

THE SIERRA FUND presents

Reclaiming the Sierra 2017: Headwater Resiliency

May 8 - 10, 2017
California State University
Sacramento, California



A forum to collaborate on a vision of headwater management to promote the resiliency of natural and human resources in California and beyond.

www.reclaimingthesierra.org

Highlights

Reclaiming the Sierra Tonight Show

Monday, May 8, 6:00 - 7:00 pm



“Resiliency” is the buzz word at Reclaiming the Sierra 2017, and this evening program will explore two expert opinions on the best policy and regulatory opportunities that can be seized right now to promote improved resiliency for the forests, meadows, rivers and communities

of the Sierra Nevada. The Sierra Fund recognizes that ecosystems from the Sierra to the Sea have been disturbed for over 150 years, first by gold mining followed by clear cutting, over-grazing, fire suppression, water diversion and urbanization. How can the Sierra and the state recover from these disturbances to water, sediment and fire regimes while under pressure from the emerging impacts of climate change? Gideon Kracov, Chair of the State Mining and Geology Board and John Laird, California Secretary for Natural Resources will address these issues and offer effective strategies to restoring resiliency to our region. The Sierra Fund’s CEO Elizabeth “Izzy” Martin will host the talk show-style program.

Book Signing by Author Jordan Fisher Smith

Tuesday, May 9, 10:00 - 11:00 am

Following his keynote address, author Jordan Fisher Smith will be available to sign copies of his 2016 book *Engineering Eden: The True Story of a Violent Death, a Trial, and the Fight Over Controlling Nature*, and his 2005 memoir *Nature Noir*. Copies of both books will be on sale at the conference venue following Jordan’s talk, and at the Sacramento State Hornet Bookstore all day Monday and Tuesday.

Sierra Crest Awards

Monday, May 8, 7:00 pm

The Sierra Fund’s awards are presented to an organization, an agency, and an individual demonstrating exceptional leadership and initiative in their work to address the impacts of historic mining in California. Join Assemblymember Brian Dahle in celebrating this years awardees at the Monday evening reception.

Dear Conference Participant,

Welcome to Reclaiming the Sierra 2017: Headwater Resiliency, the fourth biennial conference to address the legacy impacts of the Gold Rush on California's landscape and people. This year marks the second time that The Sierra Fund has convened the event at California State University at Sacramento (CSUS) providing easy access and fostering synergy between scientists, policy experts, college students, and other stakeholders.

We have spent over a year planning an engaging program intended to inform and inspire strategies that promote headwater resiliency with a vision of adaptive recovery for the ecosystems and communities still blighted from centuries-old resource extraction. Our program is informed by the predicted changes in the Sierra Nevada region caused by the increasingly obvious impacts of global climate change.

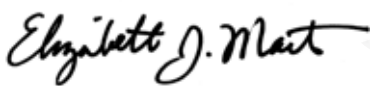
As the source of most of the developed water in the state – and the epicenter of California's historic and devastating Gold Rush – changes in precipitation and temperature in our region have a dramatic impact on the ecosystems and communities of the region. The forests, meadows, rivers and fish have been terribly stressed by years of drought. The health and safety of the towns around and in the forest as well as the air and water quality of the whole state are at stake. The torrential rainstorms of this year have added a new concern about the ability of our water infrastructure to handle precipitation changes such as extended droughts interspersed with heavy rainstorms instead of snow. And, the legacy gold mines that riddle the region continue to contribute sediment and mercury to our watersheds.

Looking at our region through the lens of these fundamental considerations leads us to a better understanding of both the challenges and the wealth of opportunity we face. Our conference program explores research and policy opportunities to generate multiple benefits for the region – from improved water quality and water storage systems to ecosystem restoration that leads to improved habitat for fish and wildlife and environmentally healthy communities and forests.

Our conference features plenary talks by literary luminaries, elected officials, and leaders from the indigenous people of the region. Afternoon offerings will include an array of science and policy breakout workshop sessions featuring expert presentations, panel discussions and Q&A. Our Monday Evening Reception will host a scientific poster session against a musical backdrop courtesy of the Sacramento State Jazz Quartet, followed by a lively "Tonight Show" event and the awards ceremony for student poster competitors and Sierra Crest Leadership.

We close on Wednesday with a Sierra to Sea charter boat tour up the Sacramento River that will help conference participants to visualize the legacy of watershed-wide mercury contamination that persists 100 years after the Gold Rush.

Thanks for joining us!



Elizabeth "Izzy" Martin
CEO, The Sierra Fund



Carrie Monohan, Ph.D.
Science Director, The Sierra Fund



Program at a Glance

Monday, May 8

8:00 am **Registration Open** (*light breakfast served in Ballroom 3*)

9:00 am **Morning Plenary Session** (*Ballroom 2*)

- Elizabeth “Izzy” Martin, CEO, The Sierra Fund
Welcome & Orientation, TSF’s Platform for Action
- Lawrie Mott, former senior scientist with the Natural Resources Defense Council
“A New Look at the Cadillac Desert”

10:15 am **15-minute Break**

10:30 am **Morning Plenary Session Contd.** (*Ballroom 2*)

- Adrienne Alvord, Union of Concerned Scientists and Board Member, The Sierra Fund
Climate Change and the Intersection of Science and Policy
- David Bunn, Ph.D., Director, California Department of Conservation
Stewardship of California’s Resources: The Next 100 Years
- Thomas O’Neill, The Habitat Institute
Assessing Ecological Resiliency Using Functional Redundancy
- Mathias “Matt” Kondolf, Ph.D., University of California Berkeley
Sedimentation Impacts on California’s Water Infrastructure
- Trina Cunningham, Maidu Summit Consortium and Conservancy
Water: A Tribal Perspective

Program at a Glance

Monday, May 8

12:00 noon	Lunch (<i>Ballroom 3</i>) Exhibit Hall and Poster Session Open
1:00 pm	Technical Presentations and Policy Panels (<i>Hinde Auditorium & Redwood Room - see pages 6 and 7 for full details</i>)
2:55 pm	15-minute Break
3:10 pm	Technical Presentations and Policy Panels Contd. (<i>Hinde Auditorium & Redwood Room - see pages 6 and 7 for full details</i>)
5:00 pm	Scientific Poster Session & Networking Hour (<i>Ballrooms 2 & 3</i>) <i>Featuring the Sacramento State Jazz Quartet, Light Refreshments & No-Host Bar</i>
6:00 pm	Reclaiming the Sierra Tonight Show (<i>Ballroom 2 - see page 2 for details</i>) Elizabeth “Izzy” Martin, CEO, The Sierra Fund as Master of Ceremonies, featuring • Gideon Kracov, J.D., Chair, State Mining and Geology Board • John Laird, Secretary, California Natural Resources Agency
7:00 pm	Sierra Crest Awards (<i>Ballroom 2</i>) The Sierra Fund’s Sierra Crest Awards are presented annually to an organization, an agency and an individual demonstrating exceptional leadership and initiative in their work to address historic mining in California. Join Assemblymember Brian Dahle as he congratulates the 2017 Sierra Crest Awardees: • Delta Mercury Exposure Reduction Program • United States Forest Service, Tahoe National Forest • Shelly Covert, Nevada City Rancheria, California Heritage: Indigenous Research Project

Technical Presentations

Session Details, Monday Afternoon, May 8

Mine Remediation Session 1:00 - 2:55 pm (Hinde Auditorium)

Session Facilitator: Glenda Marsh, CA Department of Conservation, Abandoned Mine Lands Program

This session on mine remediation and restoring resiliency will address the unique issues associated with mine-impacted landscapes with a focus on low-impact methods for remediation and effectiveness evaluation.

