

# 36<sup>th</sup> Annual Salmonid Restoration Conference

## April 11-14, 2018 at the Fortuna River Lodge

### *The Art and Science of Watershed Restoration*



## Conference Co-sponsors

Alnus Ecological, AmeriCorps Watershed Stewards Program, Balance Hydrologics, Cachuma Operation and Maintenance Board, California Conservation Corps, California Department of Fish and Wildlife, California Department of Water Resources, California Trout - North Coast, East Bay Municipal Utility District, ESA, GHD, Green Diamond Resource Company, Hanford Applied Restoration and Conservation, Humboldt Redwood Company, ICF International, Inter-Fluve, Lyme Redwood Forest Company, Marin Municipal Water District, McBain & Associates, Michael Love and Associates, Mother Earth Engineering, NOAA Fisheries, Northern California Water Association, Northwest Hydraulic Consultants, Pacific States Marine Fisheries Commission, Pacific Watershed Associates, Redwood Forest Foundation and Usal Redwood Forest Company, Restoration Design Group, Rincon Consultants, Inc., Samara Restoration, Santa Clara Valley Water District, San Lorenzo Valley Water District, SHN Consulting Engineers and Geologists, Solano County Water Agency, Sonoma County Water Agency, Stillwater Sciences, The Nature Conservancy, Trout Unlimited, Westervelt Ecological Services, Wildlife Conservation Board



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Cover photo: Eel River Photo by Jason Hartwick

# Join the SRF Community

As the rain has returned and the salmon are running, this season engenders a feeling of gratitude for those engaged in the salmon restoration field. SRF supporters are far-flung from all over the state of California from fishermen and advocates, to scientists, academics and students, to the restoration work force, watershed residents, landowners, tribal members, and on-the-ground practitioners.

**SRF's contributing members are the backbone of our organization.** You have enabled our small organization to accomplish big goals over the past year including the 35<sup>th</sup> Annual Salmonid Restoration Conference in Davis, CA, the 20<sup>th</sup> Annual Coho Confab in the Mattole, a Spring-run Chinook symposium on the Salmon River and a host of water conservation workshops and water rights clinics.

**SRF is also accomplishing important community-centered work in our local North Coast watersheds.** With project partners, we developed online resources aimed at educating rural communities about water conservation techniques that can help improve water security for people and water quality for salmon. We paired these tools with public outreach and education campaigns to let local residents know about important resources that will help them become responsible water stewards and caretakers of their land.

**California's water resources are in higher demand than ever, and the laws that protect our environment, water quality, and vulnerable salmon species are at risk.** Your contribution to SRF will help empower citizens and restoration professionals in the coming year by making the following actions possible:

- The 36<sup>th</sup> Annual Salmonid Restoration Conference in Fortuna, California, with an expected attendance of over 500 professionals
- Several statewide technical education events, including the 21<sup>st</sup> Annual Coho Confab in the Smith River watershed and a Steelhead Summit in Ventura, CA
- A large wood technical field school that will be held in Mendocino County
- Increased capacity for community-based water conservation programs

As an advocate of native salmon species and their habitat, we hope you'll contribute to efforts that will help make California's restoration community stronger.

### Our valued members receive the following benefits:

- Connection to a network of thousands of scientists and practitioners with an interest in California fisheries and watershed restoration
- Biannual newsletter featuring event updates from SRF and exciting news from California's innovative restoration field
- Monthly eNewsletter with up-to-date announcements about restoration funding and training opportunities throughout the state
- Discounted admission to the annual Salmonid Restoration Conference
- Eligibility to vote in annual SRF Board of Directors elections

**Becoming a member of SRF is easy and will have a lasting impact.** Please take time today to add your voice to one of California's most active and highly regarded non-profits providing technical education, training, and advocacy on behalf of the salmonid habitat restoration field.

Thank you for your generous support.

For Wild Salmon,

*Dana Stolzman*

Dana Stolzman, Executive Director





# 36<sup>th</sup> Annual Salmonid Restoration Conference

## The Art and Science of Salmonid Restoration

Salmonid Restoration Federation (SRF) is excited to host the 36<sup>th</sup> Annual Salmonid Restoration Conference on the North Coast where participants will have the opportunity to explore innovative restoration projects and participate in technical workshops. The theme of this year's conference is "The Art and Science of Salmonid Restoration." The conference agenda will explore a range of issues including aging infrastructure, effectiveness monitoring, temperature impairments, biological responses, salmon reintroduction to historic habitats post-Klamath dam removal, streamflow enhancement and streamlined permitting, and ecological and policy issues that affect recovery.

Workshops topics will explore a range of watershed restoration techniques and approaches including: Using an optimization model to select fish passage barrier remediation; Devising instream flow criteria for small coastal streams; Effectiveness monitoring of instream restoration projects; Identifying appropriate site-specific methods and target criteria for instream large wood restoration efforts; and Speaking of Science—a workshop about presentation and facilitation skills.

Field tours will include a tour of Lower Klamath River tributaries, groundwater recharge projects in the Mattole headwaters, and flood reduction and habitat connectivity in the Lower Eel River and Salt River estuary. Additionally, there will be a tour focused on restoring tidal wetlands with inclusive, process-based restoration in working landscapes; and a tour of tidal, off-channel, instream, and upslope projects in the Humboldt Bay watershed.

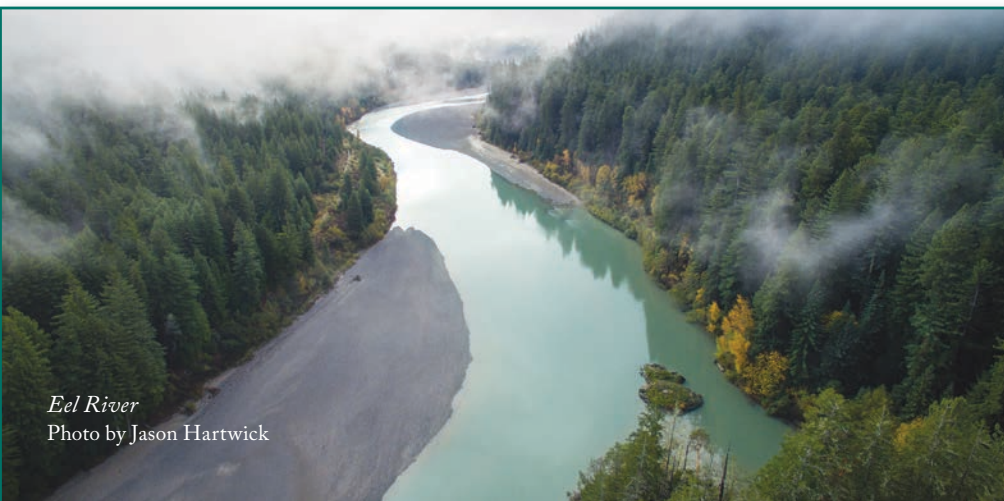
Concurrent sessions include a physical processes track that features a restoring to stage zero session focused on recent innovations in restoration science, modeling salmonid habitat for restoration, and alluvial fans and salmonid habitat. A biology and streamflow track will focus on emerging stream temperature science and biological responses to temperature and flow; and streamflow enhancement planning, science, and strategies. Additionally, there will be a track on policy and ecological issues including an overview of Klamath dam removal efforts and salmon reintroduction planning; adapting aging infrastructure to sustain listed species; Eel River ecology, restoration challenges and opportunities; and streamlined permitting.



