



Bristlecone Chapter

Dedicated to the Preservation of California Native Flora
The California Native Plant Society
Bristlecone Chapter Newsletter

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Vice President's Message

An early sign of spring, Anderson's buttercups (*Ranunculus andersonii*) are blooming already in the Buttermilks. In the desert valleys, the bursage is taking on a green hue, and the annuals that germinated with the fall storms will soon be blooming in abundance. It's a time for renewal and finding the comfort and cheer that spring brings to every plant-lover. As we look forward to outings and gardening, I would like to say thank you to the many chapter members who have contributed so much to the knowledge and conservation of our native flora. Far too many to mention here, but as a glimpse of happy news and accomplishments... Carolyn Mills, 2019 DeDecker grant recipient, rediscovered Arizona chalk dudleya (*Dudleya arizonica*) in the Nopah Range of southeastern Inyo County, not seen since 1977, when Mary DeDecker observed it. Sophie Winitsky, a previous chapter intern supported by Robert Hudson's bequest, accepted a position with the Jepson Herbarium. Edie Trimmer graciously stepped up to lead the chapter in addressing the watering status in Long Valley. Sue Weis, yet again, is organizing a line-up of field trips for all to enjoy. From newsletter publication to membership and web design, and from record- and finance-keeping to plant sales and gardening, a big thanks to you all for your work and inspiration. Happy spring!

--Michèle Slaton

General Meeting Presentation

Wednesday, Mar 18th, 7:00 p.m.
US Forest Service Supervisor's Office
351 Pacu Lane, Bishop

 **Speaker: Bryan Hatchell**
Desert Protection and the Plant Connection



Bryan Hatchell, the Desert Lands Organizer with Friends of the Inyo, will be informing us of energy development threats in the California Desert Conservation Lands. Plans that guide conservation and renewable energy development in the desert may rapidly change under the current administration, which strengthens the need

of continued advocacy for conservation and science. We will learn of the landscape level issues and then narrow in on what neat desert plants that exist at each site of concern.

Come and enjoy the desert talk with desserts provided!



Maturango Museum's Annual Wildflower Exhibit, April 3–5, 2020

As springtime comes closer, we look forward to the wildflowers blossoming along the Eastern Sierras. In

the lower elevations, wildflowers bloom sooner than in the higher elevations allowing flower seekers to see the variety of wildflowers throughout the spring and into the summer. The Maturango Museum hosts a Wildflower Exhibit in the early spring showcasing wildflowers that bloom in the Indian Wells Valley and in the canyons surrounding the Indian Wells Valley. This year's exhibit is Friday, April 3 through Sunday April 5 from 10 am to 5 pm each day. The cost for entrance to the Wildflower Exhibit is \$2.00 for adults and children are free.

The speaker for the weekend event is Maria Jesus who is a master's student at Rancho Santa Ana Botanic Garden/Claremont Graduate University and a 2019 Switzer Fellow. Maria is researching the flora of the Southern Inyo Mountains, Inyo County. She states, "Here, Joshua trees, emblematic of the Mojave Desert, give way to Pinyon and Juniper woodlands which are characteristic of the Great Basin Desert. This unique transition zone is home to many endemic and rare plants including *Hesperidanthus jaegeri*, *Nemacladus* 'inyoensis', and *Perityle inyoensis*." During her presentation, Maria will share her preliminary results of her floristic research, including new occurrences of rare taxa and an update on the conservation status of Conglomerate Mesa. Maria's presentation is on Saturday, April 4 at 3:30 pm at the Maturango Museum.



Maria Jesus at last year's bioblitz at Conglomerate Mesa.

The Maturango Museum is located in Ridgecrest. Visit www.maturango.org to find out more about the museum.