Session Speakers

- **Vic Claassen, Ph.D., University of California Davis**
Landscape controls through regeneration of soil hydrologic function at an abandoned mercury mine in the Coast Range
- **Michael Schultz, REI Drilling, Inc.**
A New Direction - How Horizontal Directional Drilling can be Used to Control Acid Mine Drainage, Reduce the Risk of Mine Blowouts, and Minimize Long-Term Maintenance and Operational Costs
- **Steve Lofholm, P.G., Golder Associates, Inc.**
Passive Water Treatment of Mining Influenced Water at Empire Mine State Historic Park in Grass Valley, California
- **Gregory J. Reller, P.G., Burleson Consulting**
Corona Mercury Mine Tracer Test
- **David Herbst, Ph.D., University of California Sierra Nevada Aquatic Research Laboratory**
Acid mine drainage impact and recovery shown by long-term monitoring of benthic macroinvertebrates in Sierra Nevada streams of the Leviathan mine watershed
- **Valerie Hanley, Ph.D., California Department of Toxic Substances Control**
Recommended Methodology for Evaluating Site-Specific Arsenic Bioavailability in California Soils

2:55 - 3:10 pm 15-minute Break

Meadow Restoration Session 3:10 - 5:00 pm (Hinde Auditorium)

Session Facilitator: Mark Drew, Ph.D., California Trout

This session on meadow resiliency will identify key components of desired meadow conditions and explore methods for quantifying the benefits of meadow restoration on species diversity, hydrologic function, water quality, and carbon sequestration.

Session Speakers

- **Mark Drew, Ph.D., California Trout**
Increasing pace, scale and efficacy of Sierra Meadow restoration: Applying the Sierra Meadows Strategy
- **Darren Blackburn, San Francisco State University**
Monitoring surface-atmosphere interactions in a partly degraded Sierra Nevada meadow
- **Austen Lorenz, San Francisco State University**
Remote Sensing of Meadow Hydrogeomorphic Types Using LiDAR and Multispectral Imagery
- **Rachel Hutchinson, South Yuba River Citizens League**
Meadows at our Headwaters: Promoting resiliency in the Yuba River watershed
- **Question & Answer**



Policy Panels

Panel Details, Monday Afternoon, May 8

Challenges to California's Water Infrastructure Panel 1:00 - 2:55 pm (Redwood Room)

Panel Moderator: Jeffrey Mount, Ph.D., Public Policy Institute of California

This panel will discuss the state's water infrastructure from dams to ditches, infrastructure impacts on fish passage and water supply, and the challenges to restoring resiliency to the water storage and delivery system in the face of climate change.

Panelists

- **Randy Fessler, California Department of Water Resources** - *What is the current status of the Oroville Dam repair, and what does the failure of this key piece of water infrastructure mean to the future of dam building in California?*
- **Charlton "Chuck" Bonham, J.D., California Department of Fish and Wildlife** - *What is the state of California doing to improve fish passage for threatened species in Sierra Nevada and obstacles exist to improving fish passage?*
- **Mathias "Matt" Kondolf, Ph.D., University of California Berkeley** - *What is the impact of the hydraulic mining waste rock on California's water infrastructure and what opportunities exist to address this impact?*
- **Carol Purchase, Tahoe National Forest** - *What is the threat posed by and how does the USFS intend to assess and address the debris control dams in the forest left behind from legacy gold mining?*

2:55 - 3:10 pm 15-minute Break

Surface Mining and Reclamation Act Implementation Panel 3:10 - 5:00 pm (Redwood Room)

Panel Moderator: Gary Parsons, The Sierra Fund Board of Directors

This panel will discuss the development of regulations and programs as a result of the legislation passed in 2016, identify opportunities for public input around SMARA enforcement issues, and discuss the impact of the new regulations on communities and the mining industry.

Panelists

- **Pat Perez, California Department of Conservation, Office of Mine Reclamation** - *What is the status of the development of the new regulations stemming from mining bills passed last year, and what are the top priorities for implementation of these regulations?*
- **William Craven, Senate Natural Resources and Water Committee** - *What are the most important changes in the Surface Mining & Reclamation Act stemming from the two bills passed last year, and what outstanding reforms are still needed for improving mine reclamation in our state?*
- **Mary Pitto, Regional Council of Rural Counties** - *What resources do counties need to do to support consistent enforcement of SMARA provisions including adequate bonding, mine inspection and development of plans?*
- **Michael Smith, Teichert Materials** - *What are the top priorities of the mining industry in improving consistent enforcement of mined materials, and why and how should the mining industry support environmentally sensitive mining methods?*



Ongoing Activities

Exhibit Hall

Businesses, nonprofit organizations and government agencies are displaying educational and technical information about their programs and products throughout the conference in Ballroom 3.

Scientific Poster Session & Student Competition

Researchers from multiple disciplines were invited to submit posters describing projects that address strategies for headwater resiliency.

The poster session is available for viewing in Ballroom 2 on Monday, May 8 and Tuesday, May 9. Researchers will present their posters on Monday, May 8 at lunch from 12:00 - 1:00 pm and from 5:00 - 6:00 pm that evening.

Student poster presenters are participating in a competition with cash prizes for first, second and third place. Awards will be presented following the Reclaiming the Sierra Tonight Show on Monday, May 8 at 7:00 pm

Student poster judges for the session include:

- Carrie Monohan, Ph.D., Science Director, The Sierra Fund
- Sandrine Matiassek, Ph.D., Assistant Professor, California State University Chico
- Bill Christner, Ph.D., Geomorphologist, KTC Environmental

Legacy Mine Reclamation Services Directory

To continue building the diverse network established at our Reclaiming the Sierra conferences, The Sierra Fund has developed a comprehensive e-directory of the businesses, organizations and agencies providing environmental restoration, legal, outreach, financial and other services related to reclaiming legacy mines in the Sierra. Listing in the Directory is free – you can fill out an entry using the computer station located at conference registration, or go to:
www.reclaimingthesierra.org/services-directory

Program at a Glance

Tuesday, May 9

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- 8:00 am** **Registration Open** (*light breakfast served in Ballroom 3*)
- 9:00 am** **Morning Plenary Session** (*Ballroom 2*)
- Dr. Carrie Monohan, Ph.D., Science Director, The Sierra Fund
Welcome & Orientation
 - Jordan Fisher Smith, author “Engineering Eden”
A Fatal Bear Attack, a Lawsuit, and the Philosophy of Ecological Restoration in the Sierra Nevada
- 10:15 am** 15-minute Break and Book Signing with Jordan Fisher Smith (*Ballroom 3*)
- 10:30 am** **Morning Plenary Session Contd.** (*Ballroom 2*)
- John Hillenbrand, P.G., E.G., US Environmental Protection Agency, Region 9
Legacy Mine Remediation in the West: Challenges and Opportunities
 - Jim Branham, Sierra Nevada Conservancy
Watershed Improvement Program for the Sierra Nevada
 - Craig Tucker, Ph.D., Natural Resources Policy Advocate, Karuk Tribe
Bring the Salmon Home Campaign
 - Fraser Shilling, Ph.D., University of California Davis
Connecting Mercury Remediation Policy to Tribe and Community Benefits
- 12:00 noon** **Lunch** (*Ballroom 3*)
Exhibit Hall and Poster Session Open
- 1:00 pm** **Technical Presentations and Policy Panels**
(*Hinde Auditorium & Redwood Room - see pages 10 and 11 for full details*)
- 2:55 pm** 15-minute Break
- 3:10 pm** **Technical Presentations and Policy Panels**
(*Hinde Auditorium & Redwood Room - see pages 10 and 11 for full details*)
- 5:00 pm** 15-minute Break
- 5:15 pm** **Conference Closing Remarks** (*Ballroom 3*)
- Shelly Covert, Nevada City Rancheria, California Heritage: Indigenous Research Project
 - Elizabeth “Izzy” Martin, CEO, The Sierra Fund

Technical Presentations

Session Details, Tuesday Afternoon, May 9

Regional Models for Prioritization Session 1:00 - 2:55 pm (Hinde Auditorium)

Session Facilitator: Stephen McCord, Ph.D., P.E., McCord Environmental

This session on regional models will explore the use of visual, spatial, and predictive models to inform watershed and landscape scale project prioritization and adaptive management decision-making processes.

