

32nd Annual Salmonid Restoration Conference

March 19-22, 2014, Santa Barbara, CA

Recovery Strategies for Coastal Salmonids



2014 Conference Co-sponsors

Aspen Environmental Group, Balance Hydrologics, Inc., Cachuma Operation and Maintenance Board, California American Water, California Conservation Corps, California Department of Water Resources, Caltrans, CalTrout, Cardno Entrix, cbec, inc., City of Santa Barbara Creeks Division, Contech Engineered Solutions, ESA PWA, GHD, Greenheart Farms, ICF International, Marin Municipal Water District, Michael Love and Associates, Northern California Council Federation of Fly Fishers, Pacific Gas and Electric Company, Pacific States Marine Fisheries Commission, Pacific Watershed Associates, Patagonia, R2 Resource Consultants, Restoration Design Group, Rincon Consultants, Inc., San Lorenzo Valley Water District, Sierra Nevada Brewing, Solano County Water Agency, Sonoma County Water Agency, South Coast Habitat Restoration, Stantec, Stillwater Sciences, Stoecker Ecological, The Nature Conservancy, Trees Foundation, Trout Unlimited

For more information, please visit www.calsalmon.org

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Design & Layout by *Trees Foundation*

32nd Annual Salmonid Restoration Conference

March 19-22, 2014, Santa Barbara, CA

Recovery Strategies for Coastal Salmonids

In March of 2014, Salmonid Restoration Federation will produce the 32nd Annual Salmonid Restoration Conference in Santa Barbara, California. The theme of this year's conference is "Recovery Strategies for Coastal Salmonids" and the conference agenda highlights habitat restoration techniques, monitoring, methodologies, and practices to restore and recover salmonids. The conference agenda will also explore the theories, philosophies, and science informing the development of key recovery strategies for salmonids.



Conference field tours will visit Ventura River Parkway, urban creek and fish passage projects in Santa Barbara, projects on the Gaviota Coast and Santa Ynez River, and representative anadromous fish habitat restoration projects in the Santa Clara River watershed. Workshops will examine innovative and successful restoration practices including reopening blocked passage, innovative stormwater and water

conservation practices, steelhead and beaver interactions, and coastal monitoring.

This year's conference agenda will have a Southern Steelhead track that will feature southern steelhead life histories, habitat restoration techniques from estuaries to tributaries, and recovery strategies. Other topics will include: Monitoring Restoration Effectiveness through Fish Habitat Relationships, Landscape Ecology of Salmonids, Living With and Without Dams, California's Salmonid Restoration Economy, Urban Creek Restoration, and Historical Ecology of Salmonids.

The Plenary session will feature a presentation on the *Historical Context for Interpreting Early Accounts of Pacific Salmon in California's Coastal Watersheds* by Brian Spence of the Southwest Fisheries Science Center, of NOAA Fisheries. Renowned geologist, professor, and author Ed Keller, PhD, from UC Santa Barbara will discuss Southern Steelhead habitat requirements. Charlotte Ambrose, Central Coast Recovery Coordinator, NOAA Fisheries, West Coast Region will present on *Recovery Strategies for Coastal Salmonids* and George Pess of the Northwest Fisheries Science Center will present on *Adaptive Monitoring to a Large Scale Restoration Action*.

Other conference events will include the SRF Annual Meeting and membership dinner on Thursday evening with a special screening of the new film *Southern Steelhead: Against All Odds*, a poster session and reception on Friday night, and a cabaret and banquet with a wild Copper River salmon dinner and live dance band, Casey Neill and the Norway Rats, on Saturday evening. For more information about the conference, please visit www.calsalmon.org



Water Diversion Enforcement Spawns Community Action

The South Fork Eel River is a key watershed for the survival and recovery of endangered coho salmon in Northern California. This forested and populated watershed contains many tributaries that once supported thriving steelhead, coho, and Chinook salmon populations. In 2013, Humboldt County experienced the driest spring season on historic record. This drought coupled with unregulated and legal water diversions lead to perilous conditions for juvenile coho and steelhead.

Low flow conditions on the South Fork of the Eel threaten water quality and quantity for people and sensitive aquatic species. The low flow crisis galvanized a community response in southern Humboldt County. While attempts to coordinate voluntary water conservation efforts have made significant progress in the past year, the issue of water rights has presented a challenge for rural residents who are attempting to store water in large tanks during the wet winter season for use during the dry season (a water conservation method known as “storage and forbearance”).

The Primer on California Water Rights (Sawyers 2010) explains: “California has a unique system of surface water rights that combines a traditional riparian system with the appropriative system found elsewhere in the West. The result is a confused approach to water rights

that often leads to more questions than certainty.” State water rights law requires all people diverting surface waters (from springs, streams, and rivers), including diversion of water from subterranean streams flowing in known and definite channels, to file a basic statement that includes the following information related to the diversion: amount, location, method, and basis of water right. Additionally, if a resident is interested in conserving water through the storage and forbearance method, they are required by law to file for an appropriative right.

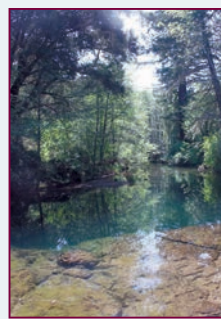
Established as a legal means for protecting our rivers as a shared resource and public trust value, water diversion permitting requirements have existed in California for many years, but have not been enforced in Humboldt County until recently. Prior to an enforcement sweep that began in the summer of 2013 in response to a fish kill on a tributary of the South Fork Eel, many landowners were not aware they had to report their water diversions and register their storage water rights to comply with state water law and avoid potentially onerous fines. According to Matt McCarthy, of the State Water Resources Control Board (SWRCB) Division of Water Rights, Southern Humboldt residents are not alone. Roughly 75% of all water diverters in California are in need of some form of action in order to come into compliance

with state water law.

Salmonid Restoration Federation has been working closely with Friends of the Eel River, the California Department of Fish & Wildlife (DFW) and the SWRCB to inform residents about their water rights and responsibilities, since this issue is perceived by many rural residents as a barrier to participating in water storage and forbearance. In the summer of 2013, approximately 170 people attended a historic forum at a community center in southern Humboldt, which brought together landowners and staff from state agencies in an effort to address some of the challenges and confusion associated with the water rights permitting process.

In addition to the Water Rights Education Forum, SRF also helped to develop an informational brochure with input from the DFW and the SWRCB. The *Know Your Water Rights* brochure outlines the step-by-step process required in order to come into compliance, and has been instrumental for residents in Humboldt County and elsewhere. The emphasis of SRF’s educational outreach efforts has been to demystify the water rights process for landowners. Filing for a water right and registering water diversions offers the dual benefits of increasing the water security of a property, while helping to quantify the amount of water being allocated for beneficial use in the watershed. This information is crucial to protecting instream flows sufficient to maintain our salmon and steelhead.

Know Your Water Rights



Water is a Shared Resource and Public Trust Value

If you're diverting water from a spring or stream, you need to be informed about your water rights and responsibilities.

