



Bristlecone Chapter

Dedicated to the Preservation of California Native Flora

The California Native Plant Society

Bristlecone Chapter Newsletter

Volume 42, No. 3

May–June 2021

President's Message

Exquisite blossoms decorate the Inyo bush lupine, desert peach and purple sage growing on the alluvial fan near my home, making for delightful hiking in spring. But for some reason another plant always captures my attention—sagebrush (*Artemisia* spp.). This time of year, the leaves plump up and display a deep silver green. Small branches get a little floppy. The pungent aroma described by Mark Twain as “... an odor which isn't exactly magnolia and equally isn't exactly polecat...” becomes more intense; the bush releases the lively scent with the slightest touch. I observe the pleasantly twisted shapes of sagebrush branches and I appreciate the resemblance to Krummholz trees.



Krummholz-like big sagebrush (*Artemisia tridentata*) at DeDecker Garden. Photo by Kelly Bahr

In the Great Basin, sagebrush is as much a part of the landscape as the dirt, rocks, and folds of the land. It can live to be over 100 years old, and during its lifetime this under-appreciated plant is essential to wildlife, watersheds, and people. Sagebrush shrubland provides wildlife habitat for up to 350 species, including badger, mule deer, kangaroo rats, black-tailed jackrabbits, and coyotes. Sagebrush obligate species—those completely dependent on the bush—include sage grouse, pronghorn, pygmy rabbits, sagebrush lizards and sage sparrows. We are fortunate to have beautiful sagebrush ecosystems in the Mono Basin, White Mountains, Long Valley, and other local areas.

It saddens me to know that sagebrush ecosystems are now considered critically imperiled. “Its vastness can be deceiving—loss of sagebrush habitat is accelerating,” affirms a recent Audubon article. The reasons for this decline are many; they are complex and interrelated, but all are the result of human activities. Increasing wildfire frequency, climate change, livestock grazing, invasive plants, agriculture, urban sprawl, mining, energy development (both oil and renewable energy), and motorized recreation—the high desert is being used to death.

To me, sagebrush is a delightful plant, and sagebrush country feels peaceful, timeless, and full of life. Though seemingly abundant, we must not fail to appreciate “the West’s most important native plant.” Sagebrush habitat, like many others, needs protection or it too will be gone like the once abundant passenger pigeon. Rachel Carson said it best, “One way to open your eyes is to ask yourself, ‘What if I had never seen this before? What if I knew I would never see it again?’”

—Kelly Bahr

May General Meeting Wednesday, May 19th, 5:30 pm

iNaturalist in Bishop City Park: Socially-distanced Introductory Workshop with Marty Purdy



Are you interested in citizen science? Want to turn your nature photos into biodiversity data that can be used by scientists and naturalists from around the world? If so, then iNaturalist is for you! iNaturalist is a worldwide biodiversity database and social network for naturalists and scientists. Join Bristlecone Chapter Education Chair and botany graduate student Marty Purdy for an introduction to the app and mini BioBlitz in Bishop City Park. This socially distanced outdoor program will include a brief introduction to the functionality of the iNaturalist app vs. the website, how to contribute high-quality biodiversity data to the platform, and a collaborative effort to document as much wild biodiversity within Bishop City Park as possible! iNaturalist beginners and veterans are welcome. Smartphones with the iNaturalist app downloaded and an iNaturalist account are required for full participation.

Meet at Bishop City Park at 5:30 pm, Wed., May 19, under the veranda just west of the Senior Center (682 Spruce St). Remember to bring your mask – participants will be required to wear one. Need help getting the app on your phone? Show up 15 minutes early and we can help.

Spring Plant Sale ONLINE

Our SPRING PLANT SALE will be online and active May 10th to 14th with scheduled pick-ups of purchases on Saturday, May 15th at White Mountain Research Center (3000 E. Line St., Bishop, CA).

The State CNPS office is offering 40% off the \$50 memberships if you join or renew at this plant sale. We will be sending out the URL on May 10th, 8:00 am to our email list and posting it on our website, Facebook page, and the Eastern Sierra Land Trust's website. We will also have Julie Fontaine's magical compost tea for sale to help get those spring plants going.



