

39th Annual Salmonid Restoration Conference

April 19 - 22, 2022 Santa Cruz, CA

Reconnecting with Resilience



Conference Co-Sponsors

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**Design & Layout by
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Anadromous salmon and steelhead journey through the California Salmonscape from the forested mountains to the flowing rivers, through meandering or channelized floodplains to the coastal lagoons and estuaries to the Pacific Ocean. For many, there is the California Salmonscape of our imagination (the beautified version of what functioning ecosystems would look like) and the reality of our paved, channeled, diked, and disrupted systems that once teemed with salmon.

Protecting, conserving, and restoring California wild salmon and steelhead populations will require laser focus on restoration strategies that show a strong fish response. If our best thinking got us to this precipice of salmonid recovery, our way forward will need clarity and acuity beyond what we have practiced in the last decade.

The salmon restoration field intersects with many disciplines including science, engineering, communities, infrastructure, planning, food production, and land use practices. These intersections animate the lively debate and discussions about the most appropriate strategies and techniques to achieve restoration milestones. Nowhere is this more evident than the SRF Conference, where practitioners from many fields converge to address the very issues that are germane to salmonid recovery.

Many of us try to think like a salmon to understand their impulses, foraging and migratory behavior, and the extent of their adaptability. Looking forward in 2022 and beyond, SRF wishes the restoration community the determination, prowess, and adaptability that grace our totem salmon.

SRF's contributing members are the backbone of our organization. Please consider joining SRF or renewing your commitment today!



The "California Salmonscape" poster was illustrated by the legendary artist Ray Troll, and sponsored by National Marine Sanctuary Foundation. "The California Salmonscape ranges from the Klamath River in the north to the Tijuana River in the south...Migrating from their home streams to the ocean and back again, they mature from egg to adult, sharing the landscape with human activities across the most populous state in the nation." This is our California, this is the era in which we live, this is the species we look to for guidance and inspiration.

39th Annual Salmonid Restoration Conference

Reconnecting with Resilience

For years, SRF has been dreaming and scheming on how to produce our Annual Conference again in Santa Cruz, CA. As most of you know, the 2020 Conference was cancelled due to COVID. With both excitement and trepidation, Salmonid Restoration Federation is proceeding with an in-person conference aptly named *Reconnecting with Resilience*.

The watershed restoration field is one that thrives on interaction, exchange of ideas, and harnessing people-power to protect and restore salmonid populations. It is our hope that we can carefully and cautiously convene a small conference that is supported by our individual and collective efforts to gather responsibly. The restoration field is one that is familiar with mitigating risk. For this conference, SRF will be requiring proof of vaccination and booster shots or recent test results (24 hours). Furthermore, SRF will encourage all conference participants to get tested prior to the conference and we will have rapid testing available each morning of the conference. Our primary concern is the safety and well-being of all conference participants.

Santa Cruz is home to some of the southernmost populations of wild salmonids left in California. The conference will highlight lagoons, seascape ecology, ocean conditions, life history variation, and feature tracks on drought, climate, and hydrology; and another on physical habitat conditions and food webs. There will also be several niche sessions including Emerging Technologies, Mountain Meadows, and Collaboration for Collective Impact.

This year participants will have the opportunity to visit fisheries recovery

projects in the Butano and Pescadero Watershed, as well as tour the Los Padres fish passage projects and Rancho Canada project near the San Clemente dam removal site. There will be a restoration tour of Scotts Creek, which is the only watershed south of the Golden Gate Bridge that continues to support all three cohorts of Central California Coast Coho. Additionally, participants can learn how to combat human-induced sedimentation with a tour of mitigation measures that address the effects of mountain bikes and logging in the San Gregorio watershed.

Conference technical workshops will include a two-day Fish Passage workshop for engineers with a tour of fish passage projects in Corralitos Creek. There will be a half-day workshop on the California Environmental Flow Framework and full-day workshops on Low-tech Process-based Restoration with Beaver and Wood, and Restoration Approaches to Large Wood Augmentation.

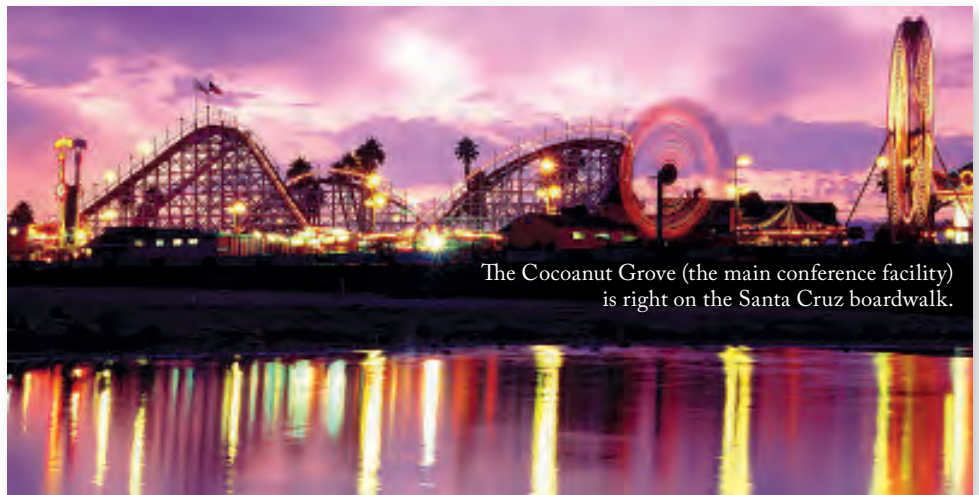
The SRF Plenary session will feature Jeff Mount who is the founding director of the Center for Watershed Sciences at UC Davis and Senior fellow at

the Public Policy Institute's Water Policy Center. Professor Mount will present *Adapting to Increasing Drought Intensity: Recommendations for Reform in Policies and Practice*. Sean Hayes from NOAA Fisheries will present a thought-provoking talk called, *Answering the Question Most of Us are Afraid to Ask in Southern Salmon Restoration: Why Bother?*

Brook Thompson, a Yurok and Karuk native from Northern California, will present *Salmon Fishing, More than a Sport: How Salmon are Vital to Native American Culture, Health, and Prosperity*. Margaret Spring, Chief Conservation and Science Officer, from the Monterey Bay Aquarium will present *Protecting and Restoring California's Ocean Ecosystems*.