The State Water Resources Control Board, Division of Water Rights has notified landowners that diverting water without complying with State water rights law could lead to enforcement action and fines of up to \$1,000 plus \$500 a day.

Compliance with State water law requires filing forms and acquiring permits when needed. The benefits are ensuring your homestead's water security and your land's value, while protecting our region's vital fisheries and wildlife.



170 people attended this historic Water Rights forum
photo: Sara Shremmer

SRF 2014 Conference Registration

Recovery Strategies for Coastal Salmonids

Name: _____ Phone (work): _____

Address: _____ (home): _____

_____ Email: _____

Affiliation: _____ Please check box if you are a presenter

Advanced Registration Closes February 18, 2014

Workshops & Field Tours

	Advanced Registration	Late Registration	Fee
☛ Wednesday, March 19			
1. Southern Santa Barbara Coastal Streams Tour: Fish Passage and Urban Stream Projects	\$60	\$70	_____
2. Southern California Steelhead Monitoring and Research Workshop	\$60	\$70	_____
3. Steelhead and Beaver Interactions Workshop and Field Tour	\$60	\$70	_____
4. Santa Clara River Watershed: Anadromous Fish Habitat Restoration Projects Tour	\$60	\$70	_____
☛ Thursday, March 20			
5. Innovative Stormwater and Water Conservation Measures, Strategies, and Programs Workshop	\$60	\$70	_____
6. Santa Ynez River and Gaviota Coast Fish Passage Tour	\$60	\$70	_____
7. Reopening Blocked Habitat: Taking a Watershed-Scale View to Fish Passage Workshop	\$60	\$70	_____
8. Ventura River Parkway Field Tour	\$60	\$70	_____
<i>Thursday Evening SRF Membership Meeting and Dinner</i>	\$20	\$25	_____

Conference

☛ Friday & Saturday, March 21 & 22

SRF Member	\$140	\$170	_____
Non-member	\$190	\$220	_____
Student (with ID)	\$90	\$100	_____
Saturday Evening Banquet	\$40	\$50	_____

SRF Membership

Individual Membership:

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

Payment Total _____

Method of Payment: Check Money Order Purchase Order

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

VISA MasterCard Credit Card# _____ Exp. Date _____

Mail form and payment to: SRF Conference, PO Box 784, Redway, California 95560 (Make checks payable to: SRF)

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

Please Note: We do not give refunds • Receipts are emailed, so print legibly • This form is available at www.calsalmon.org

Workshops & Tours

Wednesday, March 19

Southern Santa Barbara Coastal Streams Tour: Fish Passage on Agricultural and Urban Streams

Tour Coordinators: Mauricio Gomez, South Coast Habitat Restoration, and George Johnson, City of Santa Barbara

The Southern Santa Barbara Coastal Streams field tour will stop at several streams where agencies and non-profit organizations have improved habitat for Southern steelhead trout. We will visit modified debris basins, a low water crossing removal/bridge installation, and modified concrete trapezoidal channels. The field tour will provide participants with an opportunity to learn about the challenges of implementing projects on private agricultural and public lands.



George Johnson, City of SB, will tour SB fish passage projects photo: Dana Stolzman

Southern California Steelhead Monitoring and Research

Workshop Coordinator: Dana McCanne, California Department of Fish and Wildlife

The Southern California Steelhead Monitoring and Research Workshop is designed to give attendees an overview of the California Coastal Salmonid Monitor Program (CMP), a statewide program focused on implementation for the Southern California Steelhead Distinct Population Segment. The workshop will feature current monitoring projects that predate CMP implementation on the South Coast, current CMP efforts including the utilization of DIDSON technology, and future CMP plans. Research needs for the CMP will be presented as well as the genetics of Southern California steelhead. There will be a presentation on GIS tools that the CMP utilizes to model fish distribution, develop sampling frames, and project support. Finally, the database that all CMP projects use will be introduced, including how to get data in and out of the database as well as the open-source tools that will be made available to do many of the analyses projects required.

The California Coastal Salmonid Monitoring Plan (CMP), Kevin Shaffer, California Department of Fish and Wildlife, Fisheries Branch

Passive Monitoring Techniques for Steelhead Migration, in the Santa Clara River, Ventura County, California, Steve Howard, United Water Conservation District

Five Years and Counting of Lifecycle Monitoring of Oncorhynchus mykiss in Topanga Creek, California, Rosi Dagit, Resource Conservation District of the Santa Monica Mountains

Snorkel Surveys as a Method of Monitoring Oncorhynchus Mykiss in Small Southern California Coastal Streams, Jenna M. Krug, Resource Conservation District of the Santa Monica Mountains

Ventura River Basin Steelhead Monitoring, Evaluations, and Research, Scott Lewis, Casitas Municipal Water District

History of Steelhead Monitoring on the Lower Santa Ynez River from 1994 to the Present, Scott Engblom, Cachuma Operation and Maintenance Board

Building a Southern California Steelhead Monitoring Program, Mary Larson, California Department of Fish and Wildlife, South Coast Region

Methods Used in the Southern California Steelhead Monitoring and Research, Dana McCanne, California Department of Fish and Wildlife, South Coast Region

DIDSON in Southern California Streams: Challenges and Potential Solutions, Heidi Block, Pacific States Marine Fisheries Commission

The Coastal Monitoring Plan Aquatic Survey Program, Doug Burch, California Department of Fish and Wildlife, Northern Region

Influence of Adaptive Genetic Variation on Life-History in Steelhead/Rainbow Trout, Devon Pearse, PhD, National Marine Fisheries Service, Southwest Fisheries Science Center

We Have Much More to Learn About the Basis for Anadromy in Southern Steelhead, David Boughton, PhD, National Marine Fisheries Service, Southwest Fisheries Science Center



Steelhead and Beaver Interactions Workshop and Tour to Santa Ynez River Projects

Workshop Coordinator: Tim Robinson, PhD, Cachuma Operation and Maintenance Board (COMB)

This workshop will provide a half-day of presentations on the current state of southern steelhead (*Oncorhynchus mykiss*) and beaver (*Castor canadensis*) within the Southern California Steelhead Distinct Population Segment (DPS). The focus of the presentations will be on the interaction and cohabitation of the two species using examples from within and outside of the DPS. The workshop will bring together beaver experts and fisheries biologists in the spirit of collaboration to shed light on this subject that is not well understood in Southern California. The afternoon will be dedicated to touring the Santa Ynez River to visit multiple sites where steelhead and beavers are present.