*The art and science of large wood installations will be a featured topic in field tours, workshops, and concurrent sessions. This photo shows geologist Rocco Fiori checking out his handiwork on the Lower Klamath. Credit: Sarah Beesley*

The Plenary session will focus on the landscape of restoration and how both art and science can inform our thinking about the future of this evolving field. Renowned geomorphologist Colin Thorne will give a talk entitled, *Thinking Outside the Channel—Learning from History and Working with Nature to Restore Riverine-floodplain Connectivity*. UC Berkeley Professor Stephanie Carlson will present on *Evolutionary Enlightened Management Strategies for Conserving and Restoring Pacific Salmon and Trout*. Tribal member Wendy Poppy George who serves on the Klamath River Renewal Corporation Board will speak about on revitalizing native lands.

Other conference events will include the SRF Annual Meeting and membership dinner on Thursday evening with a special screening of the film *A River's Last Chance*, the annual poster session and reception on Friday night, and a cabaret and banquet, with a wild salmon dinner and live dance band on Saturday evening. For more information about the conference, please visit [www.calsalmon.org](http://www.calsalmon.org).



*Eel River*  
Photo by Jason Hartwick

# SRF 2018 Conference Registration

## The Art and Science of Watershed Restoration

Name: \_\_\_\_\_ Phone ( work ): \_\_\_\_\_

Address: \_\_\_\_\_ (cell): \_\_\_\_\_

\_\_\_\_\_ Email: \_\_\_\_\_

Affiliation: \_\_\_\_\_

Advanced Registration Closes March 3, 2018

### Workshops and Field Tours

#### Wednesday, April 11

	Advanced Registration	Late Registration	Fee
1. Identifying Appropriate Site-Specific Methods and Target Criteria for Instream Large Wood Restoration Efforts Workshop	\$70	\$80	_____
2. Devising Regionally Protective Instream Flow Criteria for Unregulated CA Coastal Streams Workshop	\$70	\$80	_____
3. Effectiveness Monitoring of Instream Restoration Projects in California Workshop	\$70	\$80	_____
4. Instream Restoration and Groundwater Recharge in the Mattole Headwaters Tour	\$70	\$80	_____
5. Tidal, Off-Channel, Instream, and Upslope Restoration in Humboldt Bay	\$70	\$80	_____

#### Thursday, April 12

6. Speaking of Science and Facilitating Community Engagement Workshop	\$70	\$80	_____
7. Using an Optimization Model to Select Fish Passage Barriers for Remediation Workshop	\$70	\$80	_____
8. Salmonid Habitat Restoration in Lower Klamath Tributaries Tour	\$70	\$80	_____
9. Lower Eel River Restoration, Flood Reduction, and Habitat Connectivity Tour	\$70	\$80	_____
10. Restoring Tidal Wetlands: Inclusive, Process-based Restoration in Working Landscapes Tour	\$70	\$80	_____
<b>SRF Membership Dinner and Film Screening of <i>A River's Last Chance</i></b>	\$20	\$25	_____

### Conference

#### Friday and Saturday, April 13 & 14

SRF Member	\$150	\$180	_____
Non-member	\$200	\$230	_____
Student (with ID)	\$100	\$110	_____
<b>Saturday Evening Banquet</b>	\$50	\$60	_____

### SRF Membership

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

Membership: \_\_\_\_\_

**Payment Total:** \_\_\_\_\_

Method of Payment:  Check    Money Order    Purchase Order    Credit Card

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 give refunds • Receipts are emailed, so print legibly • This form is available at [www.calsalmon.org](http://www.calsalmon.org)

# Workshops & Tours

**Wednesday, April 11**

## **Devising Regionally Protective Instream Flow Criteria for Unregulated Coastal California Streams Workshop**

**Workshop Coordinators:** Bill Trush, PhD, River Institute, Humboldt State University and Darren Mierau, Cal Trout

In the morning, hydraulic units with their sectional and bedform control over streamflow depth and velocity will be explored from a biological perspective, including how a stream channel's riffle crest cross-sections govern baseflow velocities and depths. Real spatial and real temporal variability will then be folded into this hydraulic framework to demonstrate how specific life history and large-scale ecosystem instream flow needs are met. The afternoon will begin with a synthesis of the morning's science, and then chart a pathway to regionalizing an environmentally protective diversion strategy for the South Fork Eel River. Workshop participants will be provided quantitative examples allowing them a hands-on opportunity to test-drive the regional strategy proposed.

## **Identifying Appropriate Site-Specific Methods and Target Criteria for Large Wood Restoration Workshop**

**Workshop Coordinators:** Anna Halligan and Elizabeth Mackey, Trout Unlimited

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. The morning portion of the workshop includes several presentations from large wood restoration practitioners on a wide-array of implementation techniques. These presentations will include hands-on construction demonstrations and video footage, as well as provide an opportunity for participants to work through some mathematical calculations.

The afternoon will consist of some directed small group discussions, as well as a facilitated panel discussion. Discussion topics will include considering project outcomes when selecting treatment methods, the effectiveness of structure designs in achieving particular outcomes, and how to determine appropriate wood loading densities for various project types.

**Accelerated Recruitment: Cost-efficient Restoration Techniques for Enhancing Instream Habitat in California Coho Streams,** Chris Blencowe and Ken Smith, Blencowe Watershed Management and Pacific Inland Inc.

**30 Years in the Making: California Conservation Corps Instream Large Wood Restoration Techniques,** Brett Leonard, California Conservation Corps

**Restoring Wood's Essential Role in Controlling Channel Grade and Stability in Small Streams,** Michael Love, Michael Love and Associates Inc.

**How to Keep Your Wood from Floating Downstream: Interactive Computations for Stability of Large Wood Structures,** Rachel Shea, Michael Love and Associates Inc.

**Building Salmonid Habitat Complexity and Resiliency in Tributaries of the Lower Klamath River—Innovations and Lessons Learned,** Rocco Fiori, Fiori GeoSciences

**Simple LWD Structures, Big Geomorphic Changes,** Marjorie Caisley, California Department of Fish and Wildlife

**Salmonid and Watershed Restoration: Focusing on Process-Based Design After 30 years of Techniques,** Chris Moore, Pacific Watershed Associates

**Group Panel Discussion**



*Panoramic of South Fork Ten Mile River Stream Habitat Enhancement Project; Rod Vogel, Anna Halligan, and Elizabeth Mackey of Trout Unlimited pictured. Photo by Libby Earthman, Trout Unlimited*



Seining for salmonids on Wood Creek. Photo by Bob Pagliuco, NOAA Fisheries

### Effectiveness Monitoring of Instream Restoration Projects—Lessons Learned and Where Do We Go From Here

**Workshop Coordinators:** Bob Pagliuco, NOAA Restoration Center, Arcata CA and Ross Taylor, Ross Taylor and Associates

Restoration Project types and techniques are constantly evolving as we learn more about fish and habitat response to various types of restoration. Physical and biological monitoring at an individual project and larger watershed scale is essential to understanding these relationships. The purpose of this workshop is to explore various restoration project effectiveness monitoring approaches and learn how project and watershed level physical and biological data are helping us evaluate these projects. In addition, this workshop will have a group discussion that explores existing monitoring data and provides input on what data would be most useful to collect in the future to advance restoration effectiveness science.