Julie Fontaine and her compost tea. Photo by Katie Quinlan.

Conservation Updates

K2 Gold's Proposal for Conglomerate Mesa Development

K2 Gold recently released their proposed plan of operations which was recently submitted to the Bureau of Land Management. The total area of estimated impact is 12.2 acres which includes 3.7 miles of new roads and overland routes, 30 drill pads, drill crew camps, and mule pack strings. Drilling will require anywhere between 30,000 and 120,000 gallons of water for the duration of the project. More difficult to quantify is the degree to which a successful exploratory operation would open the door for an industrial-scale gold mine which would devastate this important plant area. Important updates, including opportunities for public comment, will be posted to our website and/or Facebook page.

—Maria Jesus

Water Updates

LADWP Urban Water Management Plan

As this newsletter issue goes to press, Los Angeles Department of Water and Power (LADWP) will be finalizing their 2020 Urban Water Management Plan (UWMP) which outlines how they expect to meet the water demands of Los Angeles over the next 25 years.

The draft UWMP details an impressive strategy for water conservation and a decreased reliance on imported water. However, there is no plan to reduce water imports from the LA Aqueduct other than a small amount predicted to be lost due to climate change. According to the draft UWMP, LADWP expects to reduce only purchased imported water from the Metropolitan Water District (MWD). While that is good news for the watersheds that supply the MWD, it could mean trouble for our region's native plants—especially at highly impacted mitigation sites such as Five Bridges. The climate change forecasts included in the draft UWMP only goes so far as to predict how water supply will change in the future. Unfortunately, there was no consideration of how continued water extraction might remove important buffers (e.g., groundwater) for sites that are likely to be stressed by events associated with climate change, such as increased temperatures, extreme drought, and increased wildfire. Local and regional groups, including our chapter, called on LADWP to commit to the development of a sustainable Integrated Water Resources Management Plan for the aqueduct in partnership with stakeholders in our region. The final UWMP is expected to be posted to www.ladwp.com/uwmp.

—Maria Jesus

Long Valley Leases

On February 11, 2021, Judge Evelio Grillo with the Alameda District Court issued a Writ of Mandate which requires LADWP to complete an Environment Impact Review (EIR) under the California Environmental Quality Act (CEQA). Until the EIR is completed, LADWP must supply amounts of water to grazing leases consistent with amounts of past years. Mono County Board of Supervisors are optimistic that the CEQA process will produce solutions which will benefit all stakeholders. (For a history of this lawsuit, see past issues of the Bristlecone Chapter newsletter.) Ranchers have not yet been notified of water releases for grazing leases for the coming spring and summer.

On April 5, 2021, LADWP announced the completion of the “Long Valley Adaptive Management Plan for the Bi-State Sage Grouse.” Several parties contributed to the plan, including the US Fish and Wildlife Service, Inyo Bureau of Land Management, Inyo National Forest Service, US Geological Survey, Mono County, local members of the Audubon Society and local ranchers. This plan focuses on the water needed to

support sufficient habitat for the Bi-State sage grouse on LADWP lands in the Bodie Hills and southern Mono County. Water would be supplied by LADWP for sage grouse brood-raising habitat from mid-April to mid-September with a minimum of 10 cubic feet per second guaranteed. Mono County Supervisors have expressed concern because the plan does not address water supplied to grazing leases except for what might pass through existing irrigation ditches.

How these two efforts to supply water to Long Valley grazing leases and sage grouse habitat might converge remains to be seen.

—Edie Trimmer

Annual Pumping Plan, LADWP

Every year by April 20, LADWP must submit an annual pumping plan for the water year, April through March. Inyo County Water Department (ICWD) has 10 days to review and comment on the plan. LADWP has 10 days to address ICWD's concerns. In mid-May, the pumping plan goes before the LADWP/ICWD Standing Committee for review. While there may be agenda items of mutual concern to be voted on by the Standing Committee, the pumping plan does not require a vote to be implemented by LADWP. This year, we hope to have our Bristlecone Chapter and other interested organizations to attend the Technical Group and Standing Committee meetings via ZOOM to express concern for continued pumping from Owens Valley that degrades riparian and meadow habitats. Past impacts plus drought and climate change are realities that LADWP and the Owens Valley must deal with.