Session Speakers

- **Erik Ringelberg, The Freshwater Trust**
Basin Scout: A Geospatial Analytical Method for Targeted Forest Management
- **Danielle V. Dolan, Local Government Commission**
Innovative Approaches to Brownfields Coalition Assessment in the Cache and Putah Creek Watersheds
- **Nicole Lutkemuller, 34 North**
Collaborative Natural Resource Management in the Sacramento River Watershed Using OpenNRM Software for Data Aggregation, Analytics, and Visualization of Water Quality Conditions and Contaminants, Ecosystem Function, Fish and Wildlife populations, Water Quantity and Supply, and Forest Health
- **Charles N. Alpers, Ph.D., United States Geological Survey**
Prediction of Fish and Sediment Mercury in Sierra Nevada Streams Using Landscape Variables and Historical Mining
- **Question & Answer**

2:55 - 3:10 pm 15-minute Break

Forest Resiliency Session 3:10 - 5:00 pm (Hinde Auditorium)

Session Facilitator: Edward Smith, The Nature Conservancy

This session on forest resiliency will highlight the implications of fire suppression and logging practices on terrestrial and aquatic forest ecosystems and provide insight into policy changes and on-the-ground techniques that can be used to restore forest health in the Sierra Nevada.

Session Speakers

- **Edward Smith, The Nature Conservancy**
Regional Prioritization of High Value-High Risk Watersheds for Ecological Restoration in the Sierra Nevada-Southern Cascade Bioregion
- **Scott Stephens, Ph.D., University of California Berkeley**
US Federal Fire and Forest Policy: Emphasizing Resilience in Dry Forests
- **Gabrielle Boisramé, Ph.D., University of California Berkeley**
Managed wildfire effects on forest resilience and water in Yosemite National Park
- **Douglas Bevington, Ph.D., Environment Now**
The High Costs and Low Benefits of Attempting to Increase Water Yield by Forest Removal in the Sierra Nevada
- **Question & Answer**

Policy Panels

Panel Details, Tuesday Afternoon, May 9

Ethical Gold Panel 1:00 - 2:55 pm (Redwood Room)

Panel Moderator: Elizabeth “Izzy” Martin, CEO, The Sierra Fund

This panel will discuss how to create an environmentally sound and ethical certification process, including identification of techniques and a chain of custody, to bring gold that is produced as a result of restoration activities to the market as a specialized product.

Panelists

- **Remleh Scherzinger, Nevada Irrigation District** - *How much gold, sand, gravel and other valuable materials is estimated to be recovered from the project at Combie and how will this material be brought to market?*
- **Martin Taber, Ethical Metalsmiths** - *How are ethical metalsmiths working to improve consumer access to environmentally sound, economically viable and ethical gold and other precious metals and stones?*
- **Bob Scowcroft, Nell Newman Foundation** - *What are the key elements of creating a scientifically valid certification and chain-of-custody programs for a commodity such as gold and other precious metals and stones?*
- **Sherri Norris, California Indian Environmental Alliance** - *What role should indigenous people play in setting the standards for defining gold and other mined metals and stones, and how can the creation of these new standards for gold production be helpful to the restoration and stewardship of tribal people?*

2:55 - 3:10 pm 15-minute Break

Reservoir Mercury Discharge Panel 3:10 - 5:00 pm (Redwood Room)

Panel Moderator: Robert Meacher, The Sierra Fund Board of Directors

This panel will address pending Total Maximum Daily Load (TMDL) regulations under development by the State Water Resources Control Board to control mercury sources to reservoirs, reduce mercury methylation in reservoirs, and reduce bioaccumulation of methylmercury through in-reservoir fisheries management.

Panelists

- **Steven Moore, State Water Resources Control Board** - *What is the current status of the state's efforts to reduce mercury discharge from reservoirs, and what sort of directives will the Board issue to reservoir operators where the mercury discharge exceeds the new total maximum daily load now under development?*
- **Carrie Monohan, Ph.D., Science Director, The Sierra Fund and Mark Seelos, Santa Clara Valley Water District** - *What sort of pilot projects exist or are being developed to reduce mercury discharge from reservoirs?*
- **Carol Purchase, Tahoe National Forest** - *What is the potential impact of the legacy debris control dams in the forest (features of abandoned hydraulic mines) on mercury discharge into reservoirs in the region?*

Sierra to Sea Charter Boat Tour

Wednesday, May 10

Tour Host: Elizabeth “Izzy” Martin, CEO, The Sierra Fund

The Charter Boat Tour, *Sierra to Sea: A Watershed-Wide Legacy of Mercury Contamination*, will help participants visualize the impacts of legacy mining on the Bay/delta ecosystem and infrastructure, and draw connections between upstream remediation and downstream benefits. After two full days of plenaries, technical presentations and workshops, conference attendees can mingle and collaboratively digest the event while soaking up the scenery on Woody’s River City Queen Charter Boat.

The *Sierra to Sea* Tour will build on previous conference tours that featured mine-impacted landscapes in the upper-watershed: Malakoff Diggins State Historic Park (one of the largest hydraulic mine sites in California), Combie Reservoir (behind which mercury laden sediment is accumulating) and the Yuba Goldfields (a 10,000 acre area made up of 19th century hydraulic mining debris). A tour by charter boat will help participants understand the connectivity between the headwaters and the Bay, and how cleaning up contamination upstream will benefit those downstream.

Tour Agenda:

- | | |
|----------|--|
| 9:30 am | Boarding Begins, Riverfront Dock, Old Sacramento |
| 10:00 am | Boat Departs, Charting Upstream on the Sacramento River
<i>Welcome and Orientation, The Sierra Fund CEO Elizabeth “Izzy” Martin</i> |
| 10:15 am | Tour Speaker: Peter G. Green, Ph.D., University of California Davis
<i>Upstream Mercury Mines</i> |
| 10:45 am | Tour Speaker: Jay Davis, Ph.D., San Francisco Estuary Institute
<i>Mercury in Aquatic Food Webs</i> |
| 11:15 am | Tour Speaker: Lauren Baehner, Sacramento-San Joaquin Delta Conservancy, CA
Department of Public Health
<i>Human Exposure and Fish Consumption Advisories</i> |
| 11:30 am | Lunch Buffet with No-Host Bar, Networking |
| 1:00 pm | Tour Ends, Riverfront Dock, Old Sacramento |

Speakers

Biographies A - B

A BIG THANK YOU to all speakers who are donating their time to share their expertise and enrich our discussions.

Charles N. Alpers, Ph.D., is a Research Chemist with the U.S. Geological Survey's California Water Science Center in Sacramento, California. He has degrees in Geology from Harvard University (A.B., 1980, magna cum laude) and the University of California, Berkeley (Ph.D., 1986). Dr. Alpers has authored or coauthored more than 125 peer-reviewed publications on various topics related to the environmental legacy of historical mining including: acid mine drainage; sulfate minerals; mercury contamination and bioaccumulation; and arsenic speciation and bioavailability. His current projects include quantification of erosion and sediment sources at Malakoff Diggins State Historic Park in Nevada County, California; investigation of mercury transport, methylation, and bioaccumulation at the Cache Creek Settling Basin in Yolo County, California; and geochemistry and mineralogy related to extreme mine drainage (including negative pH) at the Iron Mountain Mine Superfund Site in Shasta County, California.

Adrienne Alvord is the Union of Concerned Scientists' California and Western States Director. Prior to coming to UCS, Ms. Alvord was the environmental policy director for California State Senator, Fran Pavley and served as lead staff on AB 32. She worked extensively in climate, energy, fuels, waste, and agricultural policy and has deep experience both in translating scientific and technical work into policy ideas and creating strategic partnerships to achieve those policies.

Lauren Baehner is the Coordinator for the Delta Mercury Exposure Reduction Program (Delta MERP), a multi-year effort to reduce human exposure from eating fish caught in the Sacramento-San Joaquin Delta by providing information on how to make safe choices about fish. The objective of Delta MERP is to work with impacted communities to design and implement culturally-relevant activities and materials that raise awareness and understanding and reduce risks of harm from mercury. Delta MERP is a partnership between the Central Valley Regional Water Quality Control Board, the Sacramento-San Joaquin Delta Conservancy, and the California Department of Public Health. Lauren holds undergraduate degrees in Anthropology and Cell Biology from the University of Kansas, and an M.P.H. from the University of California, Berkeley in Environmental Health Sciences. Lauren has worked with community-based organizations in San Francisco Bay Area to evaluate public health programs and engage and educate communities in evaluation efforts.



