water, and grow well in shallow rocky soil. They are members of the aster family (Asteraceae). Consequently, the flower heads are composites, with yellow ray flowers and maroon disk flowers. The yellow ray petals have striking red-stripped undersides.

Chocolate flowers have a long bloom season, from spring through frost. They attract many beneficial insect pollinators, including bees.

They are called chocolate flowers because they smell like chocolate and the stamens have a chocolate flavor. They are

unusual in that, as the temperature rises in mid-morning, the petals close or drop off, leaving a set of green bracts cupped around the flower head. Because of this, these flowers are sometimes called green eyes. Seeds eventually develop and can serve as a food source for a number of bird species. The dried seed heads can be used in dried autumn arrangements.

See photos on back cover!

The plants die back to the ground in winter and return the next spring, eventually reaching 2 feet across and 18 inches high. The plants can spread by seed and may produce a number of plants at new locations in the garden. ❖

A Botanist to Transport Us

by Barbara Fix, NPSNM Membership Secretary

At what is the beginning of a beautiful friendship, or rather the next step in one, Steve Gisler has been appointed liaison to the NPSNM board by the New Mexico Transportation Department. Steve is a botanist (with a BS in environmental science and biology from Willamette University and an MA in botany from Oregon State University).

He is the the environmental specialist for one of the six NMDOT districts—No. 6 covers west and central New Mexico (Gila, Reserve, Gallup, Cuba, Grants). He and his counterparts in the other districts collaborate with each other and with Bill Hutchinson, NMDOT landscape architect, e.g., in refining DOT seed selection to be solely of appropriate native plants. Steve is the NMDOT go-to plant guy. Rachel Jankowitz, our diligent Conservation Chair, wrote of how open NMDOT was to seed suggestions from NPSNM. Steve wants NPSNM to know that NMDOT welcomes the Society's and the public's participation.

Steve is no stranger to NPSNM. He's attended at least two NPSNM annual meetings and by the time this newsletter is published will have spoken about seed selection at the

Taos meeting in September. He graciously volunteered to manipulate/adapt the rare plant photos used for NPSNM's rare plant temporary tattoo project. He has a supportive partnership with his wife, Melanie Gisler, a native New Mexican and the head of the New Mexico outpost of the Oregon-based Institute of Applied Ecology. IAE, per Melanie, has partnered with NPSNM on projects such as the native plant curriculum and employment of Sara Digby as NPSNM's outreach coordinator.

Steve and Melanie met when she searched him out at a science conference at which he was listed as talking about a weevil predator of a rare Oregon checker mallow. Her master's degree was on the same rarely mentioned subject! Three years or so passed before he happened to run into her at a botanic conference in Austin, where she was working at a botanic garden. One thing led to another. Their wedding rings are intertwined weevils.

Feel free to contact him. He enjoys talking about the native plants of our region, from the Chihuahuan Desert to the northern mountains. He's nice. ❖



Steve with son Leo and dog Piñon

Conservation Corner (continued from p. 3)

tion in the size of OMDP NM, which is in his district. OMDP NM has the support of the Cities of Las Cruces and El Paso, the Town of Mesilla, and the Doña Ana County Commission, as well as two tribes native to the area and a long list of local organizations and businesses. A 2012 opinion poll showed that 83% of Doña Ana County residents supported the Monument designation and 10% opposed it, with a similar margin of support statewide. RGDN NM has the support of the City of Santa Fe, the Towns of Taos and Red River, the Village of Questa, the Taos County Commission, and the Taos Pueblo. The value to local communities of future recreation and tourism dollars will surely be greater and more sustainable than any extractive or development interests that might be hindered by limited access to public lands.

The OMDP and RGDN National Monuments embody great historic and scientific value and have the overwhelming support of state and local government entities. Their size is fully compatible with the proper care and management of the objects to be protected. NPSNM urged the Department of the Interior to conclude its review by leaving the designations intact. On August 24, Secretary of the Interior Ryan Zinke announced that he would not be recommending the elimination of any Monuments. It had previously been announced that he would recommend that one be reduced in size (Bears Ears in Utah), and that two others (in Washington and Idaho) would not be altered. The fate of our New Mexico Monuments remains to be seen.

Anasazi Skipper

In August, the Natural Resources Institute hosted volunteers to conduct a research project at Wild Rivers Recreation Area, where the Red River joins the Rio Grande within RGDN NM. NRI Founder and Research Director Steve Cary led the effort to elucidate aspects of the life cycle of the Anasazi skipper butterfly (*Ochloides yuma anasazi*). This research also raises interesting questions about the values of both native and introduced plants.