To read the entirety of the Annual Operations Plan, as well as past plans and comments, please refer to the Inyo County Water Department's website:

www.inyowater.org/documents/pumping/dwp-annual-operations-plans/. Here is the 2021-2022 Annual Operations Plan: www.inyowater.org/wp-content/uploads/2021/04/Pumping-Plan-Final-DRAFT-2021-OWENS-VALLEY-REPORT-dn.pdf.

Check our website and/or Facebook page for important updates that may arise in the time between publication of our chapter's newsletters!

Update: On April 26, the Inyo County Water Commission (ICWC) met to discuss the proposed pumping plan. The five members of the ICWC have differing views on how to proceed in commenting on the LADWP's water pumping plan but all agree that pumping for 2021-2022 should be substantially

below the range of 64,500 to 78,900 acre-feet recommended by LADWP. The Inyo County Water Department also agrees and recommends 59,377 acre-feet pumping in 2021-2022.

The following day, on April 27, the Inyo County Board of Supervisors had a rare meeting during its weekly meeting with the ICWC and agreed to pumping as recommended by the ICWD.

The Technical Group meeting on pumping for the coming year is May 10. The Standing Committee meeting is May 26. Bristlecone Chapter members are encouraged to attend both of these meetings via Zoom. The ICWD webpage will provide times and access information.

—Edie Trimmer

Seed Bank Dynamics and Climate Change

On a recent trip to the eastern base of the Inyo Mountains, I was disappointed to see that not a single annual plant had germinated. Extremely dry years, like the one we are experiencing now, can be gloomy times for a desert botanist. However, the lack of a colorful flower show isn't all bad news. In some cases, drought can have positive impacts on the long-term health of many native plant species.

Dry conditions can reduce competition from invasive annual species whose seeds are poorly adapted to year-to-year fluctuations in precipitation. For exotic annual species with short seed viability, such as red brome (*Bromus rubens*), a year or two of drought is enough to diminish the seed bank and clear the way for native wildflower blooms in wetter years. Although the drought-induced elimination of certain invasive annuals isn't permanent, a pause in their proliferation can help replenish the native seed bank. If you are interested in learning more about these cycles, I highly recommend reading the book *California's Fading Wildflowers* by Richard Minnich.

During extreme drought, many native seeds are doing exactly what they are supposed to do—stay dormant. It is not unusual for desert annuals to spend many years safely tucked away as a seed. Many seeds with dormancy mechanisms are essentially locked up until they experience specific cues that signal optimal growing conditions, such as fall precipitation and

abundant El Niño rains. Other groups of seeds spread out their risk by germinating across multiple years under a variety of conditions.

However, climate change could severely impact these fine-tuned seed bank dynamics, especially in desert regions. According to a 2012 review paper by seed ecologist Mark K.J. Ooi, increased soil temperatures can prematurely break physical dormancy or even lead to high levels of seed mortality. In at least one species, mother plants that were subjected to increased temperatures produced seeds with lowered levels of dormancy. Increased variability in precipitation could cause seeds to germinate into unsuitable conditions.



Top to bottom: Joshua tree woodlands in the Inyo Mountains in a wet year (2019) and a drought year (2021).
Photos by Maria Jesus.

With so many variables influencing seed bank dynamics, it can be difficult to predict how native wildflowers will fare under a changing climate. Individual species or populations may adapt, migrate,

or become extirpated. As a safeguard against extinction, an impressive endeavor is currently underway to collect and store seeds from at least 75% of California's rare and threatened species led by California Plant Rescue. To learn more about this effort, including a database of all collected species, please visit <https://www.caplantrescue.org/>.

—Maria Jesus

2021 Garden Cleanups

Spring cleaning fever has infected us all and there has been a flurry of volunteers working on cleaning up our local native gardens. We had five members of a Student Conservation Association crew help out at the greenhouse. They potted up 900 plants in two hours but then spent five hours raking leaves and pulling invasive mustard plants.



