

Salmonid Restoration Federation

Summer 2010

5th Annual Spring-run Chinook Symposium Chico, CA July 22-23

The Salmonid Restoration Federation is hosting the 5th Annual Spring-run Chinook symposium July 22-23 in Chico, California. This is a truly collaborative educational event with diverse symposium partners including Friends of Butte Creek, Pacific Gas & Electric, Department of Water Resources, and Big Chico Creek Watershed Alliance.

SRF is pleased to offer this opportunity for local landowners, restorationists, fisheries biologists and agency staff to participate in the Chinook Symposium which includes field tours and presentations on problems and solutions specific to Spring-run Chinook. The Spring-run Chinook Symposium offers restoration practitioners training and networking opportunities on issues affecting California's threatened Spring-run Chinook populations. Thursday tours will include a tour of Upper Butte Creek salmonid habitat; hydroelectric influences and the Butte Creek Ecological Preserve; a tour of the Lower Feather River including Oroville Dam Visitor's Center and Department of Water Resources Projects; and a Big Chico Creek tour of salmonid restoration projects. Thursday evening SRF will host a dinner social with symposium keynote speaker Lisa Thompson from UC Davis and UC Cooperative Extension who will give a presentation, "Wilderness First Aid: Stabilizing Spring-run Chinook Populations While We Work Toward Recovery."

Friday Tours will include a Lower Butte Creek tour of the Western Canal, and some of the weirs that are being retrofitted by the Department of Water Resources. Chris Mosser, a graduate student from UC Davis, will give a presentation regarding Monitoring of Rescued Salmon in Lower Butte Creek. There will also be a tour of Deer Creek and Mill Creek Restoration Projects with Holly Savage of the Deer



Deer Creek habitat restoration projects include floodplain restoration and flow enhancement.

photo courtesy of Deer Creek Watershed Conservancy archives

Creek Watershed Conservancy and a representative of The Nature Conservancy. The tour will begin at the Abbey of New Clairvaux and will include a brief overview of the Deer Creek Watershed Conservancy's goals for salmonids in Deer Creek. During the tour we will visit sites proposed for improvements in the Deer Creek Flood Corridor Protection Project.

This project will increase floodway width through setback levees and conservation easements to improve flood protection and ecosystem function. Increasing the floodway width in this reach would provide a number of ecological benefits, including increased area for channel migration, ability for natural sediment transport and deposition that improves channel complexity without damaging infrastructure, and increased area for riparian vegetation growth while maintaining flood conveyance; greater channel complexity and gravel size diversity via reduced water velocities and shear stress in the reach; and more confined low-flow channel to improve adult salmonid fish passage and juvenile rearing habitat.

We will also visit areas in the creek where fish passage has been an issue and discuss the Deer Creek Flow Enhancement Program (DCFEP) where local irrigators provide bypass flows for fish during low flow conditions. The DCFEP is designed to fulfill the water needs of local agriculture and domestic water users while achieving the fisheries flow objectives in Deer Creek and the groundwater protection requirements set forth by the Tehama County AB 3030 Groundwater Management Plan.

For more information about this exciting event please check out the Salmonid Restoration website at www.calsalmon.org or call (707) 923-7501.



Butte Creek contains prime habitat for Spring-run Chinook salmon populations.

photo by Allen Harthorn

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As Sea Levels Rise...

by Don Allan

The implications of climate change on sea level rise, melting snow packs, changes in run-off regimes, and instream flows and temperatures translate into huge implications on the viability of cold water fish and the distribution of warm water fish. Climate change also has indirect effects that have huge potential impacts on fisheries and water availability for instream flows. In a state approaching 40 million people, and with a large irrigated agricultural land base, the demand on water resources will only intensify. We are already hearing talk of raising dams, and building new dams and a peripheral canal. We are looking at an increasing demand on a shrinking resource.

