42nd Annual

Salmonid Restoration Conference

Taking the Pulse: Measuring Restoration Success

April 29 - May 2, 2025 Santa Cruz, CA

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Cover Photo: Chris Berry

Taking the Pulse — Monitoring Restoration Results and Anticipating the Next Calamity

Ironically, writing the preface for the SRF Conference Agenda packet and Proceedings is often the last step of weaving the individual components of the conference into a cohesive vision for the annual conference. What begins as a meditation of the pressing and regional issues to highlight at our upcoming conference becomes a larger brainstorm that gathers momentum as SRF integrates valued input from our restoration partners and colleagues.

As we build the framework of the conference: technical workshops, field tours, concurrent sessions, the Plenary session, poster session, and the Mentor-mentee program, there are always the unknown stressors of state and federal budget restrictions, policy shifts, and the landscape game changers like catastrophic fires, mudslides, and water scarcity / flooding.

California is so varied and so vulnerable. As we gather this year to celebrate the unbelievable success of the largest dam removal project in world history, let's remember that we did not arrive at this exciting milestone through science alone. It took vision, daring, perseverance, once unthinkable partnerships, activism, tribal leadership, agency support, and a federal administration that's hallmark achievement was thinking big about Climate resilience.

In recent weeks, we have lost so much, so fast — precious habitat in the Santa Monica mountains, Diversity Equity and Inclusion initiatives, and climate science resources.

If there was ever a time to come together and share science, vision, techniques, strategies, and most of all compassion, this is it.

It's tempting to bury our heads in the sand but the sand is always shifting (ask any geomorphologist). The SRF Conference is often the venue where people in this interdisciplinary field of watershed restoration get recharged, engage in a hallway conversation that advances their specific effort, or encourages some wonderful young professional to dedicate their career to this exciting and ever-evolving field.

As landscapes and our political institutions are ravaged, perhaps we need to think not just about what is possible, but how we perceive what is impossible. California and our beloved salmonids will always need water and as we navigate all of these new stressors, restorationists will always need to practice compassion, open-mindedness, and best available science to restore our fragile watersheds.

In the spirit of thinking like a watershed, I hope that the SRF conference can hold space for all of us dedicated to the long game of restoration, recovery, and the life work of preserving wild salmonids in our precious state.

SRF Plans for 2025

- Build five-million gallons of water storage at Black Oak Ranch, Laytonville, CA
- Produce a Fish Passage Design and Engineering Field School in Santa Barbara
- Produce a Bay Area Steelhead Summit
- Continue the Storage and Forbearance Program in Redwood Creek, SF Eel
- Complete the Feasibility Study for Lost Coast Forestlands, SF Eel
- Continue the Holland Reservoir Planning for the largest privately-owned reservoir in the South Fork Eel
- Launch the North Coast Tribal Capacity and Climate Resilience program that will provide capacity building, climate assessments, technical education and assistance

What SRF Did in 2024

- Produced the 41st Annual Salmonid Restoration Conference in Santa Rosa, CA
- Completed the Marshall Ranch Flow Augmentation in the South Fork Eel River
- Produced the 26th Annual Coho Confab in the Smith River
- Created and implemented a Storage and Forbearance Program in Redwood Creek, SF Eel
- Secured NOAA Fisheires funding for a Tribal Capacity and Climate Resilience Program
- Created a more robust Diversity, Equity, and Inclusion scholarship program

Taking the Pulse — Measuring Restoration Success

Salmonid Restoration Federation (SRF) produces the largest salmon restoration in California that convenes a diverse range of people in the watershed restoration field including planners, engineers, policy makers, students, Watershed Stewards Program members, consultants, academics, tribal members, on-the-ground practitioners, and landowners. It is these wide range of practitioners engaged in science, policy, and restoration that enlivens our annual conference and creates a dynamic venue for learning from "real life" experience and expertise.

SRF will host the 42nd Annual Salmonid Restoration Conference on April 29 - May 2, 2025 in Santa Cruz, California which affords many opportunities to see and learn about

Lagoon restoration, post-fire recovery, dam removal, and coastal monitoring. The SRF Conference has grown tremendously and our small organization has navigated the growing pains of producing a high-caliber conference at larger venues in order to accommodate our swelling ranks. In order to keep the conference costs affordable, SRF will be using a few wonderful facilities this year so come prepared to walk, bike, and be adaptable.

This hybrid arrangement means that each event at the conference will have the space and venue appropriate for the intended purpose. The historic or vintage CG is large enough for the Plenary session, an interactive mentor-mentee program, a lively poster session, and the Friday night banquet dinner and awards ceremony.

Participants will have the opportunity to explore innovative restoration projects and participate in technical workshops. The conference will include technical and practical workshops on forward-thinking restoration topics including:

- Integrated Model Development and Application
- The Passionate Fact — Telling Restoration as Story
- Fish and Fire Conversation: Where There Are Fish, There is Fire
- Using Rapid Assessment Protocols to Gauge Fish Passage Opportunities
- CA Estuarine Marine Protected Monitoring Program Workshop & Tour
- Remote Sensing Tools for Restoration Planning and Assessment Workshop

Workshops will be at the Hotel Paradox meeting rooms, the field tours will depart from the Resource Center for Non-Violence, a multi-racial community center across from the Paradox. The main Conference days will begin with the Plenary session at the Cocoanut Grove (CG) on the Boardwalk and concurrent sessions will be both at the CG and the Dream Inn meeting rooms, just a short stroll from the iconic CG *Photo: Chris Berry*

This year's Plenary will focus on post-Klamath dam removal opportunities with keynote speakers immersed in the 20-year struggle to achieve dam removal, the execution of the largest dam removal project in the world, and post-dam removal salmon migrations. Frankie Myers of the Yurok tribe will discuss the cultural significance of the dam removal and what it means for salmonid return to the Upper Klamath Basin. Jonny Armstong from Oregon State University will discuss how Redband trout navigate the Upper Klamath Basin and what the implications are for salmon recovery. Desiree Tullos, Ph.D., Department of Biological and Ecological Engineering, Oregon State University will give a presentation about water quality and primary production responses during drawdown and Dam Removal. Kellyx Nelson, Director of San Mateo Resource Conservation District and one of the most grounded and knowledgeable leaders about the day-to-day challenges of implementing restoration will ruminate on the *Humanity of Fisheries Restoration*. Tommy Williams, Ph.D. with the Southwest Fisheries Science Center, will give the presentation, Knowing What We Want — A Conceptual Framework for Restoring Klamath River Salmon Populations.

