



NEWSLETTER

of the

NATIVE PLANT SOCIETY OF NEW MEXICO

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Native plants and pollinators go about their daily business while NPSNM members discussed when is a plant a native and Joan Woodward asked "Is it time to think about our definition?" Kathleen Hall summarized the discussion and other conference highlights (p. 9). Tom Stewart provided his definition in his president's letter (p. 3). Rachel Jankowitz pondered how exotics she has seen in her travels might have gotten to where they are today (p. 4).

Above: Variegated Fritillary nectaring on whorled milkweed along the Rio Grande. Image: Jim Von Loh, Las Cruces Chapter.

Above right: Variegated Fritillary nectaring on spiny chlorecantha along the Rio Grande. Image: Jim Von Loh, Las Cruces Chapter.

Lower right: American Snout-nose butterfly on Apache Plume in Alamo Canyon. Image: Elroy Limmer, Gila Chapter.



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The Newsletter of the Native Plant Society of New Mexico

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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.

The next submission deadline is November 25, 2021. Articles and high-resolution artwork supporting NPSNM's mission are welcomed and can be sent to the editor, Margaret Ménache, *npsnmnewsletter [at] gmail.com*.

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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.

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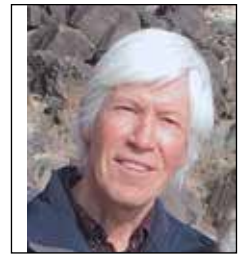
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From the President

by Tom Stewart



The Perennial Question. The August 20-22, 2021 Native Plant Society state conference was a big hit. For understandable reasons, this historic gathering was over two years in the making, improving with age. We are so grateful for all the work done by the remarkable people of our Otero chapter, for what we learned about the relationship of New Mexicans with the native flora over time, and for the chance to see long-time friends and make some wonderful new ones.

During the conference, the perennial (and annual) question arose, “What is a native plant?” It has been asked in this newsletter and in conversations endlessly, while a simple definition has always been available. On our website, right under Welcome, botanist Bob Sivinski writes (paraphrased), “The resident plant species that evolved within, or naturally dispersed to, New Mexico’s varied floristic regions are ‘native’ or ‘indigenous’ species.” That is not too hard to understand. One rule of thumb is that if the common name of a plant starts with the name of a foreign land, you can bet it isn’t native here. Russian thistle, Siberian elm, Spanish broom, Malta star thistle, African rue, and so on. The Native Plant Society of New Mexico recommends that you not plant these.

Clever people come up with tricky exceptions and “what ifs.” What if a lost Phoenician trading boat was blown into the Gulf of Mexico and made its way up the Rio Grande before running aground, scattering seeds of Middle Eastern plants? Way before 1492! Are those plants native? Obviously not, if you understand “evolved within or naturally dispersed to” in the definition above. Naturally dispersed usually means gradually, even if aboriginal people brought a few culturally useful species on foot. In any case, native plants have long since found their place in a community of organisms with checks and balances, healthy competition, constraints, and symbiotic roles among the inhabitants.

An associated question is, “Why are native plants good and exotics bad?” Let’s ditch moral judgements — it’s a practical thing. An excellent driver in the U.S. with a spotless record can be a big problem in the U.K., disrupting traffic and much worse, by driving as usual on the right hand side of the road.

Likewise with an introduced plant that has no history with its new community and its “rules.” By the way, there is nothing as good as corn (*Zea mays*) for making tortillas. But it can’t reproduce in nature after centuries of selective breeding, so it is not even native to Mexico anymore.

Defining “native” depends on why it is important to you. If claiming New Mexico has more native species than most other states (we’re allowed some eco-chauvinism!), the political border is important. But that gets silly if your purpose is selecting plants that will do well and serve well in a landscape. In El Paso you would not choose *Sabal palmetto* (common near Galveston) for land restoration, though it is native to Texas. Therefore, nativity to an ecoregion makes more sense, and residents of El Paso, Alamogordo and Palomas, Mexico, all in the Chihuahuan Desert ecoregion, can have legitimately native plant gardens using the same species.

Huge mistakes have been made by selecting foreign species for restoration on the basis of vigorous growth. Dave Anderson, this year’s Carter Conservation Award winner, pointed out how very, very well Lehmann’s lovegrass (*Eragrostis lehmanniana*) is doing in the Tularosa Basin, replacing diverse plant communities with monocultures, nearly useless to wildlife and livestock. Doing well, but not serving well. We would do well to think beyond immediate gratification and go native. ❖



Appearing in the photograph, left to right, are Albuquerque chapter president, Carol Conoboy, Dewitt’s wife Vivian, Jason Roback (rear), and Dewitt’s daughters Jeri Muller and Laura Mascarenas.

Image: Tom Stewart, Albuquerque Chapter.

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On the beautiful morning of August 4, 2021, the Albuquerque Chapter of NPSNM dedicated a memorial plaque honoring the life and achievements of Robert Dewitt Ivey (1923-2013), best known as the author and superb illustrator of *Flowering Plants of New Mexico*. Approval to mount the plaque at Sandia High School, where Ivey taught for many years, was arranged by current biology teacher, Jason Roback. ❖

Conservation Corner

by Rachel Jankowitz, NPSNM Conservation Committee Chair

Strangers in a Strange Land

Have you ever come across a plant that doesn't seem to belong? Did you wonder how it got there? These outliers usually have a human history behind them. Some stories we will never know, some we can guess at with a little imagination. Starting on the eastern prairie, and moving closer to home in northern NM, here are a few such botanical outliers.

