

VALENTINE RESERVE FUND

2019 NEWSLETTER

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AUGUST 2019

UC SANTA BARBARA



DIRECTOR'S MESSAGE

What a year 2019 has been for the Valentine Eastern Sierra Reserves! With record-breaking snowfall extending late into spring, it has been an incredible season, and the deer, bears and wildflowers are thriving. Our educational programs, many of which would not be possible without Valentine Reserve Fund support, have grown over the last year to feature more offerings, including bilingual Spanish-English summer courses and an ocean touch tank experience for local schools. The spring seminar series at the Page Center at the Sierra Nevada Aquatic Research Laboratory was incredibly popular, and thanks to all of you who spent one or more of your Tuesday nights with us!

This has also been a landmark year in building support for the Valentine Eastern Sierra Reserves, thanks in large part to connections made through you, our incredible Valentine Reserve Fund members. Your generosity and commitment help make our research and programs at the Valentine Eastern Sierra Reserves possible. We could not be more thrilled about the recent \$1 million award from the Tambour Foundation for our Reserves to support students, staff and researchers, and outreach programs for all ages, as well as essential infrastructure projects at Valentine Reserve and Sierra Nevada Aquatic Research Laboratory. The donation was motivated by Roger and Ruth MacFarlane, part-time Mammoth residents and Valentine Reserve Fund members, who approached the Foundation on Valentine Eastern Sierra Reserve's behalf. This transformative gift also provides critical leverage that allows our Reserves to obtain matching funds from the State of California through Proposition 68.

Thank you for your generosity and engagement with the Valentine Eastern Sierra Reserves. As Valentine Reserve Fund members, you are our champions within the community of Mammoth Lakes and beyond. Your contributions help support many of our programs, ranging from research fellowships to education and outreach activities. We are incredibly grateful for everything you do for our community and Reserves.

With great appreciation,

Carol Blanchette

VESR HIGHLIGHTS

SEMINAR SERIES

It has been a busy year for our Outreach Programs. The six-week SNARL Spring Seminar Series was wildly popular this year with standing room only for several talks. Topics ranged from snow leopard conservation to wildfires (<https://vesr.nrs.ucsb.edu/education-outreach/snarl-seminar-series>). If you have ideas for topics for next spring, please let me know.



OUTDOOR SCIENCE EDUCATION PROGRAMS

The Outdoor Science Education Programs are going strong. Despite the snowy spring, we again had visits from over 30 different school groups at SNARL. These children participated in outdoor exploration and scientific investigations ranging from biology (ants, trees, birds, mammals) to prehistoric life skills. Our OSEP summer programs have also been extremely popular this year, and included topics ranging from art to ecology (<https://vesr.nrs.ucsb.edu/education-outreach/outdoor-science-program-k-12/osep-classes>). We added two new bilingual (Spanish-English) programs, and one new Aquatic Biology class for high school students.

We are continuing to host tours for the public at Valentine Camp throughout the summer on topics ranging from Black Bears to wildflowers. You can view the schedule of Valentine tours at <https://vesr.nrs.ucsb.edu/education-outreach/valentine-public-tours>. The wildflowers are spectacular this year thanks to the wet winter and various species will be blooming throughout the summer, so please join us to enjoy a walk around the reserve this summer!

THE FOREST ISLAND PROJECT

The Forest Island Project has just finished a successful artist in residence program at Valentine Reserve for the summer called Avalanche Dynamics (<https://forestislandproject.org/2019-avalanche-dynamics-snarl>). The three artists (Brian O'Connell, Nina Waisman and Alice Konitz) partnered with researchers from VESR and are continuing work on their art this summer. We are planning to host a public Forest Island exhibit at the Page Center in fall and will keep you all posted.



VESR HIGHLIGHTS

HIGHER EDUCATION

SNARL has hosted over 17 higher education classes this season in areas ranging from environmental chemistry to geology. The Doris Duke Conservation scholars, the Bay School of San Francisco, as well as a wide range of universities within and outside of California have utilized the facilities at SNARL to train the next generation of scientists, scholars and stewards. Nic Barth (UC Riverside) recently won the Field Camp Excellence Award, national recognition from the Geological Society of America, for his class at SNARL. VESR facilities are so important to these classes.



CALIFORNIA NATURALIST SIERRA NEVADA IMMERSION COURSE

We are thrilled to once again have led the Eastern Sierra portion of the California Naturalist Sierra Nevada Immersion Course. We partner with UC Merced's Yosemite Field Station Reserve to host this weeklong field course, which trains dozens of docents on the climate, geology and ecology of the Sierra Nevada. Several of our own volunteers and other local naturalists are participating in the course this year and plan to use this training to further their work with our local reserves.