Field tours include restoration projects in San Lorenzo River, Alameda Creek, Carmel River, Monterey Peninsula, and Butano Creek.

Concurrent sessions will highlight groundwater recharge planning, effectiveness monitoring, Science and Policy, Klamath post-dam removal restoration, CA Dam Removal efforts, Urban Creeks, Lagoon restoration, monitoring for rare salmonids and much more.

Please visit the SRF Conference website to see full descriptions of the workshops, field tours, and concurrent sessions.

Workshops & Field Tours

Tuesday, April 29, 2025

Using Rapid Assessment Protocols to Gauge the Passability of Barriers to Anadromous Fish Passage, *Including Hands-On Experience at Barriers Around Santa Cruz*

Workshop and Field Tour Coordinators:
Grace Adams, California Fish Passage Forum; Ross Taylor, Ross Taylor and Associates: Anne Elston, Pacific States Marine Fisheries Commision, Damon Goodman, CalTrout

Rapid Assessment techniques can be a useful tool in assessing aquatic connectivity of a watershed before practitioners invest in full hydrologic modeling. The California Fish Passage Forum in partnership with Ross Taylor and Associates offers this hands-on workshop to train interested individuals in rapid barrier assessment techniques used to assess natural features or manmade structures for their ability to provide fish passage for anadromous fishes. The workshop will showcase assessment protocols outlined in Part 9 of the California Salmonid Stream Habitat Restoration Manual: Fish Passage Evaluation at Stream Crossings.

Key Objectives:

- Familiarize participants with benefits and limitations of field assessment techniques.
- Practice assessing barriers via hand-on demonstration.
- Connect participants to existing and emerging assessments in their working watersheds through the Passage Assessment Database.

Little Case Fish Passage Project-Eel River Watershed Improvement Group.
Photo: Holly Steindorf, NRC

Integrated Model Development and Application to Game Changers for Salmon Recovery

Workshop Coordinators:
Darren Mierau, CalTrout; Eric Palkovacs, UC Santa Cruz Fisheries Collaborative Program; David Boughton and Nate Mantua, Ph.D., NOAA Fisheries, Southwest Fisheries Science Center Fish Ecology Division

Jacob Montgomery, Program Manager at CalTrout, checks on juvenile salmon housed in floating enclosures which allow measurement of fish growth across different locations and river conditions.
Photo: Mike Weir

Morning Session: Recipes for Recovery

How Can Science Help Accelerate Recovery of Pacific Salmon? Steve Lindley, Ph.D., NMFS Southwest Fisheries Science Center

Salmon Recovery Success Stories from British Columbia – Context and Ingredients for Success, Jason Hwang, Pacific Salmon Foundation

Oregon Coast Coho – Recovery in Progress, Tim Elder, Wild Salmon Center

Paving Way for Coho Recovery in the Ten Mile Watershed: A Discussion of Landscape Level Restoration Investments Over 20 Years, Peter Van de Burgt, North Coast Project Manager, The Nature Conservancy

Sharing Butte Creek, Jacob Katz, Ph.D., CalTrout

On the Renewal of Carmel River and its Steelhead, David A. Boughton, Ph.D., NOAA Fisheries, SW Fisheries Science Center

Klamath River – Understanding Where We Are Going, Sequencing Actions and Expectations, Tommy Williams, Ph.D., NOAA Fisheries, Southwest Fisheries Science Center

Panel Discussion

Afternoon Session: Systems. - Level Case Studies Underway

Investment and Approach – NOAA Restoration Center's Role in Salmonid Recovery on the Pacific Coast, Ruth Goodfield, NOAA Restoration Center

Conducting Watershed-Scale Restoration and Evaluating Reintroduction Pathways in Effort to Return Steelhead to Jalama Creek, Matthew Mensinger, UC Santa Cruz

Landowner Willingness as a Critical Variable in Integrated Modeling for Tuolumne River Salmon Recovery, Willam Eisenstein, Ph.D., River Partners

Reorienting to Recovery in the Central Valley: Adapting Decision Support Models to Advance Values Informed, Landscape Scale, and Equitable Decision-Making, Liz Stebbins, FlowWest; and Alison Collins, Metropolitan Water District of Southern California

Floodplain Forward: Aligning Ecological and Economic Outcomes, Jacob Katz, Ph.D., CalTrout

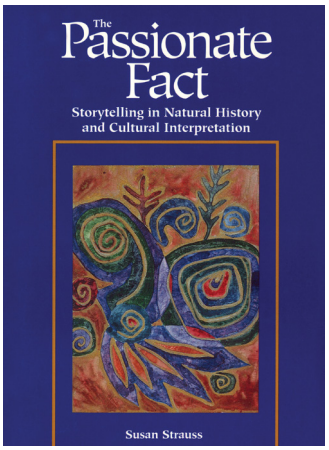
Restoration in Reconciled Aquatic Ecosystems in the Wildland Urban Interface: Mill Creek, Lower Russian River Watershed, Sonoma County, California, Matt O'Connor, Ph.D., CEG, Coast Range Watershed Institute

The Eel River on the Threshold of Transformative Change for Basinwide Salmonid Recovery, Darren Mierau, California Trout and Suzanne Rhoades, Applied River Sciences

Upper Shasta River Recovery Actions, Ada Fowler, Ph.D., CalTrout

The Passionate Fact — Telling Restoration as Story Workshop

Workshop Coordinator:
Susan Strauss, Storyteller



A biologist's life experience holds a wealth of story material. Sharing personal experience or anecdotes is the most accessible story form and can be very effective when communicating with the public about restoration. In this workshop, participants will refine a personal anecdote and a restoration experience for use in public presentations; and develop an understanding of how to translate experience into story.