***Maclura pomifera* in NE NM.** Mills Canyon splits the prairie grasslands east of Wagon Mound. Melvin Mills was a lawyer from the Midwest who moved into the canyon, built a road, and established a tourist hotel and a thriving fruit orchard. The whole enterprise was wiped out by a huge flood event in 1904. Walking north in the canyon bottom, along a little-used dirt road, I noticed a line of small scraggly trees at the base of the cliff. Must be net-leaf hackberries, I thought. They're taking advantage of either the run-off coming down the cliffs, or a seep at the base.



***Maclura pomifera*.** Osage orange fruits are 3 to 6 inches in diameter. They were used as baseballs by generations of farm kids. Image: <https://springfieldmn.blogspot.com/2012/08/osage-orange.html>

But that line of trees was a little too straight. Closer examination confirmed my second guess, Osage orange, familiar from undergraduate field botany in Ohio. It is native to the south-central US, and, before the invention of barbed-wire, early settlers on the American prairie adapted an Osage Indian custom of using these tough, thorny plants as living fences, which were reputed to be "horse-high, bull-strong, and pig-tight."

The Osage used the hard, dense, decay-resistant, golden-yellow wood of this species to make bows, and settlers used it for wagon wheels. Today it is a specialty wood-working species for things like cutting-boards and jewelry. Osage orange has an invasive reputation in the midwest, but I have not seen that in northern NM: our climate isn't quite right for it to be invasive.

The remains of a stone building stand at the spot where the row of Osage orange trees intersects a large wash coming out of

a side canyon. Why would anyone build a fence so close to the cliffs? Maybe to keep cattle out of the side canyon, where they might be difficult to track down?



***Pinus sylvestris*.** The bright orange bark of Scotch pine makes a cheerful Christmas display. Image: © Acabashi, Creative Commons CC-BY-SA 4.0 (https://commons.wikimedia.org/wiki/File:%27Pinus_sylvestris%27_Scots_Pine_at_Staplefield,_West_Sussex,_England_03.JPG)

***Pinus sylvestris* in La Mesilla.** I passed nearby this tree oblivious for many years; it was a walking companion who spotted the 30-foot tree with its distinctive bright orange bark on her first time there. Scotch pine is native to northern Europe, including of course Scotland, and is widely planted in the eastern US as an ornamental and forest product species.

How did it get down there in the bosque? Although the location is some distance from any residence, I think that someone planted their living Christmas tree in the bosque several years ago. They must be grateful to see what a beautiful specimen it's become!

Buddleja alternifolia

in Pecos. Along the bottom of Alamitos Canyon, near the now-reclaimed millsite (El Molino) of the historic Terrero Mine, grows a very conspicuous exotic woody plant. The shrubs are about 5 meters tall, and equally as wide. Butterflies cavort among the hundreds of bright lavender-colored flowers on each arching branch. This horticultural beauty is highly invasive in its habits. In Alamitos Canyon, it is actively spreading uphill into the pinyon-juniper woodland.



***Buddleja alternifolia*.** Thousands of spectacular flowers, but an invasive nature. Image: Rachel Jankowitz, Santa Fe Chapter

With some help from the UNM herbarium, it was keyed to a species of butterfly-bush (*Buddleja alternifolia*), native to China. A specimen from Alamitos Canyon was accessioned

to SEINet, the Southwestern Environmental Information Network, in 2014 by Teague Embry of Tucson AZ. At the time, he was conducting vegetation monitoring for NM Game & Fish, which owns the property. Teague published a notice in the on-line journal *Phytoneuron*, in which he stated that there are unpublished photographs of Buddleja on the road shoulder in the early 1990s, from whence it has spread. It has not yet been recorded elsewhere in NM.

My theory of how it got there (and Teague Embry tends to agree) is that it was planted as an ornamental by the mining families that lived in the canyon in the early 20th century, and somehow hung on for 100 years until the reclamation process released it to express its genes. Or it may have moved to the creekside from a present-day garden in Pecos, though there are none right nearby.

Have you seen something that doesn't belong, and wondered about its story? Please share your observation with me at npsnmconservation [at] gmail.com, and I'll try to put it in the newsletter.

Chapter Actions

On June 19 former NPSNM President Barbara Fix and Dr. Sylvan Kaufman led a field trip along a portion of Santa Fe's Acequia Trail that the Baca-Sierra Vista Neighborhood Association (BSVNA) has adopted through an agreement with the City Parks Department. Dr. Kaufman produced a plant list of both native and exotic plants. That plant list will form the basis for a brochure to be produced by *the Santa Fe chapter* giving brief descriptions and photos. In the fall, the brochure will be used to train Parks staff to identify plants. It also will be used for invasive species management by trail users & BSVNA volunteers. Another planned use is for a BSVNA fiesta to be held later in the fall.

Representatives of *the Albuquerque chapter* remain active in community partnerships with the Cibola National Forest. Our members actively participate in three Ranger District Collaborative groups. They have taken a particular interest in protecting a location in the Zuni Mountains called Little Water Canyon. As described in this newsletter's winter 2015 issue, the primary botanical feature of LWC is that it contains the type locality for the *Picea pungens/Cornus stolonifera* or Colorado blue spruce/red-osier dogwood plant association. Some of the

blue spruce are near record size. The diameter and height of these spruce trees reflect the maturity of the forest and the fact that it has been maintained in a more or less pristine state.