**The Pudding Creek BACI Experiment: A Paired Watershed Approach to Effectiveness Monitoring,** Elizabeth Mackey, Trout Unlimited

**A Study of Aquatic Habitat and Fish Behavioral Response to Enhanced Flows in a Russian River Tributary,** Gabe Rossi, University of California, Berkeley

**Using Science to Guide Coho Restoration in the Middle Klamath River: If You Build it, They Will Come,** Toz Soto, Karuk Tribal Fisheries Program

**Tools and Methods to Monitor the Effectiveness of the Dry Creek Habitat Enhancement Project, Russian River Basin,** Neil Lassette, Sonoma County Water Agency

**Differing Responses of Natal and Non-natal Juvenile Coho Salmon to Restoration Actions in McGarvey Creek, a Tributary to the Lower Klamath River,** Jimmy Faulkner, Yurok Tribal Fisheries Program

**Annual, Seasonal, and Diurnal Variation in Fish Use of Constructed Slough Habitat in the Mattole River Estuary,** Nathan Queener, Mattole Restoration Council

**Monitoring of Beaver Dam Analogues in the Scott River Watershed,** Michael Pollock, PhD, NMFS Northwest Fisheries Science Center

**Effectiveness Monitoring of Fish Passage Projects in California,** Leah Mahan, NOAA Restoration Center

**The Old Man and the SEE: Lessons Learned From 15 Years of Monitoring Coho Salmon Life History and Habitat Restoration Projects in the Stream-Estuary Ecotone,** Michael Wallace, Environmental Scientist, CA Department of Fish and Wildlife

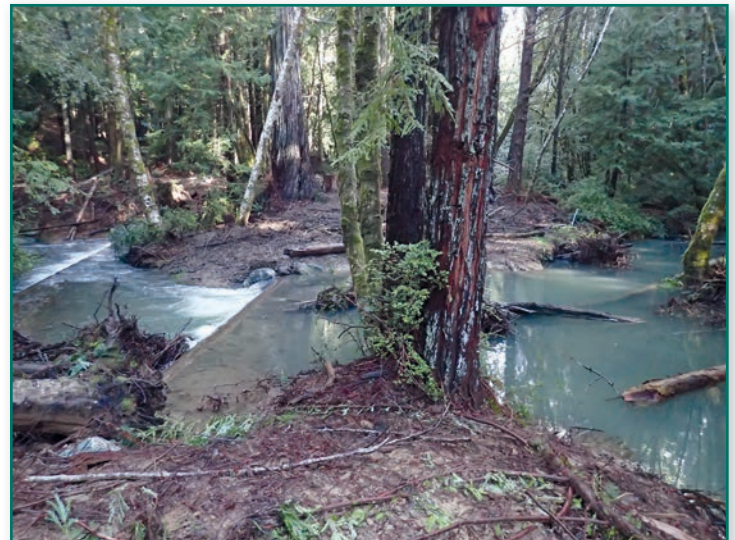
**Temporal Patterns and Environmental Correlates of Young-of-the-Year Coho Salmon Movement into Non-natal Seasonal Habitats,** Seth Ricker, California Department of Fish and Wildlife

**Group Discussion on Effectiveness Monitoring Data Gaps, Priority and Geographic Needs, and Funding Opportunities**

### Instream Restoration and Groundwater Recharge in the Mattole Headwaters

**Field Tour Coordinators:** Tasha McKee, Sanctuary Forest and Sam Flanagan, Bureau of Land Management, and representatives from Stillwater Sciences, Mattole Salmon Group, and Pacific Watershed Associates

The tour will encompass a 500 meter reach of Baker Creek, a 4.1 km<sup>2</sup> tributary to the upper Mattole River. The reach hosts a range of instream woody debris work begun in 2012, with the objective of increasing groundwater levels, improving instream habitat, and reconnecting historic floodplains. We will also visit an adjacent stream terrace to view a series of groundwater recharge ponds, both existing and planned. The field tour is intended to spur discussion on restoration in incised stream channels where several factors conspire to limit salmonid productivity: depleted streamflows, lack of instream habitat, and poor floodplain connectivity.



Mattole headwaters

Photo by Sam Flanagan, BLM Arcata office

## Tidal, Off-Channel, Instream, and Upslope Restoration in Humboldt Bay

**Field Tour Coordinators:** Mitch Farro, Pacific Coast Fish, Wildlife and Wetlands Restoration Association and Chris Herbst, Pacific Watershed Associates

This tour will visit different types of projects and discuss issues involved with developing priorities and the challenges of working on public vs. private lands. We will visit two different project areas, starting with the Humboldt Bay National Wildlife Refuge located at the mouth of Salmon Creek. The field trip will visit the location of the major tide-gate replacements, salt marsh restoration, and new tidal channel excavations and off-channel ponds. We will then travel to visit road decommissioning and instream LWD projects in Ryan Creek, where the new Humboldt County Community Forest is located. The trip will look at off-channel habitat created at the mouths of stream crossing and drainage swale excavations, instream large woody debris structures, and wetland habitat created along decommissioned road reaches.



*Stream crossing associated with the road decommissioning work in Ryan Creek, a tributary to Humboldt Bay. Photo by Chris Herbst, Pacific Watershed Associates*

## Thursday, April 12

### Speaking of Science and Facilitating Community Engagement Workshop

**Workshop Coordinators:** Janine Castro, U.S. Fish and Wildlife Service and Miriam Volat, Soil Scientist and Facilitator, Occidental Arts and Ecology Center

The morning part of this workshop is focused on improving oral presentation skills for scientists and engineers. Participants will leave the workshop with an improved skill set, including a checklist to develop and deliver memorable presentations. The workshop is highly interactive and builds on the collective experience of the audience and the instructor.

Topics:

- Audience, venue, organization, size, length
- Main message, title slide, final sentence

- Audiovisuals, lights, sound, computer, timer, pointers, remote, props
- Tone, volume, inflection, pace, pauses, body language
- Answering questions

The afternoon workshop is focused on public engagement processes for scientists, engineers, and project managers involved in restoration projects and research that include multiple stakeholders and interactions with diverse parts of the community. Participants will leave the workshop with a clear design process for one-meeting engagements or longer processes, as well as a tool kit of mini-processes to use in your design.

