Dedicated to the Preservation of California Native Flora

The California Native Plant Society

Bristlecone Chapter Newsletter

Volume 39, No. 1
January-February 2018

President's Message, January 2018

In reviewing our newsletters of this past year I see that in every issue I have encouraged people to fill our empty board positions. Because my focus is on trying to keep this chapter going, I often fret that we are not as strong as we could be. However, I also must remind myself that we are an organization of volunteers. So as I look back on this past year I can see that our small chapter has accomplished a lot!

In 2017, we welcomed two new members to the board, Gaylene Kinzy and Elaine Chow who have fulfilled their new positions with both enthusiasm and grace. The T-shirt committee held a contest and came up with a new T-shirt design that has been selling quite well. The propagation center got a much needed facelift with the help of the Forest Service spreading gravel and sanding the greenhouse. We propagated over 6,000 plants for restoration projects and pollinator gardens. Our demonstration gardens at the Bishop Community Garden and the DeDecker garden in Independence look rejuvenated and beautiful with lots of new plants and new signs. So even though our chapter is small in comparison to others, in the end, I am both thankful and proud of the many volunteers who have helped to make this chapter function and accomplish a lot!

Not only have the many volunteers helped make us more accomplished as a chapter, CNPS members and the public have helped make the fruits of our labor from the propagation center (plant sales) a success in supplying funding support to research projects in the eastern California area through the Mary DeDecker Botanical Grant – going on 17 years now! Read on in this issue to learn about the work from our more recent grantees.

At the General meeting in February we will be planning our field trips for the year. So if you have an idea for a field trip that you would like to go on or a field trip you would like to lead, then please come to the planning meeting which will happen at 6:00 p.m. just before the general meeting (February 7th, 7:00 p.m., in the George Lozito Conference Room at the Jill Kinmont Boothe School, 166 Grandview Dr., Bishop). We will provide the pizza and salad.

At our last meeting we elected the board for the new year. The elected officers of this Chapter are President, Vice-president, Secretary, and Treasurer. In addition to these required elected officers, the Chapter Council Delegate and Members-at-Large are also on the executive board. The currently elected Executive Board includes:

President	Katie Quinlan
Vice President	Michèle Slaton
Secretary	**currently open**
Treasurer	Sue Weis
Chapter Council Delegate	Stephen Ingram

Members-at-Large:
Elaine Chow - Newsletter
Gaylene Kinzy - Membership
Kathy Duvall - Historian

Please let any board member know if you are interested in any open positions (Secretary, Conservation Chair, Webmaster, Publicity, and Hospitality) or attend our next board meeting to learn more (January 10th, 6:00 p.m., Eastern Sierra Land Trust, 250 N. Fowler, Bishop).

--Katie Quinlan

Mary DeDecker Botanical Grant, 2018 – Now Accepting Applications!

The Bristlecone Chapter of the California Native Plant Society is pleased to request applications for the Mary DeDecker Botanical Grant. This small-grants program is named in memory of a local botanist renowned for her many contributions to the botany

and history of the Eastern Sierra Nevada and northern Mojave Desert.

Our goal is to promote research and projects that increase understanding and appreciation of native plants and ecosystems of the Eastern Sierra region. Anyone may apply for a grant, but we are especially interested in helping graduate and undergraduate college students as well as elementary, middle, and high school pupils and their teachers. Subjects appropriate for funding cover a wide range, from basic taxonomic or ecological research to school gardens featuring native plants and their pollinators. The only requirement is that the project be relevant to the native plants of the northern Mojave Desert, Eastern Sierra Nevada, or Great Basin of eastern California.

The program will award grants of up to $1,000 each. Proposals exceeding $1,000 may still be considered, contingent on chapter funding and project justification; in such cases, applicants are advised to develop their project acknowledging that only $1,000 or less may be available, and line-item the budget accordingly.

Criteria and Procedures: Submit written proposals to the Mary DeDecker Grant Committee. Proposals should be no more than two pages in length. Each should contain title, objectives, methods, expected final product, brief statement of applicant's qualifications, and breakdown of proposed costs. Students should include a letter of support from their advisor or teacher. **The deadline is January 25, 2018.** All applicants will be notified of the committee's decision by early March, 2018.