DeDecker Grant Recipient Progress Report, 2019

Quantifying natural regeneration of high-elevation five-needle pines across climatic and disturbance gradients to support ecological restoration

Lacey Hankin, PhD Student, University of Nevada, Reno

Overview

High-elevation forests provide essential ecosystem services to their ecological and anthropogenic communities. Because they occupy environments near or beyond the physiological tolerances of other tree species, they provide irreplaceable wildlife habitat and stabilize snowpack, which serves as the primary water source to the Great Basin. Their extreme longevity and slow growth have allowed for their persistence through significant climatic changes; however, unprecedented ongoing climate change coupled with threats from mountain pine beetle, white pine blister rust, and changes in fire activity now threaten the resilience of these important forest types. The overall goal of this study is to improve our understanding of climate and disturbance effects on limber, bristlecone, and whitebark pine regeneration to inform conservation and management efforts and facilitate their persistence under changing climate and disturbance regimes.



High severity wildfire in a limber pine stand (Great Basin National Park, NV).

Methods and Results

We evaluated natural regeneration in 70 sites across nine mountain ranges in eastern California and the Great Basin that varied in climatic and disturbance characteristics. Sites were either undisturbed or

affected by one or more of the following mortality agents: fire, mountain pine beetle, and white pine blister rust. We found extensive beetle-induced mortality across the study area, as well as several recent high-severity wildfires in the subalpine zone and white pine blister rust infection in two mountain ranges. Natural regeneration was highly variable across mountain ranges and species. There was abundant natural regeneration of whitebark pine across varying disturbance and climatic conditions, while limber pine and bristlecone pine regeneration was significantly lower. While bristlecone pine regeneration was rare, mortality was also limited to small-scale lightning events. Preliminary models show that natural regeneration is driven by a complex network of abiotic and biotic factors. Favorable soil characteristics seem to be more important for whitebark and limber pine regeneration, while increased spring snowpack and summer temperature were important drivers of bristlecone pine regeneration. All species show reduced regeneration with greater understory competition. There was no clear response of regeneration to different disturbances; however, further investigation of disturbance effects is underway.



Lightning-killed bristlecone pine (White Mountains, CA).

Conclusions

Our findings highlight the complex drivers of natural regeneration in high-elevation pine systems of eastern California and the Great Basin. Water availability, either through increased snowpack or soil characteristics, is an important driver of regeneration and water stress is expected to increase under projected future conditions. Disturbance effects were highly variable and require further investigation. We believe that bird dispersal in whitebark and limber pine may buffer the effects of

disturbance by overcoming local seed source limitations; however, forest mortality may exacerbate harsh microclimate conditions, leading to increasingly rare opportunities for seedling establishment. Widespread mortality throughout eastern California and the Great Basin necessitate continued monitoring of its effects on natural regeneration and implications for the persistence of these iconic forests.



Top: Beetle and white pine blister rust-infected whitebark pine (Mt. Rose Wilderness, NV). Bottom: Recent bark beetle mortality in limber and whitebark pines (Ruby Mountains, NV). Photos by Lacey Hankin.

In Appreciation:

Steve McLaughlin, Past President of the Bristlecone Chapter of CNPS, passed away on December 29, 2019, at the age of 71 at his new home in Santa Fe, New Mexico. Steve and his wife, author and botanist Janice Bowers, moved from Tucson to Birch Creek southwest of Big Pine in 2007 to enjoy their retirement.

Steve's knowledge of botany was incredibly broad and deep. He earned his PhD at University of Arizona in 1978, and then taught courses there in plant systematics, economic botany, and arid crops ecology. Steve was Professor of Arid Lands Resource Sciences and herbarium curator at UA. His research focused on ecophysiology of arid lands crops, such as *Hesperaloe funifera* (giant hesperaloe) and *Grindelia camporum* (Great Valley gumweed), the discovery and development of anti-cancer agents in plants, floristic inventories, and analyses of floristic areas in the western U.S. He also named one new species, *Phacelia sonoitensis*, from southern Arizona. In 2004, Steve received the Anson Ellis Thompson Career Service Award from the Association for the Advancement of Industrial Crops, and in 2006 he was recognized by the Arizona Botanists Symposium with a Lifetime Achievement Award. Steve was sole author or co-author on more than a hundred scientific publications and presentations.