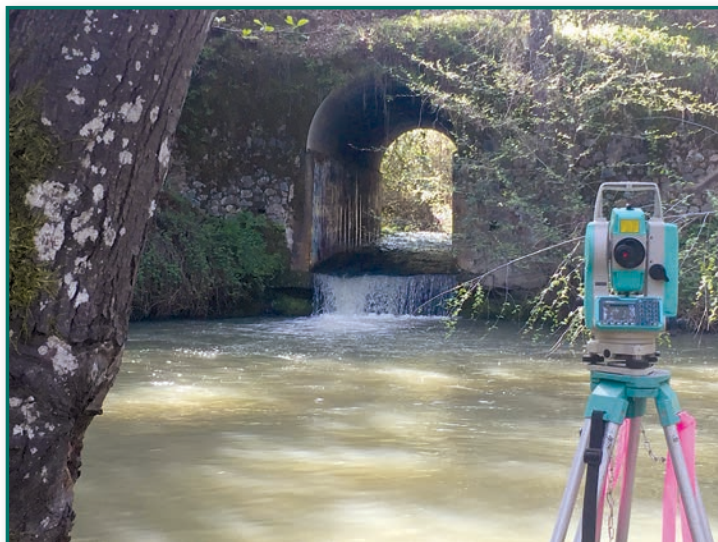
Topics:

- Designing and planning for your entire public engagement process
- Creating agendas that get results
- Assessing, creating, and sustaining commitment and communication
- Simple facilitation skills and tools that make meetings enjoyable

### Using an Optimization Model to Select Fish Passage Barriers for Remediation

**Workshop Coordinators:** Lisa DeBruyckere, California Fish Passage Forum and Ross Taylor, Ross Taylor and Associates

This workshop focuses on testing FISHPass in a variety of watersheds along the coast of California, giving fish passage practitioners, and others involved in fish passage barrier remediation, an opportunity to test the model in a variety of watersheds. Workshop attendees will be able to test their own model runs and receive immediate model results as they interact with model inputs (e.g., cost) to explore potential outcomes. The goal of the workshop is to familiarize fish passage practitioners with FISHPass and its utility in optimizing fish passage barriers for remediation.



*Mariposa Creek at Tomki Road, a tributary to the Russian River. Photo by P. Travis James*



*Looking downstream at multiple jams and recruited old growth in Hunter Creek, Lower Klamath. Photo by Sarah Beesley*

### **Salmonid Habitat Restoration in Lower Klamath Tributaries**

**Field Tour Coordinators:** Rocco Fiori, Fiori GeoSciences and Sarah Beesley, Yurok Tribe

The Lower Klamath field tour will focus on restoring complexity and resilience to instream and off-channel habitats to support self-maintaining salmonid populations. The Yurok Tribal Fisheries Program and its restoration partners have been using a bio-geomorphic approach that promotes the geomorphic processes necessary to form and maintain productive instream and off-channel habitat features. These techniques include: excavations that mimic or enhance naturally occurring valley landforms such as side-channels, alcoves, remnant oxbows, and wetlands; use of constructed log jams to provide cover, promote pool scour, sediment sorting and metering, and induce favorable hydraulics and connectivity to off-channel features; constructed infiltration galleries and sediment weirs to facilitate surface and groundwater exchange to limit sediment intrusion and enrich dissolved oxygen levels in constructed off-channel features; and bioengineering that integrates the use of willow and other riparian plants to add root cohesion, hydraulic roughness, and vertical and horizontal vegetative structure and diversity to the site. On-going monitoring indicates that natal and non-natal juvenile and adult fish utilize these habitats as soon as they are available. Case examples from different hydro-geomorphic settings will be presented that illustrate design considerations and constraints and provide associated biological and physical monitoring results.

### **Lower Eel River Restoration, Flood Reduction, and Habitat Connectivity Tour**

**Field Tour Coordinators:** Jeremy Svehla PE and Brett Vivyan, PE, GHD Inc., and Michael Love, PE, Michael Love & Associates, Inc.

This tour will visit diverse project sites within the Lower Eel River, including the multi-benefit Salt River Ecosystem Restoration Project near Ferndale and the Rohner Creek Flood Reduction & Habitat Enhancement Project, and Strongs Creek Fish Passage Improvement Project, both

in the City of Fortuna. The tour will include constructed tidal channels, floodplains, side-channels, large wood structures, geomorphically-based and concrete fishways, a sediment management area, and landscape-scale revegetation efforts.



*Aerial view of Salt River restoration project. Photo by Brad Finney, HSU*

### **Restoring Tidal Wetlands: Inclusive, Process-based Restoration in Working Landscapes**

**Field Tour Coordinators:** Kerry McNamee, Northcoast Regional Land Trust, Conor Shea, USFWS, and Redwood Community Action Agency

Join Northcoast Regional Land Trust, U.S. Fish and Wildlife Service, Redwood Community Action Agency, and other project partners on a tour through three coastal projects including Martin Slough, Wood Creek, and the White Slough Tidal Restoration project. These projects embody inclusive strategies to balance tidal wetlands and juvenile salmonid habitat restoration with sustained working agricultural landscapes. The tour will include constructed tidal channels, large wood structures, various stages of restored and abundant tidal wetland habitat, a pasture actively undergoing restoration to balance high-brackish marsh vegetation with agricultural use, a hydraulically-based and large-scale tide gate, and if possible, a demonstration of capturing and PIT tagging juvenile coho salmon. Each project's context, goals, engineering design, implementation, management strategies, challenges, and successes will be discussed at the project sites.



*The Wood Creek Phase II Restoration project at Northcoast Regional Land Trust's Freshwater Farms Reserve. Photo by NRTL*



# 2018 Conference Logistics & Events

## Conference Location

River Lodge Conference Center  
1800 Riverwalk Drive  
Fortuna, CA 95540

## Conference Events and Schedule

Wednesday and Thursday Workshops and Field Tours are 9am to 5pm. Field Tours depart promptly at 9am, so please come to the facility early to pick up your registration packet and pack a lunch for the day. Vans are provided for field tours.

The SRF Annual Membership Meeting, is Thursday evening, followed by the SRF membership dinner, and film screening of *A River's Last Chance*.

Friday's Plenary Session is 9am-noon. Concurrent Sessions are on Friday and Saturday.

The Conference Poster Session is on Friday from 7-10pm.

The Annual Awards Ceremony, Banquet, Cabaret, and Dance Band is Saturday evening, doors open at 6pm.

## Meals

Lunches on Wednesday – Saturday are included with the conference registration fee. Evening meals during the conference are optional on the following dates:

**Thursday, April 12:** The SRF Membership Dinner and film screening. Tickets can be purchased in advance or at the door, and are not limited to members.

**Friday, April 13:** The Conference Poster Session includes appetizers. Wine and beer will be available for sale.

**Saturday, April 14:** The Annual Conference Banquet and Cabaret is a conference highlight. Advanced ticket purchase is recommended.

All meals will feature locally sourced & organic ingredients whenever possible.

## Poster Session

The Poster Session on Friday evening is free to attend for all conference participants and is an excellent networking opportunity. For information about how to present at the poster session, please contact [info@calsalmon.org](mailto:info@calsalmon.org) or visit the 2018 SRF Conference FAQs page at [www.calsalmon.org](http://www.calsalmon.org).