The Albuquerque chapter also brought agency attention to an invasive species, Blindeyes Poppy (*Papaver dubium*), which has recently increased in the Sandia foothills.

WOTUS Update

The current definition of "waters of the United States" covered by the Clean Water Act went into effect in 2020. The great majority of water bodies in New Mexico are no longer protected. For details of how that loss affects native plant communities, please see this newsletter's summer 2019 edition.

Now, the U.S. Environmental Protection Agency and the Department of the Army Corps of Engineers have announced their intent to revise the definition yet again. This process includes two rulemakings. The first rule will propose to restore the regulations defining WOTUS which were in place for decades until 2015, updated to be consistent with relevant Supreme Court decisions. The agencies will also pursue a second rulemaking process that further refines and builds upon that regulatory foundation.

In August, initial public meetings were held to hear from interested stakeholders about their perspectives on defining WOTUS and how to implement that definition. The agencies accepted written recommendations from members of the public. They are planning further opportunities for engagement. Future events will include ten geographically distributed roundtables that will provide for regionally focused discussions among a full spectrum of stakeholders.

Update: On August 30, a federal judge struck down the Trump administration rule. This action is effective nationwide, pending appeal. With the court ruling, agencies will go back to applying water protection standards from the 1980s, which are more expansive than the Trump-era rule but not as sweeping as Obama's 2015 rule. ❖



A Journey through Time: An old cottonwood towers over a field trip participant during the 2021 conference.

Image: Elva Osterreich, Otero Chapter



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Chapter Activities & Events

For further information on upcoming events, notify the contact person listed, or visit the chapter's web page: First go to www.npsnm.org; click on Chapters; then 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. As we go to press, **Covid-19 restrictions** remain in place and many in-person events have migrated online. Remember if you do meet with your fellow society members that you should follow CDC, state, and local guidelines. On the positive side, many chapters are now using online meeting platforms and recording sessions, which they are making accessible to the general public. The home page of the NPSNM website has a number of interesting talks you can "attend." ❖

Albuquerque

Monthly meetings are normally the first Wednesday of the month at 7:00 pm, currently online via Zoom. Meeting links are distributed to chapter members via e-mail prior to the meeting. For more information on programs and/or registration for an upcoming Zoom meeting, contact Sara Keeney at [skeeney\[at\]swcp.com](mailto:skeeney[at]swcp.com) or 505-379-3392 or check the Albuquerque Chapter page of NPSNM.org. No public field trips are scheduled at this time. Plant lists are available for hikes on your own on the website.

Oct 6 Meeting. Christina Selby will share her adventures over several years of chasing blooms while researching, writing, and photographing the guide book *Best Wildflower Hikes New Mexico: A Guide to the Area's Greatest Wildflower Adventures*, published in 2020. Her photos and short videos will take you on a tour of some of New Mexico's best, most remote, and most diverse wildflower displays throughout the seasons and throughout the state. Interesting information about flower species and changing habitats will also be included in her presentation. Come be amazed by the beautiful treasures that await you from the lowland deserts to the alpine tundra and everywhere in between.

Nov 3 Meeting. "Amazing Cacti of New Mexico." Ralph Peters, a local cactus aficionado, will share his photos and wide-ranging information about NM and area cacti and some ocotillo species. The presentation will include examples from around the state including many unusual forms and flowers. He will share the history of the miniature cactus, *Pediocactus knowltonii*, found only on one hill in NM. Ralph is an expert in germinating and growing cacti from seed, especially with challenging species. The presentation will include information about his propagation work, as well.

Dec 4 Annual holiday potluck and officers election. Watch mailings and Facebook for more communication about the Annual Meeting — a special event may be in store for us all.

El Paso

Meetings are usually at St. Alban's Episcopal Church, 1810 Elm Street (Elm at Wheeling, off Piedras). Programs are second Thursdays at 7:00 pm. Coffee social at 6:30 unless otherwise noted. All events free unless a fee is specified. Nonmembers welcome. Info: John White, 575/640-7555; [jmwhite\[at\]utep.edu](mailto:jmwhite[at]utep.edu).

Gila (Silver City)

Monthly evening programs will resume this fall. Because of the inroads of the Delta variant, we will have to depend on Zoom for a while longer. Gila Chapter members will receive a Zoom link by email; any others interested may request a link from [gilanative\[at\]gmail.com](mailto:gilanative[at]gmail.com). All are welcome. For more information check our website at www.gilanps.org/events/programs.

Oct 15 6:00 pm via Zoom. Join Bat Conservation International's Dan Taylor for a program describing restoration efforts of *Agave palmeri* and *Agave parryi* in southwestern New Mexico to support insectivorous bat populations. This subject will attract flora and fauna lovers alike and, therefore, will be a joint program of the Gila chapter and the Southwestern New Mexico Audubon Society. Dan Taylor is a Senior Restoration Specialist with Bat Conservation International's Habitat Protection and Restoration (HP&R) Program and has more than 30 years of experience working on a wide range of wildlife and conservation issues in the U.S., Central America, and Africa.

Nov 19 7:00 pm via Zoom. "Post-fire Status of *Allium gooddingii* in New Mexico." Daniela Roth, New Mexico State Botanist, will discuss the status of *Allium gooddingii* in New Mexico following the five large fires that have occurred in the Gila and Lincoln National Forests since 2006.

Dec TBD Holiday Party/Volunteer Appreciation — date to be determined.