Evidence that the North American Beaver was Native to California's Coastal Watersheds, Rick Lanman, MD, Institute for Historical Ecology

The Current Distribution of Beavers in California: Implications for Salmonids, Eli Asarian, Riverbend Sciences

The Effect of Beavers on an Urban Stream, Qualitative Observations from Six Years of Citizen Science, Heidi Perryman, PhD, President & Founder, Worth A Dam

Effects of Beaver Dams on Steelhead Populations, a Review of the Science, Michael Pollock, PhD, Northwest Fisheries Science Center, NOAA Fisheries

Co-habitation of Steelhead and Beaver within the Lower Santa Ynez River, Tim Robinson, PhD, Cachuma Operation and Maintenance Board

Policy Opportunities for Working with Beaver in Salmonid Recovery, Kate Lundquist, Occidental Arts and Ecology Center WATER Institute

The Role Of Beaver in Shaping Steelhead Habitat Heterogeneity and Thermal Refugia in a Central Oregon Stream, Florence N. Consolati, Department of Watershed Sciences, Utah State University



*Beaver dam surveying on the Lower Santa Ynez River in January 2012.
photo: Tim Robinson*

Santa Clara River Watershed: Anadromous Fish Habitat Restoration Projects

Field Tour Coordinator: Jared Varonin, Aspen Environmental Group

The Santa Clara River and tributary system covers about 1634 square miles. Major tributaries include Castaic Creek and San Francisquito Creek in Los Angeles County, and Sespe, Piru, and Santa Paula Creeks in Ventura County. This tour will visit sites that include projects that are potential or current migration barriers for steelhead and Pacific lamprey and discuss the options for removal or modification to increase the available habitat for these species. Ultimately this tour will show the current challenges anadromous fish face attempting to migrate through the watershed including the current work being done to restore access to spawning tributaries and to increase available suitable habitat for all life stages of anadromous fish.



Freeman Diversion, Santa Clara River photo: Steve Howard

Thursday, March 20

Innovative Stormwater and Water Conservation Measures, Strategies, and Programs to Benefit Salmonids Workshop

Workshop Coordinators: Rosi Dagit, RCD of the Santa Monica Mountains, Freddy Otte, City of San Luis Obispo, and Regina Hirsch, Sierra Watershed Progressive

This workshop will explore innovative approaches to stormwater management and water conservation. Presentations will cover topics including how to read a stormwater management plan, harvesting rainwater for stormwater catchment, plumbing for LID measures, and Stormwater LID Capture Project Profile. In the afternoon, case studies will be provided that demonstrate on-the-ground strategies and programs that can help keep water in the streams and rivers for fish including a dynamic presentation by Brock Dolman focused on "basins of relations," and the "slow it, spread it, sink it" methodology. Presentations will be followed by a brainstorming session on what kinds of programs work, the need for adaptability, and tangible ways to move forward to achieve water sustainability.



Ocean friendly garden in Venice, CA photo: Steven Williams

Reading a Stormwater Plan: How to Know What Co-efficients Affect Your Watershed, Mark Adams and Nick Weigel, NorthStar Engineering

Harvesting Rainwater for Stormwater Capture at Cal Poly San Luis Obispo, Meredith Hardy, California Conservation Corps

CCC Stormwater Capture Project Profile: Lowering Stormwater Hydrograph Through Low Impact Development (LID) Treatments, Regina Hirsch, Sierra Watershed Progressive

Folding Salmonid Restoration into a Regulatory Program, Freddy Otte, City of San Luis Obispo

Reconnecting Coastal Streams: An Overview of Cooperative Streamflow Programs and Options in California, Mary Ann King, Trout Unlimited

Conservation Hydrology Pondering & Implementation, Brock Dolman, OAEC WATER Institute

A Practitioner's Guide to Instream Transactions in California: Instream Flow Enhancement Approaches and Lessons Learned From Members of the Small Watershed Instream Flow Transfer (SWIFT) Working Group, Chris Alford, American Rivers, and Amy Hoss, The Nature Conservancy

Ocean Friendly Gardens are Salmon-Friendly Gardens! How Surfrider Foundation's Ocean Friendly Garden Project Benefits Salmonids, Steven Williams, Conservation Biologist, Resource Conservation District of the Santa Monica Mountains

Santa Ynez River and Gaviota Coast Fish Passage Tour

Tour Leaders: Tim Robinson, PhD, Fisheries Biologist, COMB and Mike Garello, Fish Passage Engineer, HDR

This all-day tour of the tributaries of the Santa Ynez River and creeks of the Gaviota Coast will visit multiple fish passage projects with a wide variety of implemented designs. Discussion at each site will focus on the design and permit process, landowner relationships, construction, and fish passage performance. Completed projects that we will visit include bridge installations, several types of fish ladders, step-pools with rock weirs, bank slope protection, and creek watering systems at Hilton Creek, Quiota Creek, Salspuedes Creek, El Jaro Creek, and Arroyo Hondo Creek. Weather and time permitting, lunch will be at the coastal lagoon of the Santa Ynez River.

Reopening Blocked Habitat: Taking a Watershed-Scale View to Fish Passage Workshop

Workshop Coordinator: Michael Love, Michael Love & Associates

The workshop will focus on restoring fish access to habitat using a holistic approach. Topics to be discussed include passage design flows and resulting fish migration delay within different regions of California, natural low-flow barriers and triggers to generating migrational behavior, continuity of passage corridors, watershed prioritization of barriers using the passage assessment database, projects that have restored fish access as part of a watershed-wide effort, and monitoring passage effectiveness.

Steelhead Passage Versus Migration Streamflows, Bill Trush, PhD, Humboldt State University, River Institute

Spawner Risk Assessment Model to Evaluate Instream Flows for Spawning Success, Gabriel Rossi, McBain & Trush

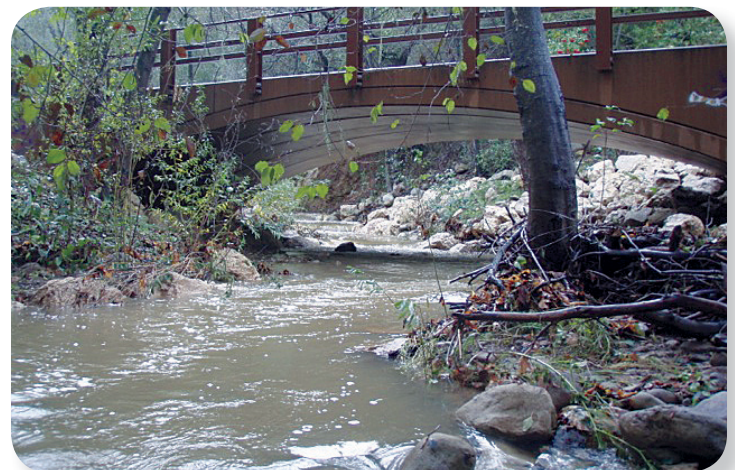
Fish Passage Design Flows: Resulting Passage Windows and High-Flow Delay in Coastal California, Margaret Lang, Humboldt State University, and Michael Love, Michael Love & Associates

Tools for Stream Habitat Connectivity Restoration: the Passage Assessment Database and Other Datasets Available on the CalFish Website, Anne Elston, Pacific States Marine Fisheries Commission

The Anadromous Fish Passage Optimization Tool: Using Optimization to Strategically Manage Fish Barrier Remediation in California, Donald Ratcliff, US Fish and Wildlife Service

Potential for Fish Passage Barrier Remediation as Compensatory Mitigation, Jason Q. White, ESA PWA
Hydraulic and Geomorphic Monitoring of a Constructed Roughened Channel to Evaluate Temporal Variation in Fish Passage Ability, Brian Wardman, Northwest Hydraulic, Inc.