Rancho Cañada Floodplain Restoration Project

Tour Coordinators: Katrina Harrison, McBain Associates, and Jim Robins, Alnus Ecological

The Rancho Cañada Floodplain Restoration Project is a Stage 8 process-based restoration project that will restore connectivity to 40 acres of floodplain on the Carmel River, in a public park and former golf course. This walking tour will include speakers from NMFS, the landowner, State Coastal Conservancy, and others who will share design inspiration, lessons learned and challenges overcome in preparation for construction in June 2025.

Carmel River at the Rancho Cañada Floodplain Restoration site.
Photo: Ben Snyder

Remnants of San Clemente dam after dam removal.
Photo: Brian LeNeve

Monterey Peninsula Sleepy Hollow Steelhead Rearing Facility

Field Tour Coordinators: Brian LeNeve, Carmel River Steelhead Association; Cory Hamilton, Monterey Peninsula Water Management District; Doug Smith, CSUMB, and Julio A Gonzalez, California American Water

This tour will visit the MPWMD's Sleepy Hollow Steelhead Rearing Facility, where up to 40,000 steelhead rescued from drying sections of the Carmel River can be reared until it rains and the Carmel River runs again. This tour on the Carmel river will provide an overview of how fish rescues impact the fishery. Participants will learn how rescued fish are raised in a s creek and see San Clemente Dam 9+ years after removal.

Process-based Restoration on Paicines Ranch 2022, before (left) and 2023, (right) after a sudden geomorphic event. *Photos: Kevin Swift*

Process-based Restoration on Paicines Ranch Tour

Field Tour Coordinator: Kevin Swift, Swiftwater Design

This full-day field tour will highlight process-based restoration (PBR) efforts taking place at the 7,500 acre Paicines Ranch in San Benito County. Tour participants will learn about how using local materials and hand tools can affect geomorphic and biologic changes within the riverscape. We will learn about the potential for integrating PBR into a working ranch, Paicines' grazing practices and the changes in land-use and vegetation over time.

Wednesday, April 30

CA Estuarine Marine Protected Monitoring Program Workshop and Tour

Workshop Coordinators: Kevin O'Connor, Central Coast Wetlands Group; Jan Walker, Southern California Coastal Water Research Project; and Christina Toms, SF Bay Regional Water Quality Control Board

The California Estuarine Marine Protected Area (EMPA) Monitoring Program is an ongoing Ocean Protection Council–funded effort to assess the quality and condition of estuaries statewide, including but not limited to estuarine Marine Protected Areas (MPAs).

The workshop will include presentations on the EMPA Monitoring Framework including the development process, standard monitoring protocols and data structures, where the framework is being implemented, and how to incorporate it into new and existing monitoring programs. Following the presentations there will be a field demonstration of several of the monitoring protocols in the San Lorenzo River Lagoon. This workshop and field trip is a great opportunity for conference attendees and other interested parties to be trained on eMPA protocols, and help build a more comprehensive picture of estuarine health in California.

Central Coast EMPA field team conducting beach seines in the Pajaro River Estuary.
Photo: Kevin O'Connor

Fish and Fire 2025: Where There Are Fish, There is Fire Workshop

Workshop Coordinator: Lenya N Quinn–Davidson, University of California Agriculture and Natural Resources

This workshop will continue the Fish & Fire conversation started over the last two years of SRF conferences, highlighting recent research and management examples and digging further into the ecology of fish and fire, the impacts of fire exclusion and fire suppression on aquatic habitats, and the potential for restoration practitioners to more meaningfully bring fire into the way they envision and implement their work. By the end of the day, participants will have a better understanding of the many connections between fish and fire, more contacts and networks to bridge the two disciplines, and new skills and inspiration that they can bring to their restoration work.

Smith River Complex.
Photo: Lenya Quinn-Davidson

Fire: From the Headwaters to the Estuary, Don Hankins, Ph.D., CSU Chico

Fire, Fish, and Flows: Community–led Climate Modeling for the Karuk Ancestral Territory, Cleo Woelfle–Hazard, University of California Cooperative Extension

Food Webs of 10 Lakes Before and After a Mega–Wildfire, Christine Parisek, UC Davis

Linking Fire and Fish: The Importance of a Whole–Ecosystem Perspective, David Roon, Oregon State University

Lethal and Sublethal Effects of Fire Retardants on Salmonid Early Life Stages: Establishing Toxicity Thresholds for Aquatic Health, Louise Cominassi, UC Davis

The Klamath Dams. Fell, So Let's Get to Work Restoring Fire for the Fish! Will Harling, Mid Klamath Watershed Council

Rapid and Scaled Low–Tech Instream Restoration Can Capture Post–Wildfire Sediment in Historically Depositional Reaches Instead of Important Fish Reaches, Karen Pope, USDA Forest Service Pacific Southwest Research Station

Bringing Beneficial Fire into The Restoration Toolbox, Lenya Quinn–Davidson, University of California Agriculture and Natural Resources

Remote Sensing Tools for Restoration Planning and Assessment Workshop

Workshop Coordinators: Emily Fairfax, Ph.D., Univ. of Minnesota; Eli Asarian, Riverbend Sciences; and Adam Cummings and David Dralle, Ph.D., U.S. Forest Service Pacific Southwest Research Station; and Mitzi Wickman, Mid Klamath Watershed Council

This workshop provides a gentle hands–on introduction to easy–to–use "no–code" and "low–code" remote sensing tools for restoration planning and assessment. Morning lectures will cover: 1) available data types (e.g., aerial/satellite imagery, vegetation, land cover, topography, and climate) and their uses, and 2) how to efficiently access and analyze these data to understand landscape conditions and response to restoration. Then participants who bring laptops can work through a step–by–step instructor–led example project together, explore short step–by–step tasks selected from a menu of ≥14 tutorials, or work on independent projects with instructor guidance."