Other conference events will include the SRF membership social, the annual poster session and reception on Thursday night, and a cabaret and banquet with a wild salmon dinner and live dance band on Saturday evening.

For more information about the conference, including registration, please visit www.calsalmon.org.



The Cocoanut Grove (the main conference facility) is right on the Santa Cruz boardwalk.

SRF 2022 Conference Registration

39th Annual Salmonid Restoration Conference, April 19-22, 2022

Name: _____ Phone (work): _____

Address: _____ (cell): _____

_____ Email: _____

Affiliation: _____

Advanced Registration Closes February 18, 2022

Workshops and Field Tours

Tuesday, April 19

	Advanced Registration	Late Registration	Fee
1. Fish Passage Design for Road Crossings Workshop and Field Tour <i>Please note this is a 2-day workshop and field tour. Limited to 35.</i>	\$160	\$180	_____
2. Salmonid Recovery in the San Lorenzo River	\$80	\$90	_____
3. Scott Creek Field Tour: Ground Zero for Central California Coast Coho Salmon Recovery	\$80	\$90	_____
4. Los Padres Fish Passage Field Tour	\$80	\$90	_____
5. Restoration Approaches to Instream Large Wood Augmentation	\$80	\$90	_____

Wednesday, April 20

6. It Takes a Watershed: Fisheries Recovery in the Butano / Pescadero Watershed	\$80	\$90	_____
7. California Environmental Flows Framework (half-day workshop)	\$80	\$90	_____
8. Rancho Cañada Restoration Project	\$80	\$90	_____
9. Low-Tech Process-based Restoration with Beaver and Wood: Jump-Starting Structurally Starved Streams Workshop	\$80	\$90	_____
10. 18 Years of Managing Mountain Bikes, Sediment, and Legacy Logging to Improve Salmonid Habitat	\$80	\$90	_____
SRF Membership Dinner Soiree	\$30	\$35	_____

Conference

Thursday and Friday, April 21 & 22

SRF Member	\$250	\$300	_____
Non-Member	\$300	\$350	_____
Student (With ID)	\$100	\$100	_____
Friday Evening Banquet	\$60	\$70	_____

SRF Membership

\$35 Alevin \$50 Fry \$100 Smolt \$250 Jack \$500 Spawner Membership: _____

Method of Payment: Check Money Order Purchase Order Credit Card Payment Total: _____

Purchase Orders will only be accepted for 5 or more people. Each registrant is required to fill out an individual registration form.

VISA MasterCard Credit Card# _____ Exp. Date _____

Mail form and payment to: SRF Conference, 425 Snug Alley, Unit D, Eureka, California 95501 • Make checks payable to SRF.

Phone: (707) 923-7501 • Fax: (707) 923-3135 • info@calsalmon.org

Please Note: We do not offer refunds but conference passes can be transferred to another person or deferred until 2023

Receipts are emailed, so print legibly • This form is available at www.calsalmon.org

Workshops & Tours

Tuesday, April 19

Fish Passage Design for Road Crossings Workshop and Field Tour

Workshop Coordinators: Michael Love, P.E., Michael Love & Associates, Inc., Ross Taylor, Ross Taylor and Associates, and Kristen Kittleson, County of Santa Cruz

This two-day workshop will focus on fish passage design approaches and techniques for road-stream crossings and other low-head barriers. The course will be structured around Part XII—Fish Passage Design and Implementation—of the CDFW California Salmonid Stream Habitat Restoration Manual. The workshop is intended for participants with a variety of backgrounds, including engineers, biologists, geologists, planners, and project managers.

Covered topics include:

- Biological imperative of providing passage
- Assessing geomorphic risk for a fish passage project
- Pre-design and selection of project approach
- Stream simulation design and reference reach characterization
- Roughened channel design
- Use of boulder and log weirs
- Retrofits and technical fishways

Workshop participants will work on sample problems taken from real projects, including analysis of thalweg profiles, developing designs for a stream simulation culvert crossing, and sizing material for a roughened channel. Participants should bring a calculator and a ruler. The second half of Day 2 will include a field tour to a range of fish passage sites within Santa Cruz's Corralitos Creek. Sites include full replacements and retrofits of stream crossings and a fish ladder, illustrating the various design approaches covered in the workshop and described in CDFW Part XII.

Salmonid Recovery in the San Lorenzo River Watershed Tour

Field Tour Leaders: Chris Berry, City of Santa Cruz, and Sierra Ryan, County of Santa Cruz

This tour will visit sites in the San Lorenzo River watershed from the mouth at Monterey Bay to the upper watershed and showcase current recovery work including water resource, instream wood and riparian corridor management, post-fire response and restoration projects focused on improving instream habitat complexity and improved low flow passage. The tour will include lunch at the beautiful Happy Valley Conference Center.



The fish passage workshop will culminate with a field tour of local road crossings
By Kristen Kittleson

Scotts Creek Tour: A Three-Pronged Approach to Coho Recovery

Field Tour Leaders: Ben Cook, Trout Unlimited, Lisa Lurie, Santa Cruz Resource Conservation District, and Joseph Kiernan, NOAA Fisheries

Scotts Creek is the only watershed south of the Golden Gate Bridge that continues to support all three cohorts of CCC coho. This watershed is critical to coho recovery in the Santa Cruz Mountains Diversity Strata. As coho struggle to keep a foothold south of the Golden Gate, a unique collaboration of scientists, restoration practitioners, geneticists, transportation planners, and farm managers are working in tandem to keep this population from going extinct. The field tour will showcase the three major efforts underway by partners: ecological restoration, monitoring, and hatchery efforts. Tour participants will get an inside view of habitat restoration projects, new science being developed through NOAA's Science Center, and the challenges and achievements of the watershed's coho recovery hatchery.