The Anasazi skipper is a geographically and reproductively isolated subspecies of Yuma skipper, which is broadly distributed in the western states. All Yuma skippers depend on the common reed (*Phragmites australis*) as their host plant, where they lay eggs and the caterpillars feed, shelter, and pupate. Common reed is a tall (to 4 m), long-lived, perennial grass that forms cane-like thickets in wet places. It tolerates salinity, but not shade. It has spreading rhizomes, wind-dispersed seeds, and is known from all continents except Antarctica. In western North America it inhabits river edges, irrigation ditch banks, freshwater springs, and even alkaline or sulfurous seeps. In New Mexico it forms thickets



Anasazi skipper pupa in a *Phragmites* leaf.

Photo: Steve Cary

along streams and in wet ground of springs and seeps. In the Wild Rivers area, *Phragmites* is found growing around a number of springs associated with the Red River geologic fault zone.

The Anasazi skipper is found only in the Rio Grande Gorge, from Chiflo Spring to the John Dunn Bridge. During a previous survey, NRI staff were surprised to observe adult Anasazi skippers 800 vertical feet above the reed beds, feeding on nectar from flowers along the roadsides of the Recreation Area, where runoff from the asphalt creates a favorable environment for flowering plants, especially the native species poison milkweed (*Asclepias subverticillata*) and rabbitbrush (*Ericameria nauseosus*). This summer's research project was designed to determine what happens to the adult Anasazi skippers once they finish feeding on nectar along the canyon rim. Do they die, return to the reed patch they came from, or return to a different patch? The answers to these questions will shed light on how the presence of roadside concentrations of flowers affects the population. Volunteers netted the butterflies, recorded their behavior, gender, and condition, and then painted unique identifying patterns on their wings. Subsequent volunteers tried to resight the marked individuals both in the canyon and up on the rim. We marked more than 60 Anasazi skippers; 4 were resighted, always around the camping loop, often at or near the location where they were initially marked. No marked skippers were observed in reed patches in the gorge.

Interestingly, in North America, both the native common reed (*Phragmites australis* ssp. *americanus*) and an introduced subspecies (*P. a.* ssp. *phragmites*) are found. Preserved remains of native *Phragmites* that are 40,000 years old have been found in the Southwest, indicating that it is a part of the native flora of the region. Introduced *Phragmites* is

thought to have arrived in North America accidentally, most likely in ballast material in the late 18th or early 19th centuries. It established itself along the Atlantic coast and over the course of the 20th century spread across the continent. Once introduced *Phragmites* invades a site, it can quickly take over a marsh community, crowding out native plants, changing marsh hydrology, altering wildlife habitat, and increasing fire potential. *Phragmites* occurs throughout the lower 48



states and southern Canada. It has been reported to invade natural areas in 18 states, but is not yet a widespread problem in New

Anasazi skipper adults on a bull thistle flower.
Photo: Steve Cary

Mexico. The two subspecies are difficult though not impossible to distinguish in the field. The Anasazi skipper situation is a reminder that it is important to positively identify weeds before acting to control them.

The *Phragmites* stands in the Rio Grande gorge are threatened by several exotic invasive species, including Siberian elm, Russian olive, horehound, and hound's tongue. On the other hand, the invasive bull thistle is a popular nectar plant for skippers and other insects.

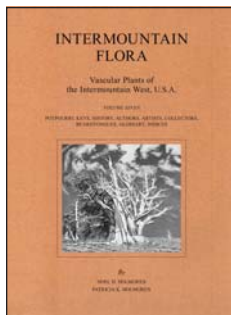
ESA Status Changes

NPSNM also recently sent a letter to the US Fish & Wildlife Service opposing the proposed delisting of the gypsum wild-buckwheat (*Eriogonum gypsophilum*) and downlisting of the Kuenzler hedgehog cactus (*Echinocereus fendleri* var. *kuenzleri*), on the basis of insufficient scientific information about threats and population trends. ❖

New and Recent Books

Intermountain Flora, Volume 7.
By Noel and Patricia Holmgren.
New York Botanical Garden. 2017.

