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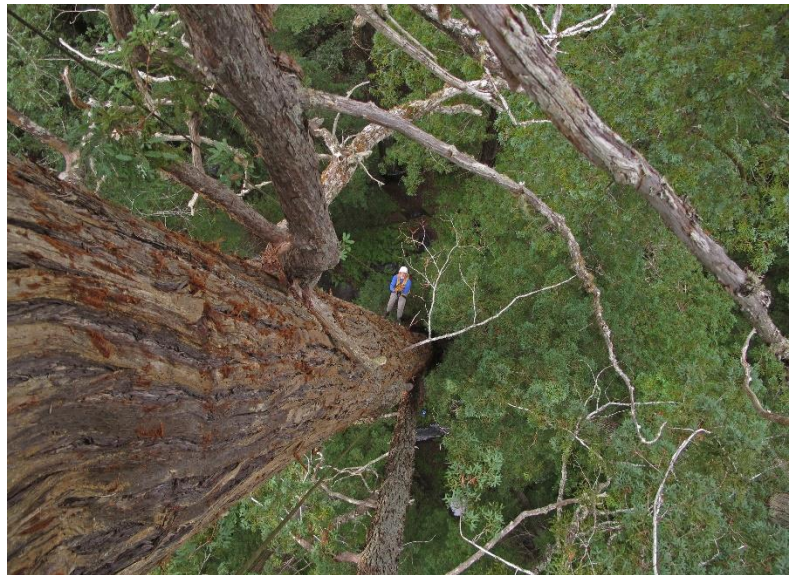
Save the Redwoods League Grants More than \$160,000 for New Scientific Research in the Coast Redwood and Giant Sequoia Ranges

Research programs inform stewardship and land management efforts

San Francisco, Calif. (April 6, 2023) — [Save the Redwoods League](#) today announced it has selected nine projects to receive \$162,221 in grant funding to advance research and discoveries in coast redwood and giant sequoia forests in 2023. The grantees will investigate effects of fire; study owls, migratory birds, amphibians and microorganisms within these forest communities; and collaborate with Indigenous tribes to create a database of plants and their traditional uses; among other projects.

“The League’s research programs expand our scientific understanding of coast redwood and giant sequoia forests, and they also help us become better land stewards,” said **Laura Lalemand**, senior scientist for Save the Redwoods League. “This year we were able to select nine interesting and well-designed projects that will increase our knowledge of the effects of climate change and fire on forest communities and allow us to better understand the interactions of life within redwood forests.”

“We’re thrilled to once again offer starter grants to underrepresented graduate and undergraduate students to nurture a diversity of perspectives in redwoods research,” Lalemand added.



University of California, Berkeley researcher Todd Dawson, Ph.D., studying the redwood canopy in Montgomery Woods State Natural Reserve. Photo by Anthony Ambrose.

Since 1997, Save the Redwoods League has funded studies that have provided the scientific community, land managers and the public with valuable information about coast redwood and giant sequoia forests. Data from these studies support conservation planning, stewardship and restoration efforts by the League and others.

2023 Redwoods Research Grantees

The annual [Redwoods Research grant program](#) funds research on California's coast redwood and giant sequoia forests to help Save the Redwoods League and its conservation partners understand how to best conserve and restore these ecosystems. The five selected projects are:

Todd Dawson, Ph.D., and Ph.D. candidate Emily Dewald-Wang from the [University of California, Berkeley](#): \$30,000 to investigate coast redwood-associated fungal and bacterial communities along gradients in fog and in response to fire. Plant-associated microbes play important roles in disease resistance, nutrient acquisition, growth and drought tolerance, but have remained largely unstudied despite the outsized role they play in plant health and ecology. Dawson and Dewald-Wang will take coast redwood needles from across the state for various experiments, examining fungal growth patterns, antimicrobial or antibiotic compound production and benefits to water uptake. Their research will deepen our understanding of the relationship microbes have with coast redwoods, and it will help inform conservation planning in the face of extended droughts and changing fog patterns.

Master's-degree student Taj Katuna from the [University of California, Berkeley](#): \$22,363 to evaluate first-entry prescribed fire effects in coast redwood forests. Katuna's research seeks to better understand how restoring fire management practices in coast redwood forests will affect overall plant diversity and wildfire resilience. Katuna will study multiple sampling plots across three redwood forests to gather data before, during and after prescribed burns to ascertain how different forest conditions affect the forest structure and composition. Results from this study will assist land managers in refining their burn prescriptions for coast redwood forests in the San Francisco North Bay Area and beyond.

Jeff Manning, Ph.D., and Ph.D. candidate Edwin Jacobo from [Washington State University](#) (Pullman, Wash.): \$29,958 to study wildfire and stopover ecology of migratory birds in Sequoia National Park and Giant Sequoia National Monument. Frequent high-intensity wildfires can destroy parts of a giant sequoia forest that serve as resting areas for migratory birds. Researchers will survey birds in nine recently impacted giant sequoia groves in Sequoia National Park and Giant Sequoia National Monument during the peak of spring migration to determine how wildfire affects migratory bird community structure, density, habitat selection and refueling performance. This approach to understanding wildfire effects on avian species will provide information on how birds are responding to climate change and inform management approaches to safeguarding their habitats.