Scott Creek watershed, after the 2021 fire. By Kristen Kittleson

Los Padres Fish Passage Tour

Field Tour Coordinators: Brian LeNeve, Carmel River Steelhead Association; Haley Ohms, PhD, University of California Santa Cruz & NOAA Southwest Fisheries Science Center; and Beverly Chaney, Associate Fisheries Biologist, Monterey Peninsula Water Management District

The Los Padres Dam tour will focus on how to improve fish passage over and back down from an existing dam, along with habitat improvements below an existing dam and learning how steelhead use a dam. With co-presenters from NMFS, Monterey Peninsula Water Management District, California American Water, and the Carmel River Steelhead Association you will learn about 40 years of work to benefit steelhead.



Anna Halligan, Trout Unlimited, leading a Large Wood tour at 2021 Coho Confab By Bob Wilms

Restoration Approaches to Large Wood Augmentation

Workshop Coordinators: Anna Halligan and Daisy Schadlich, Trout Unlimited

Due to the important role of large wood in restoring and maintaining instream salmonid habitats, wood augmentation has become a common element in stream restoration. To help improve the efficacy of these types of projects, and to help identify when and where specific application of these methods may be the most appropriate, it is important for restoration practitioners to communicate their lessons learned and experiences with one another. This workshop will focus on presenting several instream large wood implementation methods and techniques, followed by a discussion of where and when it is best to apply specific methods.

Go Big or Go Home—The Use of Large Wood in Stream Habitat Restoration, Kristine Davis Pepper, PE, California Department of Fish and Wildlife

Large Woods Relation to Process Based Restoration in Heavily Logged Watersheds, Thomas H. Leroy, Pacific Watershed Associates

How Big Can You Go with Your LWD Structure Before You Start Breaking Things? An Analysis of Structure Layout and Material Properties Comprising Simple LWD Structures, Rachel Shea, PE, Michael Love & Associates, Inc. (MLA)

Going Big with Large Wood Structures in Low Gradient Alluvial Valleys: Design Approaches and Lessons Learned from the Ten Mile River Projects, Lauren Hammack, PCI, Prunuske Chatham

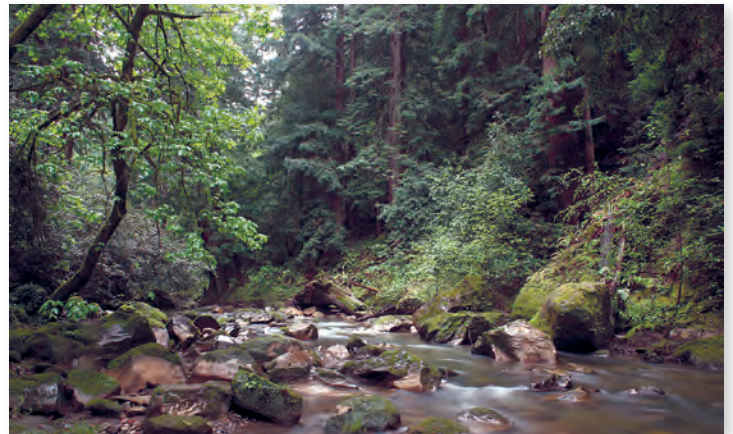
A Quantitative Map-Based Approach to Identifying Hazards and Assessing Risk for Large Wood Structure Installations, Rachel Shea, PE, MLA

Wednesday, April 20

It Takes a Watershed: Fisheries Recovery in the Butano / Pescadero Watershed Tour

Field Tour Leaders: Jim Robins, Alnus Ecological; Kellyx Nelson, Joe Issel and Jarrad Fisher, San Mateo RCD; Joe Pecharich, NOAA RC; CDFW; and Chris Hammersmark, cbec eco engineering

The Pescadero-Butano Watershed is a critical independent watershed for CCC Coho, is home to myriad special status species, and contains the Pescadero Marsh Natural Reserve which has been a management flashpoint for 30+ yrs. The tour will enable participants to learn about unique issues, technical solutions, compliance approaches, and partnerships necessary to complete an array of projects from headwaters to ocean including the marquee Butano Reconnection project within the Marsh and much more.



Pescadero Watershed By Trout Unlimited

California Environmental Flows Framework

Workshop Coordinators: Ted Grantham, Dept. Environmental Science, Policy, and Management, UC Berkeley; and Julie Zimmerman, The Nature Conservancy

The California Environmental Flows Framework (CEFF) is a management approach to efficiently develop environmental flow recommendations for California's rivers. This workshop will provide an overview of CEFF, introduce technical tools that were developed to support CEFF implementation, and highlight case study applications that are completed or underway. The workshop will include presentations and interactive elements and will be oriented towards practitioners working to assess and protect environmental flows in California's rivers and streams.



Beaver dam analogue constructed in 2014 by the Scott River Watershed Council on Sugar Creek in Scott Valley. By Eli Asarian

Rancho Canada Restoration Project Tour

Tour Coordinators: Katrina Harrison, McBain Associates, and Tommy Williams, NMFS, Southwest Fisheries Science Center

The tour will focus on the lower portion of the Carmel River watershed where the Rancho Cañada Golf Course is being removed and restoration of the site for public access, parklands, and river restoration are being planned. Staff from the NMFS, Monterey Peninsula Regional Park District, Trout Unlimited, California Coastal Conservancy, McBain Associates, and others will provide an overview of the project and tour of the restoration site. On site presentations will include various aspects of planning activities with focus on restoration of stream channel and active floodplain.