San Lorenzo River gorge passage.
Photo: Chris Berry, City of SC photos

San Lorenzo River Restoration, Resilience, and Recovery Tour

Field Tour Coordinator: Chris Berry, City of Santa Cruz

The San Lorenzo River historically had one of the most productive anadromous salmonid fisheries south of San Francisco. However, this river is very much a "working river" and has served many other beneficial uses for generations as well. Reconciling past land use, increased climatic variability, a growing population and related pressures with recovery needs of Central California coast coho and steelhead is a major challenge for local natural resource managers.

This San Lorenzo tour will highlight recent significant changes in local water resource management, progress on high-priority restoration projects, regulatory changes, recent extreme weather events and catastrophic wildfire.

The Butano Creek Backfield Floodplain and Streamflow Enhancement Project completed in 2024, restored floodplain and riparian habitat, increased instream complexity, and supported farming by elevating the farm field and expanding a historical pond. See the pond in the background, the farm field in the middle, and the floodplain in the foreground.
Photo: San Mateo RCD

The Gold Standard vs. Pragmatism: Threading the Needle to Accomplish Restoration at Scale

Field Tour Coordinators: Jarrad Fisher, Joe Issel, and Amy Kaeser, San Mateo Resource Conservation District

Field tour participants will see examples of a range of restoration projects in the Lower Pescadero watershed, including floodplain restoration, off-stream farm water storage, instream riparian habitat enhancement, and a dredge project that restored a stream channel and fish passage. We will visit a relatively unconstrained site owned by a conservation landowner as well as a highly-constrained site spanning dozens of private landowners. We will discuss how we navigate trade-offs, balance permit and funding requirements, reconcile diverse partner and landowner needs and concerns, and the role of engineering, risk management... and reality.

We will discuss the different factors for restoration on public and private lands, engineering and design considerations, integrating restoration with disaster mitigation and what it looks like to restore a watershed at scale.

Oncorhynchus mykiss captured conducting electrofishing surveys in Alameda Creek.
Photo: California Trout

Fish Passage Partnerships in Alameda Creek Watershed

Field Tour Coordinators: Claire Buchanan, California Trout; Leonard Ash, Alameda County Water District; Joe Merz, Cramer Fish Sciences; Scott Chenue and Randall Renn, San Francisco Public Utilities Commission; Joe Sullivan, East Bay Regional Park District; and Jeff Miller, Alameda Creek Alliance

The Alameda County Water District (ACWD), San Francisco Public Utilities Commission (SFPUC) and California Trout (CalTrout) are collaborating to host a tour of Alameda Creek to highlight fish passage improvements and fish monitoring in the watershed. Moving upstream, Alameda Creek gives way from a flood control channel in a dense urban and suburban setting to a natural stream with an intact riparian canopy and diverse substrate. Alameda supports a self-sustaining population of wild resident *O. Mykiss* and provides habitat for Chinook salmon near the southern extent of their range as well as multiple species of lamprey.

Conference Sessions

Thursday, May 1, 2025

PLENARY SESSION 9AM to 12:15PM at Cocoanut Grove, Santa Cruz Boardwalk

Redband trout in the Upper Klamath give us an indication of how salmonids will repopulate the Klamath.
Photo: Jonny Armstrong

Frankie and Molly Myers celebrating Klamath Dam Removal that they advocated for their entire adult lives.
Photo: Frankie Myers

Restoring Balance: The Klamath Dam Removal and its Significance for Reconnecting Humanity to the Environment
Frankie Myers, Yurok tribal representative

How Redband Trout Navigate The Challenges And Opportunities Of The Upper Klamath Basin: Implications For Salmon Recovery
Jonny Armstorng, Ph.D., Oregon State University

Water Quality and Primary Production Responses in the Klamath River During Drawdown and Dam Removal
Desiree Tullos, Ph.D., Department of Biological and Ecological Engineering, Oregon State University

The Humanity of Fisheries Restoration
Kellyx Nelson, San Mateo Resource Conservation District

Knowing What We Want – A Conceptual Framework For Restoring Klamath River Salmon Populations
Tommy Williams, Ph.D., NOAA Fisheries, Southwest Fisheries Science Center

Thursday Afternoon Concurrent Sessions

Free flowing Klamath River post-dam removal.
Photo: Swiftwater Films

Klamath Dam Removal – Lessons Learned as a River Is Reborn

Session Coordinators: Bob Pagliuco, NOAA Restoration Center, and Mike Belchik, Yurok Tribe

Planning, Implementation, and Lessons Learned for the Removal of the Four-Dam Complex of the Lower Klamath Project, Mort McMillen, Executive Vice-President McMillen Inc., Owner's Representative

From Reservoirs to Rivers: A Look at the Past Year of the Klamath River Renewal Project Restoration Journey, Dan Chase, Director, Fisheries, Aquatics & Design – Western Region, Resource Environmental Solutions (RES)

Water Quality Conditions During Klamath Dam Removal Drawdown, John R. Oberholzer Dent, Biologist, Karuk Tribe