## Awards Nomination

Please submit 200 words or more, by February 8, to nominate candidates for the illustrious *Restorationist of the*

*The Eel River in Northern California provides one of the best opportunities for wild salmon recovery on the entire west coast.*

*The river and salmon have weathered decades of over-fishing, industrial logging, catastrophic floods, droughts and a dam that diverts water and blocks fish passage. Today, the Eel's recovering wild salmon compete for water with the region's lucrative wine and underground cannabis economies. This film shows we can live symbiotically with our watersheds and encourage both a river's recovery and economic future.*

*A River's Last Chance premiered to a sold out crowd at the Portland Eco Film Fest, has won "Best Environmental Film" at the Yosemite Film Festival, and will debuted at the 2018 Wild and Scenic Film Festival.*

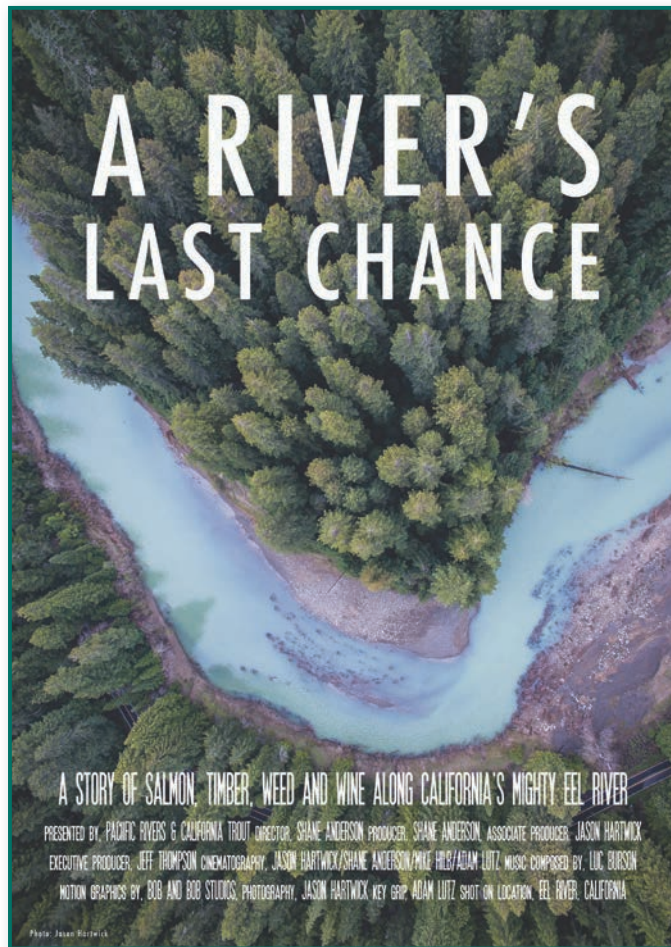
*Year Award, the Golden Pipe Award for Innovation, the Lifetime Achievement Award, and the Gordon Becker Memorial River Advocate Award.*

## Conference Host Hotels

**Comfort Inn,**  
[www.comfortinnfortuna.com](http://www.comfortinnfortuna.com)  
Located at 1583 Riverwalk Drive, Fortuna, CA 95540. The group block is under the code SRF Conference. They are offering both double and king rooms at \$88 until March 28, 2018. The rate includes a continental breakfast, wifi, and parking. To make your reservation, please call (707) 725-7025.

**Redwood Riverwalk Hotel,**  
[www.theredwoodhotel.com](http://www.theredwoodhotel.com)  
Located at 1859 Alamar Way, Fortuna, CA 95540. They are offering double rooms, queens, and kings at \$85. This hotel is eco-friendly and includes a buffet breakfast. Rooms are limited so please book early. To make your reservation, please call (707) 725-5500 and ask for the group block under SRF.

**Best Western Country Inn,**  
[bestwesterncalifornia.com/hotels/best-western-country-inn-fortuna](http://bestwesterncalifornia.com/hotels/best-western-country-inn-fortuna)



Located at 2025 Riverwalk Drive, Fortuna, CA 95540. They have limited single occupancy rooms available for \$95. This rate includes breakfast, indoor/outdoor heated pool, spa, gym, and parking. To make your reservation under the SRF group block, please call (707) 725-6822. Only the first 15 rooms reserved are at this rate.

## Banquet, Cabaret, and Dance!

The banquet includes a wild salmon dinner, 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.



# Conference Sessions

## Plenary Session

**Evolutionary Enlightened Management Strategies for Conserving and Restoring Pacific Salmon and Trout**, Stephanie Carlson, PhD, UC Berkeley

**Thinking Outside the Channel—Learning from History and Working with Nature to Restore Riverine-Floodplain Connectivity**, Colin Thorne, PhD, Nottingham University, UK

**Revitalization in Native Country**, Wendy Poppy Ferris-George (Hupa/Karuk/Yurok/Chameriko), Klamath River Renewal Corporation

**Fish and Fires—Integrating Traditional and Western Knowledge Systems with Landscape Restoration Strategies to Address, Adapt to, and Confront Large-scale Wildfires in an Era of Climate Change**, Frank Kanawha Lake, U.S. Forest Service PSW Fire and Fuels Program

**The Persistence and Characteristics of Chinook Salmon Migrations to the Upper Klamath River Prior to Exclusion by Dams**, John B. Hamilton, U.S. Fish and Wildlife Service

**Genetic Analyses of Contemporary and Ancient Samples Provide Insights into Restoring Upper Klamath Spring Chinook**, Tasha Q. Thompson, UC Davis

**Klamath River Dam Removal and the Klamath River Renewal Corporation**, Mark Bransom, Executive Director, Klamath River Renewal Corporation

## **Restoring to Stage Zero, Recent Innovations in Restoration Science: Reports From the Field**

**Session Coordinator:** Brian Cluer, PhD, NOAA Fisheries

**Winter Habitat and Floodplain Enhancement in Lagunitas Creek—Phase 1 Project Construction**, Gregory Andrew, MS, Marin Municipal Water District

**Historical Basis for Restoring to Stage Zero**, Sean Baumgarten, San Francisco Estuary Institute-Aquatic Science Center (SFEI-ASC)

**Five-mile Bell Restoration Project: A Stage Zero Restoration Case Study in Coastal Oregon**, Paul Burns, U.S. Forest Service, Siuslaw National Forest

**Embracing Chaos, Stage Zero Experience from the Sierra Foothills**, Damion Ciotti and Jared McKee, U.S. Fish and Wildlife Service

**Stage Zero Restoration Approach, Design, and Construction**, Paul Powers, U.S. Forest Service, Deschutes National Forest

**Design and Implementation of Secondary Channels in Dry Creek, Sonoma County, California**, Jason Q. White, River Scientist, ESA

## Friday Afternoon Concurrent Sessions

### **Overview of Klamath River Dam Removal and Salmon Reintroduction to the Upper Klamath Basin**

**Session Coordinator:** Mike Belchik, Yurok Tribe

**Strategies for Repopulating the Upper and Middle Klamath River with Salmon and Steelhead Following Dam Removal**, John Carlos Garza, PhD, NOAA Southwest Fisheries Science Center and UC Santa Cruz

**An Update on the Reintroduction Implementation Plan of Anadromous Fishes into the Oregon Portion of the Upper Klamath Basin**, Mark Hereford, Klamath Fisheries Reintroduction Planner, Oregon Department of Fish and Wildlife



*Upper Klamath River habitat that would become accessible to anadromous salmonids once the dams are removed.* Photo Thomas Dunklin