Zach Peery, Ph.D., at [University of Wisconsin-Madison](#) and Connor Wood, Ph.D., at [Cornell Lab of Ornithology](#) (Ithaca, NY): \$30,000 to assess the effects of invasive barred owls on forest owl communities in redwood forests using a bioacoustics approach. Barred owls, a nonnative species in redwood forests, have been shown to compete with and prey upon native owl species in redwood forests. Using passive autonomous recording units, researchers will record audio in two redwood forests: one where barred owls were removed prior to this study and another that has not been treated. A machine-learning algorithm will then be used to identify vocalizing owls to look at

whether barred owl removals lead to substantial increases in native owl species in the treated area. Findings from this research will reveal to what degree competition and predation from barred owls impact native owl species and inform land managers on how to better prevent the extinction of threatened native owl species.

Vance Vredenburg, Ph.D., at [San Francisco State University](#): \$30,000 to investigate coast redwood forests as refugia from disease and climate change for terrestrial salamanders. The skin microbiome on amphibians is directly related to health and disease, and it is influenced by microclimates and climate change. Vredenburg will study how forest conditions along a steep disturbance gradient (urban to wild) affect salamander skin microbiomes and their ability to withstand fungal infections. There has been a worldwide epidemic of chytrid fungus (*Batrachochytrium dendrobatidis*) that can kill amphibians, and Vredenburg is one of the leading researchers on chytrid. Learning more about the relationship between forest health and disease in amphibians may further underscore the importance of maintaining redwood forests as a vital buffer zone that can help preserve biodiversity.

2023 Redwoods Research Student Starter Grants

This annual [student starter grants program](#) offers grants up to \$5,000 each to graduate and undergraduate students of color interested in redwood forest research. These grants provide introductory opportunities to members of underrepresented communities to engage in research studies in any academic discipline in the redwood forests and to encourage a diversity of perspectives and approaches. Students who are Black, Indigenous, Latine, Asian American, Pacific Islander and people from other communities of color are all invited to apply. The four selected projects are:

Ph.D. student Emily Dewald-Wang and their mentor Todd Dawson, Ph.D., from the [University of California, Berkeley](#): \$5,000 to investigate the bacterial and fungal communities existing on coast redwoods and how external factors, such as rain and fire, may affect their development. This study will advance our understanding of microbial growth on the surface of redwood needles. The microbiome of the leaf surface is known as the phyllosphere. The team will investigate the ways these microbial communities may bolster water uptake for redwood trees in times of drought.

Student researcher Meriel Melendrez Mees and their mentor Cindy V. Looy, Ph.D., from the [University of California, Berkeley](#): \$4,900 to research stomatal variation with canopy height in redwoods. Researchers will collect branches from redwood tree canopies and perform a whole-leaf analysis to refine our knowledge of redwood physiology and taxonomy. Findings will help form the foundation of future research examining the species' resilience to increased carbon dioxide levels.

Student researcher Karley Rojas and their mentor Cutcha Risling Baldy, Ph.D., from [Cal Poly Humboldt](#) (Arcata, Calif.): \$5,000 to collaborate with Indigenous tribes in developing the Living Database of Disseminated and Contributed Ethnobotanical Knowledges. The database will include impacts of climate change on redwood forests

and inform restoration and management trajectories derived from Indigenous science, bio-cultural sovereignty and agroforestry.

Undergraduate student Maya Scanlon and their mentors Rob York, Ph.D., and Amber Lennon from the [University of California, Berkeley](https://www.berkeley.edu/) : \$5,000 to examine the potential capacity for giant sequoias to survive outside of their native range in the face of a new fire regime driven by climate change. Researchers will survey giant sequoias that were killed or damaged by wildfires and evaluate post-fire seed dispersals. Results from this study will quantify the regenerative ability of giant sequoias to take root outside of their native range.

Redwoods Research Grants are made possible by generous supporters of Save the Redwoods League. Learn more at [SaveTheRedwoods.org](https://www.savetheredwoods.org/) about the League's grant programs and donate to support future research in the coast redwood and giant sequoia ranges.

To schedule an interview, contact Robin Carr at 415-766-0927 or redwoods@landispr.com.



Save the Redwoods League

One of the nation's longest-running conservation organizations, Save the Redwoods League has been protecting and restoring redwood forests since 1918. The League has connected generations of visitors with the beauty and serenity of the redwood forests. Our 240,000 supporters have enabled the League to protect more than 220,000 acres of irreplaceable forests in 66 state, national and local parks and reserves. For information, please visit [SaveTheRedwoods.org](https://www.savetheredwoods.org).