Sea level rise is now something that projects in coastal areas, such as estuary enhancement, must consider under CEQA (California Environmental Quality Act) when submitting a coastal development permit. Current predictions for sea level rise are 12-18 inches by 2050 and 21-55 inches by 2100¹. Estuary enhancement projects often need to balance current land uses, usually beef and dairy production, with restoration of natural processes and habitats. This is done by a partial re-introduction of the tide cycle, usually relying on levees and tide gates with regulator doors that control the volume and level of tide water. One has to wonder if the cost of saving diked-former tide lands is worth the investment, or if those lands should be allowed to be reclaimed by the rising sea level, especially if the land is being used as pasture or other lands with relatively low economic output.

As sea levels rise, there is also potential for change in the legal ownership of newly inundated lands. A report by the State Lands Commission² discusses how sea level rise will affect regulatory jurisdictions. The report states that sea level rise will have an impact on California's sovereign lands and shoreline boundaries. Sovereign lands or Public Trust lands include tide and submerged lands. Public Trust lands may only be used for public purposes. The report states that coastal boundaries and the State's sovereign ownership should continue to move with changes in sea level—lands that in many cases are now privately owned or may be owned by the federal government.

As sea levels rise and the shore line pushes further inland, the shallow benches that support salt and brackish marshes will be under deeper water and will no longer support the vegetation that they do today, with implications for the fish and wildlife that those marshes support. The landward edge of brackish marsh will start encountering obstacles to its spread as cities, counties, and the state build barriers to protect infrastructure and the area available for brackish and salt marsh will shrink.

Understanding what climate change will do to instream flows, fisheries habitat, coastal habitats, and our water supplies is crucial for understanding the effects on fisheries and wildlife and for planning habitat enhancement projects. In a future newsletter we will look deeper into the effects of sea level rise and the regulatory statutes in coastal areas.



Restoration projects and recovery and monitoring efforts in watersheds like the Mattole River are impacted by climate change and the re-prioritization of the Fisheries Restoration Grant Program.

photo courtesy Mattole Salmon Group archives

¹ CA Natural Resources Agency, 2009. 2009 California Climate Adaptation Strategy, a report to the governor of the state of California in response to Executive Order S-13-2008; <http://www.energy.ca.gov/2009publications/CNRA-1000-2009-027/CNRA-1000-2009-027-F.PDF>

² A Report on Sea Level Rise Preparedness, December 2009; http://slc.ca.gov/Reports/SEA_LEVEL_Report.pdf
Salmonid Restoration Federation

13th Annual Coho Confab in Western Sonoma County August 13-15, 2010

The Coho Confab is a symposium to explore watershed restoration, learn restoration techniques to recover coho salmon populations, and to network with other fish-centric people. The 13th Annual Coho Confab will be held in Western Sonoma County in the Russian River watershed. Salmonid Restoration Federation and Trees Foundation are the permanent co-hosts of this educational event and this year the Confab is also sponsored by the California Department of Fish & Game, Westminster Woods, and Occidental Arts & Ecology Center. The Confab allows for participants and instructors to learn from each other's experience. Participants learn skills and practices that can be applied to restore habitat in their home watershed.

Restoration pioneer Richard Gienger coined the term "Confab" from the verb "confabulate" which literally means to informally chat or to fabricate to compensate for gaps in one's memory. This is not to imply that restorationists are prone to hyperbole when recounting the size of a rescued fish, the magnitude of the waterfall coming out of the culvert, or the heroics of a particular restoration job. Orientation presentations include a talk with Liza Prunuske of Prunuske Chatham entitled, *Making a Living: Economics and Ecological Restoration*. Bob Coey from NOAA Fisheries will discuss *Linking Pathways to Core Recovery Targets and Programs on the Sonoma/Marin Coast* and Brock Dolman from Occidental Arts and Ecology Center will give a talk about *Basins of Relations*.

This year's Confab will feature Friday afternoon tours of the Russian River Broodstock Program followed by a tour of Dry Creek

Vineyards that have employed sustainable vineyard practices that benefit fish as well as a bioengineering tour in Guerneville where participants will see various bioengineering techniques including live willow siltation baffles, live willow brush mattresses, live willow deep cluster planting, live woven willow walls, live willow brushlayers with coir wrapped soil lifts, live willow brushlayers with boulder and gravel lifts, vegetated boulder wing deflectors, roughened channels to replace culverts and several fish habitat structures.