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Speakers

Biographies B - C

Douglas Bevington, Ph.D., is the Forest Program Director for Environment Now, a family foundation that supports water and forest protection in California. He is the author of *The Rebirth of Environmentalism: Grassroots Activism from the Spotted Owl to the Polar Bear* (Island Press, 2009).

Darren Blackburn is a physical geographer with an interest in microclimate research. He received a bachelor's degree in geography from the University of California, Los Angeles in 2008. He is currently a master's candidate at San Francisco State University in the Department of Geography and Environment. Darren's master's thesis research utilizes the eddy covariance technique to observe surface-atmosphere exchanges in a partly degraded Sierra Nevada meadow. His advisors for this project are Andrew Oliphant, Ph.D. and Jerry Davis, Ph.D.

Gabrielle Boisramé, Ph.D., is a postdoctoral scholar in the Stephens Lab at the University of California Berkeley. Her current research focuses on the interactions between wildfire, land cover, and water in the Sierra Nevada. Since 2013 she has been using a combination of fieldwork, remote sensing, and hydrological modeling to explore how managing natural wildfire in landscapes can improve water resources and forest health. This work is focused in Yosemite and Kings Canyon National Parks. Dr. Boisramé received her PhD in environmental engineering from UC Berkeley and earned a B.A. in applied mathematics at Whitman College.

Charlton "Chuck" Bonham, J.D., is the Director of the California Department of Fish and Wildlife (previously the Department of Fish and Game). Bonham was appointed by Governor Edmund G. Brown in August 2011. His five years of service makes Bonham one of the longest standing Directors in recent history. Prior to his appointment, Bonham served in a number of roles for Trout Unlimited (TU) for over ten years, including as the organization's California Director and as a Senior Attorney. He was responsible for developing, managing, and implementing TU's programs in California. Bonham has also served as a gubernatorial appointee on the Board of Directors of the Delta Conservancy. Bonham received his J.D. and Environmental and Natural Resources Law Certificate from the Northwestern School of Law of Lewis and Clark College in Portland, Oregon. He was also a Peace Corps Volunteer in Senegal, West Africa.

Jim Branham, Executive Officer, Sierra Nevada Conservancy

David Bunn, Ph.D., Director, California Department of Conservation

Vic Claassen, Ph.D., University of California Davis

Shelly Covert is the Spokesperson for the Nevada City Rancheria Nisenan Tribe. She sits on the Tribal Council and is community outreach liaison for her Tribal membership. She is also the Executive Director of their newly founded non-profit, California Heritage: Indigenous Research Project or CHIRP. CHIRP's mission is to preserve, protect and perpetuate the Nisenan culture. The Tribe's major focus has been the restoration of its Federal Recognition with the United States



Speakers

Biographies C - D

Government. The Nevada City Rancheria Nisenan Indians were Federally Recognized until 1964 when they were illegally “terminated.” Shelly spends most of her time engaging the public in educational speaking events about her Tribe, their rich history on the Yuba and Bear River watersheds, and assisting the Tribe with environmental and cultural revitalization projects to stabilize the Nisenan culture upon its ancient landscape.

William Craven is currently the chief consultant for the Senate Natural Resources and Water Committee and has served in that capacity for 17 years. The committee is chaired by Senator Robert Hertzberg, D-Los Angeles. The Natural Resources and Water Committee has jurisdiction over legislation pertaining to water, state parks, public conservancies and other public lands, forestry, wildlife, coastal protection, mining, harbors, and other resource areas. Craven is an active designee of Senator Hertzberg at meetings of the Ocean Protection Council and the California State Parks and Recreation Commission. He staffed all of the mining reform bills introduced by his former chair, Senator Fran Pavley. Prior to working for the Senate, he was the chief consultant to the Assembly Natural Resources Committee for one year, and for 3 years was the state director for Sierra Club California. He moved to California from the Midwest where he practiced law for 20 years including environmental work for nonprofits and Voting Rights Act cases with his family’s firm on behalf of Hispanic and African-American classes.

Trina Cunningham, Maidu Summit Consortium and Conservancy

Jay Davis, Ph.D., grew up near the PCB-contaminated aquatic food web of Lake Michigan. He has worked on contaminant issues in San Francisco Bay since 1986. He received his Ph.D. in Ecology at the University of California, Davis in 1997. Dr. Davis is Lead Scientist of the Regional Monitoring Program for Water Quality in San Francisco Bay, a comprehensive water quality monitoring program. He is also lead scientist for bioaccumulation element of the California State Water Resource Control Board’s Surface Water Ambient Monitoring Program, which conducts statewide surveys of contaminants in aquatic food webs. Dr. Davis is also the co-Director of San Francisco Estuary Institute’s Clean Water Program. His primary research interests are monitoring the accumulation of persistent contaminants in aquatic food webs of the Bay, its watershed, and aquatic ecosystems in California.

Danielle V. Dolan has worked in environmental education, engagement, and advocacy for the last 14 years, the latter half in California water issues. Ms. Dolan was hired by the Local Government Commission in 2014 to lead LGC’s water programs — engaging on statewide policy initiatives and implementing projects at the local level. LGC’s water work emphasizes the connection between land use planning and sustainable water management, and includes cross-jurisdictional efforts to address watershed health and water security across the state. Prior to joining the LGC team, Ms. Dolan served as a workshop coordinator for the Sacramento River Watershed Program, and a project coordinator for the UC Davis Center for Watershed

Sierra Nevada Conservancy (SNC)

The Sierra Nevada constitutes about 25% of California’s land area and is the state’s principal watershed, supplying more than 60% of the developed water supply to residents, agriculture, and other businesses and industries across the state.

Healthy watersheds provide cool, clean water more consistently, benefitting instream flow, downstream users, hydropower generation, groundwater basins, and the ecosystem as a whole.



www.SIERRANEVADA.ca.gov

Increasing the pace and scale of forest restoration will:

- ✓ Protect water quality and quantity
- ✓ Reduce fire risk
- ✓ Stabilize carbon storage
- ✓ Improve habitat for wildlife

Forest health is a primary goal for SNC’s Proposition 1 grant program and the Sierra Nevada Watershed Improvement Program. Visit www.RESTORETHESIERRA.org to learn more.



Speakers

Biographies D - H

Sciences. She holds a B.A. in Environmental Studies from Hawai'i Pacific University and a M.S. in Community Development from UC Davis.

Mark Drew, Ph.D., is California Trout's Sierra Headwaters Program Director. Mark is the founder and prior Director of the Inyo-Mono Integrated Regional Water Management Program. Prior to joining CalTrout, Mark worked as The Nature Conservancy's Southeastern Caribbean Program's Protected Areas Specialist. Prior to working for The Nature Conservancy, Mark spent almost 15 years involved, both academically and professionally, in the fields of resource conservation, tropical food production and livelihood systems in the U.S. mainland, Oceania, and the Asia region. Mark holds a B.S. degree in Forestry and Natural Resources Management, an M.A. degree in International Development Policy and a Doctorate degree in Forestry and Resource Conservation from the University of Florida. Mark's professional interests center largely on tackling challenging issues that address the needs of both human and natural systems.

Randy Fessler, Ph.D., Emergency Response Program Manager, California Department of Water Resources

Peter G. Green, Ph.D., studied chemistry in college and graduate school, before changing to more applied projects in environmental chemistry in the early 1990s while working in southern California. Since moving to UC Davis in 2000 and joining the department of Civil and Environmental Engineering, he has enjoyed ever widening research in the fields of air quality, water quality, engineering, ecology, human health and agricultural sciences. His current projects include: mitigation of heavy metals released from abandoned mines, minimizing uptake of arsenic during rice production, discerning impurities in biogas and biomethane (and air quality impacts of their use), management of by-product brine after removal of chromium from drinking water, plant uptake of (and impact from) copper oxide nanomaterials, and groundwater contaminants in the San Joaquin Valley from past use of fumigants.