Volunteers spent hours weeding and raking leaves in our demonstration garden at Bishop Community Garden. Photo by Katie Quinlan.

In Lone Pine the Master Gardeners have worked on the demonstration garden at the Eastern Sierra Interagency Visitor Center. Master Gardeners and CNPS volunteers have been going after the grass in the demonstration garden at the Bishop Community Garden in several work days.

The Eastern Sierra Land Trust has had one work day and will hold another to get their garden trimmed and cleaned for the spring bloom. There will be a spring clean-up at the Dedecker Garden soon so if you are interested in helping, contact Kelly Bahr at president@bristleconecnps.org.

It is always nice to clear away the fall leaves and discover volunteers that have sprouted and to see all

the spring blooms without the distraction of dead branches and leaf clutter.

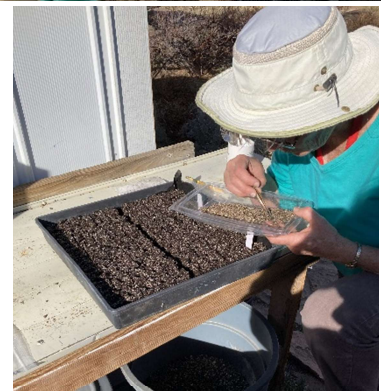
—Katie Quinlan

May Greenhouse Update

Every year I do little experiments to try and improve my growing procedures. This year's experiments were two-fold. I tried cold-stratifying *Penstemon* seeds outside in the winter to expose them to natural temperatures and cold-stratifying another group of *Penstemon* seeds in the refrigerator like I usually do. There was no noticeable difference in germination between the two treatments.



(Top) The greenhouse full of new plants. Photo by Katie Quinlan. (Bottom) Katie seeding soil blocks. Photo by Marty Tiernan.



However, to eliminate the variability in seed viability, I stratified every cohort of seed of every species I had. This is where the difference came in. There were some cohorts where all seeds were no longer viable, while other cohorts did well. In general, seeds that were more than three years old didn't do very well. Some seeds got moldy in the stratification bags, but still sprouted and other moldy seeds didn't sprout at all. The only conclusion I draw from this is I can now cull my seed collection and get rid of seeds that are more than five years old.

I also tried putting the sprouting seeds into soil blocks to reduce the stress of transplanting the seedlings later. This did reduce the transplant shock but the amount of seeds that continued to grow (even though they had sprouted) was about 35%, and the time it takes to carefully put a sprouted seed into an individual soil block isn't worth the time.

The good news for everyone is that with all this experimenting, I have a good inventory of *Penstemon* plants for the fall plant sale, which will be online from August 16–19, with current members getting the URL a day early.

—Katie Quinlan

It's more than the Birds and the Bees

Spring has sprung in the Eastern Sierra and the White Mountains, and it is never too early to visit the mountains and explore your garden for newly arrived insects and other invertebrates. Even before flowers bloom, other creatures can be found on California

native plants. Looking closer at flowering plants, one will be amazed by the presence, interactions, and interplay among plants and invertebrates.

This April, in the White Mountains many insects and some spiders were observed on emerging plants before plants were fully grown or flowers appeared. They may be using the plants as food or may be displaying their beauty to others of the same species. Later in the spring and summer, when flowers appear, you can find many species on flowers, including dark-winged fungus gnats, and observe the mating ritual of ornate checkered beetles.

There has been considerable news recently about the rapid decline of birds, native bees, and other insects throughout the world. The importance of insects to native plants and agriculture in California cannot be underestimated. To understand why they are important, we should venture out and experience firsthand the interplay among them and the plant kingdom.

—Bob Zimmerman



Leafhopper nymphs (top left) and small wasp displaying (top right) on round-spike catseye, *Cryptantha humilis* (April 11, 2021). Bottom left: Dark-winged fungus gnat on cushion buckwheat, *Eriogonum ovalifolium*, (May 25, 2020).