From www.pacificsun.com

Low-Tech Process-based Restoration with Beaver and Wood: Jump-Starting Structurally Starved Streams Workshop

Workshop Coordinators: Eli Asarian, Riverbend Sciences; Kate Lundquist, Occidental Arts & Ecology Center; and Chris Jordan, PhD, NOAA, NMFS, and Northwest Fisheries Science Center

Low-tech process-based restoration (LTPBR) is the practice of adding low unit-cost wood and beaver dams to riverscapes to mimic functions and initiate specific processes that improve river habitats. Presenters will introduce the LTPBR restoration approach, provide tools for prioritizing sites and evaluating outcomes, and discuss case studies from around the Western U.S. highlighting ecological and physical effects, implementation lessons learned, and permitting pathways. Presentations will be interspersed with panel discussions.

Introduction to Low-Tech Process-based Restoration of Riverscapes Design Principles, Chris Jordan, PhD, NOAA, NMFS, and Northwest Fisheries Science Center

Structural Starvation: Design Examples of Low-Tech Process-based Restoration Across a Diversity of Riverscape Forms, Nick Bouwes, PhD, Utah State University

Four Criteria for Process-based Restoration of Streams, Damion Ciotti, U.S. Fish and Wildlife Service

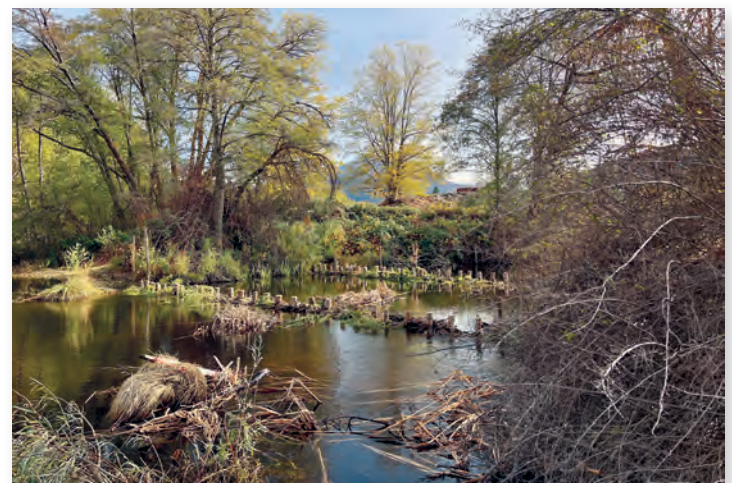
Design Tools and Spatial Analysis to Support Low-Tech Process-Based Restoration of Riverscapes, Chris Jordan, PhD, NOAA/NMFS/Northwest Fisheries Science Center

Thinking Outside the Floodplain: A LiDAR-based Tool to Assess Stream and Floodplain Connectivity, Adam Cummings, U.S. Forest Service

Using Remote Sensing to Inform Beaver-Based Restoration: How to Get Started with Satellites and GIS Tools, Emily Fairfax, PhD, California State University Channel Islands

California's First Beaver Dam Analogues (BDAs) —What Have We Learned Since 2014, Charnna Gilmore, Scott River Watershed Council

Use of Process-based Restoration Techniques and Tribal Stewardship in a Coastal Tributary of the Klamath River, Sarah Beesley, MS, Yurok Tribe Fisheries Department



Sugar Creek Beaver Dam Analogues newly constructed in the fall of 2021. By Scott River Watershed Council

Mimicking Beaver Dam Building and Fencing Cattle to Increase Carbon Sequestration and Raise Groundwater Levels in Childs Meadow, California, Kristen Wilson, PhD, The Nature Conservancy; Sarah Yarnell, PhD, UC Davis

PBR The Hard Way—Fear, Hype and the Reality of Your First 1000 Structures, Kevin Swift, Swift Water Design

Update on California Department of Fish and Wildlife Efforts to Provide a Guidance Document for the Use of Low-tech Process-based Stream Habitat Restoration, Will Arcand, PG, CEG, California Department of Fish and Wildlife

Launch of New California Process-based Restoration Network, Karen Pope, PhD, U.S. Forest Service

Bring Back the Beaver Campaign Updates, Kate Lundquist, Occidental Arts & Ecology Center WATER Institute

18 Years of Managing Mountain Bikes, Sediment, and Legacy Logging to Improve Salmonid Habitat Tour

Field Tour Leaders: Aaron Hébert, Midpeninsula Regional Open Space District, Jonathan Owens, Balance Hydrologics

Midpeninsula Regional Open Space District and Balance Hydrologics will present technical information and lessons learned about 18 years of sediment reduction efforts in a popular mountain biking preserve with a focus on instream sediment monitoring and the V* method. A technical briefing in the morning will be followed by a field tour of the project site, El Corte de Madera Open Space Preserve, and a hands on demonstration of the V* method.



Chelsea Neill of Balance Hydrologics and Aaron Hebert of Midpen gather V* data at a pool in El Corte de Madera Open Space Preserve (2019). By Morgan Williams

2022 Conference Logistics & Events

Conference Locations

Cocoanut Grove
400 Beach St., Santa Cruz, CA

Conference workshops will be held at the Hotel Paradox at 611 Ocean Street, Santa Cruz, CA.

Conference Events and Schedule

Tuesday and Wednesday Workshops and Field Tours are 9am to 5pm on April 19 and 20. Field Tours depart promptly from The Center for Non-violence (CNV), across from Hotel Paradox, at 9am so please come to the CNV early to pick up your registration packet and pack a lunch for the day.

Plenary Session

9am on Thursday, April 21 at the Cocoanut Grove Ballroom.

Poster Session

The Poster Session on Thursday evening is free to attend for all conference participants and is an excellent networking opportunity. For info about how to present at the poster session, please email info@calsalmon.org or refer to the Events or FAQ section of the conference website.

Walk, Bike, or Jump!