## **Streamflow Enhancement: Planning, Science, Strategies, and Lessons Learned**

**Session Coordinator:** Monty Schmitt, The Nature Conservancy

**Maximizing Incentives to Enhance Streamflow in Coastal California: Integrating Instream Flow Dedications and ESA Recovery Initiatives,** Dan Wilson, NOAA Fisheries

**A Coordinated Approach for Developing Statewide Environmental Flow Regulations in California,** Julie Zimmerman, The Nature Conservancy

**Managing Diversions in Unregulated Streams Using a Modified Percent-of-Flow Approach,** Darren Mierau, Cal Trout

**An Alternative Approach to Evaluating the Effects of Streamflow Improvement Projects in Small Intermittent Streams: A Case Study in Dutch Bill Creek,** Sarah Nossaman, UC Sea Grant, Russian River Salmon & Steelhead Monitoring Program and Mia Van Docto, Trout Unlimited

**Collaborative Water Management: A Framework for Stakeholder-lead Flow Enhancement Projects at a Watershed Scale,** Monty Schmitt, The Nature Conservancy and Tasha McKee, Sanctuary Forest

**Working Toward Instream Flow Enhancements: Modeling Hydrology and Water Use to Inform Policy Development in Critical Salmonid Streams,** Valerie Zimmer, State Water Board

**Research Efforts Supporting Instream Flow Planning: Hydrology Modeling, Data Collection, and Stream Classification in the South Fork Eel River Basin,** Valerie Zimmer, State Water Board

**Revising Field Sampling Protocols to Enhance the Role of Geomorphic Classification in Instream Flows Studies,** Colin Byrne, University of California, Davis, Center for Watershed Sciences

**The Phenology of Food Webs in South Fork Eel River Tributaries: Implications for Water Management,** Gabriel Rossi, University of California, Berkeley, Department of Integrative Sciences

**Removing the Eel River Dams and PG&E's Potter Valley Project to Restore a Wild and Unregulated Eel River Watershed,** Scott Greacen, Friends of the Eel River

## **Cool Matters: Emerging Stream Temperature Science**

**Session Coordinator:** Eli Asarian, Riverbend Sciences

**Spatial and Temporal Patterns of Riparian Shade, Light, and Stream Temperature in Response to Riparian Thinning in Redwood Headwater Streams,** David Roon, Oregon State University

**Streams That Cool Down as Summer Heats Up: The Effects of Seasonal Changes in Riverine Canopy on Water Temperature,** Ann Willis, University of California, Davis, Center for Watershed Sciences

**Wildfire Smoke Reduces Summer River Water Temperatures, Potentially Benefiting Cold-Water Fishes,** Frank Lake, PhD, U.S. Forest Service Pacific Southwest Research Station

**Potential Effects of Climate Change on Thermally Suitable Habitat for Salmonids in the Salmon River, California,** Eli Asarian, Riverbend Sciences, and Jay Stallman, Stillwater Sciences

**Predicting Temporally and Spatially Continuous Estimates of Stream Temperature in Non-Monitored Years Using Simple Covariates,** Jared Siegel, South Fork Research, Inc.

**Freshwater Temperature Response to Five-year Drought in Two Trout-bearing Streams of Southern California,** Andre Sanchez, Resource Conservation District of the Santa Monica Mountains



*The Eel River is considered critical for the recovery of the Southern Oregon Northern California Coast Evolutionary Significant Unit (SONCC ESU).*

Photo by Jason Hartwick

## **Saturday Morning Concurrent Sessions**

### **Eel River Ecology, Restoration Challenges, and Opportunities**

**Session Coordinator:** Darren Mierau, North Coast Director, CalTrout

**The South Fork Eel River: Recovery Opportunities in one of the North Coast's Premier Stronghold Watersheds,** Darren Mierau, CalTrout

**The Eel River Delta: Opportunities and Challenges to Restoring Critical Fisheries Habitat on a Working Landscape,** Michael Bowen, California State Coastal Conservancy



*Rising water temperatures from climate change threaten salmonids.*

Photo: Thomas Dunklin

## Modeling Salmonid Habitat for Restoration

**Session Coordinator:** James Graham, PhD, Humboldt State University, Environmental Science and Management

**Integrating Hydraulic Modeling-Based Simulations of Salmonid Habitat Suitability with Geomorphic, Hydrologic, and Fisheries Data for Restoration Prioritization, Russian River Watershed, CA,** Jeremy Kobor, PG, O'Connor Environmental, Inc.,

**Increasing the Availability of Spawning Habitats through Building Base Flow Patterns as Found in Natural Flow Regimes,** Damon Goodman, U.S. Fish & Wildlife Service

**A Streamlined Monitoring Approach Quantifying Existing Habitat Conditions and Guiding Restoration,** Brian Cluer, PhD, NOAA Fisheries

**Modeling Stream Temperatures with the Inclusion of Irradiance Change Due to Forest Biomass Shifts,** Jonathan James Halama, PhD, ORISE Fellow with Environmental Protection Agency

**What's in a Number: Southern Steelhead Population Viability Criteria?** Mark Capelli, PhD, Steelhead Recovery Coordinator, Southwest Fisheries Center, NOAA Fisheries

**Flow, Form, and Function: Integrated Hydro-geomorphic Modeling Reveals Opportunities and Trade-offs for River Restoration,** Belize Lane, PhD, Utah State University



*DeSabra–Centerville, located on Butte Creek in the northern Sacramento Valley has a complex system of dams, canals, reservoirs, and power generation facilities. These hydro-electric projects that have been operated by PG&E for over 100 years are now for sale. Photo by Allen Harthorn, Friends of Butte Creek*

## Streamlined Permitting for Restoration Projects

**Session Coordinator:** Matt Clifford, JD, Trout Unlimited

**Trinity River Restoration—Does Streamlining the Regulatory Process Allow for More Effective Restoration?** Brandt Gutermuth, Bureau of Reclamation, Trinity River Restoration Program

**Dam Insights: Removal of Small Dams Via Programmatic Permitting,** Stacie Fejtek Smith, NOAA Restoration Center

**Water Rights Permitting for Streamflow Enhancement Projects in Coastal California—Existing Tools and the Need to Bring Them to Scale,** Matt Clifford, JD, Trout Unlimited

**Removing Barriers to Restoration. Are We Done Yet?,** Jonathan Warmerdam, Senior Environmental Scientist, North Coast Regional Water Quality Control Board

**Saving Taxpayer Dollars While Protecting Natural Resources: An Overview of the NOAA Restoration Center's Programmatic Biological Opinions and Coastal Commission Consistency Determinations in CA,** Bob Pagliuco, Marine Habitat Restoration Specialist, NOAA Fisheries

**Improving Restoration Permitting: A New Multi-agency Initiative to Advance Projects Statewide,** Erik Schmidt, Senior Conservation Strategist, Sustainable Conservation

## Saturday Afternoon Concurrent Sessions

### Adapting Aging Infrastructure to Sustain Listed Salmonids

**Session Coordinator:** Eric Ginney, Central Valley/Sierra/Cascade Director, ESA

**Changing Energy Markets, Changing Needs: Rethinking Hydropower Dams and Infrastructure,** Dave Steindorf, Special Projects Director, American Whitewater