Valerie Hanley, Ph.D., is a Staff Toxicologist at the Department of Toxic Substances Control. She has been the lead toxicologist on an arsenic bioavailability in mining soils research study for the last 8 years and recently authored DTSC's Human Health Risk Assessment Note 6: Recommended Methodology for Evaluating Site-Specific Arsenic Bioavailability in California Soils. Dr. Hanley has a Bachelor's degree in Molecular, Cellular, and Developmental Biology from the University of California, Santa Cruz, a Ph.D. in Comparative Pathology from UC Davis, and completed a postdoctoral fellowship in Respiratory Toxicology at UC Davis. She's been serving California in DTSC's Human and Ecological Risk Office since 2008.

David Herbst, Ph.D., holds a Ph.D. from Oregon State University and has been doing research on mountain streams and desert lakes at the University of California Sierra Nevada Aquatic Research Laboratory since 1986. Among the research questions he has investigated are the effect of salinity and water chemistry on life in alkaline salt lakes such as Mono Lake, the effect of sediment on stream invertebrates in the Sierra and central coast of California, assessment of livestock grazing and meadow restoration, the influence of introduced trout on formerly fishless mountain streams, and how drought and climate



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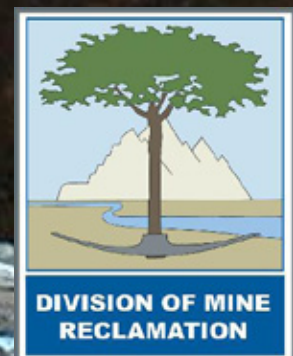
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The Department of Conservation administers a variety of programs vital to California's public safety, environment and economy.

The Division of Mine Reclamation provides a measure of oversight for local governments as they administer mining laws within their respective jurisdictions.

Although the focus is on existing mining operations and the return of mined lands to a usable and safe condition, issues related to abandoned legacy mines are also addressed.



Speakers

Biographies H

change alter headwater ecosystems of the high Sierra. Using bottom-dwelling aquatic invertebrates as indicators of stream health, he has monitored acid mine drainage impacts and recovery in the Leviathan mine watershed for over 20 years.

John Hillenbrand, P.G., E.G., provides regional coordination for mining activities and provides technical expertise to mine site case workers within EPA Region 9. He is also co-chair of EPA's national mining team. Mr. Hillenbrand holds a B.S. in Geology from UC Davis and a M.S. from UC Riverside. He is a Professional Geologist and Engineering Geologist in the State of California. Mr. Hillenbrand has 27 years of experience in the water quality and solid waste. For the past 20 years he has specialized in Clean Water Act enforcement and Superfund clean-up at mining sites at EPA Region 9. His work includes providing site specific assistance to project managers at various Region 9 Superfund mine sites and is currently the project manager for the Argonaut Mine, Celtor and Copper Bluff sites. Other work includes leading EPA's internal investigation at Gold King Mine and assisting with the development of the abandoned mine prioritization effort for EPA in California.

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Thanks! This conference would not be possible without the visionary foundations that support our ongoing Initiative to address the impacts of legacy mining: Clarence E. Heller Charitable Foundation, True North Foundation, and Giles and Elise Mead Foundation. We are honored that these organizations have chosen to invest in our work, showing their confidence in our abilities and the importance of this issue.

Thanks! And, we couldn't do it without our fantastic team of volunteers - from students to weathered activists to local organizations!

Speakers

Biographies K - L

Rachel Hutchinson is the Science Director for the South Yuba River Citizens League (SYRCL) and is responsible for SYRCL's conservation, restoration, monitoring, and education programs. She joined SYRCL in 2013 from the UC Davis Center for Watershed Sciences where she worked as a riparian ecologist for almost ten years. Rachel received her master's degree in Water Resources from the University of Idaho where she studied how plant communities on restored river floodplains responded to changes in hydrology and invasion from non-native species in the lower reaches of the Cosumnes watershed.

G. Mathias (Matt) Kondolf, Ph.D., Matt Kondolf is a fluvial geomorphologist specializing in environmental river management and restoration. At Berkeley he teaches courses in hydrology, river restoration, and environmental science and planning. His research focuses on human-river interactions, with emphasis on managing of flood-prone lands, managing sediment in rivers and reservoirs, and river restoration, and has published extensively on these topics. His book *Tools in Fluvial Geomorphology* (2nd edition, Wiley) is a reference in the field. He has served as advisor to US and state agencies on river management and restoration, and provided expert testimony before the US Congress, the California Legislature, the US Supreme Court, and the International Court of Justice and Permanent Court of Arbitration in the Hague.

Gideon Kracov, J.D., was appointed to the State Mining and Geology Board (SMGB) by Governor Edmund G. Brown Jr. on July 8, 2014, and made Chair on February 2, 2015. He is a lawyer in private practice in Los Angeles, where he represents clients in civil law, environmental and land use matters. Previously, he was deputy city attorney at the Los Angeles City Attorney's Office. In addition to his service as SMGB Chair, Mr. Kracov currently chairs the California Department of Toxic Substances Control Independent Review Panel tasked with recommending improvements to the agency's permitting, enforcement, outreach and fiscal management. Mr. Kracov also is the former Chair of the State Bar of California Environmental Law Section. Elected by his peers to that role, he led education and program activities on behalf of the Section's 2,500+ environmental lawyer members. He previously has served as Vice-Chair of the Los Angeles Proposition O Bond Committee overseeing \$500 million to protect the City's rivers and beaches and as Acting Chair of the State Committee supervising California's vehicle smog check program.

John Laird has served as Secretary for the California Natural Resources Agency since 2011. A long-time resident of Santa Cruz, Secretary Laird has spent nearly 40 years in public service at the state and local level, including 23 years as an elected official. While serving the maximum three terms in the Assembly, Laird authored 82 bills that were signed into law. These bills



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Speakers

Biographies L

established the landmark Sierra Nevada Conservancy, restored community college health services, expanded and clarified state civil rights protections, reformed the state mandates system, and significantly expanded water conservation. As California's Secretary of Natural Resources, Laird has prioritized climate change adaptation, water conservation and supply reliability, enhanced relationships with tribal governments, State Parks access, farmland conservation, and oceans sustainability. He provides administrative oversight to thirty departments, commissions, councils, museum, boards and conservancies – and is a sitting member of sixteen conservancies, councils, boards and commissions within the purview of the Agency.

Steve Lofholm, P.G., is a Program Leader with Golder Associates. He earned an M.S. in geology from the South Dakota School of Mines in 1982. He is a California professional geologist with over 35 years' experience working as a hydrologist with the USGS, an exploration geologist with Homestake Mining, Anaconda Copper, and Exxon. He has worked as an environmental



THE SIERRA FUND is a nonprofit community organization dedicated to restoring ecosystem and community resiliency in the Sierra Nevada. We pursue our mission by utilizing the following tools:

- **Science:** a targeted approach to applied science;
- **Policy:** strategic advocacy to address mining impacts and increase public and private funding to the region;
- **Outreach:** a two-way flow of information with the goal of engaging, convening, and listening; and
- **Capacity Building:** to provide a fiscal vehicle for the Sierra Nevada region.

In 2006 The Sierra Fund launched our “Reclaiming the Sierra” initiative to address the long term human health, environmental and cultural impacts of legacy mining in California, with a vision of adaptive recovery for communities and the environment.

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Speakers

Biographies L - M

consultant since 1987 managing hazardous waste investigation and remediation projects. Currently, Mr. Lofholm is a program manager for environmental remediation at sites throughout California including the Empire Mine State Historic Park where work includes environmental permitting and assessments, remediation, engineering, construction and O&M. A highlight includes the design and construction of the passive mining influenced water treatment system (PTS), and restoration of the Magenta Drain channel. The PTS system had a three year TSO to allow the system to mature but has met final effluent limits after only 15 months of operation.

Austen Lorenz is a graduate student in the Geographic Information Science (GIS) program at San Francisco State University. His research is focused on applications of remote sensing and GIS for landscape ecology, hydrology, and geomorphology. For his thesis, Austen is developing a method of remotely sensing and classifying mountain meadows by hydrogeomorphic types in the Sierra Nevada using object-based image analysis. Previously Austen worked for American Rivers, where he became interested in mountain meadows. Prior to that, Austen worked for the United States Forest Service in Colorado and Alaska as an aquatic ecology technician.