Las Cruces

Meetings are usually the second or third Wednesdays (unless otherwise noted) at 7:00 pm in the NMSU Herbarium, Biology Annex on NMSU campus. Zoom link will be announced a few days before the presentation. Field Trips are usually on the Sunday following the Wednesday meeting; most last into the afternoon. At this time, we aren't announcing any events for the 4th quarter due to Covid-related uncertainty regarding the availability of venues for meetings. Also, it is apparent that rapidly changing, unpredictable weather makes it difficult to schedule field trips too far ahead of time. So, we plan to announce recommended, do-it-yourself-type field trips via e-mail lists to our chapter members and to a limited number of officers in neighboring chapters. These can also be announced short-term on the NPSNM website. The same holds true for any meetings via Zoom. Contact: Vic Crane: [viccrane\[at\]gmail.com](mailto:viccrane[at]gmail.com).

Otero (Alamogordo)

For workshop and field trip details, contact Elva Osterreich, echoofthedesert [at] gmail.com, 575/443-4408, or Jennifer Gruger, jengruger [at] gmail.com, 505/710-2924. More information will be available by the beginning of each month.

Oct 9 Aguirre Springs at 9:00 am. Meet in the Pine Tree Trail parking lot. A moderate hike which climbs 1,100 feet. The 4-mile loop offers excellent views all the way. No need to walk the whole loop. Bring lunch to enjoy following the hike.

Nov 4 Desert Foothills Park sunset critter watch walk at 5:15 pm. Meet at the entrance to the park, at the East end of First Street in Alamogordo. We will discuss the different animals we might see and their interaction with the plants on the walk as we watch the sun set over Alamogordo.

Nov 20 Celebrational relaxation gathering and gift exchange. Potluck style at 11:30 am to meet, eat, chat about the year past and maybe make some plans for 2022. Location TBA. Be prepared to talk about what delighted you during 2021 and let go of the tough moments of the year.

Santa Fe

Meetings are third Wednesdays at 6:00 pm at Christ Lutheran Church, 1701 Arroyo Chamiso (in the triangle of Old Pecos Trail, St Michael's Dr., and Arroyo Chamiso). For more information, check the NPSNM website. Meetings and talks are free and open to all.

Taos

Monthly meetings are usually third Wednesdays at 6:00 pm in the Kit Carson Electric Cooperative boardroom, 118 Cruz Alta Rd. Check the NPSNM website or our Facebook page (search for "Native Plant Society New Mexico Taos Chapter") for updates. Contact: TaosNPS (at) gmail.com, or phone Jan Martenson at 575-751-0511. Videos of past meetings can be found at <https://tinyurl.com/TaosNPSvideos>

Sep 15 Dr. Joseph Morton Santa Fe will speak on "The Wacky Wonderful World of Fungi." Dr. Morton is a professor emeritus of Environmental Microbiology, University of West Virginia. This will be the first of a two-part series on fungi.

Oct 20 Dr. Morton will speak on "The Mycorrhizal Symbiosis: Essential To All Life On Earth." ❖

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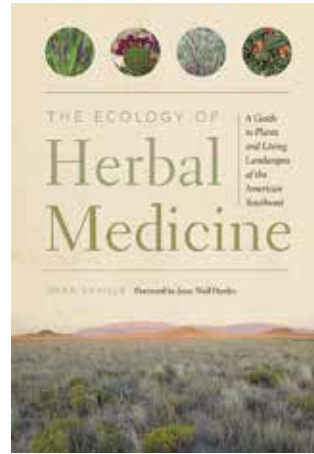
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Ecology of Herbal Medicine

by Margaret Ménache, Albuquerque Chapter



If you haven't bought your copy of Dara Saville's new book, *The Ecology of Herbal Medicine: A Guide to Plants and Living Landscapes of the American Southwest*, you'll want to do that soon. For those who are committed to less personal paper, check your local library. If they don't already have this resource, encourage them strongly to add it to their collection.

Ecological herbalism, according to Dara, is "an approach to working with plants

that is based on their interactions with other elements of the natural environment, including us." (p. xviii). While that might have a rather dry sound, Dara's meaning is far richer. The first part of her book elaborates on what that means in very specific and personal ways. With a background in geography (evidenced in her detailed, clear, and inviting descriptions of the landscape), a long practice of community and medical herbalism, and an ongoing commitment to giving to the environment and people (her Yerba Mansa restoration project along the Rio Grande bosque), Dara seems uniquely positioned to produce this book. She credits her graduate work in UNM's geography and environmental studies department with giving her a theoretical approach to landscape and life systems that has influenced her understanding of herbalism's necessary relation to a healthy ecosystem.

Geography also gave her an appreciation for the importance of citations, with their ability to allow the reader to investigate topics further. The bibliography comes in at just under 70 pages. No, you don't have to read it all, or even to read it at all, but if something piques your interest, she has provided you with the next step. She describes the references as critical to support the book's focus as a *Materia Medica*. Dara said, "Also, doing that really honors the lineage of information behind our practice. I really wanted to honor everyone who contributed to this knowledge that we have." She added, "I think it also gives herbalism a little bit more academic legitimacy, you know. I hope that in writing this book I can elevate the profession in that manner."

Throughout our conversation, that was a continual theme — honoring others, recognizing contributions, and providing people with the tools to continue learning. Her Yerba Mansa project in the Rio Grande bosque is a great example of how she has braided these themes together to create a tangible restoration project. You can read more about this impressive project at yerbamansaproject.org.

Continued page 14

Wrapping Up the 2021 Journey Through Time

by Jen Gruger, Conference Chair, Otero Chapter

Sometimes...well ok, most of the time, the Universe listens to me.