Construction and Monitoring of the CalTrans Santa Paula Creek Rock Weir Fishway, Stan Glowacki, GPA Consulting



Upstream view of Quiota Creek stream crossing photo: Tim Robinson

City of Goleta: San Jose Creek Flood Control and Fish Passage Project, Steve Wagner, City of Goleta and Brian Trautwein, Environmental Defense Center

It Takes a Watershed to Restore a Steelhead—Chronicles of Mission Creek, Santa Barbara, George Johnson, Creeks Division, City of Santa Barbara

Carpinteria Creek Steelhead Recovery—Upstream Passage Nearly Complete!, Erin Brown, Project Manager, South Coast Habitat Restoration

Ventura River Parkway Tour

Tour Coordinator: Paul Jenkin, Surfrider Foundation

The Ventura River Parkway connects parkland and open space over 16 miles of the Ventura River, connecting the community with the river upon which it depends for water supply, recreation, and a unique quality of life. This tour highlights ongoing community-based acquisition and restoration. The tour begins at the mouth of

the Ventura River where the recently constructed Surfers' Point Managed Shoreline Retreat project provides a precedent-setting example of coastal restoration adjacent to the estuary.

Just upstream, a recent acquisition by the Ventura Hillside Conservancy has been a catalyst for a major cleanup and restoration effort in the lower river. Further upstream, the Ojai Valley Land Conservancy has acquired over five miles of the main stem of the river along with two tributary watersheds. And 16 miles upstream, the obsolete Matilija Dam remains in place pending removal through a planning process that continues after almost two decades.



Paul Jenkin from Surfrider Foundation will lead the Ventura River Parkway Tour
photo: Joelle Geppert

2014 Conference Logistics & Events

Conference Location

Santa Barbara Veteran's Memorial Center at 112 W Cabrillo Blvd. Santa Barbara, CA 93101



Conference Events

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 will be at 5:15pm on Thursday followed by a networking social. You can buy advance tickets for dinner or buy tickets when you arrive.

The membership dinner includes free beer and a showing of the new film *Southern California Steelhead: Against All Odds*.

2014 Conference Poster Session

If you are interested in presenting at the 2014 Salmonid Restoration Conference Poster Session, scheduled for Friday evening, March 21, please contact poster@calsalmon.org

Space is limited and on a first-come, first-requested basis. Please indicate if you need wall space or an electrical outlet. Request to

present at the poster session should be made by January 20. Tables are provided but please bring your own display board.

SRF Call for Awards Nominations for 2014 Conference

SRF presents awards for outstanding achievements in the Salmonid Restoration Field. If you would like to nominate someone for the Restorationist of the Year award, the Lifetime Achievement award or the Golden Pipe award, please submit 200 words describing the accomplishments of the nominee by January 8, 2014 to srf@calsalmon.org

SRF Conference Host Hotels

SRF has set up group blocks at several hotels that are walking distance to the Santa Barbara Veteran's Hall.

Hotel Oceana (www.hotelocneasantabarbara.com) is a beautiful boutique on the ocean and right next door to the SB Vet's Hall. Rooms are \$159 on weekdays, \$219 on Friday, and \$289 on Saturday for double rooms or King rooms. This hotel has courtyard gardens, two pools, a Jacuzzi, and a fitness center. The hotel includes a continental breakfast and parking is \$18 a day. To book a reservation under the SRF Conference block, please call (805) 966-2880 by February 18, 2014.

Franciscan Inn (www.franciscaninn.com) is located at 109 Bath Street, Santa Barbara, CA 93101 and has King rooms for \$80 on the weekday, and \$139 on the weekends, Junior Suites, and Doubles for \$85 on the weekdays

and \$139 on the weekend, and 10 Standard Suites for \$95 on the weekdays and \$139 on the weekend. This inn is 2 blocks from the conference facility. To make a reservation, please call (805) 963-8845 by February 18, 2014 to get the group block rate. This hotel includes a continental breakfast, free wifi, and parking. The group block is under Salmonid Restoration Federation.

Eagle Inn (<http://eagleinnsantabarbara.com>) is located at 232 Natoma Avenue, Santa Barbara, CA 93101. This hotel has beautifully furnished rooms, a hot breakfast, free parking, free use of bicycles, and a fitness center. There are only 15 rooms in this group block that are \$148 on weekdays and weekends. To make a reservation, please call (805) 965-3586. This group block will expire on February 4, 2014.

Banquet, Cabaret, and Dance!

The banquet includes a wild Copper River salmon dinner, local wine and beer, an awards ceremony, fun-filled Cabaret, and the incredible band Casey Neill and the Norway Rats. The banquet will most likely sell out, so please buy your tickets in advance.



Santa Ynez River Steelhead: *An Angling History*

Mark H. Capelli, South-Central/
Southern CA Steelhead Recovery
Coordinator, NOAA Fisheries

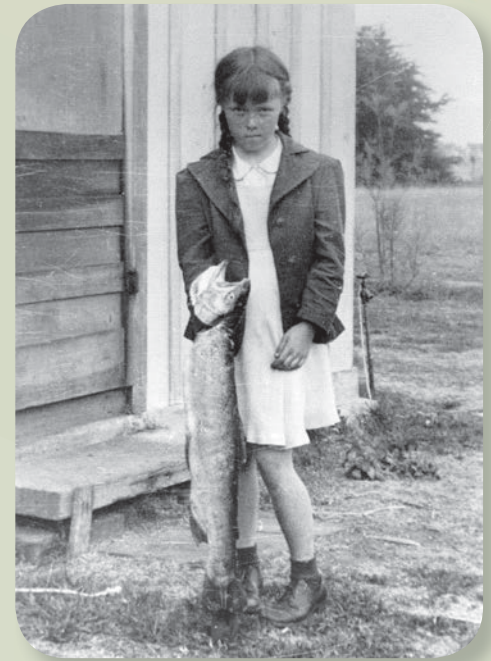
An investigation of the historical distribution and abundance of anadromous steelhead and associated freshwater rainbow trout in the Santa Ynez River watershed of northern Santa Barbara and western Ventura counties, California, prior to the completion of Bradbury Dam in 1953, records the rise and fall of an extensive steelhead fishery.

Steelhead and rainbow trout once occurred throughout the Santa Ynez River watershed, which periodically supported one of the largest steelhead runs in central and Southern California. Limited archaeological evidence suggests the seasonal steelhead runs were only opportunistically exploited by native Chumash peoples, consistent with an observed trend in the increasing use of salmonids by native peoples from southern to northern latitudes on the Pacific Coast. Evidence from the Mission and Rancho Eras (1769-1849) provided little additional information on the status or exploitation of steelhead or rainbow trout by early Europeans in California. The first explicit historical

records of steelhead and rainbow trout in the Santa Ynez River come from the Early American Era (1849-1880). The extensive exploitation of Santa Ynez River steelhead by European and Eastern North American immigrants began during the Progressive Era (1880-1920), concurrently with the management and scientific study of California's freshwater anadromous fishes.