When Steve and Jan moved to the Eastern Sierra in 2007, it was inevitable that they would become involved with the Bristlecone Chapter of CNPS and active with conservation issues in this region. Steve and Jan had actually joined our chapter back in 1999, and Steve wasted no time and became President only a year after moving here.

Steve was a very thoughtful, gentle, and generous man. Michele Slaton, current Vice-president of the Bristlecone Chapter and Inyo National Forest Ecologist, recalls that Steve asked her to join the board in 2008. She says, "he made it clear this work was not about chores and busy work ... but that there is important progress to be made to protect our land and native plants. He was a real mentor, and helped me with botanical writing, with forest planning, and urged me to pursue tasks and skills that felt like a good match. He encouraged me to take on the project with Mary's [DeDecker] notecards and to pursue a chapter database of plants. I will truly miss him."

As the representative of CNPS, Steve strengthened ties with other conservation organizations throughout the Eastern Sierra. He worked with the Bodie Hills Conservation Partnership, the Eastern Sierra Environmental Roundtable, and others. For several years, Steve served on the Owens Lake Master Project Committee, where he was a key participant and, "in many ways, the conscience of the working groups. His contributions to the process were enormous," according to Pete Pumphrey, Steve's friend and colleague with Eastern Sierra Audubon. "People paid attention to his comments because it was obvious that he knew what he was talking about. More than this huge technical contribution, Steve brought an ethic to the discussion that was invaluable," recalls Pumphrey. He also noted that Steve treated everyone with respect. "It is hard for me to describe how much I learned from him, and how much we all depended on his participation."

Steve also contributed to the local GLORIA (Global Observation Research Initiative in Alpine Environments) Great Basin plant surveys in the White Mountains. Jim Bishop from the Mt. Lassen Chapter, and GLORIA Board Member, recalled that "Steve often participated in our surveys in the White Mountains, freely giving of and applying his great plant expertise. He was always very helpful and an all-around nice guy."

Steve led many Bristlecone Chapter field trips and also "Breakfast with a Botanist" field trips for Friends of the Inyo, where he served as a Board Member for four years. His field trips were always well attended, and when teaching others about plants, Steve had "the patience of a saint," according to his friend and neighbor, Sydney Quinn. Steve would also take his neighbors on plant outings, and made a list of all local medicinal plants.

One of Steve's favorite things to do was to lead birding/botany/geology field trips to the Bodie Hills and Convict Lake for the Mono Basin Bird Chautauqua. He loved being involved with the Chautauqua and always refused the honorarium offered to trip leaders.

Steve will be missed by everyone in the Eastern Sierra who cares about conservation and preserving what we have, as well as those who value learning about plants and birds from a consummate teacher and field trip leader.

Below is an excerpt from Steve's first President's Message from the January/February 2008 newsletter:

Jan and I dreamed of moving to the Eastern Sierra Nevada for almost 25 years. During my academic career I was fortunate to be able to travel and work many places on this earth, but I have never been anywhere as breathtaking and fascinating as the Eastern Sierra. There are many ways to enjoy and learn more about this great area in which we are privileged to live, and one important way is to take advantage of opportunities provided by the Bristlecone Chapter. I urge you all to come to our Wednesday evening programs and participate in our field trips. Enjoy exceptional places, beautiful plants, and interesting people..... Steve McLaughlin

--Stephen Ingram



Steve leading a field trip to McGee Canyon for Friends of the Inyo in 2013. Photo by Maggie Riley.