Mapping a New River – First Aerial Surveys of the Klamath River After a Century of Dams, DJ Bandrowski, P.E., Senior Civil Engineer/Program Manager; Yurok Tribe

Factors Limiting Filamentous Algae and Rooted Macrophyte Growth During Dam Removal in the Klamath River, Isabelle Tang, M.S. Student, Oregon State University

Quantifying Benthic Macroinvertebrate Responses to Klamath Dam Removal During Juvenile Salmonid Outmigration Season, Rosa Cox, Masters Student, Cal Poly Humboldt

Evaluating the Effectiveness of Dam Removal on the Klamath River Using SONAR and Radio Telemetry, James Whelan, California Trout and Alex Corum, Karuk Tribe

Salmon and Climate Change: Advancing a Climate-Resilient Recovery Approach for Pacific Salmon

Session Coordinators: Shaara Ainsley, Long Live the Kings, and Sherri Norris, California Indian Environmental Alliance

Collaborative Planning Efforts

Developing Collaborative Solutions to Address and Plan for Climate Impacts on Pacific Salmon, Shaara Ainsley, Long Live the Kings, and Sherri Norris, California Indian Environmental Alliance

Reorienting to Recovery: Stretching into the Whole, Natalie Stauffer-Olsen, Trout Unlimited

Tools and Information to Inform Collaborative Efforts

Effects Of End-Of-Century Streamflow Conditions On High-Elevation Streams And Juvenile *Oncorhynchus Mykiss,* Kelly Goedde-Matthews, UC Davis Department of Wildlife, Fish, and Conservation Biology

Rapid Evolution In The Face Of A Changing Climate: Can Salmonids Keep Up With Rising Temperatures? Paige Gardner, UC Santa Cruz

Spawning Distributions Through Space And Time: Assessing Resilience Of An Endangered Coho Salmon Population Complex In A Coastal California Watershed, Rachael Ryan, Ph.D., University of California Davis

A Model-Based Investigation Of Early Marine Growth And Survival For California Chinook Salmon, Kelly Vasbinder, Ph.D., University of California Santa Cruz

Students wave goodbye to the San Lorenzo River after a Watershed Rangers field trip.
Photo: Coastal Watershed Council

Urban Rivers and Creeks

Session Coordinator: Sam Adelson, Education Coordinator, Coastal Watershed Council

Where Does Your Water Come From?" A Summary Of City Of Santa Cruz Water Department Education And Outreach Efforts To Connect The Local Community To Our Drinking Water Sources And The Wildlife That Lives There., Maryna Sedoryk and Kristoffer Patterson, City of Santa Cruz Water Department

City Meets Nature: Engaging Los Angeles in Major Dam Removal and Southern Steelhead Recovery, Russell Marlow, CalTrout

A Multidisciplinary Approach Toward Protecting Beneficial Uses of Water in the Lower San Lorenzo River Watershed, Chris Berry, City of Santa Cruz

Fall Salmon in San Jose, Jordan Almaguer, South Bay Clean Creeks Coalition

Reconnecting Communities to the San Lorenzo River: Equity, Education, and Stewardship, Sam Adelson and Maria Rocha, Coastal Watershed Council, Santa Cruz, CA,

Rewilding and Resilience in the Urban San Luis Obispo Creek, Freddy Otte, City of San Luis Obispo

Restoration Assessment and Planning

Session Coordinator: Rachel Shea, PE, Michael Love & Associates

Boulder Hopping Towards Steelhead Recovery in Jalama Creek, Keith Miller, The Nature Conservancy

Ten-year Summary of *O.mykiss* (steelhead) Monitoring on San Mateo Creek, California, Richard Johnson, San Francisco Public Utilities Commission

Hatchery Assisted Re-introduction of Salmonids Post Dam Removal, Utility or Futility?, Samantha Kannry, TRIB Research

Urban Creeks: Unexpected Refugia for Threatened Salmon, Colton Dixon, M.S., Cal Poly Humboldt

Integrated Ecosystem and Infrastructure Resilience Planning in Scott Creek, Santa Cruz County, Daniel Nylen, Resource Conservation District of Santa Cruz County

Redwoods Rising's Logging Road Removal in the Greater Prairie Creek Watershed, Orick, CA, Evan Laughlin, Redwood National Park

Multiple Years of Genetic Monitoring of Central Valley Juvenile Chinook Yields Valuable New Insights into Spatial and Temporal Patterns of Adult Reproductive Success, Jeff Rodzen, Ph.D., California Department of Fish and Wildlife

Room to Roam session will weave together floodplain reconnection efforts from around the state

Photo: Carson Jeffres

Room to Roam: Floodplains and the Central Valley

Session Coordinator: Chris Hammersmark, cbec engineering

Wiggle, Elevate, Connect: Partitioning the Effects of Increased Aquifer Size, Channel Realignment, and Floodplain Reconnection on Streambed Exchange in a Large Scale Channel Restoration, Byron Amerson, M.S., Environmental Science Associates.

Challenges and Lessons Learned Designing Floodplain Rearing Habitat on Central Valley Rivers, Paul Frank, P.E., CED, FlowWest

Restored Seasonally Inundated Habitat Supports Juvenile Salmonid Rearing and Growth in California Central Valley Rivers, Kirsten Sellheim, M.S., Cramer Fish Sciences

Effects of Predator Density on Predation Rates of Juvenile Salmon in Managed Agricultural Floodplains, Peter Aronson, University of California, Davis, Department of Wildlife, Fish, and Conservation Biology

Bringing the Floodplain to Life: Big Notch and Multi-Scale Restoration Efforts in the Yolo Bypass, Dennis Finger and Brandy Smith, California Department of Water Resources

Butte Creek Floodplain Reconnection and Channel Restoration, Allen Harthorn, M.S., Friends of Butte Creek

Geomorphic Progression, Habitat Use and Sustainability on a Floodplain Reconnection Project, Sam Diaz, cbec eco engineering – a Verdantas company

Thursday Evening Poster Session
7-10 pm at Cocoanut Grove
Sponsored by SRF, RES and McMillen

Friday Morning Concurrent Sessions

Childs Meadow on Collins Pine timberlands near Lassen.