Nicole Lutkemuller has a B.S. in Environmental Science and Ecology from Sierra Nevada College and has been working and studying in the Sierra since 2009. Nicole joined the 34 North team as an Ecologist in October 2015 and manages geospatial data for 34 North's OpenNRM projects throughout California. Prior to joining 34 North, Nicole served as the Watershed Program Assistant for the Alpine Watershed Group through the Sierra Nevada AmeriCorps Partnership and as a Land Health Assessment Technician for the Bureau of Land Management through the Great Basin Institute and Nevada Conservation Corps. Ms. Lutkemuller's passion and focus through her academic and professional career has been on both water resource management and forest health issues in the Sierra Nevada. Nicole volunteers with numerous environmental non-profits in the Lake Tahoe area, conducting water quality and forestry monitoring as well as facilitating community engagement in local environmental issues.

Glenda Marsh is the Program Manager for the Abandoned Mine Lands Program at the California Department of Conservation. She brings a diverse 15-year career implementing environmental regulatory and natural resource programs at several state departments, including historical fishery, hydrological, genetics, and botanical research projects. She finds that reclaiming the state's historic mined lands has many similar facets, requiring bridging between regulatory processes, human and environmental health and land management in order to protect people and the environment for future generations.

Elizabeth "Izzy" Martin, CEO of The Sierra Fund, is an organizer and advocate with thirty-seven years of experience working in rural communities to promote economic and environmental justice. She has worked with farm workers, farmers,



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Speakers

Biographies M

and environmentalists to develop pioneering programs to promote organic agriculture and reduce community exposure to pesticides. While serving as Nevada County Supervisor Izzy led the fight in the legislature to put the Yuba River into the state's wild and scenic river system, spearheaded the effort to clean up an abandoned mine in her district, and began a successful five-year campaign to establish the Sierra Nevada Conservancy. Izzy conceived of and directs The Sierra Fund's Headwater Ecosystem and Community Resiliency Program, aimed at restoring the region from the environmental, health and cultural devastation caused by the 19th century California gold rush. Her extraordinary accomplishments were recognized last year when she received a James Irvine Foundation Leadership Award.

Stephen McCord, Ph.D., P.E., is President of McCord Environmental based in Davis, CA. He holds a B.S. degree in Civil Engineering from Clemson University, and M.S. and Ph.D. degrees in Civil & Environmental Engineering from the University of California Davis. He has over 20 years of consulting, research and teaching experience with surface water quality management projects throughout California, several other US states, and internationally. As a registered Professional Engineer and a certified Lake Professional, his key project areas include technical project management, strategic planning, stakeholder facilitation, discharge and surface water monitoring, and water quality modeling. Special water quality expertise include conceptual and mass balance models, TMDLs, water quality trading, and abandoned mine site cleanups.

Robert Meacher has served on The Sierra Fund's Board of Directors since 2013. He is currently the City Manager for Portola California. He is the City's representative to the Sierra CAMP (Climate Adaptation Mitigation Plan) through the Sierra Business Council. He sits on the Board of Directors of the Sacramento River Watershed Program and the California Watershed Network. He was the Democrat Candidate for the State Assembly District 1 in 2012. He was a Plumas County Supervisor from 1993 to 2013. Robert was appointed by three consecutive State and Federal Administrations to serve as the Local Government representative on the CALFED Bay-Delta Advisory Committee, and the CALFED Bay-Delta Public Advisory Committee 1996-2008. In that capacity he co-chaired the Watershed Program element 1998-2008. Robert was the Rural Counties representative on the Pacific Coast Watershed Lands Stewardship Council Board of Directors from 2008-2013. He was the Rural Counties representative on the California Biodiversity Council from 1995-2008. He attended Cal State Chico, majoring in Pre-law and Political Science. He was the first Certified Paralegal in Northeast California in 1986.

Carrie Monohan, Ph.D. has been the Science Director at The Sierra Fund since 2010 where she designs and directs research to fill critical data gaps in water quality regulation, abandon mine remediation and prioritization of conservation efforts. She earned her Ph.D. in Forest Resources and Hydrology in 2004 from the University of Washington. Her dissertation



Speakers

Biographies M

work addressed the relationship between water quality in agricultural streams and diminishing salmon habitat. Other notable recent positions include Senior River Scientist for the Natural Heritage Institute and project manager and lead scientist for the EPA Brownfields Community Wide Assessment in Nevada City. Dr. Monohan is also an Adjunct Professor and Lecturer at California State University at Chico where she teaches courses in the Geological and Environmental Sciences Department and supervises graduate student research in the projects that she directs at The Sierra Fund.

Steven Moore was appointed to the State Water Resources Control Board by Governor Edmund G. Brown Jr. in 2012, reappointed in 2016, and elected as Vice Chair of the Board in 2017. He previously served on the San Francisco Bay Regional Water Board from 2008-2012 under the Brown and Schwarzenegger administrations and held staff positions at that Regional Water Board at various times between 1992 and 2006. Between 1989 and 2012, Mr. Moore worked over 10 years as an engineer and consultant on a wide variety of water infrastructure projects, including sewer reconstruction, recycled water, stormwater, water supply, stream and wetland restoration, and Environmental Impact Reports throughout California. Mr. Moore has experience both obtaining and issuing discharge permits, wetland permits, and clean water grants and loans. He led Basin Planning for the Regional Water Board from 2002 to 2006. Mr. Moore holds a B.S. in biological sciences and an M.S. in civil engineering, both from Stanford University. He is a registered civil engineer and a member of the American Society of Civil Engineers.

Lawrie Mott specializes in environmental health and science, and has recently focused on western water issues. Beginning at the Natural Resources Defense Council in the early 1980s, Lawrie worked on agricultural and pesticide problems in California and nationally. Later she launched a new project to safeguard children from environmental health threats, including lead, air pollution and pesticides. Working on climate change, sustainable agriculture, educational equity, children's environmental health, and independent media for social change Lawrie has served on many government advisory committees and nonprofit boards, including Envision Education, Cool the Earth, Resource Media, Center for Urban Education about Sustainable Agriculture, and the U.S. EPA Children's Health Protection Advisory Committee. Lawrie posthumously edited and completed *A Dangerous Place: California's Unsettling Fate* by Marc Reisner, her late husband and author of *Cadillac Desert*,



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Speakers

Biographies N - P

on the potential impact of earthquakes on California with particular focus on the Sacramento– San Joaquin Delta. She is now completing a final chapter to update Cadillac Desert for a new edition coming later this year.

Jeffrey Mount, Ph.D., is a Senior Fellow with the Public Policy Institute of California Water Policy Center. He is the Founding Director of the UC Davis Center for Watershed Sciences and Professor Emeritus in the Department of Earth and Planetary Sciences. While at UC Davis he held the Roy Shlemon Chair in Applied Geosciences and UC President's Chair in Undergraduate Education. During his long career Dr. Mount has published widely on the science and management of rivers, including his award-winning book, *California Rivers and Streams* (UC Press). He is co-author of the recent synthesis *Managing California's Water: From Conflict to Reconciliation* (Public Policy Institute of California). His work at the Public Policy Institute of California focuses on bringing together multidisciplinary teams of researchers to develop novel solutions to water problems, particularly in California.

Sherri Norris, Executive Director, California Indigenous Environmental Network

Thomas A. O'Neill is the Director, founder, and lead ecologist for The Habitat Institute a nonprofit 501(c)3 scientific and educational organization. Tom has worked for 40 years as a wildlife ecologist in the west and 35 years as a Certified Wildlife Biologist. Experience related to this presentation include developing a framework and method called Combined Habitat Assessment Protocols or CHAP for assessing ecosystem functions and resiliency. His work has produced the first patent in the US for an algorithm for assessing habitat value; creating and implementing a new dimension of performance called a functional redundancy index value; implementing proof-of-concept projects; and defending the concept in a host of independent scientific reviews. Additionally, Tom's other work has helped delist the first listed fish species in the US. Tom has several degrees and has also held an Associate Faculty status at the University of Chicago and Oregon State University.