I can remember many times listening to Dr. Dave Anderson talk about the land and the plants on it and thinking, "There has got to be a way we could thank this man for all he has done and all he has recorded and all he has taught us."

I also wrote in a newsletter article for this very publication, and restated in my opening remarks for the 2021 State Conference, that I wish the Universe would provide me an opportunity to meet Aldo Leopold someday.



Aldo Leopold (Steve Morgan) reads from his journal and encourages us all to document what we see around us. Image: Jen Gruger, Otero Chapter.

Well, if you attended the Conference, you know that both of those 'asks' were fulfilled.

It is a true honor to be the President of the chapter that was able to recognize Dr. David Lee Anderson as the recipient of the 2021 Jack and Martha Carter Conservation Award. I felt a little sheepish, even, because he has done so much for other chapters as well. Anyone who has met him has benefitted from the experience. Dr. Anderson has been retired from his job as land manager of the Missile Range for a couple of years, so it was especially good to see him among us, firing away with questions for the speakers, writing notes in his ever-present notebook, and receiving the award with the grace and humor of a wise sage who knows more than most of us put together but only makes us feel eager to learn more.

During his lovely and gracious remarks, Dr. Anderson gave the room, and by association, the entire organization, a very specific, very direct, and very heartfelt set of instructions. He asked us to be better record keepers. Better scribes. Better documenters of the history we are witnessing: the plants, the land, and the ecosystems we are living in. He held up in his hand his notebook, containing details of over 60 different trips conducted just for NPSNM chapters over the years. For some, he even had at least a partial list of attendees; for all, he had details of the area explored, plants that were spotted, and, perhaps, ones that were elusive. This documentation matters to the work of the scientists and land managers who come after us; it also matters to those who came before us.

After Dr. Anderson's departure from the lectern, who should stroll in as though finishing up a leisurely walk in the brush and scrub that Alamogordo is nestled in, but Aldo Leopold himself! And I'll be darned if he didn't give us the exact same instructions. He encouraged us to journal as he did for so many years. Write what we witness. Share what we see in the land that we are borrowing. Own the changes we are making to the earth. Many thanks to Chautauqua speaker and Leopold enthusiast Steve Morgan for this magical conclusion to an already successful conference!

As instructed, then, I am pleased to announce that our chapter will be adding the formal role of "Scribe" to our ranks. At the beginning of each trail hike we will designate a person to keep a record of events, who attended and, to the extent possible, what plants were seen/discovered/missing. These data will be made available for futurists like graduate student and field botanist Marisa Mancillas, whose current project was one of the presentations at the conference. Marisa and undergraduate student Justin Lopez are diligently and with as much accuracy as possible gathering plant data recorded over hundreds of years to create a historical ecology database on the Organ Mountains for others to use in the future.

The Otero chapter challenges you to join us in our humble response to this reasonable request put forth by some pretty smart fellows. Be well. Write stuff down. Read some Aldo Leopold. ❖



Dr. Dave Anderson accepts the 2021 Jack and Martha Carter Conservation Award from Otero Chapter's Elva Osterreich. Image: Jen Gruger, Otero Chapter.



Jen Gruger moderates the panel on native plants. From left to right, the panelists are Dave Anderson, George Miller, and Michael Drinkwater. Image: Elva Osterreich, Otero Chapter.

Notes from the Conference: a few favorite moments

by Kathleen Hall, Albuquerque Chapter

How did they pull this off? Jen Gruger, president of the Otero Chapter, along with her conference team and community, is a master of the unexpected. We took a trip through time, as promised, back to the hearth on a packed dirt floor, to pits of roasting agaves, to plants as characters in legends, to hand-dug channels on a flood plain, to grasslands before cattle, to the barren soil of drought and the scrubland of nature filling her voids.

The logistics of getting lots of people together are always fraught with issues and obstacles, and then there was a pandemic. We wore masks. We didn't shake hands. We convened for presentations and a banquet at rows of tables with seating on one side only. We ate abundantly and with thought-provoking provisions. No plastic bottles. No Styrofoam. The caterer found, at Jen's insistence, paper cups that held hot and cold and didn't disintegrate and plates made of biodegradable palm leaf.

There was virtual attendance for those who stayed home. This is a great breakthrough in meeting planning, as there will always be folks who need to be somewhere else. It's rough to be pioneers, but the wheels kept rolling, weather cooperated, and we accumulated plenty of thoughts and impressions to mull over for the next year.

White Sands Sunset: Otero Chapter saw an opportunity and took it to the moon. They booked us into the Group Shelter at White Sands National Park for the Friday evening reception. There we were, surrounded by dunes, far away from our highway journeys and everyday busyness, enjoying the company of fellow phytophiles. Walking out into the landscape from time to time as it turned from bright white to gold to red and finally to shadowy blue. Communing with a single, perfect *Yucca elata* steadfast on its white hill. Watching the cloud wisps paint the sky with sunset. Finding a sand verbena (*Abronia angustifolia*) with its sunset-colored blossoms. Seeing the near-full moon rise. Driving back to Alamogordo with the moon tracking us down a dark road toward our Journey Through Time.

Panel Discussion – What is a Native Plant?: Well we should ask, since without the query we might just be The Society of New Mexico. Spoiler alert: there's no final word. Keep asking.

The panel discussion included cleric and linguist Michael Drinkwater, who has spent time working with the Jicarilla

people and other tribes. He defined a native plant as one that is known by the natives of the land, and that, perhaps, has assumed a character role in folklore. Although challenged during the discussion, the Drinkwater definition is worth pondering.

