

GILA NATIVE PLANT SOCIETY

January 2018

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Helen Shoup, Editor

Bulletin 2018: Quarter 1

This quarterly Bulletin of the Gila Native Plant Society of Silver City, New Mexico, provides the latest communications between the society and the members.

It is delivered via your email unless you request otherwise. The online version allows color photos and for a lower cost (essentially free for GNPS). The Bulletin will continue to be available on the [GNPS website](#).

Programs for This Quarter

All programs are free and open to the public. Meetings are usually the third Friday of the month at 7:00 pm at WNMU's Harlan Hall from September through May, unless otherwise specified. Refreshments follow the program.

Activity updates and further details are posted on the [website](#). You will also receive an email reminder before the date of each meeting.

The Gila Native Plant Society is committed

- To promote education, research, and appreciation of the native flora of the Southwest
- To encourage the preservation of rare and endangered plant species
- To support the use of suitable native plants in landscaping

For information on programs, publications, and membership, please visit www.gilanps.org.

January Meeting

When: Friday, January 19, 2018, 7:00 pm

Where: Harlan Hall, WNMU Campus, Room 201

Program description: Sara Fuentes-Soriano, plant scientist, will present a talk entitled “The Intriguing and Wonderful Natural History of Uncommon Southwestern Mustards.” As she explains, “Members of the mustard family (*Brassicaceae*) are well known for the unique flavor they bring to our table. The plant diversity of the family is organized within 41 subgroups known as tribes. Tribe *Physarieae* is a unique group of mustards with specialized pollen morphology and a natural history tied to the Southwest region of North America. In this talk we will

- Visit different geographic areas where this tribe is found
- Cover some useful morphological and molecular features that help us to recognize species
- Learn about a few species that are locally and traditionally used for medicinal purposes.”

Presenter: A native of Mexico, Sara Fuentes-Soriano obtained undergraduate and graduate degrees in biology and electron microscopy at the National University of Mexico (UNAM) and completed her studies with a PhD in Plant Systematics and

Evolution from the University of Missouri - Saint Louis.

In her research, she uses plant museum collections and data to address fundamental questions related to trait evolution, taxonomic classification, and phylogenetics. Most recently, her research on the comparative phylogenomics of several crop species and their wild relatives (e.g., loblolly pine, cacao, sweet potato) has been shared with a broad community through publications and outreach programs. The aim is to provide research-based biotechnology solutions to agricultural problems identified by economically disadvantaged farmers, rural communities, and cattle ranchers.

Currently, she serves as the Director and Curator of the 2 herbaria on the New Mexico State University (NMSU) campus. Some of her most important duties are carrying out:

- 1) professional hands-on experiences designed to engage students to learn more about biological sciences and natural history collections;
- 2) programs to recruit, train and mentor students and volunteers in herbarium work;
- 3) activities to promote research and the use of herbarium specimens by the broader plant science community;
- 4) herbarium tours and botanical presentations to stakeholders inside and outside campus;
- 5) plant identification services for users of the NMSU herbaria and the University's Plant Diagnostic Clinic.

Sara explains, "I have a strong commitment to higher education and expanding representation in the STEM fields. NMSU, an official Hispanic Serving Institution (HSI) located ca. 50 miles from the Mexican border, provides me, as a Mexican female scientist, the wonderful opportunity to proudly educate and raise awareness about plant science within under-represented, economically disadvantaged sectors of the community."

Since joining NMSU, she has participated in the College Assistance Migrant Program, offering professional hands-on experience to first-generation college

students in plant biology using herbarium-based knowledge.

February Meeting

When: Friday, February 16, 2018, 7:00 pm

Where: Harlan Hall, WNMU Campus, Room 201

Program description: March to the North: The Last Tropical Orchid: Orchids, oaks, agaves, yuccas, daturas, cacti, and so many others hugely diverse towards the tropics but only a few march to the north. How do the poleward outliers achieve their northern march and differ east and west of the North American continental divide? How do they compare with their counterparts in the Old World and in the Southern Hemisphere?

Presenter: Richard Felger of the University of Arizona Herbarium

- Associated Researcher, University of Arizona Herbarium, School of Plant Sciences, University of Arizona
- Research Associate, International Sonoran Desert Alliance, Ajo, AZ
- Visiting Scholar, Western New Mexico University, Silver City, NM

Richard Felger has been a biologist since childhood. He received his PhD at the University of Arizona. His dissertation analyzed the vegetation and flora of the islands and Gulf Coast of Sonora, Mexico. Subsequently, he was on the faculty of the University of Colorado, Boulder, and then Senior Curator of Botany at the Los Angeles County Museum of Natural History.