Bottom right: Mating pair of ornate checkered beetles, *Trichodes ornatus*, on a bloom of an *Opuntia* sp. (June 9, 2019). Photos by Bob Zimmerman.

Up-Coming Events

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

Chapter Events

May 10–14, Monday–Friday

Spring Plant Sale ONLINE

**White Mountain Research Center,
3000 E. Line St., Bishop**

Native plants and Julie Fontaine's compost tea will be for sale online from May 10th to 14th, with scheduled pick-ups of purchases on Saturday, May 15th at White Mountain Research Center.

May 12, Wednesday, 6:00 pm

Bristlecone Chapter Board Meeting

All members are always welcome to join this Zoom meeting. To obtain a link for the meeting, contact Kathleen Nelson (goatheads@aol.com).

Up-Coming Events

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

May 19, Wednesday, 5:30 pm
Bristlecone Chapter General Meeting
iNaturalist in Bishop City Park:
Socially-distanced Introductory Workshop with
Marty Purdy
Please see details on page 2 of this issue.

Other Events

May 3, Monday, 12:00 pm–1:00 pm
ESLT Virtual Workshop Series
Gardening with Native Plants in the Eastern Sierra
with Katie Quinlan
Eastern Sierra Land Trust's Virtual Pollinator Garden Workshop Series is hosting Katie Quinlan, Plant Sales and Greenhouse Manager for our Bristlecone Chapter to give a live, informative webinar about what California native plants will work best to beautify your garden this season. Q&A session with Katie Quinlan will be held at the second half of the webinar.

May 7, Friday, 12:00 pm–1:00 pm
ESLT Virtual Workshop Series
Gardening for pollinators with Pete Pumphrey
Eastern Sierra Land Trust's Virtual Pollinator Garden Workshop Series is hosting Pete Pumphrey, former Eastern Sierra Audubon Society President. He'll share a wealth of knowledge on gardening for the right kind of animals, including native and migrating pollinators. Bring your questions for the Q&A session.

May 14, Friday, 12:00 pm–1:00 pm
ESLT Virtual Workshop Series
Cultivating Creativity in Your Garden with
Roberta Lagomarsini
Eastern Sierra Land Trust's Virtual Pollinator Garden Workshop Series is hosting Roberta Lagomarsini to help you spark your inner creativity and add personal touches to your own yard. Roberta will share her own experience and ideas of turning her outdoor space into not only a space for plants and pollinators, but a space for art and originality.

Up-Coming Events

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

May 25, Tuesday, 6:00 pm–7:30 pm
Film Viewing and Panel Discussion of *Paya: The Water Story of the Paiute*, hosted by Teri Red Owl
Paya: The Water Story of the Paiute tells the untold story of America's longest lived water war between the Owens Valley Paiute and the city of Los Angeles. Find updates and more information at
<http://www.oivwc.org/paya-movie/>.

October 5–7
The Second Conference on the Research and Management of High Elevation Five Needle Pines in Western North America, Virtual conference
Scientists, management professionals and outdoor enthusiasts—join us in exploring the latest techniques, research findings and land management recommendations on High-Elevation Five-Needle Pine Ecosystems. Register at www.highfivepines.org

Please send any submissions to us by June 15, 2020 for the next issue.

Bristlecone Chapter Directory

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DeDecker Gardener: Kelly Bahr kbahr@cnps.org
Historian: **OPEN**
Mammoth Plant Sales: **OPEN**
Hospitality: **OPEN**

The California Native Plant Society

Bristlecone Chapter

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Note: If you still receive this newsletter via US Mail, please help the Bristlecone chapter save money, energy, and trees by sending your email address to newsletter@bristleconecnps.org so you can receive the electronic version.

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 www.cnps.org and select JOIN/RENEW (at the top of the webpage or select it after clicking the menu button) or mail 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:

California Native Plant Society, Attn: Membership

2707 K Street, Suite 1

Sacramento, CA 95816

Gift Contribution: _____ Wherever needed ☐
Specific Area: _____

Membership Category

<input type="checkbox"/> Student / Fixed 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	_____

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Membership Type: ☐ New Member
☐ Renewal