George Miller, botanist, author of Native Plant guides and Albuquerque Chapter past president, suggested that a native is a plant that evolved in association with the ecology of an area. He asked us to consider a caterpillar and the plants it needs to feed, pupate, metamorphose, and reproduce. When specific host plants are replaced or hybridized by introduced cultivars they may be less appropriate to the region and inappropriate for the caterpillars. A native plant is a part of a system.

David Anderson, botanist, former land manager of White Sands Missile Range, and field trip wrangler, said the definition needs to include a timeline, "Ten thousand years sounds about right." Creosote bush (*Larrea tridentata*), for example, had origins in South America and dispersed into North America naturally. The Chihuahuan species evolved in isolation from its original gene pool for that ten thousand year timeline and is now considered a native.

The discussion included audience members, many of whom have given this topic a good deal of thought.

If it's dispersed by wind, water or non-human critters? Not the South African Lehmann Lovegrass (*Eragrostis lehmanniana*), introduced in Arizona and wind-dispersed into New Mexico, and which has supplanted the native Black Grama (*Bouteloua eriopoda* Torr.), according to Anderson.

If it doesn't out-compete existing natives? Back to Miller's caterpillar host plants, and the well-mannered cultivar that alters the native gene pool to the detriment of the native fauna. There's also the exotic that may not be invasive here, but wanders into another latitude or altitude and becomes someone else's invasive.

We routinely grow non-natives for food, beauty, medicine, and spiritual purposes. Apples, tomatoes, rice, potatoes, soybeans, and on and on. A few escape and "naturalize;" most rely on human intervention to reproduce reliably. Some are grafted to native rootstock, like European wine grapes, for disease-resistance and higher yield. Non-natives are not the Evil Empire

Continued page 11

2022: An Ecology for Seven Generations

by Tom Stewart, Albuquerque Chapter

Our "Journey Through Time" gave us the long view of our historical relationship with plants and our environment. The journey will continue in Albuquerque next summer with "An Ecology for Seven Generations," inspired by an ancient Haudenosaunee (Iroquois) philosophy. With climate change and a legacy of ecosystem abuse clearly coming home to roost, our next conference will offer multiple perspectives on the ecology of New Mexico to broaden the conversation and to move toward pragmatic solutions. How can we advocate for necessary changes in policies and behaviors, showcase successful solutions, and pass our knowledge and respect for nature to future generations? The conference date and venue will be announced in early 2022. ❖

Carter Conservation Fund Helps Safeguard Bryophyte Collection

by Cheryl Beymer, Zachary Rogers, and Sara Fuentes-Soriano



Fig. 1. Reproductive spore-bearing capsules of *Ptychostomum pseudotriquetrum* growing near Fort Bayard. Like most species of mosses, this species usually grows on damp or wet soil, rock, or rotten wood. Image: Russ Kleinman, 2010

Founded in 1890 by Professor Elmer Ottis Wooton, the New Mexico State University Herbarium is the oldest in New Mexico and contains one of the largest collections of bryophytes in the state. Bryophytes are a very old evolutionary lineage of small land plants that reproduce from spores rather than seeds. [Figs. 1 and 2]

Bryophytes are divided into three groups: hornworts, liverworts, and the best known members — the mosses. Experts estimate New Mexico has about 460 species of bryophytes (more than 80% are true mosses) and probably more than 95% of those are native to the state. Mosses and their close relatives play many important roles in society: as habitat for soil and other organisms, as bioindicators, and even as a source of new biofuel research, to name only a few. [Fig. 3]



Fig. 2. Leaves of bryophytes are small and often only 1- or 2-cells thick, which makes it necessary to study their structure and anatomy under a powerful microscope, as seen in this specimen of *Fabronia*. Image: Russ Kleinman, 2010

Thanks in part to a generous

grant from the 2021 Carter Conservation Fund, the NMSU Herbarium completed a project to secure the future of its large bryophyte collection through major improvements made to

specimen organization, digitization, preservation infrastructure, and data accessibility.



Fig. 3. Don't be fooled – this is not a tiny patch of mushrooms! It is actually a species of liverwort (*Mannia californica*) growing in the Burro Mountains near Silver City. Image: Karen Blisard & Russ Kleinman, 2012

Documentation from the early history of the NMSU Herbarium is scant, but we suspect our core bryophyte collection of about 700 specimens was mainly acquired by Wooton as a gift, purchase, or exchange of material received from his East Coast colleagues at the turn of the 20th century. Only about 30% were collected in New Mexico. For over a hundred years, the information contained in these specimens was difficult to access and the material was never inventoried or databased.

Then, in the 1990s, NMSU's own Dr. Kelly Allred became interested in studying New Mexico bryophytes. Through his research, he collected another 2,300 moss specimens, most of those coming from our own state flora. This material was stored in the University's Range Science Herbarium in Knox Hall, and kept separately from Wooton's original bryophyte collection, located in the Biology Annex Building.

In 2017, herbarium curators received a National Science Foundation award to physically merge and manage all of NMSU's herbarium collections, libraries, and resources together, including the digitiza-

tion of all 97,000 plant specimens, in order to promote in-person and online activities related to teaching, research, and outreach.

Because of their special position as an early lineage of plants, the bryophytes were one of the first groups to be merged and digitized. The laborious curatorial work was carried by dedicated volunteer Cheryl Beymer, one of Las Cruces Native Plant Society Chapter's members, and Master's student Angela Swanson, under the guidance of Herbarium Curator Zachary Rogers.