The significant decline in habitat conditions within the watershed, and corresponding decline of the steelhead runs, occurred during the Era of Big Water Projects (1926-1953). The size of the Santa Ynez River's steelhead runs varied dramatically due to climatic and hydrologic cycles. However, the river still supported an important recreational steelhead fishery until the early 1950s, when the population collapsed following the construction of Bradbury Dam. Few steelhead spawn in the Santa Ynez today, but the river remains a crucial focus for the recovery of southern California steelhead, which since 1997 have been listed as endangered under the U.S. Endangered Species Act.

Historical investigations of anadromous fisheries can provide insights into the restoration and management of



Historic Santa Ynez River photo of Dan Smith's daughter with Santa Ynez River steelhead, 1943

fisheries which have been substantially impacted by anthropogenic changes over historical and pre-historical time-frames, and assist in distinguishing the natural range of environmental variation from more recent and rapid changes due to human activities.

Ventura River Parkway Field Tour

Paul Jenkin, Ventura Campaign
Coordinator, Surfrider Foundation

The Ventura River Parkway provides a means of reconnecting a community with their watershed. The region is impacted by conflicts over water supply, flood damages, loss of habitat, beach erosion, and degraded surface and coastal water quality. Increased attention on the watershed and emerging planning processes may provide significant opportunities for integrated ecosystem-based management (EBM) solutions. Community-based watershed restoration projects at varying scales provide opportunities for ongoing outreach and education. This presentation outlines ongoing efforts to implement a vision



for integrated watershed management by linking a holistic set of demonstration projects including the Surfers' Point Managed Shoreline Retreat, Matilija Dam Ecosystem Restoration, and provides the context for the other

projects in this conference session and field trip. Current efforts to enhance the Ventura River Parkway provide a common thread that links these efforts through recreational trails and interpretive experiences.



*Derek Poultney leading a tour of the Ventura River estuary, 2012.
photo: Ventura Hillside Conservancy*

Conference Sessions

Friday, March 21

Plenary Session

Master of Ceremonies: Thomas Williams, PhD, Southwest Fisheries Science Center, NOAA Fisheries

Recovery Strategies for Coastal Salmonids, Charlotte Ambrose, Central Coast Recovery Coordinator, NOAA Fisheries, West Coast Region

Drought and California's Climate of Extremes, Frances Malamud-Roam, PhD, co-author of *The West Without Water*, and Senior Environmental Planner at Caltrans

Southern Steelhead Habitat: It's All About Water and Boulders, Ed Keller, PhD, UC Santa Barbara

Adaptive Monitoring to a Large Scale Restoration Action, George Pess, PhD, Northwest Fisheries Science Center, NOAA Fisheries



This photo illustrates how habitat has changed with the influx of sediment. Prior to dam removal, the Middle Elwha between the two dams was devoid of wood and gravel. Today we see large-scale accumulations of both wood and gravel, with only some occurrence of boulders. photo: John McMillan

Friday Afternoon Concurrent Sessions

Fish-Habitat Relationships and the Effectiveness of Habitat Restoration

Session Coordinator: Bob Pagliuoco, NOAA Fisheries

Fish-Habitat Relationships and the Effectiveness of Habitat Restoration, George Pess, PhD, Northwest Fisheries Science Center, NOAA Fisheries

Dry Season Southern Steelhead Pool Habitat Monitoring on the Lower Santa Ynez River, Santa Barbara County, Tim Robinson, PhD, COMB

Monitoring the Response of Steelhead and Physical Habitat in a Dryland Stream That Is Being Restored Using Beaver, Michael M. Pollock, PhD, Northwest Fisheries Science Center, NOAA Fisheries

Monitoring of a Dam Removal Project in a Coastal Mendocino County Watershed, Ross Taylor, Ross Taylor and Associates

Juvenile Coho Salmon Growth and Behavior: A Comparison Between Natural and Constructed Habitats in the Mid-Klamath Watershed, Shari Witmore, NOAA Fisheries

Effectiveness Monitoring and Adaptive Management for Santa Felicia Dam FERC project on Piru Creek, Ventura County, California, Mike Booth, United Water



An example of life history diversity. John McMillan (NOAA contractor) documented the first summer steelhead above the former Elwha dam in Little River, historically a tributary used by steelhead.

Landscape Ecology of Pacific Salmonids

Session Coordinator: Thomas Williams, PhD, Southwest Fisheries Science Center, NOAA Fisheries

A Lifecycle Perspective of Climate Impacts on West Coast Salmonids, Nate Mantua, Southwest Fisheries Science Center, NOAA Fisheries

Parallel Evolution of the Summer Steelhead Ecotype in Multiple Populations of *Oncorhynchus Mykiss* in Oregon and Northern California, Martha Arciniega-Hernandez, Institute of Marine Sciences, University of California Santa Cruz

Seascape Genetic Analysis of Chinook Salmon in the California Current Reveals Distinct Marine Distributions Among Stocks, Carlos Garza, PhD, Southwest Fisheries Science Center, NOAA Fisheries

Quantifying the Role of Woody Debris in Providing Bioenergetically Favorable Habitat for Juvenile Salmon, Lee Harrison, Southwest Fisheries Science Center, NOAA Fisheries

Are Low Summer Flows Limiting Survival of Salmonids at the Stream and Watershed Scales in the Russian River Watershed, California?, Amelia Johnson, California Sea Grant

Combining Stable Isotope Analysis With Telemetry To Identify Trade-Offs Between Thermal And Trophic Resources For Fish In Thermal Refugia, Kim Brewitt, University of California Santa Cruz

Steelhead Life Histories

Session Coordinator: Jacob Katz, CalTrout

“Drought, Fire, Landslides, and El Niño—Oh My”: *Steelhead Life Histories in Southern California’s Dynamic Landscape*, Jacob Katz, CalTrout

Comparing the Demographics of Two Steelhead Populations and Their Habitat Characteristics, Eileen Baglivio, Department of Natural Resources, Cornell University

Life History Characteristics of Southern Steelhead in the Lower Santa Ynez River Watershed Revealed by Scale Reading, Sarah Horwath, Cardno Entrix

A Perfect Match for Self-Renewal: Steelhead and the Santa Ynez River Ecosystem, William J. Trush, PhD, Humboldt State University, River Institute, Dept. of Environmental Science and Management

Spawning Characteristics of Sympatric Steelhead and Resident Rainbow Trout in Southern California, Anthony Spina, NOAA Fisheries, West Coast Region

Relative Contribution of Anadromous and Resident Adults in an Endangered Southern California Steelhead Population, Rick Bush, NOAA Fisheries, West Coast Region

Saturday, March 22

Saturday Morning Concurrent Sessions

Southern California Steelhead Recovery Planning and Science

Session Coordinators: Bruce Orr and Ethan Bell, Stillwater Sciences

South-Central California Steelhead Recovery Plan, Mark Capelli, PhD, NOAA Fisheries

The City of Santa Cruz Draft Habitat Conservation Plan and Central Coast Steelhead Recovery—Moving Toward Balance, Chris Berry, City of Santa Cruz Water Department