**New Ownership of the DeSabra Hydropower Project: Stakeholders Creating Regulatory Process from Scratch,** Chris Shutes, FERC Projects Director and Water Rights Advocate, California Sportfishing Protection Alliance

**Butte Creek DeSabra–Centerville Hydroelectric Project: Decommission or Retool? Salmon Want to Know!,** Allen Harthorn, Executive Director, Friends of Butte Creek

**The Potter Valley Project: Fish Passage and Flow Opportunities,** Curtis Knight, Executive Director, CalTrout

**New Federal Interagency Guidance on Managing Infrastructure in the Riverine Environment,** Brian Cluer, PhD, Fluvial Geomorphologist, NOAA Fisheries

**Cultivating Ecological Solutions On Agricultural Lands,** Jacob Katz, PhD, Senior Scientist, CalTrout



*Restoring geomorphic processes in an alluvial fan setting. Photo by Audrey Squires*



*Alluvial fan in Freshwater Valley, North Coast Regional Land Trust. Photo by Thomas B. Dunklin*

**Alluvial Fans and Salmonid Habitat:  
The Forgotten and Challenging Landscape In-Between**

**Session Coordinators:** Michael Love, PE, Michael Love & Associates, Inc. and Jay Stallman, PG, Stillwater Sciences

**The Benefits of Restoring Alluvial Fan Processes after a Century of Neglect,** Michael Love, Michael Love & Associates, Inc.

**Alluvial Fan Construction in the Pacific Northwest,** Paul Powers, U.S. Forest Service

**Managing Fish Passage Across the Antelope Creek Alluvial Fan,** Jay Stallman, Stillwater Sciences

**Debris Basins in Southern Santa Barbara County; Their History and Exciting Future,** Seth Shank and Andrew Raaf, Santa Barbara County Flood Control and Water Conservation District

**Expect the Unexpected—Monitoring Geomorphic Changes and Evaluating Overall Effectiveness in Highly Dynamic Alluvial Fan Environments—The Hansen Creek Story,** Ian Mostrenko, Herrera Environmental Consultants

**Salmonid Habitat Use of the Goodell Alluvial Fan: Would Removal of Anthropogenic Features Increase Fish Numbers?;** Rick Hartson, Upper Skagit Indian Tribe

**Biological Responses:  
Fish Seeks River With Ample Flow and Bugs, Not Too Hot**

**Session Coordinator:** Eli Asarian, Riverbend Sciences

**An Observational, Comparative, Field-based Study of Thermal Tolerance in Juvenile Salmonids as a Function of Food Availability: Implications for Recovery and Restoration,** Joshua Strange, PhD, Sweet River Sciences

**Decreased Streamflow in a Mountain Stream Ecosystem Reduces Fish Energetic Efficiency and Alters Fish Behavior Through Reduction of Size and Abundance of Invertebrate Drift,** Timothy Caldwell, University of Nevada, Reno

**Primary and Secondary Production in Dammed and Undammed Reaches of the Eel River,** Lara Jansen, Environmental Science & Management, Humboldt State University

**Interannual Variability in the Timing of Sacramento Pikeminnow Migration in the South Fork Eel River,** Philip Georgakakos, University of California, Berkeley

**Thermal Refuge for Salmonids at Tributary Confluences in a Warming River Network,** Terrance Wang, University of California, Berkeley, Department of Environmental Science, Policy, and Management

**Panel Discussion**



*Juvenile Chinook salmonids in blue hole, a spring-fed alcove adjacent to both the Klamath River and Blue Creek tributary. Photo by Thomas B. Dunklin*

**SRF Banquet, Cabaret,  
and Awards Ceremony**



# Planning for Resilience

## Water Conservation and Flow Monitoring in Redwood Creek, South Fork Eel River

The South Fork of the Eel River is a crucial link for the survival and recovery of coho salmon in California. Coho are listed as a threatened species under the federal and California Endangered Species Acts, and the South Fork Eel River population is key to recovering the North Coast and Southern Oregon Evolutionary Significant Unit (ESU). Historically, the Eel River had supported the third largest salmon runs in the state and the South Fork of the Eel provided the ideal habitat conditions that made it home to the largest coho salmon runs in the entire 3,684 square mile watershed (*Yoshiyama & Moyle 2012*).

Today, the sub-watersheds of the basin suffer from the legacy impacts of industrial logging, extensive road networks, rural subdivisions, cannabis cultivation, and the cumulative impacts of unregulated water diversions. Creeks that once supported thriving salmon populations are now intermittent or completely dry by the end of summer. The South Fork Eel River is considered one of the highest priority watersheds in the state for flow enhancement projects.

In 2013, Salmonid Restoration Federation (SRF) began efforts to determine the feasibility of transferring Sanctuary Forest's Mattole headwaters Water Storage and Forbearance Program to a neighboring

watershed on the South Fork of the Eel River. Sanctuary Forest's innovative program—where one million gallons of winter storage was established along a one-mile stretch of the Mattole headwaters—resulted in enhanced streamflows within their project area. The idea is simple enough: store enough water in the winter when flows are plentiful to use during the summer and forbear from pumping water during the dry season.

### The Redwood Creek Water Conservation Project

Redwood Creek is a 26 square-mile watershed that flows into the South Fork of the Eel River near Redway, California. The Creek and its five tributaries have been identified by the California Department of Fish and Wildlife as important coho-bearing water courses, yet habitat degradation resulting from low summertime flows and high water temperatures pose a serious threat to the recovery of this endangered native salmon population. Additionally, these watersheds are home to rural residents that depend on healthy streamflows for their household and irrigation needs.

The Redwood Creek Water Conservation Project was designed to engage rural landowners and stakeholders in a coordinated, community-led water



*SRF's consulting hydrologist Randy Klein and Monitoring Coordinator, Bill Eastwood.*

Photo by Dana Stolzman

conservation effort. With the support of many partners, SRF has hosted several water conservation workshops and field tours in Humboldt over the past two years, as well as created and distributed educational materials about water rights, water conservation, and drought resilience throughout the region.

### A Place-based Collective Action Strategy

Collective efforts to transfer or scale-out voluntary water conservation strategies are more likely to be successful if local residents have an emotional and physical attachment to the watershed as their place, if the project is driven by the stakeholders and residents who stand to benefit from increased streamflows, and if the project stakeholders have sufficient



*2017 Drying sequence in Redwood Creek. Photos by Bill Eastwood*

access to ecological data (*Resilience in a Time of Drought*, Schremmer 2014).

The Redwood Creek Water Conservation Project is utilizing a place-based, collaborative streamflow enhancement strategy. The project puts a high value on local and inter-generational knowledge-sharing and participation, emphasizes the intrinsic value of non-human creatures indigenous to the watershed (particularly of native salmon), and is motivated by a desire to improve the landscape for the benefit and enjoyment of future generations. Under the right circumstances, place-based collaborative restoration can provide an effective framework for encouraging local citizens to become active participants and caretakers of the places that they call home.

### Low Flow Monitoring

SRF has been monitoring low flows at 11 sites in Redwood Creek for four consecutive years. Recent years have included data loggers so we have a record of continuous flow and manual spot measurements. During the extended drought, minimum flows at all of the monitoring sites were at less than one gallon per minute (GPM) by mid-September, which meant that any pumping activity could dewater pools that are critical for juvenile salmonids. This year, we conducted streamlined monitoring at nine sites and despite the wet spring, streams became disconnected and coho salmon were stranded in remaining pools.