Returning to Tucson, he continued his research and conservation activities in aridlands, concentrating on the Gulf of California and Sonoran Desert Region. Working at the Arizona-Sonora Desert Museum from 1978 to 1982, he founded the research department. He has been active in regional and international conservation, including pioneer conservation of sea turtles of the eastern Pacific, primarily during the 1980s.

In 1988 he founded the Drylands Institute in Tucson and was Executive Director until 2007. Until 2002 he was Adjunct Senior Research Scientist at the Environmental Research Laboratory, University of Arizona, and is presently Associated Researcher with the University of Arizona Herbarium.

Dr. Felger has conducted research in deserts worldwide and has been active in local and international conservation. He has written or co-authored more than 100 peer-review publications in addition to books and numerous popular writings in botany, ethno-biology, new food crops, and other fields.

One of his strong interests is addressing world hunger through agricultural independence for arid and semiarid regions of the world, including the present-day belts of food shortages encircling the globe. His concepts include non-tillage, energy- and carbon-conserving crops to fit the crop to the environment rather than change the environment to fit the crop. Based on his search of the world for new aridland food crops, he is concentrating his collaborative new-crops work on select New Mexico and Southwest food plants.

<https://cals.arizona.edu/herbarium/people/rfelger>

March Meeting

When: Friday, March 17, 2018, 7:00 pm

Where: Harlan Hall, WNMU Campus, Room 201

Description: Kenneth Sexton's talk includes air pollution, water pollution, uptake of pollutants by plants and the negative effects on insects eating the plants in the field. This last part I heard in an EPA Webinar just a few weeks ago. The question obviously is if many different insects are experimentally documented as dying from eating the plants, might bees also be affected.

Presenter: Kenneth G. Sexton, PhD, Research Assistant Professor (Retired)
Department of Environmental Sciences and Engineering, University of North

Carolina:

- Atmospheric Chemistry and Air Pollution
- Toxicological methods for risk assessment of air pollution
- Development of air quality models for risk assessment

His research focuses on the atmospheric chemistry of urban systems of nitrogen oxides and hydrocarbons, on understanding the reactive chemistry producing ozone and other photochemical products, using smog chambers. Research includes producing data suitable for modeling and simulating the experiments for the purposes of evaluating chemical mechanisms for use in air quality simulation models for ozone. This effort evolves to studies of chemical systems including organic compounds designated as air toxics or hazardous air pollutants including nano-particles.

In the last 12 years, he has focused on developing and demonstrating new technological systems to interface smog chambers and in-vitro toxicological exposure systems for evaluating the effects of photochemistry on urban air mixtures and the resulting toxic potential for health effects. These new toxicological systems included developing new in-vitro exposure apparatus for particulate matter, and a new laboratory and outdoor chamber suitable for aerosol research, including both toxicology and analytical capabilities.

http://sph.unc.edu/adv_profile/kenneth-g-sexton-phd/

Plant of the Quarter: Arizona Cypress

By Keller Suberkropp

General description

The Arizona cypress (*Cupressus arizonica*) is an evergreen tree in the Cupressaceae family. It has a pyramidal growth habit and can reach 40-80 feet tall. It is native in the southwestern United States and northern Mexico and is the only cypress native to the southwest.

The blue-green leaves are small and scale-like. When crushed, the leaves emit a fetid odor.



Arizona cypress

The bark is smooth on young branches and shreds to form gray-brown to reddish bark with age.



Older, shredding bark

Cones

Both male and female cones are produced on the same tree. The male cones are small (0.1 - 0.2 inches long), yellow-green, and they release pollen in February and March. The female or seed cones are round and woody, up to 1 inch in diameter. They are dark reddish brown, take 2 years to mature, and can persist on the tree for many years.

Although the Arizona cypress is sometimes mistaken for the junipers that occur in the area, the presence of the woody seed cones helps readily identify it.



Male Cones



Female Cones

History

In the Pleistocene, the southwest was much wetter and cooler than it is today. At that time, the Arizona cypress was widespread, including in the Gila valley, based on pollen found in packrat middens.

Location

Arizona cypress trees occur in small stands in scattered sites at altitudes of 3000-7000 ft. One naturally occurring stand remains in the general area of Cooke's Peak near Silver City. Most of the trees near Cooke's Peak are dwarfs, less than 15 ft tall.

Problems

The Arizona cypress tree has few diseases other than rust and mistletoe and few pests (mostly the cypress bark beetle), but they are susceptible to fire.

Care

The Arizona cypress is drought tolerant and typically occurs on dry rocky mountain slopes. When provided with better soil and abundant water, it can grow relatively rapidly (as fast as 2 feet/year).