Floodplain Rehabilitation as a Hedge against Hydroclimatic Uncertainty: a Case Study of a Steelhead Migration Corridor, David Boughton and Andrew Pike, NOAA Fisheries

Instream Flows for Anadromous Fish Passage on the Intermittent and Partly Regulated Santa Maria River, Coastal Southern California, Derek Booth, PhD, Bren School of Environmental Science and Management, UC Santa Barbara

Regional Assessment of Instream Flows Needs for Steelhead (Oncorhynchus mykiss) in San Luis Obispo County, Ethan Bell, Stillwater Sciences

Developing a Monitoring Program that Will Include Measuring Success of Restoration Actions in Promoting Steelhead Recovery, Dana McCanne, California Department of Fish and Wildlife

Overcoming “It’s Just An Urban Stream”: Case Studies In Urban Stream and River Restoration

Session Coordinator: Ann L. Riley, PhD, Watershed and Stream Protection Advisor, San Francisco Bay Regional Water Quality Control Board

2014 Conference Agenda Packet



The future we all envision for Matilija dam.
photo: Rich Reid Photography

Overcoming Concrete Channels and Restoring Fish Passage Through Mission Creek, Santa Barbara, George Johnson, Creeks Supervisor, City of Santa Barbara

Is Soil Bioengineering Within an Urban Stream Setting—Mission Impossible?, Mike Vukman, Restoration Scientist, Stantec Consultants

Steelhead Restoration Through Daylighting, Drew Goetting, Principal, Restoration Design Group

Beaver Impact on City Stream Habitat: Martinez, California, Heidi Perryman, PhD, President & Founder, Worth A Dam

Benefits and Risks of Using Large Woody Material in Urban Streams, Jeff Peters and Kevin MacKay, ICF International

Dams: Learning to Live With and Without Them

Session Coordinator: Shawn Chartrand, Balance Hydrologics, Inc.

Systematic Framework for Improving Environmental Flows Below Dams in California System, Ted Grantham, UC Davis, and Curtis Knight, CalTrout

The Roles of Geology, Geography, and Climate in Planning Dam Removal, Brian Cluer, PhD, NOAA Fisheries, West Coast Region

Removal of San Clemente Dam—Project Summary & Unique Challenges, Rob Maclean, President, California American Water Company, Jonas Minton, Water Project Advisor, Planning and Conservation League

Carmel River Reroute and San Clemente Dam Removal Project, Seth Gentzler, P.E., Vice President, URS Corp.

Matilija Dam: Taking Another Look, Paul Jenkin, Surfrider Foundation, Ventura Campaign Coordinator

Branciforte Dam Removal Project, Chris Hammersmark, cbec, inc. eco engineering

Lillingston Creek Debris Dam Removal: Steelhead Removal Off the Beaten Path, Seth Shank and Andrew Raaf, Santa Barbara County Flood Control District

Saturday Afternoon Concurrent Sessions

California's Powerful Salmon Restoration Economy—Collaborating to Provide the Influence Necessary to Focus Restoration and Turn Recovery Into Reality

Session Coordinator: Lisa Hulette, The Nature Conservancy

Coho Salmon Restoration—the Creation of a Restoration Economy on the North Coast, Lisa Hulette, The Nature Conservancy

Optimizing the Coho Salmon Potential Supplementation Landscape, Jeanette Howard, PhD, The Nature Conservancy

California Salmon Strongholds: Institutionalizing a 'Protect the Best' Strategy, Curtis Knight, CalTrout

A Biologist's Cost-Benefit Analysis for Salmon Habitat Enhancement, Gregory Andrew, Marin Municipal Water District

Moving Beyond a Salmon Restoration Economy—Time to Imbed Preventative Financial Incentives in Everyday Land Use Decisions and Economies, Sungnome Madrone, Mattole Salmon Group

The California Trout Directed Southern California Steelhead Coalitions—Integrating Efforts, Funding, Capacity, and Resources to Leverage Efforts for Southern California Steelhead Recovery, Candice Meneghin, CalTrout



Scott Creek lagoon
photo: David Revell

Southern and Central California Steelhead Habitat Rehabilitation from Tributaries to Estuaries

Session Coordinators: Peter Brand, California Coastal Conservancy, Scott Dusterhoff, San Francisco Estuary Institute, and Bruce Orr, Stillwater Sciences

Assessing Limiting Factors from Tributaries to the Estuary for the Steelhead (*Oncorhynchus mykiss*) Population in the Big Sur River, Ethan Bell, Stillwater Sciences

Balancing Habitat Needs for Rearing and Migratory Steelhead with other Beneficial Water Uses in the Santa Clara River Estuary, Noah Hume, PE, PhD, Stillwater Sciences

Scott Creek: The Restoration of a Critical Coastal Lagoon for Steelhead and Coho Recovery, David Revell, PhD, ESA PWA

Habitat Improvement Plan for Lower Piru Creek; Proposed Gravel Augmentation and Water Release Measures, Linda Purpus, United Water Conservation District

Habitat Capacity, Limiting Factors, and Effective Restoration Strategies for Steelhead in the Pescadero Creek Watershed, Joshua Strange, PhD, Stillwater Sciences

Using Imagery and Mapping to Detect Riparian Landscape Changes in Southern California, Brittany Struck, NOAA Fisheries, West Coast Region

Historical Ecology of Salmonids

Session Coordinator: Dougald Scott, PhD, Northern California Council of the Federation of Fly Fishers

Santa Ynez River Steelhead: An Angling History, Mark H. Capelli, PhD, NOAA Fisheries

The Status of California Salmon Habitat Based on a GIS Analysis, Charleen Gavette, and Brian Cluer, PhD, NOAA Fisheries, and Robin Grossinger, San Francisco Estuary Institute

Historical Ecology of Salmonids in the Klamath River Basin: Perspectives on the Role of Traditional Ecological Management by Indigenous Tribes and Lessons for Modern Times, Joshua Strange, PhD, Stillwater Sciences

Salmon as a Contemporary and Historical Critical Fish for California Indian Tribes, Fraser M. Shilling, PhD, Department of Environmental Science and Policy, University of California, Davis

Historical Ecology of California Lagoons—Implications for Salmonid Restoration on the Changing California Coast, David K. Jacobs, PhD, Department of Ecology & Evolutionary Biology, UCLA

On the Margins: In Search of Historic Evidence of the Southern California Steelhead South of the Ventura River, Tom Tomlinson, PhD., Gould School of Law, USC



Historic Santa Ynez River Steelhead
photo, 1937
photo: Chet Cobb

South-Central California Coast Steelhead

Recovery Plan: *Conifers to Chaparral*



Little Sur River in the south-central DPS

Mark H. Capelli, South-Central/Southern California Steelhead Recovery Coordinator, National Marine Fisheries Service

The National Marine Fisheries Services (NMFS) listed in 1997 two distinct sub-populations (DPS) of steelhead (*Oncorhynchus mykiss*) within the southern half of coastal California at the southern extent of their range in North America: a threatened sub-population along the south-central coast and an endangered sub-population along the south coast; the range of the southern sub-population was extended to the U.S. Mexico border in 2002.