### Next Steps for the Feasibility Study

SRF's monitoring was funded by the State Water Resources Control Board's 319h grant program that enabled SRF to expand our flow monitoring and community education efforts in the Redwood Creek watershed. SRF and Stillwater Sciences conducted a Feasibility Study with the support of the California Department of Fish and Wildlife. The study included a water usage analysis, conceptual designs for water conservation projects, and a target flow memo. Our project team has helped us to understand and translate what flow levels are required to keep pools connected,



Redwood Creek borders the Mattole watershed and flows into the South Fork of the Eel River. This watershed has hundreds of unregulated water diversions.

maintain juvenile salmon populations, and to maintain cool enough water temperatures for all life stages to survive within this critical habitat area.

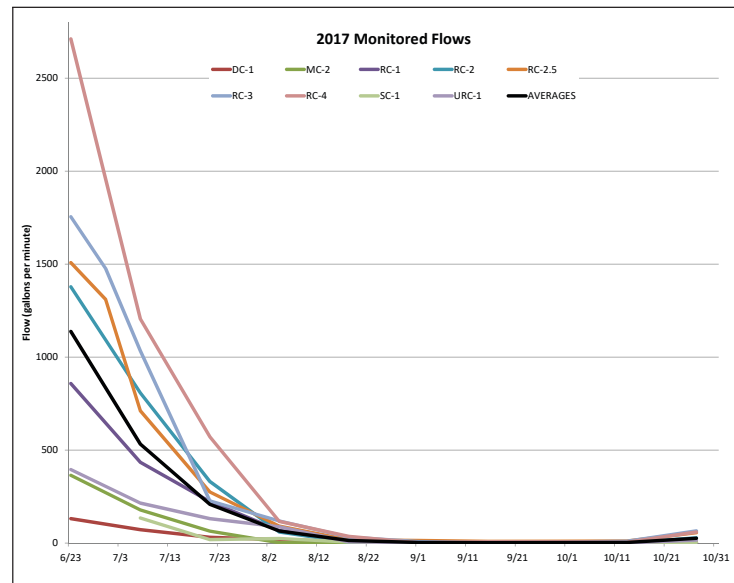
Additionally, SRF has submitted a proposal to CDFW and the Wildlife Conservation Board Proposition that would allow us to design a large groundwater recharge project

in the headwaters of Redwood Creek and plan a range of water conservation projects that could enhance instream flows in this important watershed.

SRF continues to work closely with Sanctuary Forest to learn how to build capacity for a forbearance program in the Redwood Creek watershed. We have followed the ground-truthed steps for building community support and the scientific foundation for a feasibility study: 1) conduct a water usage study; 2) community outreach and education; 3) low flow monitoring in all tributaries of Redwood Creek; 4) technical education; and 5) planning, assessment, and continued monitoring.

SRF is also developing a Collaborative Voluntary Watershed Model for the Navarro River that will create a framework for community-based water conservation efforts that can be adapted for coastal watersheds throughout the North Coast.

For more information:  
[www.calsalmon.org](http://www.calsalmon.org)



Bill Eastwood started monitoring 2017 summer flows throughout Redwood Creek on June 23<sup>rd</sup>. Although the 2017 season started with higher flows than previous years, the flows decreased steadily throughout the season. In mid-June 2016, the average flow was 583.5 gpm and mid-June 2017, the average flow was 1,137.6 gpm. During July, most flows were higher than the 2016 average (excluding Dinner Creek). Miller Creek stopped flowing mid-August, as did some upper mainstem Redwood Creek sites by mid-September. We measured a steady decline in flows for all our monitoring sites throughout August and September. By the end of October, Redwood Creek was separated into isolated pools and out of the nine sites we monitor, only three sites maintained flows over 1 gallon per minute. All of these 3 sites are located in the lower mainstem Redwood Creek. October rains increased flows at all sites except Miller Creek. The 2017 monitoring season concluded on November 10.

**Salmonid Restoration Federation**  
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[www.calsalmon.org](http://www.calsalmon.org)

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## 21<sup>st</sup> Annual Coho Confab August 24-26, 2018 Smith River, California

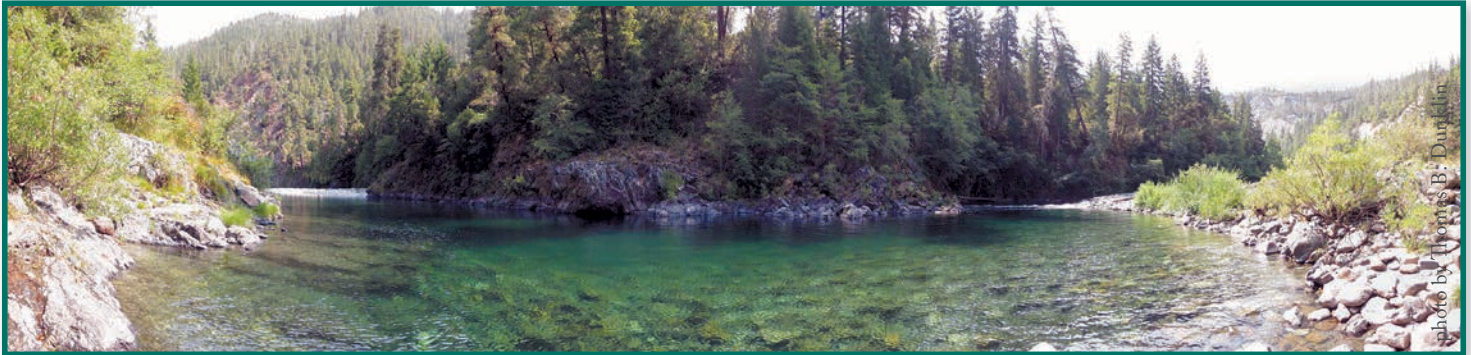


photo by Thomas B. Dunklin

SRF, with the support of California Department of Fish and Wildlife, will host the 21<sup>st</sup> Annual Coho Confab at the beautiful Rock Creek Ranch on the South Fork of the Smith River. The pristine Smith River is the largest undammed river in California and is located in the northwest corner of the state in the Siskiyou Mountains. Field tours will include tours of restoration forestry practices, Redwood National

Park projects, off-channel habitat, fish passage projects, and large woody debris installations. Participants will have the opportunity to tour stream crossing replacements that range from fish ladders to roughened channels, to stream simulation culverts and bridges. We will offer workshops on underwater fish identification, a river tour of beaver-constructed structures, and engineered log jams in Lower Klamath River tributaries.

### SRF Merchandise



Check out Salmonid Restoration Federation's merchandise page that features Ray Troll's new bestseller "Return of the Sockeye," classic tees like "Spawn Till you Die" and "Salmon Family Tree" in organic cotton. Purchasing merchandise through SRF is a great way to support the organization and look fabulous.

<http://salmonid-restoration-fed.myshopify.com/>

**For more information or to register for the conference, visit [www.calsalmon.org](http://www.calsalmon.org)**