Photo: Karen Pope

Landscape Scale Process-Based Restoration for Forests, Floodplains and Fish

Session Coordinators: Carrie Monohan, Ph.D. Mooretown Rancheria of Maidu Indians; Ben Cook, Trout Unlimited, and Karen Pope, Ph.D. Pacific Southwest Research Station USDA

Cross-Organizational Collaboration for Watershed Scale Stream Restoration, Sara Sternberg M.S, Santa Cruz County, RCD

Characterizing Watershed Stream Network Geomorphic Conditions in Industrially Logged Watersheds and Developing Strategies for Using Process-Based Techniques to Restore Aquatic Habitat, Thomas H. Leroy, CG Pacific Watershed Associates

Creating Community Stewardship, Garrett Costello, Owner, Symbiotic Restoration Group

Bringing Prescribed Burn Associations (PBAs) into Process Based Restoration (PBR): Restoring Fire with Prescribed Burn Associations, Lenya Quinn-Davidson, Fire Network Director, University of California Agriculture and Natural Resources

Structural Characteristics of Beaver Complexes and Implications for Beaver-Based Restoration, Caroline Gengo, UC Davis Center for Watershed Sciences

A Framework for Using Post-Fire Sediment to Restore Incised Channels, Zan Rubin, Ph.D., Balance Hydrologics

Data Fluency in Support of Inclusive Process-Based Restoration, Maureen (Mo) Johnson León, Doctoral Candidate in Data Science, University of Canterbury

CalTrout's Jacob Katz admires zooplankton "fish food" sampled from the flooded rice field behind him.

Photo: Jak Wonderly

Foodscapes in Action

Session Coordinator: Gabriel J. Rossi, Research Scientist, UC Berkeley and California Trout Coastal River Ecologist

Modeling the Salmon Foodscape, Ryan Bellmore, USFS Pacific Northwest Research Station

Rediscovering Non-Natal Life Histories to Recover Salmon (On The Case of the Missing Life Histories), Stephanie Carlson, Ph.D., UC Berkeley

Alternative Life-History Tactics Fueled By Warm Habitat: Coastal Cutthroat and Redband Trout Forego Thermal Refuges to Feed in Productive Riffles, Jonny Armstrong, Ph.D. Oregon State University

River Rest Stops: The Effects of Floodplain Food Subsidies on Chinook Outmigration Transit Time, Adrian Loera, UC Davis

Location, Location, Location: Stream Type Promotes Variation in Oncorhynchus mykiss Life-Histories with Implications for Future Climate Scenarios, Nicholas Corline, UC Davis, Center for Watershed Sciences

Small Streams And Floodplain Wetlands Offer Contrasting Foraging Environments For Salmonids Across A Large Interior British Columbia Watershed, Sean Naman, Research Scientist, Fisheries and Oceans Canada

Foodscape Perspectives on Salmon in the Russian River Watershed, Mariska Obedzinski, California Sea Grant & UC Berkeley

The Marshall Ranch Flow Enhancement project in the South Fork Eel River is a flow augmentation project that benefits juvenile coho salmonids.

Photo: Dana Stolzman

From Groundwater to Streamflow: Scaling Up Strategies, Models, and Datasets for Salmonid Success

Session Coordinators: David Dralle, Ph.D., U.S. Forest Service Pacific Southwest Research Station; and Monty Schmitt, The Nature Conservancy

Marshall Ranch Flow Enhancement Project: The Benefits of Incorporating Hyporheic Processes Into Flow Augmentation Projects, Joel Monschke, Stillwater Sciences

Scott River Flood-MAR: Setting Protective Flows for Diversions to Enhance Dry-Season Baseflows, Eric Ginney, Environmental Science Associates (ESA)

Floodplain Limbo – How Low Can You Go?, Chris Hammersmark, Ph.D., PE, CBEC Eco Engineering

Fish and Flow in the Scott River Watershed, Betsy Stapleton, Scott River Watershed Council

Drivers of Surface Water Response and Persistence in a Non-Perennial Stream Network, Lauren Giggy, Department of Earth and Planetary Sciences, UC Santa Cruz

Using Ponds for Groundwater Recharge vs Flow Augmentation: A Comparison of Two Pond Projects in the Mattole Headwaters, Walker Wise and Tasha McKee, Sanctuary Forest

Santa Cruz County's Updated Well Ordinance – Where Science Meets Policy, Sierra Ryan, Santa Cruz County Water Resources Program Manager

Central Valley Spring-Run Monitoring, Modeling, and Reintroduction: Building Tools to Guide and Track Recovery

Session Coordinators: Brett Harvey and Pete Nelson, CA Department Water Resources

The Road to Data-Driven Water Management: Re-Envisioning the Data Lifecycle to Support a Spring-Run Juvenile Production Estimate, Ashley Vizek, FlowWest & Brett Harvey, CA Department of Water Resources

Rapid Genetic Identification of Central Valley Spring-Run Chinook Salmon, Sean Canfield, CA Department of Water Resources

Forecasting the Timing and Abundance of Juvenile Spring-Run Chinook Salmon Outmigrants from Sacramento River Tributaries to Support a Juvenile Production Estimate, Josh Korman, Ecometric Research

Uncovering Genetic and Life History Resilience in Spring-run Chinook Salmon, Flora Cordoleani, UC Santa Cruz Institute of Marine Sciences & NOAA Southwest Fisheries Science Center