NMFS Technical Recovery Team (TRT) for southern steelhead divided the Southern-Central DPSs into four Biogeographic Population Groups (BPGs) characterized by a distinguishing suite of physical, climatic, and hydrologic features, reflecting the diversity of streams and watersheds within the BPG. These watersheds fall into two



Steelhead in San Carpoforo Creek. photos: Mark Capelli

basic types: Coastal watersheds draining directly westward into the ocean and inland watersheds separated from the coast by extensive mountainous areas. The coastal watersheds tend to be small, numerous, and are strongly influenced by a marine climate. The inland watersheds are relatively few, large, and have a continental climate. The vegetative cover in both types of watersheds is dominated by chaparral/oak grassland woodland, with notable stands of conifers in the northern most inland watershed (Pajaro River), and long the Big Sur Coast.

Recovery of the South-Central California steelhead DPSs will require the restoration of a minimum number of viable populations within each of the four Biogeographic Regions. The



San Carpoforo steelhead

core watersheds identified in this biological strategy are geographically dispersed across the recovery planning area (extending from Monterey Bay to San Luis Obispo Bay) to preserve the existing diversity of life-history forms (ranging from anadromous to resident) and their evolutionary trajectories. Additionally this biological strategy is indented to minimize the likelihood of extirpation of individual populations within each Biogeographic Region by natural perturbations (ranging from periodic drought and wildfires to longer range climatic changes), and preserve the potential natural dispersal of fishes between watersheds. To determine the



Classic chaparral steelhead habitat in the San Carpoforo Creek watershed

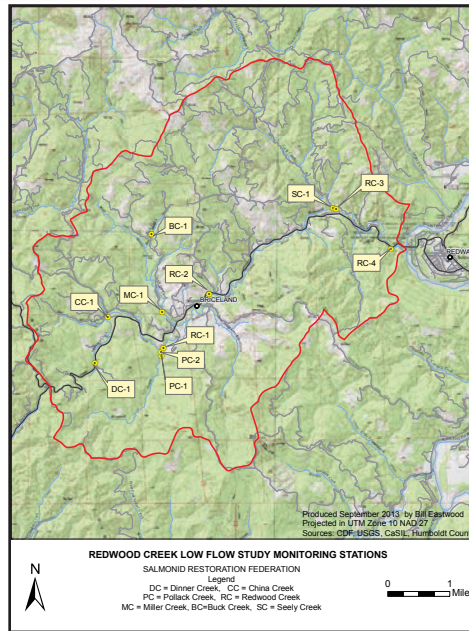
level of redundancy and distance between populations within the Biogeographic Regions, the expected geographic extent of a thousand-year wildfire was estimated based on wildfire data from 1910 through 2003. The analysis indicated that at least one viable population, plus the maximum number of wildfires expected for that BPG or whichever was less, was needed to ensure the long term resiliency of the suite of populations in each BPG, and the DPS as a whole. The recommended minimum distance between individual viable populations was estimated at 68km (42 m).

The South-Central California Coast Steelhead Recovery Plan also identifies a series of recovery actions intended to address the threats currently facing the species, as well as future threats posed by climate changes, and related habitat transformations. Additionally, a long-term research and monitoring program is proposed to address a number of key issues (such as the relationship between anadromous and resident forms), and refine the population and DPS-wide viability criteria developed by the TRT. Recovery will require re-integrating the listed steelhead populations back into habitats in a manner which allows the co-occupancy of watersheds populated with approximately 2.8 million people.

Redwood Creek, South Fork Eel River Monitoring Study

Salmonid Restoration Federation (SRF) has been conducting a low-flow study in five tributaries of Redwood Creek that flows into the South Fork Eel River. Redwood Creek is a 26 square mile watershed that had historically supported strong runs of coho, Chinook, and steelhead. Juveniles of these species are routinely found throughout the watershed in spring and early summer, with coho and steelhead rearing in the watershed until migrating to the ocean the following spring. The best spawning reaches are found in Dinner, China, and Miller Creeks, as well as Redwood Creek and Upper Redwood Creek.

Coho salmon are listed as threatened species under the Endangered Species Act, and the South Fork Eel River population is key to recovering the North Coast and Southern Oregon Evolutionary Significant Unit (ESU). The Eel River had historically supported the third largest salmon runs in the state, and the South Fork of the Eel supported the largest coho salmon runs in the entire watershed due to ideal habitat conditions



in the forested upper reaches (Yoshiyama and Moyle, *Historical Review of Eel River Anadromous Salmonids*, UC Davis). The South Fork Eel River suffers from the legacy impacts of industrial timber harvesting, extensive road networks, rural sub-divisions, the cumulative effects of water diversions, and changes in climate, all of which contribute to poor habitat conditions for salmonids.

This year, the Eel River basin experienced one of the driest spring seasons in historic record. Instream flows were significantly less in the Eel River than they were in the summer of 1976—the worst drought in our region’s history—due largely to changes in the forest landscape, hydrology, increased residential development, and water diversions for both legal and illegal activities. The “Green Rush” and water demands have increased dramatically in recent years and creeks that once supported salmon populations are now intermittent or sucked dry at the end of summer.

Gathering baseline flow data and increasing instream flows are key recovery actions for endangered coho salmon. SRF undertook a low flow study this summer in the hopes of understanding what

the instream flows actually are during the driest months and how they were affecting remnant fish populations. This is an important initial step in our Redwood Creek Water Conservation effort where we are exploring the feasibility of transferring Sanctuary Forest’s Mattole headwaters successful water conservation and forbearance program to Redwood Creek. In the Sanctuary Forest model, one million gallons of storage was installed amongst 16 landowners in a one-mile reach. California Department of Fish and Wildlife monitoring revealed a 40% increase in flows that has remained consistent even during this low flow crisis year.

SRF has been engaged in extensive community outreach efforts in an effort to build momentum around the Redwood Creek Water Conservation Project and to provide avenues for participation for local stakeholders. Approximately 70 residents and landowners participated in anonymous surveys that were designed to gather baseline data and obtain a clear understanding of human use patterns in the watershed. The surveys contained questions related to water usage, withdrawal rates, and on-site storage capacity. From the data, we found that there is a significant relationship between how often respondents talk about the health of the creek and how interested they are in protective measures and restoration efforts. Additionally, the data indicated that restoring habitat for salmon is a significant motivating factor in a respondent’s willingness to voluntarily conserve water. The surveys were followed up by two public house meetings and a free water conservation workshop, with presentations by local restoration practitioners and an emphasis on water conservation solutions for rural homesteads.