SRF strongly recommends trying to have a car-free conference experience. Hotel Paradox is where the conference workshops will be held and is a short walk or bike ride to the Cocoanut Grove. The JUMP Uber app is also a great bike service that is only \$1 per ride and can be picked up or left at any destination.

Banquet, Cabaret, and Dance!

The banquet includes a wild salmon dinner, local wine and beer, an awards ceremony, a fun-filled Cabaret, and a lively band. Because the SRF banquet usually sells out, please purchase your tickets in advance.



Anna Halligan and Mary Ann King of Trout Unlimited received the illustrious Restorationist of the Year in 2019.

SRF COVID Policy

SRF will be requiring proof of vaccination and booster shots or recent test results (48 hours). Furthermore, SRF will encourage all conference participants to get tested prior to the conference and we will have rapid testing available each morning of the conference. Our primary concern is the safety and well-being of all conference participants.

Conference Sessions

Thursday Morning, April 21

Plenary

Salmon Fishing, More than a Sport: How Salmon are Vital to Native American Culture, Health, and Prosperity, Brook Thompson, Native Scholar

Adapting to Increasing Drought Intensity: Recommendations for Reform in Policies and Practice, Jeffrey Mount, Senior Fellow, Public Policy Institute of California

Answering the Question Most of Us are Afraid to Ask in Southern Salmon Restoration: Why Bother?; Sean A. Hayes, NOAA Fisheries Northeast Fisheries Science Center

Protecting and Restoring California's Ocean Ecosystems, Margaret Spring, Chief Conservation and Science Officer, Monterey Bay Aquarium



Brook Thompson, Yurok and Karuk tribal member, Master's student at Stanford Engineering Department, will be one of this year's keynotes.

Thursday Afternoon Concurrent Sessions

Approaches for Management and Restoration of Central California Coastal Lagoons

Session Coordinators: Dane Behrens, ESA, and Jim Robins, Alnus Ecological

Considerations for Management of the Mouth State of California's Bar-built Estuaries, Kevin O'Connor, Moss Landing Marine Labs

Logging, Leather, Lime and "Lost Boys": Reducing Limiting Factors for Anadromous Salmonids in the San Lorenzo River Lagoon, Chris Berry, City of Santa Cruz

Lessons Learned from 8 Years of Lagoon Management of the San Lorenzo River, Santa Cruz, California: Using Sand to Balance Ecological Function and Social Demands, David Revell, PhD, Integral Consulting

Butano Marsh Channel Reconnection and Resilience Project: Design, Implementation and Preliminary Results, Chris Hammersmark, PhD, PE, and Jai Singh, cbec Eco Engineering

Pescadero Marsh: A Bar-Built Estuary's Importance to Steelhead, Sean Cochran, CDFW, and Patrick Samuel, Cal Trout

Project Habitat Evolution in the Face of Sea Level Rise, a Case Study in Pescadero Marsh, Matt Jamieson, MFA, Integral Consulting

Lightning Tales Where Wisdom Sails

Session Coordinators: Eli Asarian, Riverbend Sciences, and Sarah Phillips, Marin Resource Conservation District

Creating a Watershed Moment for a Watershed Approach to Fish Passage, Stacie Smith, D.Env, NOAA Fisheries

R.A.D. Thinking May Mitigate S.B.S., Brian Cluer, PhD, NOAA Fisheries

Lessons Learned from 40 Years of Watershed Restoration, Don Allan, Mad River Alliance

How to Maximize Your Grant Writing Efforts, Steve Madrone, Humboldt County Supervisor

Creek Incision Prevention/Fish Habitat Creation, Freddy Otte, City of San Luis Obispo

A Few Nuanced Tips for Getting the Most Out of Large Wood-Loading Projects, Tom Leroy, Pacific Watershed Associates

Restoration Success While Negotiating with Disney Villains, Plus a Perspective on Time, Alison Willy, SRF Board



The Scotts Creek tour will visit the lagoon, conservation hatchery, and Cal Poly's Swanton Ranch. By Walter Heady, TNC

Perfect Is the Enemy of Good; A Pragmatic Restorationist's Perspective, Mike Berry, CDFW and DWR

When Failure Leads to a Plethora of Successes, Sarah Phillips, Marin Resource Conservation District

How I Began to Listen to Traditional Environmental Knowledge (TEK), Michael Belchik, Yurok Tribal Fisheries Program

Thinking Like a Natural Historian: Nature Nerd Nuggets from the Professor of Wonderment, Brock Dolman, Occidental Arts & Ecology Center

What Makes a Good Mentor and Why Is a Mentor Important, Ross Taylor, Ross Taylor and Associates

Advice I Lived By..., Mary Power, PhD, Angelo Coast Range Reserve

Praise for Phil Pister's Species in a Bucket, Eli Asarian, Riverbend Sciences

So You Want To Be a Stream Scientist, Bill Trush, Humboldt State University River Institute

A Different Perspective and Uncomfortable Conversations, Larry Notheis, California Conservation Corps

Reflections on a Quarter Century in Waders, Sarah Nossaman Pierce, California Sea Grant

There Is No EGO in Ecosystem Restoration, Anna Halligan, Trout Unlimited

Of Turf, Integrity, and Saying Thank You, Mary Ann King, Trout Unlimited

Teamwork Makes the Stream Work, Elise Ferrarese, Trout Unlimited

Turning Forest Fuels into Instream Habitat to Benefit Long-term Ecological Function, Brandt Gutermuth, Trinity River Restoration

Considering Life-History Variation in Salmonid Restoration

Session Coordinator: John Carlos Garza, PhD, UC Santa Cruz and NOAA Fisheries

Is It Just a Matter of Time? Allowing for Changing Phenology in Salmon Restoration and Management, Michael Tillotson, PhD, ICF

A Multigenerational Pedigree Analysis Reveals the Potential for Selection on Steelhead Life-History Traits, Anne Beulke, UC Santa Cruz