New USDA Forest Publication

The ecology, history, ecohydrology, and management of pinyon and juniper woodlands in the Great Basin and Northern Colorado Plateau of the western United States

By Richard F. Miller; Jeanne C. Chambers; Louisa Evers; C. Jason Williams; Keirith A. Snyder; Bruce A. Roundy; and Fred B. Pierson



"This synthesis reviews current knowledge of pinyon and juniper ecosystems, in both persistent and newly expanded woodlands, for managers, researchers, and the interested public. We draw from a large volume of research papers to centralize information on these semiarid woodlands."

Find it at: www.fs.usda.gov/treearch/pubs/59333

Call Still Open for Field-Trip Leaders and Ideas

The Bristlecone Chapter continues to organize field trips for 2020. We are looking for more trip leaders and welcome any ideas of trip locations. So far, starting in May we'll have trips in Conglomerate Mesa, the Klondike Lake area, Harkness Flat, and White Mountains. Ideas on plants of interests are welcome too. Many are hoping for a "miracle March" of more precipitation for more bloom-filled trips and not just to encourage the newly described *Nemacladus* to make a showing. The public are welcome to join in all trips as we explore the native plants in our local area.

For more information, if you have trip ideas, or would like to lead a trip, please contact Sue Weis at treasurer@bristleconecnps.org.

Welcome Spring and New Members!

Whether you live far from Bishop or right in town, we appreciate your help in growing our chapter membership and thank you for your support in protecting our native flora! Welcome Craig in Bakersfield, Carl and Jennifer in Berkeley, Leslie in Chicago, Joanna in Concord, Ian in Ithaca, Sarah in Mammoth Lakes, Jody in Midpines, Susan in Oakland, Nancy in Sacramento, Kathleen in Salinas, Kim in San Francisco, and Jill in Santa Barbara.

Up-Coming Events

(For updated information, visit www.bristleconecnps.org/events)

Bristlecone Chapter Board Meeting

Date and location TBD.

All members are welcome.

Friday, March 13–Sunday, March 15

CNPS Quarterly Gathering

Richardson Bay Audubon Center & Sanctuary, 376 Greenwood Beach Road, Tiburon, CA

Hosted by the Marin Chapter, the CNPS quarterly gathering will be full of field trips, food and more. Speaker Terry Gosliner will discuss *Mt. Tamalpais, Marin's Iconic Treasure*. The meeting will end with a Calypso Orchid Hunt. To learn more and register, visit www.cnps.org/event/cnps-quarterly-gathering

Wednesday, March 18, 7:00 pm

Bristlecone Chapter General Meeting

US Forest Service Supervisor's Office
351 Pacu Lane, Bishop

Speaker Bryan Hatchell, Desert Lands Organizer of Friends of the Inyo, will discuss issues affecting California Desert Conservation Lands.

Bristlecone Field Trips

(For updated information, visit www.bristleconecnps.org/events)

Saturday, May 23, Conglomerate Mesa

Leader: Maria Jesus

Maria is leading a hike around one of her field sites for her work on the flora of the Inyo Mountains. She will also be seeking volunteers to help with her field work. Trip and work details TBD.

Up-Coming Events

(For updated information, visit
www.bristleconecnps.org/events)

May, Klondike Lake area

Leader: Steve Matson

An exploration of the area surrounding the lake in search for the newly described *Nemacladus* (depending on precipitation). More details TBD.

July, Harkless Flat

Leader: Steve Matson

A visit for a population of *Cuniculotinus gramineus*. Specific details TBD.

July, White Mountains

Leader: Elijah Hall

Follow Elijah to his research sites and learn about his research. Details TBD.

Other Local Events

Saturday, April 4, 10:00 am–1:00 pm Eastern Sierra Land Trust's Pollinator Garden Workshop

Location TBD

Join Eastern Sierra Land Trust for a free workshop to learn how to turn your backyard into a thriving habitat for pollinators. Guest speakers will present on native plants, butterflies, birds, bees, and more. For more information or to RSVP, contact Marie, ESLT's Education Coordinator and AmeriCorps Member, at marie@eslt.org or (760) 873-4554.