Movement and Survival of Acoustic Tagged Hatchery Spring-Run Chinook Salmon from the Feather River, Arnold Ammann, NOAA Southwest Fisheries Science Center

Developing an Improved Understanding of Pathogen Impacts for Feather River Spring-Run Chinook Salmon, Miles Daniels, UC Santa Cruz Institute of Marine Sciences & NOAA Southwest Fisheries Science Center

Spring-Run Chinook Salmon Reintroduction Pilot Study in the North Fork Feather River Upstream of Oroville Dam, Michelle Pepping, CA Department of Water Resources

Spring-run Chinook in the Salmon River.
Photo: Michael Bravo

Science Meets Policy

Session Coordinators: Kam Bezdek and Analise Rivero, California Trout

Monitoring Dissolved Oxygen in the Lower American River to Inform Real-Time Reservoir Operations to Support Successful Chinook Salmon Spawning, Mollie Ogaz, Cramer Fish Sciences

Development of the California North Coast Water Availability Tool to Support Streamlined Preparation and Processing of Water Rights for Flow Enhancement Projects, Jennifer Carah, The Nature Conservancy

A Plethora of Possibilities for Permitting – Useful Updates for Your Projects, Stephanie Falzone, Sustainable Conservation

FHAST: A Mechanistic Based Tool for Assessing Habitat Effects on Anadromous Fish, Peter N. Dudley, UC Santa Cruz

Reconnection: Integrating Policy and Restoration Science within the Sacramento River Basin, Kam Bezdek, California Trout

Integration of Watershed and Fisheries Recovery in California's Private and State Timberland Operations and Regulatory Processes, Richard Gienger, Forests Forever, and Matt Dias, CEO, California Forestry Association

Collecting eDNA water samples using an eDNA backpack sampler
Photo: FISHBIO

Needle in a Haystack – Innovative Approaches to Monitoring of Rare Salmonids

Session Coordinator: Matt Peterson, FISHBIO

eDNA Metabarcoding to Characterize the Distribution of Species of Interest to Tribal Nations in Northern California, Alec Bauer, Masters Student, Fisheries Department, Cal Poly Humboldt

Juvenile Salmonid Side Channel Restoration Monitoring in the Sacramento River, Greyson Doolittle, California State University, Chico

Evaluating Salmonids in Humboldt Bay, CA using Environmental DNA Metabarcoding, Johnathon Richardson, Master's Student, Cal Poly Humboldt Department of Fisheries Biology

Using Environmental DNA in Water Samples to Monitor the Distribution and Abundance of Salmonids, Andrew P. Kinziger, Department of Fisheries Biology, Cal Poly Humboldt

Utilizing Otolith Geochemistry to Identify Origins of Juvenile Chinook Salmon Preyed Upon by an Endangered Avian Piscivore, Sami Araya, University of California, Davis

A Multi-Scale, Collaborative Approach to Monitoring Rare and Imperiled Spring-Run Chinook Salmon (Ishyâat) Across the Mid-Klamath River, Amy Fingerle, University of California, Berkeley

***O. Mykiss* Population Growth after Two Wet Years and Water Quality Tolerances within the Lower Santa Ynez River Basin,** Timothy H. Robinson, Cachuma Operation and Maintenance Board Fisheries Division

Friday Afternoon Concurrent Sessions

Foodscapes are beautiful and full of ecotones! A rain-fed tributary flows into a glacier-fed river -- each with unique and asynchronous opportunities for fish to grow.

Photo by Ryan Bellmore

Foodscapes in Action

Session Coordinator: Gabriel J. Rossi, Research Scientist, UC Berkeley and California Trout Coastal River Ecologist

World-Wide Patterns of Invertebrate Drift Abundance with Implications for Drift-Feeding Fishes, Tyson Hallbert, Ph.D., University of California, Davis

Causes and Consequences of Variation in Rearing Strategies in Juvenile Coho Salmon, Henry Baker, Ph.D., UC Berkeley

Wildfire Impacts Trophic Supply and Demand in a Coastal Salmonid Food Web, Katie Kobayashi, Ph.D., UC Santa Cruz and Stillwater Sciences

Towards Process-Based Recovery Planning, Jacob Katz, Ph.D., CalTrout

Rearing Habitat Alters the Juvenile Salmon Gut Microbiome, Mattea Berglund, University of California, Davis

Fish Food: Development of a Conservation Easement Tool, Jacob Montogomery, M.S., California Trout

From Groundwater to Streamflow: Scaling Up Strategies, Models, and Datasets for Salmonid Success

Session Coordinators: David Dralle, Ph.D., U.S. Forest Service Pacific Southwest Research Station; and Monty Schmitt, The Nature Conservancy

Democratizing California's Water Future: Tools For Advancing Inclusive And Integrated Groundwater-Surface Water Management In The Central Valley, Ted Grantham, Ph.D., University of California, Berkeley

Beyond Surface Water and Groundwater: Successful Flow Enhancement and Climate Change Adaptation Requires a Holistic Approach to Managing the Entire Hydrologic Cycle, Jeremy Kobor, PG, OEI, Inc.

Response Diversity to Acute Climate Conditions Among Streams with Variable Flow Permanence Stabilizes Habitat Availability for Spawning Salmonids, Skylar Rousseau, Stillwater Sciences

The Impacts Of Changes In Precipitation, Plant Water Use, And Groundwater Pumping On Surface Water Presence And Temperature, Dana A Lapides, USDA-ARS Southwest Watershed Research Center

Addressing Streamflow Depletion Due to Groundwater Pumping – Unified Modeling Approaches and Process Uncertainty, Nicholas Murphy, Ph.D., The Nature Conservancy

The California Environmental Flows Framework: Integrating groundwater and Surface Water Management, Kris Taniguchi-Quan, Ph.D., Southern California Coastal Water Research Project

Unnamed Meadows in the headwaters of Corral Creek in the Lower Trinity River showing mature and young conifer encroachment.