Thus far, our findings indicate that a water conservation program in Redwood Creek would most likely be fundamentally different from the program that was



Geologist Bill Eastwood, Redwood Creek stream monitor, and Sara Schremmer, SRF, at a monitoring site where the summer flow trickles through a culvert designed for massive storm events. photo: Dana Stolzman

Exploring the Effects of Drought and Historic Low Flows on Coho Salmon



A fish monitor surveying for fish at the Whitmore Grove monitoring sites. photo: Dana Stolzman

established in the Mattole due to current availability of grant funding, differences in basic geology and hydrology of the watershed, and varying human water use practices. The initial phases of the Redwood Creek feasibility study indicate that local residents are genuinely interested in participating in voluntary water conservation efforts. SRF is exploring several options that would benefit landowners and help improve flows including a low-interest loan fund for purchasing water storage, voluntary forbearance in the summer months to ensure adequate flows in the tributaries, and working with Humboldt County Supervisors to remove economic barriers to participation. Incentivizing water storage and community engagement are essential to the success of this Redwood Creek water conservation effort.

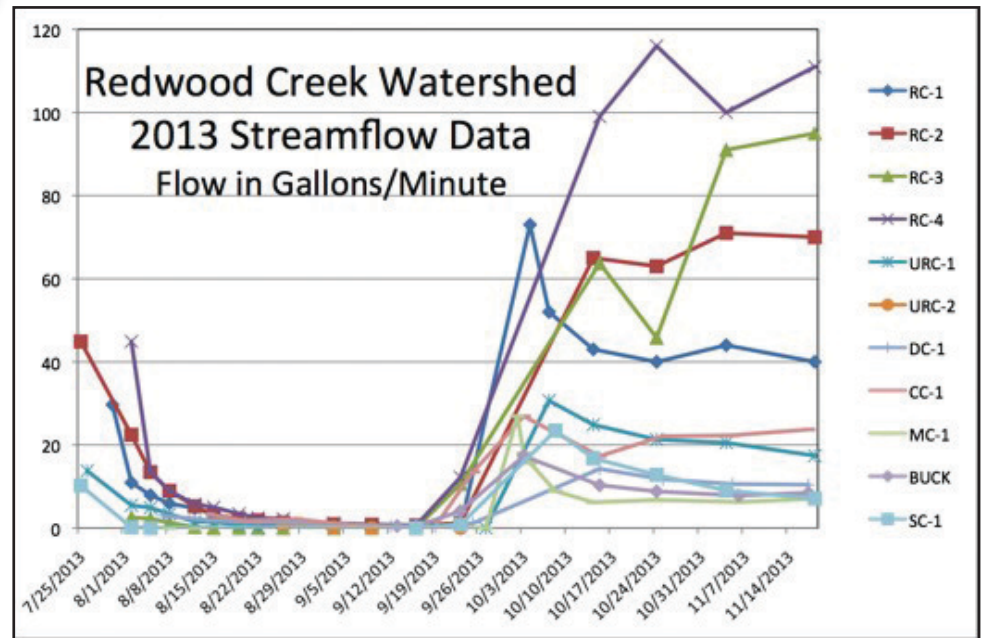
It is vital to understand flows, water usage, and the impacts of diversions in order to develop water conservation strategies that could ensure adequate water for people and fish. In this Mediterranean climate, we have dry conditions at the time of the year when there is the most demand for water and

when aquatic species are most vulnerable to poor conditions. Habitat loss coupled with lack of adequate flows can cause the extirpation of the species.

The Redwood Creek flow study began in July, when some of the monitoring sites were running at 44 gallons per minute (GPM). Six weeks later, most of the monitoring sites were flowing at less than one GPM. For rural landowners, this meant that pumping at a conservative rate of one gallon per minute (GPM) could result in the instant dewatering of a creek that contains fish habitat. Fortunately, because only a few GPM are required to maintain pool connectivity, coordinated

water conservation efforts by landowners is likely to have a tangible impact on maintaining streamflow for salmonids.

At most of the monitoring sites, trained monitors observed stranded coho salmon and juvenile steelhead that were isolated in pools. These pools were visibly decreasing each week where smaller pool volume equates to higher temperatures that are lethal for coho salmon. The initial rains greatly increased flows and helped with connectivity, yet many juvenile salmonids did not survive this low flow season. Protecting quality rearing habitat is essential for the continued viability of this population.



by Bill Eastwood

The graph above shows the flows in the various monitoring sites. Between early August and the middle of September most of the streams in the Redwood Creek watershed became intermittent. Most pools were either much lower or completely dry.

It's been fascinating to monitor the response of the dry to almost dry streams after one inch of rain on September 20-21 and three inches of rain September 28-29. It seems clear that the ground water recharge situation in various parts of the watershed is highly variable.

After the September 20-21 storm most streams increased flow only slightly or not at all. However, in marked contrast with most streams, China Creek below the monitoring site (CC-1) began flowing vigorously enough to fill all the pools and reestablish connectivity. Pollack Creek about ¼ mile above the URC-1 monitoring site also began flowing enough to fill pools and reestablish connectivity. Downstream at the URC-1 monitoring site there was still no flow.

The larger September 28-29 storm reestablished connectivity in all the streams in the watershed. The increase in pool volume was incredible. Unfortunately there were also some reaches that had dried up completely where there were no surviving fish to enjoy the newly filled pools. Interestingly, the flows after this storm maintained their flows very well, even though it didn't rain again for more than six weeks. Some of the streams actually increased flow during this period. Besides decreasing water usage by plants and people, some of the increased flow or slowed decrease in flow comes from slow moving ground water from the storms finally reaching streams.

Salmonid Restoration Federation

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SRF News

South Coast Fish Passage Field School

January 14-16, 2014, Ventura, CA

This intensive workshop will assist engineers hydrologists, biologists, environmental planners, and other staff who are involved in the design and implementation of fish passage projects. The workshop focuses on the design and implementation process, biological considerations, site surveys and geomorphic assessment, state and federal fish passage design protocols, grade control techniques, retrofitting existing crossings, contracting, implementation, monitoring, and adaptation.

North Coast Water Conservation Workshop

February 1, 2014, Briceland, CA

SRF and Sanctuary Forest will host a water conservation workshop to share water conservation techniques for rural residents in the



Salmonid Restoration Federation has just launched a new merchandise page that features Ray Troll's new bestseller "Return of the Sockeye" and some classic tees like *Spawn Till you Die* and *Ain't No Nookie Like Chinookie*. Purchasing merchandise through SRF is a great way to support the organization and look fabulous. <http://salmonid-restoration-federation.myshopify.com>

Mattole and Eel river watersheds. This workshop will explore the feasibility of transferring the Mattole headwaters water storage and forbearance program to Redwood Creek, a tributary of the South Fork Eel river watershed. The workshop will also explore how the county and state could develop landowner incentives to encourage water conservation and improve instream flows.

Steelhead Summit

Southern California, June 2014



This inaugural steelhead summit will include tours and presentations focused on habitat restoration projects that benefit steelhead trout, including fish passage barrier removal projects, bioengineering, erosion control, water conservation, and riparian planting.

17th Annual Coho Confab

August 2014, on the North Coast, California

SRF, in cooperation with the CA Department of Fish and Wildlife, Trees Foundation, and other non-profits and fisheries agencies will explore coho recovery strategies and techniques. The Confab will feature tours of fish passage projects, water conservation efforts, stream bank stabilization, and large woody debris projects.