Counting The Parts To Understand The Whole: Rethinking Monitoring Of Steelhead in California's Central Valley, Tyler Pilger, PhD, FISHBIO

Evaluating Estuary Residency and Restoration Potential for Chinook Salmon in Redwood Creek Via a Life Cycle Model, Emily Chen, UC Berkeley

The Effect of Early Life Rearing Temperature and Sedimentation on Later Life Outcomes in Coho Salmon (*Oncorhynchus Kisutch*), Alexandria Niese, University of Calgary

Habitat Restoration to Support Life History Diversity for Coho Salmon in Small Coastal Streams, Darren Ward, PhD, Humboldt State University

Artificial Intelligence and eDNA: Emerging Technologies in Salmonid Monitoring

Session Coordinators: Erik Young, Trout Unlimited and Skagit Fisheries Enhancement Group; and Gabe Rossi, Postdoctoral Researcher, UC Berkeley

LOTIC: Convolutional Neural Networks and Their Place in Monitoring Migratory Fishes, Keane Flynn, MS Candidate, Aquatic Ecosystem's Analysis Lab, University of Nevada Reno

Automated Salmonid Counting Using Sonar Data, Justin Kay, California Institute of Technology

Pedigree Analysis of Hatchery Steelhead from the Mad River, California Provides Insight into Life-history Patterns and Informs Management, Andrew Kinziger, PhD, Department of Fisheries Biology, Humboldt State University

Comparison of Standard and Environmental DNA Methods for Estimating Chinook Salmon Smolt Abundance on the Klamath River, Doyle Coyne, MS, Kinziger Lab, Humboldt State University

Comparison of Environmental DNA and Snorkel Surveys for Monitoring Fish Distributions in Rivers, Jason Shaffer, MS student, Humboldt State University

Environmental DNA, Snorkel Counts, and the Ratio Estimator: An Approach for Rapidly Estimating Total Juvenile Coho Salmon in a Small Stream, Dylan Keel, MS student, Kinziger Lab, Humboldt State University



Opportunities for Collaboration: Tools and Initiatives for Increasing our Collective Impact

Session Coordinator: Analise Rivero, Cal Trout

Redwood Creek Estuary Stakeholders Group; Using Strong Collaborative Process to Build Relationships and Trust, Mary Burke, Cal Trout, and Leslie Wolff, NOAA Fisheries

Public/Private Partnerships and Coalitions—Leveraging Skills and Avoiding Procurement Conflict, Lisa Hulette, MPA, MBA, WRA, Inc.



Scott Dam on the Eel River blocks 150 miles of salmon.

By Mikey Weir

High-resolution Water Budget Hydrology to Support Collaborative Water Management for Salmonid Recovery, Mill Creek Watershed, California, Christopher Woltemade, PhD, Shippensburg University and Prunuske Chatham

Regional Collaborations to Solve the Eel River's Aged and Outdated Hydropower Infrastructure at the Potter Valley Project, Darren Mierau, North Coast Director, Cal Trout

Establishing a Respected Ecological Workforce, Mark Cederborg, Hanford; Jim Robins, Alnus Ecological; and Sally Bolger, Ecological Workforce Initiative

Moving from Coordination to Collaboration for Transformational Change, Kellyx Nelson, Executive Director, San Mateo Resource Conservation District

Friday Morning Concurrent Sessions

Seascape Ecology: Growth, Survival, and Foraging in the California Current

Session Coordinators: Cynthia Le Doux-Bloom, PhD, Humboldt State University, Department of Fisheries Biology and Nate Mantua, PhD, NOAA, Southwest Fisheries Science Center (SWFSC)

Historic Overview, Juvenile Salmon Physiology and Foraging 22 in 2022: Twenty-Two Years of Seascape and Salmon Studies on the Pacific West Coast, Nate Mantua, PhD, NOAA Fisheries, SWFSC

Salinity Tolerance and Smoltification Differences Between Winter, Fall, and Spring-Run Chinook Salmon (*Oncorhynchus tshawytscha*) Brood Stocks, Leah Mellinger, University of California, Davis

Climate-Driven Variability in Zooplankton in Coastal Waters off Northern California: A Potential Ecosystem Indicator for Klamath River Chinook Salmon, Eric Bjorkstedt, PhD, NOAA Fisheries, SWFSC

California Current Seascape Influences Juvenile Salmon Foraging Ecology at Multiple Scales, Megan Sabal, PhD, Oregon State University

Interactions Between Environment, Forage Availability, and Predation on Salmon in the Central California Current, Brian Wells, PhD, NOAA Fisheries, SWFSC

An Ecosystem Model Framework to Predict Historical and Future Ocean Conditions Impacting Juvenile Salmon off Central California, Jerome Fietchter, PhD, University of California, Santa Cruz

Beyond Physical Habitat: the Importance of Prey Availability

Session Coordinator: Robert Lusardi, PhD, UC Davis

Putting Fish and Fish Food in the Framework: Using Drift-Foraging Bioenergetics to Make Flow Recommendations, Suzanne Kelson, PhD, University of Nevada, Reno and McBain Associates

The Effects of Prey Density and Water Velocity on Capture Success of a Juvenile Salmonid, Kwanmok Kim, UC Santa Cruz and NOAA Affiliate

Salmonids Return to Montezuma Wetlands after 150 Years: Fish Use and Productivity Trends in a Sediment Beneficial Reuse Restoration Site, Cassie Pinnell and Chris Jasper, Vollmar Natural Lands Consulting

Does "Wilding" Juvenile Chinook Salmon on Agricultural Floodplains Boost Survivorship in California's Central Valley?, Rachele Tallman, UC Davis

How BDAs Change Stream Food Webs: What Stable Isotopes Can Teach Us About Food Webs and Beaver Dam Analogs, Brandi Goss, Graduate Group in Ecology, UC Davis