Shortly into the bryophyte curation and databasing, it became clear the physical infrastructure of the bryophyte collection was also sorely in need of an upgrade. Specimens had been stored inside a series of ramshackle, repurposed library card-catalog drawers, which were poorly constructed, improperly sized, and could not be sealed. The specimen packets kept inside the drawers were at serious risk of damage by moisture, dust, UV light, and pests.

The 2021 Carter Conservation award allowed us to purchase archival, pH-neutral storage boxes specifically-sized to fit inside the fire- and pest-resistant cabinetry already located inside our main herbarium. All curated, databased packets were reorganized



Fig. 4. NPSNM Las Cruces chapter member and New Mexico State University Herbarium volunteer Cheryl Beymer is organizing some new bryophyte specimens stored inside the new archival boxes. Image: Zachary Rogers, Las Cruces Chapter.

and transferred to these boxes. Each box was then uniformly labeled, providing easier access for users interested in examining specific specimens. [Fig. 4]

The NMSU herbarium now has a combined 3,000 bryophyte specimens that are full of previously unavailable data, which will be posted online on public biodiversity portals soon. Bryologists and other plant enthusiasts are sure to learn a great deal more about these fascinating plants as our newly conserved moss collection continues to expand into the future.

The NMSU Herbarium and the bryophyte collection is a free, public resource available to anyone, amateur and professional alike, and is commonly used for teaching, research and outreach. We hope members of the Native Plant Society will pay a visit to our herbarium to see this important bryophyte collection. Please contact us to arrange a visit or schedule a tour (zrogers@nmsu.edu, sfuensor@nmsu.edu). ❖



Conference field trips and workshops provided a wide range of choices with something for everyone.

Above left Lee Blackwell, Taos Chapter, shows off a pueblo-style pot he is making. Image: Kathy Fuller, Otero Chapter.

Above right: Members look at drought-tolerant, pollinator-friendly plantings. Image: Jen Gruger, Otero Chapter.



Left: Participants hike up to petroglyphs at the Three Rivers site. Image: Vicky Ramakka, author of *The Cactus Plot*, Taos Chapter.

Favorite Moments, Continued from page 9

coming to take over (mostly); they're just plants we need to think about in our landscapes, make thoughtful decisions on their use, and continue to educate our neighbors.

Blast from the Past: Two college students, Marisa Mancillas and Justin Lopez, stood before us on the stage. They spoke with confidence and passion as they described their work on Marisa's Masters project, Organ Mountain Historical Ecology. They are using contemporary data as well as any written records they can find in archives, attics and personal collections, in a study of ecological changes over time. It's a work in progress, and the presentation was about how information is gathered. Lopez, the research assistant, worked the archival angle. It's easy to forget how quickly things change until you hear a young man admit with a smile, "I had to learn to read cursive."

To the Rocks: Those of us who chose the Three Rivers Petroglyph Site tour with Joan Price were treated to a glimpse into the lives of Native Ancestors and a beautiful, lightly overcast day that made the glyphs easy to view and the walking comfortable. There are so many, you might visit several times and suddenly see something you'd not noticed before. Among tufts of monsoon-greened grass eyes peered out. Faces and figures seemed to rise out of the soil. As we go forward, we observe and learn more about these messages from the past, and how each one is specific to its orientation and location.

Medicinal herb workshop: Mimi Kamp introduced us to a new (for some) facet of native plant lore: medicine. Native peoples used many of the plants we discussed, but Kamp combined tradition with modern knowledge. Stimulant, sedative, analgesic, tonic, calmative. She passed around sprigs of most of the plants, and the air was filled with the resinous, salty and brisk scents of desert plants.

Aldo Leopold attended: After the banquet, the Jack and Martha Carter Native Plant Conservation Award was presented to Dr. David Lee Anderson for his generous work in support of native plants and NPSNM. And then...a tall lean man in khakis and Fedora, antique binoculars, walking stick in hand, stepped onto the stage. He was Aldo Leopold and he was in our midst for an hour, humble and wry, wise and eloquent, thumbing through his journal. Most of us have read his work. That night we met him. He left us with two thoughts.

Make a conscious effort to be more observant.

Take a walk. ❖

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Recognizing Members

The NPSNM would like to thank all members who have made monetary contributions above their regular dues. This list, which covers August 16, 2020 through August 15, 2021, includes those who sent in extra contributions with their memberships. It doesn't recognize the other financial contributions people make throughout the year or the contributions of cooperation and energy from the wonderful members of this volunteer organization. The NPSNM thanks all of you for your support, whatever form it takes.

Life Membership (\$1000)

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When you renew your membership this year, consider renewing at the next level. The IRS is permitting a temporary change in limits on charitable contributions made during calendar year 2021. The tax consequences are more complex than in 2020 so check with your tax advisor for the impact on your taxes.

Carter Conservation Fund Donors

The NPSNM would like to thank all who have contributed to the Jack & Martha Carter Conservation Fund from August 16, 2020 through August 15, 2021. This fund was created to assist the NPSNM in maintaining a balanced budget while continuing to increase the funds available for conservation research and educational grants to individuals and organizations. It is a long-term endowment fund and your contributions enable the NPSNM to expand its support of programs, research, and education for those involved in the study of native plants. Every dollar we receive is important and we deeply appreciate your support.

Jack & Martha Carter Conservation Fund

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Interested in Applying for a Grant?