Uses

These trees are widely planted and have been used as ornamental specimens, Christmas trees, for erosion control, and to make hardy screens. Several cultivars have also been developed.

Propagation

An Arizona cypress can be propagated from seeds or by cuttings.

Quilt Raffle for Conference

Here is the quilt created on silk by Elli Sorensen:



It has 44 native plants hand-painted on silk - can you name them all? It is approximately 6"6" x 3'8" in size.

This raffle will have the quilt as the grand prize, and it will be given away at the October 2018 meeting. We also have second- and third-place winners:



This 2nd Place Winner is Rothrock's Basketflower (*Plectocephalus rothrockii*), a photograph taken by Elroy Limmer and float-mounted on metal. It is approximately 11"x14" in size.



This beautiful picture is a signed original poster by Jim Brandenburg from his book *Chased by the Light*. Framed and matted, it is approximately 19" x 25" in size.

The tickets will cost \$5 each or 5 tickets for \$20, so we hope to sell a lot of tickets! The tickets will be available at the next meeting.

Silva Creek Botanical Garden Report

By Elroy Limmer, Garden Chairman

The Silva Creek Botanical Garden looked great this year, thanks to all of you that helped make it that way. Looking at my records and the many unrecorded hours, I am sure that well over 300 volunteer hours were put in. Next year will be especially important as we host the State Conference, and I anticipate over a 150 out-of-town guests, all plant enthusiasts. We will want to show off our great garden at its best. I

hope for us to get a good number of new plants installed in 2018.

One major complaint I have had for years is the junky storage shed, but thanks to a handful of members, it has been cleaned up! The door now opens out, creating more space and more light, tool racks have been installed, junk thrown away, and the shelves are now organized. I often say that Fall and Winter is the time to be lazy gardeners, as many of the plants have seed that the birds can feed on. So sometime in late January or early February, I will be calling a workday so we can get the leaves raked up and many plants dead-headed in anticipation of spring.

The biggest news is the beautiful new sculpture in the Garden. Denise Friedrick has completed a piece called "Tree of Life" which is now installed on the art pad. It's a great addition, and I personally want to thank Denise for her vision and the many hours of work creating it. It is constructed out of stainless steel and will last for many years. I urge everyone to stop by and enjoy this great addition. See the pictures that follow:





Here are Jim Blurton, William Norris, and Denise delivering the Tree of Life.



Here they are again, getting the Tree of Life fastened down.

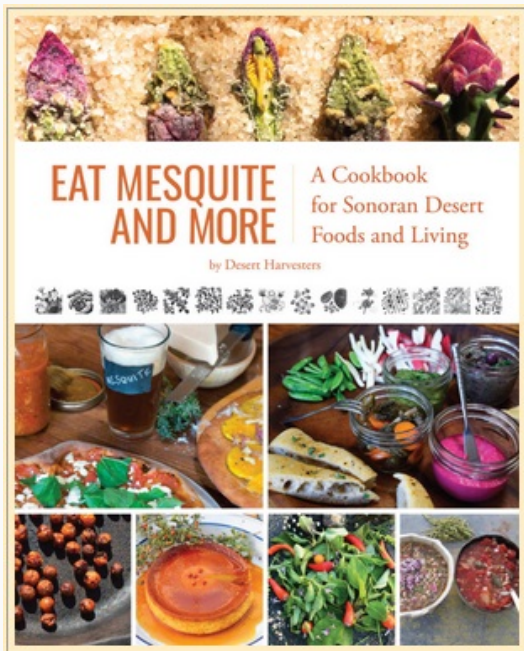
Thanks for all the help in 2017 - you're the best!

Hoping to see you in the Garden in '18.

Elroy, Garden Chairman

Book for the Quarter: *Eat Mesquite and More*

Eat Mesquite and More is written by Desert Harvesters with recipes contributed by desert dwellers, harvesters, chefs, and innovators. It includes over 100 images, an index, a harvest calendar, and additional resources.