Katz in the hat with a bag of floodplain bugs. By Mikey Weir

Managing Non-native Predatory Fish in California's Salmon Bearing Streams

Session Coordinators: Dr. Philip Georgakakos, UC Berkeley; Dr. Gabriel Rossi, UC Berkeley, and Abel Brumo, Stillwater Sciences

Landscape-scale and Habitat-level Drivers of Fish Predation in the Sacramento-San Joaquin Delta, Cyril Michel, NOAA Fisheries

Spring Temperature Predicts Upstream migration Timing of Invasive Sacramento Pikeminnow in a Salmon-bearing River, Philip Georgakakos, UC Berkeley

Shade Affects Magnitude and Tactics of Juvenile Chinook Salmon Antipredator Behavior, Megan Sabal, Oregon State University

Tracking (and Trying to Stop) the Invasion of Sacramento Pikeminnow in the North Fork Eel River, Zane Rudy, Bureau of Land Management

Pikeminnow Suppression: A Big Success in a Small Watershed, Ken Jarrett, Stillwater Sciences

Informing Management Strategies for Non-native Salmonid Predators Through Applied Ecological Studies: Lessons Learned from the Stanislaus River, Matthew Petersen, FISHBIO



Evaluation of seining as a suppression technique for non-native Sacramento Pikeminnow in the South Fork Eel River near Leggett. 8-30-2021.

By Brianna Phillips, Wiyot Tribe Natural Resources Department

Hydrologic Management for the Anthropocene

Session Coordinators: David Dralle, PhD, Pacific Southwest Research Station, Forest Service, and Tim Bailey, Watershed Research and Training Center

A Hydrosatial Approach to Measure Habitat Availability for Tidal Wetland Fishes, David E. Ayers, UC Davis
California's Stream Gaging Plan, Priorities for Future Gaging, and Analysis Tools, Valerie Zimmer, State Water Resources Control Board

EcoFIP: An Enhanced Method for Evaluating Large-scale, Multi-objective Floodplain Restoration Opportunities, Luke Tillmann, MS, cbec eco engineering

Surface Flow Conditions in Cannabis Producing Watersheds in Northern California, Elijah Portugal, MS, California Department of Fish and Wildlife

Thermal Stratification of River Pools – Field and Numerical Modeling Study, Todd H. Buxton, PhD, Bureau of Reclamation

A Hydrologic Baseline for Quantifying Groundwater Contribution to Flows Supporting Critical Salmonid Rearing—Accretion in the San Lorenzo River System, Santa Cruz County, California, Barry Hecht, Balance Hydrologics

Drought Response: Identifying the Science, Policies and Projects Needed to Protect Fisheries and Water Resources in a Drying Climate

Session Coordinators: Matt Clifford, Trout Unlimited; Monty Schmitt, The Nature Conservancy; and Redgie Collins, Cal Trout

Drought Planning in the Western United States: A Review of Drought Plans in the Western States and Recommendations for California's Future Response, Dan Wilson, NOAA California Coastal Office.

Exploring Monthly Natural Flow Predictions and Applications to Dry Year Planning to Protect Aquatic Ecosystems, Julie Zimmerman, PhD, The Nature Conservancy

Drought Response: An Overview, Lessons Learned, and Moving Forward, Erin Ragazzi, Division of Water Rights, State Water Resources Control Board

An Ecological Drought Indicator Framework for California, Ted Grantham, PhD, UC Berkeley; and Jeffrey Mount, PhD, Public Policy Institute of California

Watershed-scale Cooperative Solutions: Projects and Approaches to Increase Drought and Climate Resilience to Streamflows, Fish Habitat, and Water Supply in Coastal Watersheds, Mia van Docto, Trout Unlimited, and Monty Schmitt, The Nature Conservancy

Drought Resiliency in the Klamath Basin: The Yurok Tribe's Strategies and Approach, Michael Belchik, Senior Fisheries Biologist, Yurok Tribe Fisheries Program, and Thomas Starkey-Owens, Environmental Specialist, Yurok Tribe Environmental Program



Mill Creek tour in the Navarro watershed as part of Coho Confab. By Bob Wilms

Friday Afternoon Concurrent Sessions

Nearshore Habitat Variability and Juvenile Salmon Survival and Distribution

Session Coordinators: Cynthia Le Doux-Bloom, PhD, HSU, Department of Fisheries Biology, and Nate Mantua, PhD, NOAA, Fisheries, SWFSC

Can We Use an Ocean Productivity Model to Estimate Juvenile Salmon Early Ocean Survival?
Mark Henderson, PhD, U.S. Geological Survey

Juvenile Chinook Salmon Growth and Survival after Ocean Entry off Central California: Top-down and Bottom-up Effects in an Individual-Based Model,
Kelly Vasbinder, PhD, University of California, Santa Cruz

Time Varying Epipelagic Seascapes: Assessing and Predicting Species Composition in the Northeastern Pacific Ocean, Caren Barceló, PhD, ECS Federal LLC
in support of NOAA Fisheries

Integrating Coded-Wire Tags and Genetic Stock Identification in State-Space Models to Characterize Marine Distributions of California's Chinook Salmon, Alexander Jensen, PhD, University of Washington

Ocean Distribution of West Coast Chinook Salmon Inferred from Coded-Wire-Tags and Genetic Data, Will Satterthwaite, PhD, NOAA Fisheries, SWFSC

Panel Discussions for Seascape Ecology sessions



The seascape session will highlight ocean movement and behavior of salmonids.
By Jordan Plotsky Productions

Beyond Physical Habitat: Productivity in Recovering Imperiled Salmonid Populations

Session Coordinator: Robert Lusardi, PhD, UC Davis

How Physical Habitat and Prey Abundance Interact to Shape the Growth Opportunities of Salmonids: Examples from Bristol Bay to the Klamath Basin, Jonny Armstrong, PhD, Oregon State University
Department of Fisheries, Wildlife, and Conservation Science