A progress report explaining how Bristlecone Chapter funds were used is due at the end of the calendar year. Applicants are encouraged to give a talk about their project at a Bristlecone Chapter evening meeting or to write a brief explanation of their work for the Bristlecone Chapter newsletter. Send proposals or requests for information to: grants@bristleconecnps.org (electronic submissions are preferred but not required) or to

Michèle Slaton
Mary DeDecker Grant Committee
P. O. Box 364
Bishop, CA 93514

You can find more information about the Bristlecone Chapter Grants Program, including this Request for Proposals, at
http://bristleconecnps.org/dedecker/grant/

-- Michèle Slaton

February General Meeting

Wednesday, February 7th
George Lozito Conference Room, Jill Kinmont Boothe School, 166 Grandview Dr., Bishop

6:00 p.m. Field Trip Planning
Partake in putting together field trip ideas for 2018. Pizza and salad will be provided.

7:00 p.m. Speaker: Katie Quinlan
"Considerations when designing a native plant garden, learning from our mistakes"

California Native Plant Society Bristlecone Chapter's own plant propagator, Katie Quinlan, will be sharing tips and considerations when putting in a native plant garden. When planning a native garden, there are many elements to think about: How tall will the plants grow? Which plants tolerate shade and which ones need full sun? Which plants would be good along a path and which ones need space where they can spread? What is the best way to water and how often? Are native plants really just a bunch of weeds? Besides saving water, what other benefits do the native plants provide? What about fire, are natives more flammable than cultivated plants? All these questions and more will be answered.

Katie Quinlan has been the director of the Native Plant Propagation center since 2009. She has been an avid gardener since childhood but didn't start gardening with natives until she was given the job at the propagation center. Over the last eight years, she has converted much of her own garden to native landscapes and has learned a lot from mistakes made along the way.

Conservation Updates

Technical group comes to standoff over W385 pump test

Friday morning's Technical Group discussion of the two-month test on Five Bridges' Well 385 drew a standing-room-only crowd.

Back on November 28, Los Angeles Department of Water and Power's Board of Commissioners had approved the Initial Study/Negative Declaration with staff plans to flip the switch on the test the following Friday.

The next week, the Inyo Board of Supervisors filed suit and framed a restraining order against the test.

The Tech Group meeting was a little like the showdown at OK Corral with a twist. The group made up of LADWP and Inyo Water Department staff requires a consensus to take action. If one of the two votes no, nothing happens.

Inyo voted no on the test of W385, which LADWP had modified to draw from the deep aquifer with far less output than the unmodified version.

LADWP hydrologist Saeed Jorat started the agenda item with the well's background. W385 and 386 initially ran in 1987-1988, causing environmental damage to a 300-acre area south of the site. The department tried again in 1993; this time the wells caused a five-foot aquifer drawdown and the wells were shut-off. Efforts to restore the 300 acres were not consistently successful.

In 2014, the well was modified. The proposed two-month test was to determine, or verify, the well's operation would not do additional damage to the eco-system.

The County's comments on the Negative Declaration focused on the fact DWP identified the well as new and violations of procedures set up in the 1991 Long Term Water Agreement. Public comment on the document focused on the magnitude of the environmental damage and the fact the mitigation had yet to repair that damage.

Following Jorat's discussion, County Water Department Director Bob Harrington read a prepared statement repeating the objections raised in the Negative Declaration comments. In essence, the Agreement and Green Book set out procedures for new wells. And, in the Five Bridges area, there is a good chance damage will be done to vegetation if the well is operative. "The County's position is the well can't be turned on," Harrington said.

LADWP staff and attorney conferred, came back and argued. Harrington stuck to his statement. LADWP staff and attorney conferred again—this time arguing that the County worked with the department on developing the monitoring plan. Harrington was asked if the County's objections were technical or legal. Harrington said they couldn't be separated, and stuck to the statement.

LADWP's Aqueduct Manager Jim Yannotta made a motion: the City and County agree W385's monitoring plan was developed jointly in conformity with the Long Term Water Agreement.

Harrington didn't agree and the meeting was adjourned.