Photo: Emily Cooper-Hertel

The Role of Meadows in Water-Fire-Fish Processes Across the Landscape

Session Coordinators: Emily J. Cooper-Hertel, Klamath Meadows Partnership Coordinator, Watershed Research and Training Center; and Jay Stallman, Senior Geomorphologist, Stillwater Sciences

Understanding and Restoring Meadows of Northern California through Meaningful Collaboration, Emily Cooper-Hertel, Klamath Meadows Partnership Coordinator, Watershed Research and Training Center

Fish & Fire: Insights from Three Years of Workshops and Dialogue, Lenya Quinn-Davidson, Fire Network Director, University of California Agriculture and Natural Resources and Josh Smith, Watershed Stewardship Program Director, Watershed Research and Training Center

"How Do We Get There?" Building a Meadow Restoration Program, Megan Ireson, Mountain Meadows Project Coordinator, Scott River Watershed Council

Integrating Forest Health with Meadow Restoration in the Middle Truckee River Basin, Brian Hastings, P.G., Senior Geomorphologist, Balance Hydrologics; and Beth Christman, Ph.D., Senior Director of Restoration, Truckee River Watershed Council

Low-Tech Process-Based Riparian Meadow Restoration in Post-Wildfire Landscapes Rapidly Captures Sediment and Reconnects Floodplains, Karen Pope, Ph.D., Research Aquatic Ecologist, USDA Forest Service, Pacific Southwest Research Station

Restoring Meadows and Flows for Eagle Lake Rainbow Trout, Kate Gazzo, Director, Northern Sierra Headwaters Conservation, American Rivers; and Michael Cameron, Northern Sierra Project Manager, Trout Unlimited

Panel Discussion and Interactive Q&A

Scott Creek Estuary juvenile steelhead sampling efforts, part of a telemetry study looking at juvenile steelhead fine-scale movement.
Photo: Rosealea Bond

Progress in Measuring and Predicting Salmonid Habitat in Bar-Built Estuaries

Session Coordinators: Dane Behrens, Coastal Engineer, Environmental Science Associates and John Largier, Director, Bodega Marine Laboratory

A Framework for Condition Assessment and Monitoring of Estuary MPAs in California, Kevin O'Connor, Central Coast Wetlands Group at Moss Landing Marine Labs

The Tail of Two Lagoons: Long-Term Monitoring of Two Dynamic Central Coast Bar-Built Estuaries, Michelle Tarian, City of Santa Cruz Water Department, Water Resource Section

Two Fish Swim into a Bar: A Legacy of Data to Evaluate Salmonid Rearing Potential in the Mattole River Lagoon, Emma Held, Mattole Salmon Group/Cal Poly Humboldt

Using Acoustic Telemetry to Investigate Movement Patterns by Juvenile Steelhead in a Central California Bar-Built Estuary, Rosealea Bond, UC Davis and NMFS Southwest Fisheries Science Center

Using Two Decades of Empirical Data to Inform Habitat Enhancement in the Russian River Estuary, Justin Smith, Sonoma Water

Insights Into Potential Future Salmonid Habitat Changes Informed by Several Decades of Monitoring at the Russian River Estuary, Dane Behrens, Environmental Science Associates

Using Drones for Fisheries Management and Restoration

Session Coordinator: Eric Ettlinger, Marin Water

Using Drones to Monitor the Dry Creek Habitat Enhancement Project (and Beyond): Uses, Benefits, and Challenges, Eric McDermott, Sonoma Water

A View From Above: Using Drone Imagery to Establish Fish Passage Thresholds, Dana Lee, FISHBIO

Building Capacity for First Nations to Map Thermal Refuge Areas for Salmon Using Drones, Eric Saczuk, Ph.D., British Columbia Institute of Technology Remotely Piloted Aircraft Systems Hub

The Bigger Picture: Utilizing Drones to Assist with Fish Monitoring, Fish Passage and Quantifying Vegetation Impacts on Fish Communities, JT Casby, California Department of Water Resources

Independent Testing of PIT Tags for Fisheries Research: A Framework for Standardization and Performance Evaluation, Brian Beckley, Voda IQ

Aerial view of Scott Dam in the Eel River basin.
Photo: Kyle Schwartz, Cal Trout

Dams Out — The Next Rivers Poised for Reconnection in California

Session Coordinator: Charlie Schneider, California Trout

Dam Removal as a Strategy for Climate Resilience, Meghan Quinn, California Dam Removal Program Director, American Rivers

The Past, Present, and Future of Rindge Dam, R.J. Van Sant, Senior Environmental Scientist, California State Parks

Managing Complexity: Planning for the Removal of Matilija Dam, Sam Jenniches, Project Specialist, State Coastal Conservancy, and David Yardas, Principal, Aqua Currit Consulting

Managing Fish Populations in Reservoirs and their Downstream Reaches – Insights from Dewatering Projects, Robert Stoddard, Stantec and Jon Walsh, Pacific Gas and Electric Company

Removing Barriers to Fish Recovery: A Cooperative Approach to Reconnect Salmonids with Historical Habitat in Battle Creek, Emily Moloney, Project Manager, California Trout and Angelina Cook, Restoration Associate, California Sportfishing Protection Alliance

Restoring the Eel River: Advancing Dam Removal at the Potter Valley Project, Darren Mierau, CalTrout North Coast Director

Social Impact Assessment Of Klamath Dam Removal For Tribal Community Well-Being: Recasting Dam Removal As Eco-Cultural Revitalization, Sibyl Diver, Stanford University, and John R. Oberholzer Dent, Karuk Tribe, Department of Natural Resources