Making a Living in a Seasonal Lagoon: Interactions Among Water Temperature, Prey Availability, and Juvenile Salmonid Growth, Rosealea M. Bond, UC Santa Cruz and NMFS Southwest Fisheries Science Center



Miranda Bell Tilcock of UC Davis Center for Watershed Sciences casts a zooplankton net while monitoring a Sacramento Valley floodplain food web.
Photo by Mikey Weir

Puddle Power and the Pivot to Process: A Landscape-scale Recipe to Allow the Sacramento Valley to Make Salmon Again, Jacob Katz, PhD, Cal Trout

Coupling Habitat and Prey Supply with Juvenile Chinook Salmon Growth and Production in the San Joaquin River Restoration Project, Steve Blumenshine, PhD, CSU-Fresno CA Water Institute

Defining a Basin-scale Restoration Framework to Recover an Endangered Species. An Optimization-Simulation Approach Using a Life Cycle Model, Robert A. Lusardi, PhD, UC Davis

Reconnecting Salmon with the Productive Capacity of Their Watershed, Gabriel Rossi, PhD, UC Berkeley

Creating Opportunities for Community Involvement to Address Common Urban Stream Management Issues

Session Coordinator: Jessica Hall, California Urban Streams Partnership

Engage, Educate, and Empower: Motivating Communities to Get on Board with Restoration in Their Backyards, Sarah Phillips, Marin Resource Conservation District

Addressing Property Owner Fears of Creeks, Emanuel Peterson, California Urban Streams Partnership

Coalition and Community-based Endangered Steelhead Recovery in Southern California, Sandra Jacobson, PhD, Cal Trout

Community-involved Creek Restoration in the Walnut Creek Watershed, Heather Rosmarin, Friends of Pleasant Hill Creeks

Planting a Dream: A Community Designed Urban Park Connects People and Nature, Chelsea Neill, PG, Balance Hydrologics

Engaging Community to Protect the Pinole Creek Watershed: Assessment of Trash Impacts to Promote a Thriving Ecosystem, Ann Moriarty, Friends of Pinole Creek Watershed

Mountain Meadows: Restoring Functions in Headwater Catchments under Changing Climate and Wildfire Regimes

Session Coordinators: Jay Stallman, Stillwater Sciences and Gabrielle Bohlman, U.S. Forest Service

Restoring Ecological Function to California's Montane Meadows, Karen Pope, PhD, U.S. Forest Service Pacific Southwest Research Station

Effects of Twenty Years of Climate Warming and Livestock Grazing on High Elevation Meadows in the Golden Trout Wilderness, Devyn Orr, PhD, USDA ARS

LTPBR in Sierra Nevada Meadow Systems: A Case Study from the Golden Trout Wilderness, Sabra Purdy, Trout Unlimited and Anabran Solutions

The Hundred-Year Summer—PBR, Fire, Flood, and the Return of Beavers to Tasmam Koyom, Kevin Swift, Swift Water Design

A Decade of Data and Lessons Learned from Restoring a Sierra Meadow Complex, David Shaw, PG, Balance Hydrologics

Restoring Headwaters along Davy Brown Creek in the Los Padres National Forest, Mauricio Gomez, South Coast Habitat Restoration, and Kristie Klose, PhD, Los Padres National Forest

Climate, Habitat, and Genetic Factors Influencing Salmonid Success

Session Coordinator: Rachel Shea, Michael Love & Associates

Factors Affecting Spatiotemporal Variation in Survival of Endangered Winter-Run Chinook Salmon Outmigrating from the Sacramento River, Jason Hassrick, ICF Fish and Aquatic Sciences

Minimum Flows to Support Smolt Outmigration During Drought, Brian Kastl, UC Berkeley

California Drought Influences Steelhead Productivity through Impacts on Spring Smolt Conditions, Haley Ohms, NOAA SWFSC and UCSC

Conservation and Restoration of Adaptive Genomic Variation, Devon Pearse, NMFS

Landscape and Life History Variation in Southern California Steelhead Recovery, Mark Capelli, National Marine Fisheries Service

Effects of Climate Extremes on Geomorphic Responses to Process-based Restoration, Brian Bartell, WRA, Inc.

Save the Date



24th Annual Coho Confab

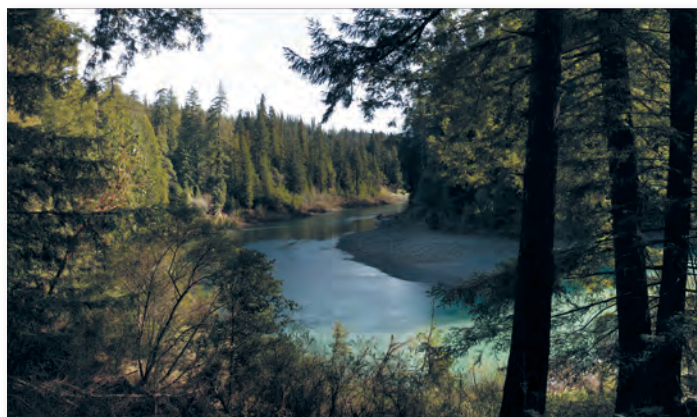
September 2022, South Fork Eel River

Join SRF, California Department of Fish and Wildlife, Eel River Watershed Improvement Group, Cal Trout, Eel River Critical Observatory, Pacific Watershed Associates, Trout Unlimited, and other restoration partners in this exciting Confab on the banks of the South Fork Eel River. This Confab will feature fish passage projects, upslope sediment remediation, large wood projects, and a suite of other techniques that are implemented or are being planned in this critical watershed.



Background photo: BDA in Yellow Creek, Tasmam Kojom. Inset photo: Incised channel and recent burn at Grizzly Meadow, Sierra National Forest.

By Karen Pope



South Fork Eel River By Pernel S. Thyseldew