--Deb Murphy

Reprinted from: www.sierrawave.net/technical-group-comes-standoff-w385-pump-test/ December 18, 2017 in General, Gov, Public Event

Restoration along Oak Creek in Independence

CNPS in conjunction with Friends of the Inyo, the US Forest Service and the Independence Tribe helped to plant over 200 plants along Oak Creek to help restore the watershed damaged by the flood of 2007.

--Photo taken on Dec. 14th by Katie Quinlan

Mary DeDecker Botanical Grant, 2017 Reports

Courtney Collins
University of California, Riverside

In the White Mountains of California, recent research has shown that *Artemisia rothrockii* (Timberline sagebrush) is expanding upwards in elevation at a rate of 30 m/decade over the past 50 years.

Throughout my dissertation, I have determined that as sagebrush establishes in new areas, it alters microbial communities in the soil, including the diversity and community composition of soil bacteria, archaea, and fungi. For my 2017 Mary DeDecker Botanical grant, I proposed to **test the impacts of sagebrush expansion on soil microbial community function.** Measuring specific microbial functions, such as extracellular enzyme activity (EEA), can link changes in the microbial community composition to ecosystem functions such as decomposition and nutrient cycling, which ultimately affect plant fitness. Extracellular enzymes are secreted by microbial organisms into the soil solution to decompose organic material, such as dead plant litter into accessible nutrients including carbon (C), nitrogen (N) and phosphorus (P). EEA can vary greatly with the chemical composition of soil organic matter, which is primarily determined by plant litter inputs. Because sagebrush has complex leaf chemistry (high C, low N, high lignin, and phenolic compounds) compared to other grass and herbaceous alpine plant species, I hypothesized that sagebrush will *enhance* EEA in soils under its canopies.

My results have shown that as predicted, EEA was higher in soils under sagebrush canopies than outside and this result was strongest at high elevation sites where sagebrush has recently established. We found this to be true for both carbon and nitrogen cycling enzymes, but not for lignin. We also found that in soils where shrubs were removed for 5 years, EEA had declined significantly, versus 1 year, where EEA remained high. These results suggests that sagebrush may actually enhance decomposition and create local nutrient hot spots in soils below their canopies, and that this effect can last for a significant time even after shrubs die or are removed. This may have important implications for other alpine plant species growing under or nearby shrub canopies and may help facilitate the growth of more sagebrush seedlings in nutrient rich soils.

Katherine Ross
University of California, Santa Cruz
My research examines the physiological sensitivity of conifers to climate variability in an effort to better understand how these species will likely be affected by future climate change. It explores the relationships between needle level gas exchange, and annual needle production, annual ring growth, and leaf and ring δ13C values, between years and across an elevation gradient in order to improve our understanding of the mechanistic pathways by which dominant conifer species respond to climate change. During the 2017 field season, I measured water potential, instantaneous gas exchange, and needle length for 58 individual trees comprising four species at four elevations, spanning approximately 500 m. I have repeated these measurements for these individuals for two consecutive years and will repeat them a final time next summer.

--Photo by Katherine Ross

Sophia Winitsky
Claremont Graduate University
For my master's thesis, with the generous support of the Bristlecone Chapter of CNPS, I am undertaking a floristic inventory of the Adobe Valley and surrounding hills in Mono County, CA. This past field season, I was able to collect over 1,400 specimens. Since most of the historic collections have been along Highway 120 and other roads, I tried to focus on collecting from the less explored peaks and remote areas near the Nevada border. Some of the rare taxa documented this year that were either new to the area, or were found in new locations within the Adobe Valley include *Tetradymia tetrameres*, *Allium atrorubens* var. *atrorubens*, *Micromonolepis pusilla*, and *Eremothera boothii* var. *boothii*. The most endangered endemic plant in the area is *Calochortus excavatus*, which had a very prolific bloom this year along the shore of Black Lake.

My study area received high levels of precipitation this past winter, which allowed for many annual plants to germinate that may not be present each year, adding to the overall count of taxa new to the area. This winter I am working on identifying my specimens, traveling to herbaria that hold specimens of the region, preparing for my next field season, and presenting my project's progress at the CNPS statewide conference. Thank you to White Mountain Research Station and the Bristlecone Chapter's Mary DeDecker Botanical Grant for helping me fulfill my research goals! As well as to Mary DeDecker herself for paving the way and documenting rare and interesting taxa in the Adobe Valley.