Review by Tim Lowrey, Albuquerque chapter



The seventh and last volume of the *Intermountain Flora* is the culmination of 80 years of field and laboratory/herbarium research, since Basset Maguire conceived the project in the 1930s. The first volume was published in 1972. The *Intermountain Flora* is a monumental work, with outstanding illustrations, thorough descriptions

and nomenclatural citations, and taxonomic treatments of 3,847 indigenous species in 146 families.

Volume 7 is titled the "Potpourri" volume. It contains keys to the families treated in the previous volumes and an updated treatment of *Penstemon*, with keys to the species and infraspecific taxa, full species descriptions, and illustrations. There is a history of the Intermountain Flora Project and biographies of the founding co-authors, including Arthur Cronquist, Arthur Holmgren, Noel Holmgren, Patricia Holmgren, Bassett Maguire, James Reveal, and Arnold (Jerry) Tiehm. Furthermore, there are biographies of the artists, Bobbi Angell and Jeanne Janish. The volume also includes

photographs of authors, artists, and plant collectors of the Intermountain West, a list of references and online resources, a cumulative index to all previously published volumes, a glossary, and a list of nomenclatural changes, including typifications, new taxa, and chromosome data.

This is a fitting last volume to the magnificent *Intermountain Flora*. The updated treatment of the large genus *Penstemon* by Noel Holmgren is an especially important contribution in itself. The key to families will be useful to anyone working in the western United States. The photographs of collectors and authors provide a fascinating compendium constituting a botanical Who's Who in the American West over the past two centuries. The photographs also constitute a reminder of the immense botanical effort that went into generating the necessary botanical information for producing the *Intermountain Flora*. The history of the project and biographies of the main co-authors are fascinating personal and professional portraits of botanists who are not only responsible for producing the *Intermountain Flora* but also for making floristic and systematic contributions in other parts of the continent and the world. The indices and botanical glossary are welcome and provide access to information in the entire Flora. Volume 7 of the *Intermountain Flora* is a must-have final volume for students of the flora of the Intermountain Region and the West as well those interested in botanical history of the region. ❖

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 \[at\] swcp.com](mailto:sedges[at]swcp.com). For field trips, contact Carol Conoboy, [carolconoboy \[at\] gmail.com](mailto:carolconoboy[at]gmail.com), 505/897-3530. For meeting places indicated [A] through [H] see website.

Oct 4 Meeting. What Tree Rings Tell Us About Historical Fire Occurrence on the West Slopes of the Sangre de Cristo Mountains. Lane Johnson, historical ecologist with Banderlier Nat'l Mon. and NM Landscapes Field Station (USGS).

Nov 1 Meeting. Forty Years of Change in the Sunflower Bee Community in the Southwestern United States. Catherine Cumberland, PhD student at UNM Biology.

Dec 2 Annual holiday potluck and officers election. 11 a.m.–2 p.m., Pam McBride's house, 5409 9th St. NW. Pam will provide vegetarian posole.

El Paso

El Paso Chapter meetings are at St. Alban's Episcopal Church, 1810 Elm Street (Elm at Wheeling, off Piedras). Programs are second Thursdays at 7 p.m. (coffee social at 6:30) unless otherwise noted. All events free unless a fee is specified. Nonmembers always welcome. Info: Jim Hastings, 915/240-7414, [jimhastings \[at\] elp.rr.com](mailto:jimhastings[at]elp.rr.com).

Oct 12 El Paso chapter strategic planning meeting. Setting goals and our course for 2018. Member input is critical for this meeting. Potential members and guests are welcome.

Nov 9 Chihuahuan Desert Native Pollinators. Bashira Chowdhury, Auburn University Bee Biodiversity Initiative.

Dec 14 Annual chapter potluck dinner.

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.

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, Rm. 219, with refreshments following the program.

Oct 20 Meeting. Protecting Wilderness, Wild and Scenic Rivers in the Gila National Forest. Nathan Newcomer.

Nov 17 Meeting. Landscaping on the Western New Mexico University Campus. Kristi Dunn.

Dec 17 GNPS Christmas Party. The Volunteer Center. Noon–4 p.m.

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 11 Meeting. New Mexico Native Plants and Pollinators in Landscaping. Ashley Bennett.

Oct 14 Annual potluck lunch at La Cueva. Noon. Bring a salad, side dish, main dish, or dessert; refreshments and plates, etc., will be provided.

Nov 8 Planning meeting for 2018. Join us to elect new officers and help select speakers and field trips for 2018.

Nov 17 Field trip. Baylor Pass, at west end of trail on Baylor Canyon Road. Meet 9:00 a.m. at former K-mart Hwy 70 parking lot.