Pat Perez was appointed Supervisor of the Division of Mine Reclamation at the California Department of Conservation on August 29, 2014 by Governor Brown. Perez served as acting supervisor of the Division of Oil, Gas, and Geothermal Resources in 2014. Before joining the Department of Conservation, Perez served as the California Energy Commission's Deputy Director for transportation energy and alternative fuel programs and held a number of managerial and supervisory positions during a 32-year career at the Energy Commission. He led programs that dealt with such diverse topics as climate change, renewable energy, conventional fuels, liquefied natural gas, international energy market development, land use, and emergency planning and response. Pat graduated from University of California Santa Barbara with a degree in Geography in 1979.

Gary Parsons, Board of Directors, The Sierra Fund



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Speakers

Biographies P - S

Mary Pitto joined the Rural County Representatives of California (RCRC) staff in 2002 and serves as a Regulatory Affairs Advocate. Mary represents RCRC before the legislature and various state agencies and regulatory bodies that have broad authority over land use and environmental policy. This includes air quality, solid waste, land use planning, and mining, as well as a variety of other issues. Mary served 19 years in California rural county government in Calaveras County where she was the Deputy Planning Director and then Senior Administrative Analyst. Mary holds a Bachelor of Science Degree in Environmental Planning and Management from the University of California at Davis and a Master of Arts in Biology from the California State University at Fresno.

Carol Purchase has spent the past 25 years working for the National Park Service and for National Forests in Oregon, Montana, Wyoming and California. In that time, she has worked on mine assessment and remediation in the Rocky Mountains, Mexico and Russia, in addition to right here in the Sierra Nevada. Her current program encompasses landscape planning, water rights, hydropower relicensing, meadow restoration and invasive species management. However, she focuses on assessing and restoring the many hydraulic mine sites on the Tahoe National Forest whenever possible. Her interest in watershed restoration began as a Peace Corps volunteer in West Africa, and since that time has had the opportunity to develop watershed restoration plans for degraded landscapes in Madagascar, Tanzania, and Big Bend, Texas. Carol Purchase has an undergraduate degree in Botany from University of Washington, Seattle and a M.S. Degree in Forest Hydrology from the University of Minnesota, St. Paul.

Gregory J. Reller, P.G., is a consulting geologist with 30 years of experience addressing environmental contamination. Since 1998 Greg has worked primarily on abandoned mine sites. He has characterized and addressed physical hazards and environmental threats at legacy abandoned mines on federal lands administered by US Forest Service, US Bureau of Land Management, and National Park Service; State lands administered by California Department of Parks, and private lands. Mr. Reller has successfully removed and treated mercury containing sediment from sluice tunnels, planned and documented monitoring to evaluate the effects of modern mining on mobility of legacy mercury, and planned and supervised the cleanup of legacy mercury, gold, sulphur, tungsten, and copper mines and mills.



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Speakers

Biographies S

Erik Ringelberg brings more than 20 years of experience as an applied environmental scientist to The Freshwater Trust as its California Director. Erik's professional work has focused on NEPA/CEQA analyses, and permit development and compliance in Northern and Central California. He has also managed lake and river restoration and listed species recovery programs in both Nevada and California. He's been cited in several articles on California's water crisis, and reforming California's water policies; and, he's served on technical advisory committees, regional water planning commissions, and watershed councils. He holds a bachelor's degree in Microbiology from Colorado State University and a master's in Environmental Science from Lesley University in Cambridge, Massachusetts.



Remleh Scherzinger has extensive knowledge and considerable experience in the water utility field. That experience ranges from design and construction of heavy civil projects to research and planning for water, waste water, storm water, and recycled water projects. Before joining NID, Mr. Scherzinger was the City of Petaluma's Utilities Engineering Manager, and was previously employed with the Sonoma County Water Agency and the Metropolitan Water District. He is a graduate of Cal Poly Pomona with a Bachelor of Science degree in Civil Engineering and Minor Degrees in Ocean Engineering and Physics. He has a Master's Degree in Business Administration from Sonoma State University. He is a licensed Civil Engineer in California. He is a member of the Association of California Water Agencies (ACWA) Region 3 Board and serves on ACWA's Drought Action Group. He serves on Mountain Counties Water Resources Association's (MCWRA) Legislative Affairs Committee.

Michael Schultz is the Business Development Manager with REI Drilling, Inc. and has an undergraduate degree in Mining Engineering from Virginia Tech. REI Drilling is a horizontal directional drilling company that specializes in delivering unique services for the mining industry. These services include installing horizontal holes into abandoned mine pools and utilizing gravity drainage either to treat the water or to lower head pressures within the mine in order to reduce the potential risk of a blowout. Over the last 6 years, Michael has been directly involved in engineering and managing environmental projects relating to dewatering abandoned mines. He recently moved to Grand Junction, Colorado to provide local consulting and support for environmental projects at abandoned hard rock mines in the Rocky Mountains, including sites such as Gold King.

Bob Scowcroft has successfully transitioned from a "retirement" state of mind into a more active composition of consultant, volunteer and advocacy oriented activities. He currently serves on the Board of Directors of the Nell Newman Foundation and sits on four non-profit advisory boards. He previously served as Executive Director of the Organic Farming Research Foundation, a national organization, based in Santa Cruz, California. It was co-founded by Bob and two certified organic farmers in 1990. In the nearly 20 years Bob directed OFRF, it awarded over \$2,400,000 in support of over 320 organic research and education projects. The results of which were shared with over 15,000 organic farmers and ranchers throughout North America. During Bob's tenure OFRF had an active policy, research, and publishing program, and it disseminated information on all sectors of the organic product industry to the public at large. Bob averaged 200 media interviews and over 15 conference presentations on all subjects "organic" annually. He sat on five Non-Governmental Organizations (NGO) Advisory Boards. He resigned and retired from OFRF at the end of 2010. Prior to working for OFRF, he was the first full time Executive Director of California Certified Organic Farmers (1987-1992); before that he served in the Friends of the Earth's San Francisco office as their national organizer with a primary focus on pesticide reduction and organic farming advocacy (1979-1985).

Speakers

Biographies S

Fraser Shilling, Ph.D., is research faculty in the Department of Environmental Science and Policy at the University of California, Davis. Shilling has three areas of research: 1) interactions between equity and water quality policy and decision-making; 2) sustainability indicator systems; and 3) transportation ecology, where he is also co-director of the Road Ecology Center. Some of Fraser's active research involves reducing mercury impacts on people and the environment, studying how traffic noise and light impacts wildlife use of habitat and wildlife crossing structures, developing new methods for measuring sea level rise and its impacts in real-time, facilitating the sharing and understanding of water data through indicators related to social goals, and calculating the impact of roads and highways on wildlife movement and survival. Shilling obtained his doctorate in aquatic biology at the University of Southern California.

Mark Seelos, Santa Clara Valley Water District

Edward Smith is leading efforts by The Nature Conservancy to increase the quality and scale of ecological restoration of forests in the Sierra Nevada. He brings people skills, analytical skills, vegetation modeling, and pragmatic experience in prescribed burning and forest management to the collaborative table to troubleshoot complex issues. He is working to quantify ecosystem service benefits of healthy forests as a result of improved forest management, with an emphasis on biodiversity value, water quality and quantity, and stable carbon. Edward has worked for TNC for 21 years, in forest ecology, grazing management and grassland ecology, and the mechanics of quality collaborative process. He received his MS in Forestry from Northern Arizona University, studying the nitrogen dynamics of intact and disturbed forests in belowground processes. He received his BA in Biology from UC San Diego, Revelle College in 1983.