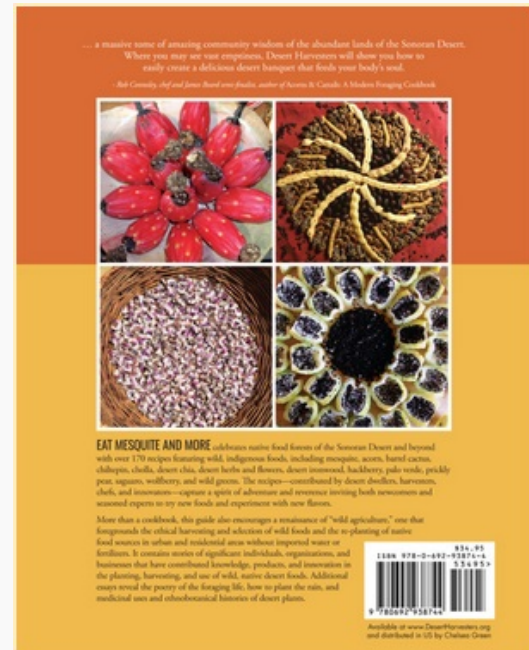
Eat Mesquite and More celebrates native food forests of the Sonoran Desert and beyond with over 170 recipes featuring wild, indigenous foods including mesquite, acorn, barrel cactus, chiltepin, cholla, desert chia, desert herbs and flowers, desert ironwood, hackberry, palo verde, prickly pear, saguaro, wolfberry, and wild greens.

The recipes capture a spirit of adventure inviting both newcomers and seasoned experts to try new foods and experiment with new flavors.

More than a cookbook, this award-winning guide also encourages a renaissance of “wild agriculture,” one that foregrounds the ethical harvesting and selection of wild

foods and the re-planting of native food sources in urban and residential areas without imported water or fertilizers. It contains stories of significant individuals, organizations, and businesses that have contributed knowledge, products, and innovation in the planting, harvesting, and use of wild, native desert foods. Additional essays reveal the poetry of the foraging life, how to plant the rain, and medicinal uses and ethnobotanical histories of desert plants.

While rooted in the Sonoran Desert, this book also offers a template for harvesting and cooking throughout the Americas. Many of the food plants included in this cookbook—or close relatives of them—can be found or grown in the other deserts and drylands of North America and South America.



Universally, the book's concepts and approach can help communities everywhere to collaborate with their ecosystems, enhancing the health of all.

This description of this hard-back book appears on the back cover of *Eat Mesquite and More*. It costs \$34.95 plus shipping and handling.

You can get more information at <https://www.desertharvesters.org/eat-mesquite-and-more/>

You can order it at <https://www.desertharvesters.org/product/eat-mesquite-and-more-a-cookbook-for-sonoran-desert-foods-and-living/>.

Programs from Last Quarter

A description of the programs from last quarter follows:

October Meeting

On Friday, October 20, 2017, GNPS had the meeting at Harlan Hall on the WNMU Campus.

Nathan Newcomer presented the program "Protecting Wilderness & Wild and Scenic Rivers in the Gila National Forest." The meeting had a great turnout. He used a tremendous slide show of the Gila National Forest with lots of photos of the Gila and the plants and animals found there. It was amazing.

The Gila is currently undergoing a Plan Revision, which is something that hasn't happened in 30 years. As a part of this Plan Revision, the Forest Service is required to look at recommending areas for Wilderness and Wild & Scenic designation. For the past 4 years, he and a team of dedicated volunteers have been out on the ground conducting inventories of these lands and waters that they believe qualify for protection. Come learn about some of the wildest places left in the Gila and ways that you can get involved.

Nathan Newcomer is a fifth-generation New Mexican with 15 years of experience working on wilderness campaigns in the State of New Mexico. He has previously been a grassroots organizer, media director, and associate director at NM Wild, having first joined the organization in 2002.



Having moved to Silver City in 2013, he is responsible for coordinating and organizing efforts to protect wild places and rivers in the Gila National Forest.

November Meeting

GNPS had the November meeting on Friday, November 17, 2017, at Harlan Hall on the WNMU Campus.

Kristi Dunn presented the program "Landscaping on the WNMU campus" with a slide show of the campus and her team. She talked about what projects they have done on campus in the past 2 years since she has been here, pointing out that she has tried to incorporate native plants as much as possible while still trying to create a lush, more sophisticated atmosphere.

She and her team have a wonderful opportunity on the campus, since the climate provides some great growing conditions for a wide variety of plants. Even though she may be in the process of taking out some plantings that people regard as fixtures on the campus, she is replacing them with innovative ideas, new varieties, and creating an upgraded version that will draw the attention that we all need.

She is also working with the YCC kids from Aldo Leopold and has had them on campus doing projects on everything from water harvesting to land sculpting and orchard planning and planting. She had their trail crew create a new trail for Tree Rock that makes it much more accessible for all.

December Meeting

On Sunday, December 17, 2017, GNPS had their holiday celebration at the Volunteer Center of Grant County. The club brought the meat dish and non-alcoholic drinks. Everyone brought their own silverware and plates as well as a dish to share with other members in the potluck.

The turnout was great and everyone had a good time.



Our mailing address is:

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Silver City, NM 88062

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