Dec No meeting. Happy holidays!



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Oct 14 Field trip. White Sands Missile Range. Meet 8:30 a.m. at entrance to Small Missile Range. Bring water, lunch, sunscreen, hiking shoes. Give your name to Jennifer Gruger at jengruger@gmail.com or 505/710-2924 by September 15.

Nov 4 Otero Chapter Annual Meeting. Location TBA. Potluck at noon, meeting follows. Member attendance is very important!

Dec No activities.

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 [at] thomasantonio.org, 505/690-5105. Meetings and talks are free and open to all.

Oct 18 Meeting. Wooing Native Bees. Dr. Olivia Carril, coauthor, *The Bees in Your Backyard: A Guide to North America's Bees*.

Nov 15 Meeting. Columbines: A Recent and Successful Immigration Story. Scott Canning, Horticulture and Special Projects Director, Santa Fe Botanical Garden.

Dec 10 Annual holiday potluck. Location TBD: Volunteer needed to host the event.

Taos

Meetings are third Wednesdays (except Dec. through Feb.) at 6 p.m. in boardroom, Kit Carson Electric Cooperative, 118 Cruz Alta Rd. Free and open to the public. Check NPSNM website or Facebook for updates, or contact TaosNPS [at] gmail.com, or phone Jan Martenson at 575/751-0511.

Oct 18 Meeting. Spruce-Fir: Another Kind of Forest. Toby Gass, USFS retired, Santa Fe.

Nov–Dec No meetings. Meetings will resume in March.

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Poaceae Grasses (continued from p. 1)

One student particularly liked learning about decoctions that could be created from grasses for medicinal purposes. For instance, Navajo would chew the root of *Bouteloua gracilis* (blue grama, the state grass of both New Mexico and Colorado) and blow it on open wounds. The breath itself did the healing; they included their animals in their treatments.

While everyone expected that grasses would be used as fodder for livestock they were surprised that people ate them, too. "I didn't know you could eat grass," Harleen said. For example, the White Mountain Apache and West Apache would grind up the seeds of *B. gracilis* and make a kind of porridge or bread. But what was equally fascinating is that the grass was referred to as a "cash crop," a term which surprised the students.

They all loved learning about the ceremonial uses of grasses. Will explained, "If a warrior killed an enemy with a lance, he would wear sideoats grama, *Bouteloua curtipendula*, because its shape was symbolic of a lance." He also enjoyed learning how the Apache would fashion toys for the children out of *Andropogon gerardi* grasses, also known as big bluestem. Someone else pointed out that the Omaha used the same plant to treat fevers.

Continued page 10

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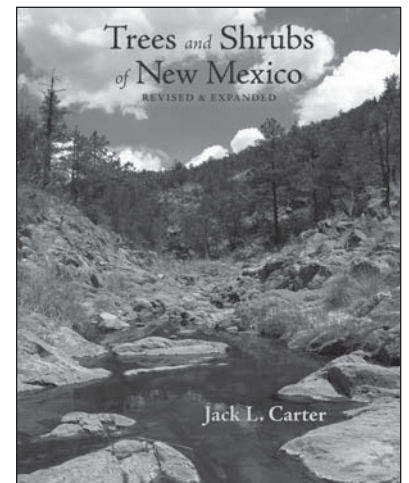
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Poaceae Grasses (continued from p. 9)

The students' work was all pulled together into a single manuscript, complete with bibliography, entitled *Poaceae—Grass Family in North Central New Mexico*. The library will retain a copy for reference by the public. Dr. Ubelaker noted that when the NPSNM annual conference meets at SMU, they'll have this unique reference available. "It's the first time the grasses have been done for this area. It will be a nice contribution to the botanical sciences of New Mexico."

The students felt that their concepts of diversity and distribution were also enhanced and they had a greater ap-

preciation for the need to ensure a future that includes many species, not just a monoculture. "It gives you such appreciation for what is out there when you do a project like this," Jackie said.

Jordan was inspired by the class so much that she is now considering a career in botany, since the idea of natural medicines appeals greatly to her. "What an incredible opportunity to be able to do this!" the students agreed. ❖

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Contributions to the Jack & Martha Carter Conservation Fund

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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New Mexico Close-Up



Photos: Elroy Limmer, Gila chapter



Berlandiera lyrata, chocolate flower.
See accompanying article on page 5.