Jordan Fisher Smith spent 21 years as a park and wilderness ranger in the West and Northwest. His 2005 memoir of ranger work, *Nature Noir*, published Houghton Mifflin, and was an Audubon Magazine Editor's Choice and a San Francisco Chronicle Best Books pick. The New York Times called *Nature Noir* "Eloquently meditative," and The Boston Globe judged it "Daringly original and gorgeously nuanced." Newsweek said of Jordan, "He writes about the natural world with more grace than anyone since Edward Abbey." Jordan's 2016 book *Engineering Eden: The True Story of a Violent Death, a Trial, and the Fight Over Controlling Nature* was nominated for the PEN/E.O. Wilson Literary Science Writing Award. The Wall Street Journal calls *Engineering Eden* "Intensely reported,

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Speakers

Biographies S - T

rousingly readable, and ambitiously envisioned...A thrilling read." "Smith's book will draw you in with his passion, thoughtfulness and first-rate story-telling," opined the Seattle Times. Jordan has written for The New Yorker, Time.com, Discover, and Men's Journal. He's a cast member and narrator of a documentary film about Lyme disease, "Under Our Skin," which made the 2010 Oscar shortlist for Best Documentary Feature, and appears in the 2014 sequel "Under Our Skin 2: Emergence." He has been a guest on various nationally syndicated radio programs including NPR's Morning Edition, On Point, Living on Earth, and National Geographic Weekend. He lives in California's Sierra Nevada mountains.



Michael Smith has 30 years of experience in land use planning and entitlement processing. He is a graduate of California State University, Chico with a B.A. in Geography and a minor in Recreation. He currently serves as Aggregate Resource and Government Relations Manager for Teichert Materials and oversees the team responsible for all land use permits necessary to serve Teichert Materials' operations throughout California. As part of his role, Michael is also responsible for government relations and community benefits for Teichert Materials and represents Teichert on CalCIMA's Governmental and Legislative Affairs Committee as well as its Political Action Committee. Michael is also deeply involved in serving the community through his work with nonprofits which includes; Board Chair for the Cache Creek Conservancy in Yolo County; Board Member for the American River Parkway Foundation, Vice-Chair for the Sacramento Metro Chamber's Inspire Giving Leadership Council, and Board Member of the Sacramento Metro Chamber Foundation.

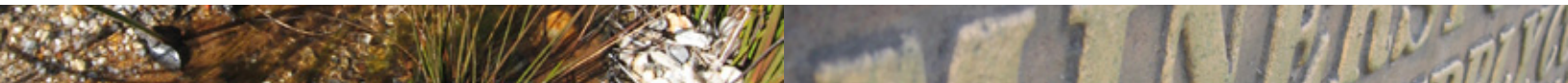
Scott Stephens, Ph.D., is a Professor of Fire Science and Chair of the Division of Ecosystem Science at UC Berkeley. He is also the Director of the UC Center for Fire Research and Outreach and Co-Director of the UC Center for Forestry. He is the leader of California Fire Science Consortium which works to more effectively deliver fire science information to natural resource managers. Stephens' areas of expertise focus on interactions of wildland fire and ecosystems. This includes how prehistoric fires once interacted with ecosystems, how current wildland fires are affecting ecosystems, and how management and climate change may change this interaction. He is also interested in wildland fire policy and how it can be improved to meet the challenges of the next decades.

Martin Taber received his B.A. in Environmental Studies from the University of California, Santa Cruz in 1995. After a lifetime of involvement in the family business, in 1997 he took to the jewelry trade full-time to develop his interests in sculptural design and architectural form. The integrity of crafting directly in the metals and working so closely with his customers led Martin to renew his passion for the environment in his new signature collection of ecologically inspired, haute couture jewelry, Martin Taber Designs. Martin has made significant changes to the methods of production and acquisition of materials to reflect Taber Studios' mission to become a leader in the move to help clean up the jewelry industry. He is currently the President of the Board of Directors of Ethical Metalsmiths, serving and guiding the jewelry industry towards ever more ethically-minded practices.

Craig Tucker, Ph.D., Natural Resources Policy Advocate, Karuk Tribe

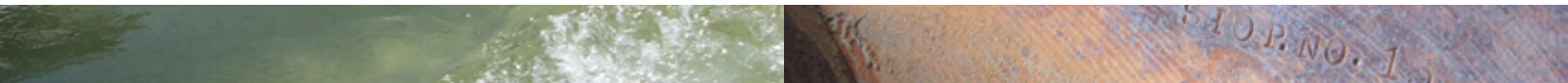
Notes

Reclaiming the Sierra 2017: Headwater Resiliency



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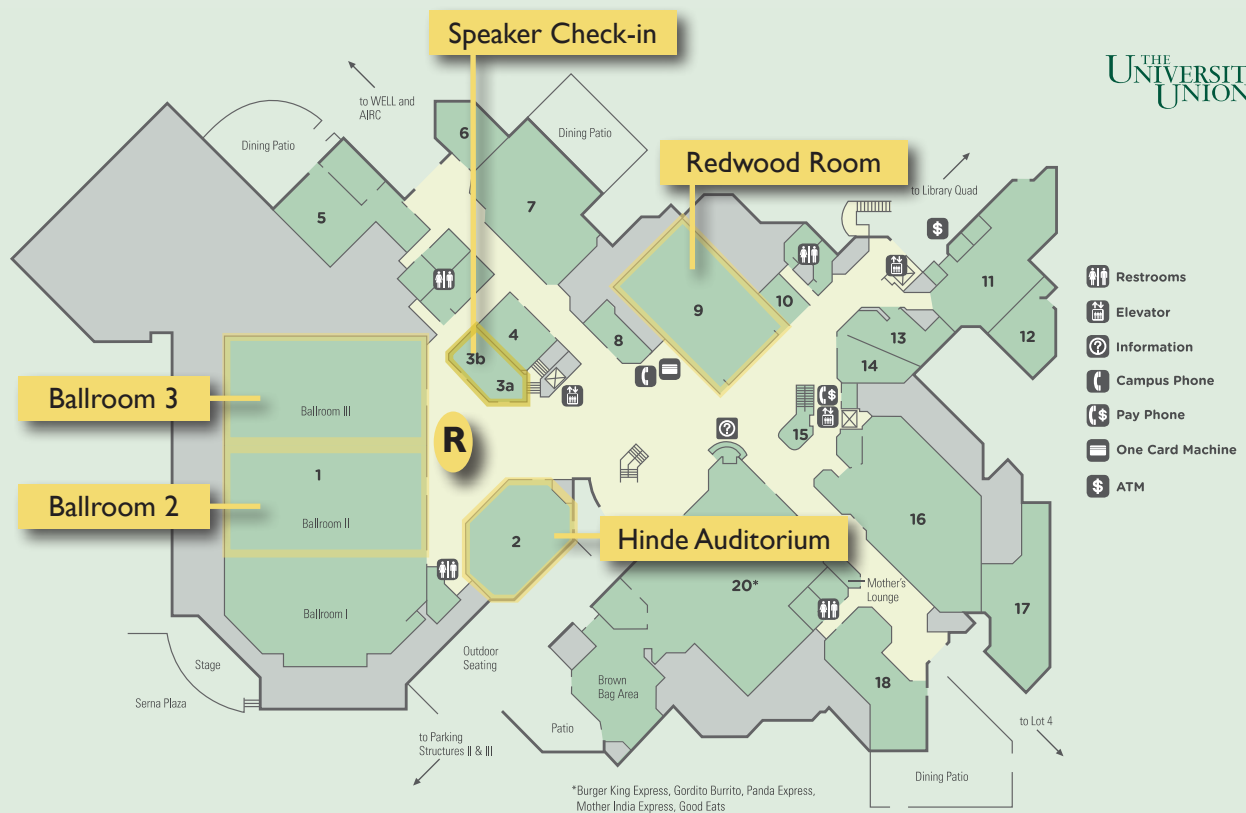
Reclaiming the Sierra 2017: Headwater Resiliency



Venue Map

Conference Center: University Union, CSU Sacramento

FIRST FLOOR



ASI Hot Spot 13
The Buzz 18
Eco Grounds 15
Epicure Catering 4
Epicure Restaurant 5
Games Room 16
Hinde Auditorium 2

Hornet's Nest Food Court 20
Jamba Juice 8
KSSU Radio Station 12
Lobby Suite 3
a Cypress Room
b Sequoia Room

Police Service Center 10
Redwood Room 9
Retail Space 14
Round Table Pizza at the Hive 7
The Store 11
Union Services & The Lab 17

University Union Ballroom 1
Vending Machines (food) 19
Women's Resource & PRIDE Centers 6

R = Registration

Yellow borders
indicate Reclaiming
the Sierra
Conference rooms

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