RECENT GRANTS AWARDED TO VESR

NATIONAL SCIENCE FOUNDATION

In late 2017 we were awarded a grant from the National Science Foundation to develop a Strategic Plan for VESR. The goal of this process has been to produce a strategic plan to guide our efforts to support our research, education and outreach activities and programs over the next decade. We hosted a series of workshops in 2018 to generate ideas and input on the plan. This spring we completed the strategic plan document, which will provide a framework to guide the management of our reserves in the next decade.

CALFIRE FIRE PREVENTION PROGRAM

This spring we received a grant from CalFire Fire Prevention Program for Fuels Reduction at the Valentine Camp Reserve. We will begin our hazardous fuels reduction project this summer on 50 acres of high-density forest within the reserve. We are excited to work with several local forest ecologists and wildfire experts on this project to increase the health and resilience of the forest, reduce potential future wildfire severity, and protect developed infrastructure in the Town of Mammoth Lakes.

VRF GRADUATE STUDENT FELLOWSHIPS

Thanks to sponsorship from the Valentine Reserve Fund, we are thrilled to support 8 graduate students from across the University of California campuses as they conduct research at the Valentine Eastern Sierra Reserves this year.



HENRY BAKER, UC SAN DIEGO. ECOSYSTEM IMPACTS OF LOCAL ADAPTATION BY TUI CHUB TO LAKE AND STREAM HABITATS.

Characteristics, such as body size, shape, diet, and other features effect the role an animal plays in an ecosystem. However, such traits can differ across populations within a species. Henry seeks to study trait differences across various populations of Tui Chub, a minnow that lives in both stream and lake habitats throughout the Owens Valley, with the goal of better understanding the causes and ecological impacts of local adaptation. Henry is first-year PhD student with an interest in community ecology, and in particular, fish. He has studied aquatic systems throughout the U.S., including New England, Alaska, and the San Francisco Bay Area.



TIM BROWN, UC SANTA CRUZ. SIERRA NEVADA GRAY-CROWNED ROSY FINCH PROJECT.

Climate change is decreasing biodiversity, and high altitude species face greater risk of climate-induced extinction because range shifts are not often possible. Tim is investigating the ecological and evolutionary factors that affect the distribution of the Sierra Nevada Gray-Crowned Rosy Finch, a high altitude songbird. Tim is a first-year PhD student in Ecology and Evolutionary Biology. He is a first generation college student, and previously worked in both natural resources management and research.



BRYAN CURRINDER, UC DAVIS. LANDSCAPE GENETICS OF SIERRA NEVADA AQUATIC INVERTEBRATES: IMPLICATIONS FOR CLIMATE WARMING AND MANAGEMENT IN MOUNTAIN LAKES.

Mountainous landscapes can significantly restrict animal movement, which can lead to genetic divergence, sometimes to the point of developing a new species. This is often true for aquatic insects and invertebrates. Using genetic tools, Bryan's research investigates how aquatic insects and invertebrates move across the Sierra Nevada landscape, and how climate change may affect these patterns. Bryan Currinder is a PhD student with a wide range of research interests in aquatic ecology. He has worked within the U.S. and internationally in Bhutan and Bangladesh.



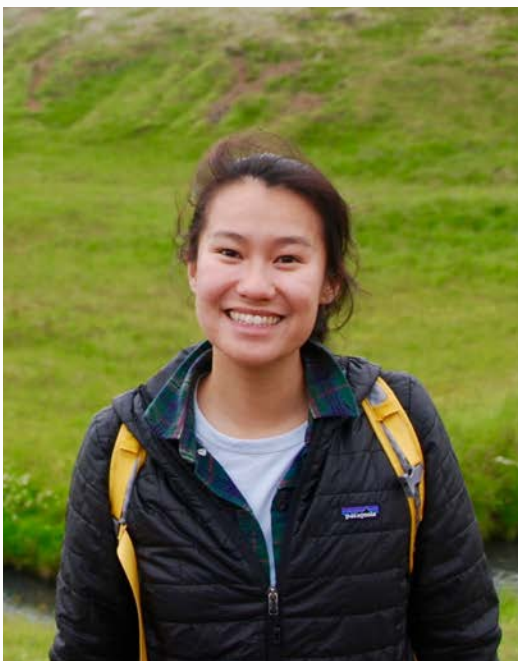
MATTHEW GREEN, UC RIVERSIDE. HIGH ELEVATION BIODIVERSITY ACROSS SIERRA NEVADA ECOSYSTEMS.

Climate change is projected to disproportionately impact high elevation aquatic ecosystems in the Sierra Nevada. The Sierra Nevada's lake and stream networks provide a unique study environment, which enables Matthew to explore how aquatic connectivity and its alteration by changing flows affect the food web and biodiversity. Matthew Green is a third year PhD student studying aquatic community ecology, with an interest in climate change and conservation biology.