Applicants may send in their proposals any time of the year until December 31. Guidelines for applying and an application form may be found on the website. It is important for applicants to follow these guidelines so the proposals are consistent for the review process. The proposals are studied by the statewide members of the NPSNM Board and voted on at the winter Board Meeting, usually at the end of January.

The Carter Conservation Fund awards for grants are sent in February, while gifts in support of the regional herbaria are sent later in spring or early summer. The Carter Fund also finances an award to a Conservation Champion, chosen by the chapter hosting the statewide annual conference and presented to the individual at the conference banquet.

The money available for grants each year comes from donations during the previous twelve months and from any earnings on our investments. The Board has typically awarded grants to ten or more projects per year, with grants limited to \$1500 each. However, they have also decided that if there is a strong proposal with a greater impact for conservation they will consider a larger award, but fewer grants for that year to hold expenditures constant.

The NPSNM Policies in Effect document lays down criteria for awarding the grants, management of the fund, and establishes responsibilities for the awardees. The bylaws of the organization and the policies in effect are available for viewing by anyone on our website under Chapters/Statewide Organization. ❖

2021 Conference Silent Auction Donations

by Kathy Fuller, Barb Hughes, and Lynne Bowers, Otero Chapter Silent Auction Committee

"Our ability to perceive quality in nature begins, as in art, with the pretty. It expands through successive stages of the beautiful to values as yet uncaptured by language." ~ Aldo Leopold

Thank you! As was evidenced through the NPSNM Silent Auction, NPSNM members truly perceive the quality and essence of nature through art; their own creations as well as those created by others. The diversity and beauty of the items donated for the cause were so VERY generous, and a remarkable sight: over 100 items were donated!

Sincerest thanks to each of you who contributed an item (or many) to the Auction and thank you to each of you who helped with the bidding, and building anticipation, as the day went along. The money raised by the silent auction is yet another way we support projects, particularly student grants. ❖

Herbal Medicine, Continued from page 7

Dara expressed unbounded gratitude for her graduate advisor, Dr. Jerry Williams; the book is dedicated to him. "Jerry showed me the importance of seeing yourself as part of the system of life. Geographers are interdisciplinary: they look at rocks, water, plants, culture, everything, and how it works together. Getting that perspective, getting out of myself and seeing myself as part of a whole was life-changing. The importance of developing a connection to place and why that matters, for us in our personal lives and on a societal level. This investment, our connection to place, and the health of where we live culturally and environmentally; that was really what he taught me. I don't know where I would be without him and without his teachings and that perspective." She added, "You can say thank you a million times to somebody but it doesn't really express the profound gratitude you have for someone like that."

The depths of her gratitude appear throughout her book and the care she has taken with it. She urges us all to develop empathy for the environment we live in. "Being a tree up on a mountaintop and feeling that wind and sun and exposure. What is that tree doing in its daily life? What is its work and its experience? Those kinds of experiences for us of that kind of deep empathy allow us not only to learn about medicinal properties of plants and how they work in their lives and how they might work in our body as medicine but it also helps us to think about our role in that ecosystem. We're not observers; we're active participants in their life systems. How can we direct our energy for good in this life system and contribute to resilience and vitality not just for people to have health but for land health. How can we have those things interconnect in a more aware manner?"

Her final words to me were: "This book really is my song of love about New Mexico. This is the first book of its kind, really about New Mexico. And it's about the love that I have for this place so I think that the people of the Native Plant Society will appreciate that aspect of it." I agree whole-heartedly.

Whatever your interests, this is a book to put on your bedside table and read often. It is practical. It is inspiring. It is an introduction to Dara's many facets, expertise, and passions. You can learn more about Dara's book-related events on her author's website: darasville.com. ❖

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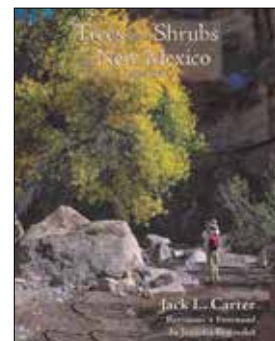
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Membership in the NPSNM is open to anyone supporting our goals of promoting a greater appreciation of native plants and their environment and the preservation of endangered species. We encourage the use of suitable native plants in landscaping to preserve 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. The Society has also produced a New Mexico wildflower poster by artist Niki Threlkeld and a cactus poster designed by Lisa Mandelkern. These can be ordered from our poster chair—check out <http://www.npsnm.org/posters/>

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

Use the form provided below, or contribute through PayPal on the website, www.npsnm.org. Every contributed dollar is being used to protect the flora of New Mexico well into the future.

~Jack & Martha Carter

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Memories of a Journey Through Time.

Did you miss it? Planning is already underway for the 2022 conference.



Above left is one of the striking Silent Auction items. This 6' recycled material sculpture was donated by Michael Gruger. Image:: Kathy Fuller, Otero Chapter.



In addition to an amazing lineup of speakers, the Journey Through Time included plenty of rest stops. Above: participants take a moment to relax and chat. Image: Jen Gruger, Otero Chapter.



Above right: Who doesn't love the reception? And what a spectacular location, with White Sands for the venue and all the glory of a near full-moon evening. Image: Jen Gruger, Otero Chapter.



Left: Kathy Fuller and the rest of the silent auction committee did a great job putting together items worth bidding on. Image: Elva Osterreich, Otero Chapter.



Right: The expanse of sand, combined with long evening shadows, inspired some members to experiment with their image making. Image: Kathleen Hall, Albuquerque Chapter.