Saturday, April 18, 10:00 am–3:00 pm Bishop City Earth Day 2020

Bishop City Park, 636 N Main

Info booths, demonstrations, vendors & fun for all!

Saturday, May 2, 11:00 am–2:00 pm GardenFest Celebration

Eastern Sierra Land Trust

250 N. Fowler St., Bishop (office backyard)

Celebrate spring with ESLT at this a free, family-friendly community event. There will be opportunities to purchase native plants, learn gardening tips and tricks, enjoy local food and drink, participate in kid's activities and more. For more information, contact Marie, ESLT's Education Coordinator and AmeriCorps Member, at marie@eslt.org or (760) 873-4554.

Up-Coming Events

(For updated information, visit
www.bristleconecnps.org/events)

Saturday, May 16, 9:00 am–1:00 pm

Pollinator Garden Tour

Eastern Sierra Land Trust

250 N. Fowler St., Bishop

Locals across the Eastern Sierra will host visitors of all ages in their pollinator-friendly gardens so you can explore how they've created wonderful havens for pollinators like butterflies, bees, and hummingbirds. The self-guided tour will kick off from the ESLT office at 250 N Fowler St. in Bishop. For more information and a map of the featured gardens, contact Education Coordinator and AmeriCorps Member Marie at marie@eslt.org or (760) 873-4554.

September 15–17, 2020

Whitebark Pine Ecosystem Foundation (WPEF) International Conference on the "Research and Management of High Elevation Five Needle Pines in Western North America"

Hilton Garden Inn, Missoula Montana

Forest managers, researchers, advocates and the public are invited to attend! Visit the conference website at www.highfivepines.org for details and to register.

Send your articles and other information by April 15, 2020 for the next issue.

Bristlecone Chapter Directory

President: Katie Quinlan president@bristleconecnps.org

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stephen@ingramphoto.com

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DeDecker Grants: Michèle Slaton 760-920-8693

Field Trips: Sue Weis treasurer@bristleconecnps.org

Historian: **OPEN**

Bishop Plant Sales: Katie Quinlan

president@bristleconecnps.org

Mammoth Plant Sales: **OPEN**

Publicity: **OPEN**

Newsletter: Elaine Chow newsletter@bristleconecnps.org

Membership: Elaine Chow membership@bristleconecnps.org

Website: webmaster@bristleconecnps.org

Hospitality: **OPEN**

T-shirt Sales: Stephen Ingram stephen@ingramphoto.com

DeDecker Garden: **OPEN**

The California Native Plant Society

Bristlecone Chapter

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Membership

The California Native Plant Society is an organization of laypersons and professionals united by an interest in the plants of California. It is open to all. The society, working through its local chapters, seeks to increase the understanding of California's native flora and to preserve this rich resource for future generations.

To Join or Renew Online: Go to cnps.org and click on the JOIN/renew button at the top of the page, or mail in the form below:

Name: _____

Address: _____

City: _____ **State:** _____

Zip Code: _____ **Phone:** _____

Email: _____

I wish to be affiliated with the Bristlecone Chapter: _____

Other: _____

Mail To / Make Payable To:

CNPS Membership Coordinator

2707 K Street, Suite 1

Sacramento, CA 95816

Gift Contribution: _____ Wherever needed ☐

Specific Area: _____

Membership Category

<input type="checkbox"/> Student / Limited Income	\$25
<input type="checkbox"/> Individual	\$50
<input type="checkbox"/> Plant Lover	\$120
<input type="checkbox"/> Supporter	\$500
<input type="checkbox"/> Patron	\$1,000
<input type="checkbox"/> Benefactor	\$2,500
<input type="checkbox"/> Steward	\$5,000
<input type="checkbox"/> Guardian	\$10,000
<input type="checkbox"/> Additional Contribution	_____