View of Adobe Valley from Antelope Mountain.
--Photo by Sophia Winitsky

DeDecker Grant Recipients Presenting at the CNPS Conservation Conference 2018

Joy England
Rancho Santa Ana Botanic Garden
Joy will be giving an oral presentation at the 2018 CNPS Conference this February, titled *Eighty years and 2,500 collections: Flora of the Upper Rock Creek watershed, eastern Sierra Nevada*. She was a recipient of the Mary DeDecker Botanical Grant in 2012 and 2013, and completed her master's thesis at Claremont Graduate University last spring. The results of her research will be presented at the conference's Plant Science session. To the Bristlecone chapter, Joy has expressed her sincere gratitude for supporting this research!

Joy collecting samples on Red Mountain (11,450 ft.).
--Photo by Joy England

Meagan Oldfather
University of California, Berkeley
Title: *Alpine plant community-climate relationships across elevation gradients in the White Mountains, CA*
Authors: Meagan Oldfather, Brian Smithers, Michael Koontz, Jan Nachlinger, Catie Bishop, Jim Bishop, and Connie Millar
Abstract: Quantifying distributions and turnover of plant communities is vital to understanding biogeographic response to climate change. We augmented Global Observation Research Initiative in Alpine Environments protocol and examined alpine plant communities across an elevation gradient on five peaks in the White Mountains, CA. We analyzed the climate niche means (CNM) of communities at different elevations to explore the relationship between local community composition and climatic conditions from across the entire range of the community's constituent species. We used extracted climatic water deficit values from herbarium record locations to calculate species-specific CNM, then used their abundance-weighted average to quantify the community CNM. Using this method, we examined how the community's climate niche changed across elevation gradients. Only two of the five summits showed a significant negative relationship between elevation and CNM indicating that species with cooler/wetter ranges were more commonly found at higher elevation. Across the entire mountain range however, there was a strongly significant negative relationship between CNM and elevation. Our results suggest that there is environmental sorting of species' local distributions at the scale of a mountain range. However, across the elevational gradient of a single summit, the relationships are weak or absent. The community turnover across the elevation gradient for each summit is likely driven by smaller-scale topographic effects shaping environmental

conditions. In the context of climate change, our results imply that community-climate relationships are scale-dependent, and predictions of alpine plant range shifts will be limited by availability of fine-scale topoclimatic information.

Garden Updates

A lot of work has been going on in our demonstration gardens this fall.

CNPS volunteers, in conjunction with Master Gardener volunteers, spent several days cleaning out and replanting our demonstration garden at the Bishop Community Garden. Bermuda grass and creeping wild rye had overwhelmed the beds; even some of our native plants had gotten out of control. So seven hardy souls went after the weeds with a vengeance and then planted 51 new plants in our garden plot. With so many new additions, the garden will look a little more manicured and a little less a collection of "wild weeds."

Hardest worker Steve Dickinson repaired, replaced and improved much of the drip system.

At the Mary DeDecker Native Plant Garden in Independence, eight volunteers showed up to plant and label 46 new plants. The greatest amount of work has been done by Steve Dickinson (the DeDecker's gardener) and April Zrelak, who volunteers to haul away all the dead brush that Steve has been removing from the garden over the seasons. The biggest improvement that has been made, perhaps, is not visible; Steve has spent many hours digging out and re-plumbing the valve system that runs the timer for the garden. Our old timer died early on in the year and he has been manually operating the drip system all summer. This means that he has to be there regularly to turn the system on and off. When it was time to shut the system down this fall, which has not been done for several years, Steve dug out the entire valve box and replaced all the pipes and fittings. He also designed it so that the next person will have an easier time at it. The last improvement to the DeDecker Garden was contributed by Tim Tiernan, who tried his hand at wood burning (with a little advice from master wood carver, Bruce Walder) and made a new sign for the garden entrance.

If you haven't had a chance to view our Bishop and Independence garden sites recently, then it is well worth the trip as our volunteers have really helped to make these gardens something we can all be very proud of as an organization.