KYLE LEATHERS, UC BAKERSFIELD. EFFECTS OF CLIMATE CHANGE INDUCED LOW FLOWS ON AQUATIC FOOD WEBS

As climate changes, snowmelt runoff in the Sierra Nevada is expected to shift earlier in the year, and may result in a longer duration of low stream flow during the summer. Kyle seeks to understand how these shifts in flow will affect high mountain stream food webs, with the goal of informing water resources management practices in the Sierra Nevada in the face of multi-year droughts. Kyle Leathers is a first year PhD student with an interest in how environmental stressors affect aquatic communities. He also has a passion for outreach and community engagement.



MICHELLE LEE, UC SANTA BARBARA. SOMETHING'S FISHY: PARSING APART TOP-DOWN AND BOTTOM-UP DRIVERS OF POLLINATOR COMMUNITY RESPONSE TO TROUT INTRODUCTION.

Fish introductions in freshwater ecosystems reduce native fish populations and disrupt ecosystem functions. While, changes to freshwater communities also affect terrestrial plant and animal communities. Michelle's research explores these aquatic-terrestrial relationships. Preliminary research suggests that the presence of trout substantially increases pollinator abundance, and Michelle seeks to understand the causes of this relationship and its implications for the role pollinators play in the ecosystem. Michelle is a second-year PhD student in Ecology, Evolution, and Marine Biology. She hopes to use her research to inform management and restoration actions.



CAROLINE HERRMANN OWENS, UC SANTA BARBARA. EFFECTS OF CLIMATE CHANGE ON THE NUTRIENT BUDGETS OF ALPINE LAKE SYSTEMS.

Alpine lakes play an important role in nutrient cycling with adjacent terrestrial systems. With her research, Caroline seeks to predict how the linkages between lakes and terrestrial systems will change in the future based on stressors on emerging insect communities. Caroline is a PhD student with an interest in climate change impacts on ecosystems. She is from Boston, and she has worked in Iceland and Washington, DC.



ERIC TYMSTRA, UC DAVIS. FROM CHEMISTRY TO COMMUNITY: SAGE GROUSE FOODSCAPES AND CITIZEN SCIENCE IN THE EASTERN SIERRA.

Sage grouse have declined approximately 95% across their range since first described by Lewis and Clark, largely due to habitat loss and degradations. California considers sage grouse to be a Species of Special Concern. Sage grouse also face challenges associated with their herbivorous diet, including adapting to the low nutritional value and toxins associated with the plants they eat. Eric's research will inform how habitat quality influences reproductive success of sage grouse, and how diet selection varies across their range, with the goal of improving conservation and restoration efforts. This summer marks Eric's third field season as a PhD candidate. When he is not doing fieldwork, he enjoys fishing in Rock Creek and trivia night at Mammoth Brewing Company.



WINTER CELEBRATION, MARCH 2019

Thanks to all of you who joined us for the 2019 Valentine Reserve Fund Winter Celebration! What a fabulous way to celebrate our Valentine Eastern Sierra Reserves during winter! We are so grateful to Mammoth Mountain for generously supporting this event. We had an incredible afternoon of skiing on the mountain with Mark and Rusty, a fantastic snowmobile and snowcat tour to Minaret Vista, and a blissful evening and dinner at Parallax. It was wonderful to share the day with so many of you, and we sincerely appreciate you all and your generosity and support of the Reserves!

UPCOMING EVENTS

There are numerous exciting events happening in the coming months with the Valentine Eastern Sierra Reserves. We invite you to join us for any of the events, and please consider inviting a friend to accompany you. For a more comprehensive list of events, please visit our website:

VALENTINE CAMP RESERVE TOURS

We are continuing our Valentine tours all summer, and planning a few art classes at Valentine this fall

- Drawing at Valentine Reserve – **Sep 22 and 29**
- Journaling at Valentine: The Art of Naming – **Dates TBA**
- Fall Sundays at Valentine – **October 6, 13, 20, 27**

Please check our website for details on tours and dates - <https://vesr.nrs.ucsb.edu/education-and-outreach>

EASTERN SIERRA HISTORY CONFERENCE

The Eastern Sierra Interpretive Association will be holding the 4th Annual Eastern Sierra History Conference at the Page Center at SNARL on **October 25-27, 2019**

(<https://esiaonline.org/eastern-sierra-history-conference>). The conference will feature presentations about the people, culture, and traditions of our region.

VRF SANTA CRUZ ISLAND TRIP

We are planning our next VRF reserve excursion to the Santa Cruz Island Reserve **November 15-17**. We are still in the planning stages, and hope that you can join us!

FALL VRF EVENT AT VALENTINE

Save the date – **Saturday, October 5, 2019**. Once again, we are planning a lovely dinner and evening at Valentine this fall.

WINTER CELEBRATION

Save the date – **Saturday March 28, 2020**. Skiing, snowmobiling, snow sports and more – Let's hope for another big winter!