--Katie Quinlan

Re-labeled *Opuntia basilaris* (beavertail cactus).

Tim Tiernan and his wood burning creation: the new entrance sign for the Mary DeDecker Native Plant Garden.
--Photos by Katie Quinlan

Up-Coming Events
(for updated information, visit bristleconecnps.org/events)

Bristlecone Chapter Board Meeting
Wednesday, January 10, 6 pm
Eastern Sierra Land Trust, 250 N. Fowler, Bishop
All members are welcome.

Bristlecone Chapter Field Trip Planning meeting
Wednesday, February 7, 6 pm
George Lozito Conference Room, Jill Kinmont Boothe School, 166 Grandview Dr., Bishop
Bring your field trip ideas. Pizza and salad provided.
All members are welcome.

Bristlecone Chapter General Meeting
Wednesday, February 7, 7 pm
George Lozito Conference Room, Jill Kinmont Boothe School, 166 Grandview Dr., Bishop
Katie Quinlan will be presenting on: "Considerations when designing a native plant garden, learning from our mistakes."

Mary DeDecker Botanical Grant deadline
Thursday, January 25
Send proposals or requests for information to: grants@bristleconecnps.org or to

Michèle Slaton
Mary DeDecker Grant Committee
P. O. Box 364
Bishop, CA 93514

More information about the Bristlecone Chapter Grants Program at
http://bristleconecnps.org/dedecker/grant/

CNPS Conservation Conference
February 1–3 (pre-conference workshops and field trips, January 30–31)
Los Angeles Airport Marriott Hotel
Held every three years, the conference covers everything from conservation to horticulture. "CNPS members are especially encouraged to attend and represent their local chapters and initiatives from around the state."
More info at https://conference.cnps.org/

Please have your articles or information to us by February 15, 2018 for the next issue.

Bristlecone Chapter Directory
President: Katie Quinlan 760-873-8023
Vice President: Michèle Slaton 760-920-8693
Secretary: **OPEN**
Treasurer: Sue Weis 760-873-3485
Chapter Council Rep: Stephen Ingram 760-937-9918
Conservation/Partnerships: **OPEN**
Programs: Michèle Slaton 760-920-8693
DeDecker Grants: Michèle Slaton 760-920-8693
Field Trips: Sue Weis 760-873-3485
Historian: Kathy Duvall 760-387-2122
Bishop Plant Sales: Katie Quinlan 760-873-8023
Mammoth Plant Sales: Sherry Taylor 760-934-2338
Publicity: **OPEN**
Newsletter: Elaine Chow newsletter@bristlconecnps.org
Membership: Gaylene Kinzy
Website: webmaster@bristleconecnps.org
Hospitality: **OPEN**
Book Sales: Sue Weis 760-873-3485
T-shirt Sales: Stephen Ingram
DeDecker Garden: Steve Dickinson

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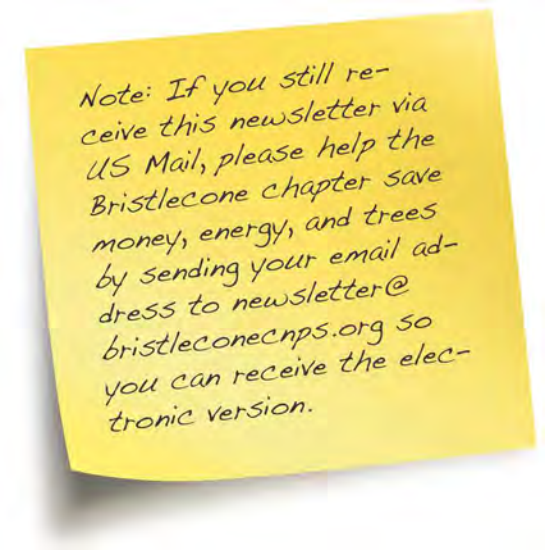

Membership

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

_ Student / Limited Income	$25
_ Individual	$45
_ Family	$75
_ Plant Lover	$100
_ Patron	$300
_ Benefactor	$600
_ Mariposa Lily	$1500
_ Additional Contribution	_____