Saturday morning tours include a Gold Ridge RCD Tour of Dam Removal and Landowner Tools for Protecting Salmon and will visit the Dutch Bill Creek Fish Barrier Elimination Project, which includes both the Camp Meeker dam removal and Market Street culvert fish passage projects, and will highlight several examples of stream habitat enhancement projects through the placement of large woody debris structures. Brock Dolman will lead a tour of Rainwater Catchment and Water Conservation Practices at OAEC, and Nick Bauer of UC Cooperative Extension will lead an Underwater Fish Identification workshop.

The Saturday afternoon sessions will include a tour of Salmon Creek: Save our Salmon, Water Conservation and Instream Habitat Projects led by John Green of Gold Ridge RCD, and Lauren Hammack of Prunuske Chatham. There will be a workshop on Aquatic Invertebrate Identification and Standard Techniques to Monitor Restoration Efforts with invertebrate taxonomist Dr. John Sandberg and Jim Harrington of the DFG Aquatic Bioassessment Laboratory. There will also be an Austin Creek: Headwaters to



Top: Dutch Bill watershed has conducted multiple watershed restoration projects including upslope and instream structures.
Bottom: A fish passage crossing sign in the Dutch Bill watershed

photos by David Berman

Mouth tour highlighting installed and planned structures designed to increase fish habitat and the effects of road development on aquatic habitat. After the tours there will be an open forum focused on Coho Salmon Restoration and DFG's Fisheries Restoration Grant Program Changes and Opportunities with Kevin Shaffer and Gail Seymour of the California Department of Fish and Game. There will also be a BBQ, Cabaret, and Campfire and Concert with Joanne Rand.

Sunday morning workshops include Slow it, Spread it, Sink it: Slowing Down Upslope Erosion in the Headwaters of Dutch Bill Creek with Brock Dolman as well as another opportunity to attend both the underwater fish identification and the macro-invertebrate sampling workshop.

The cost to attend the Confab is \$125 if you register by August 1 and \$150 afterwards. The cost includes shared cabins or camping as well as all meals and workshops. There are also ten one-day scholarships available for Dutch Bill Creek watershed residents. Scholarship applicants should submit a paragraph to the Gold Ridge RCD on why they would like a scholarship and how they will use the information to benefit the watershed community. Please submit to Gold Ridge RCD, attention Sierra Cantor by July 23; by email to sierra@goldridgercd.org or by mail to P.O. Box 1064, Occidental, CA 95465.

To register for the Confab or to view the agenda, please visit www.treesfoundation.org or www.calsalmon.org



Spring-Run Chinook Indicate Salmon Health

by Allen Harthorn

Spring-run Chinook salmon in the Central Valley are dwindling fast. After a tremendous resurgence in numbers due to increased flows, dam removals, and improved screens and ladders, the runs have taken a dive. Spring run, for the most part, are the last remnants of wild salmon populations in the Central Valley. Spring run were once the dominant run due to the unique life history they have adapted to, returning as adults on spring snow melt, holding in high elevation summer habitat, and spawning in the early fall. This pattern affords many benefits which other runs do not have. *Yoshiyama, et. al, 1996*, suggests that the spring run numbered in the hundreds of thousands on the San Joaquin River alone, before the settlers and gold seekers arrived. Perhaps as many as a million spring run returned to the entire Sacramento-San Joaquin system.

Today, the habitat for the spring run is all but gone, blocked by massive dams. Several remnant populations return to the reaches below several of these dams, most notably the Yuba and Feather River populations. The Feather

River population is supplemented by the Department of Fish and Game hatchery and has likely been hybridized by management practices. Efforts are underway to isolate spring run to reestablish a pure spring run population. Yuba River spring run are genetically unique, however, Feather River salmon have been known to show up in the Yuba and there may be some interbreeding.

With the very few runs of wild salmon returning, primarily in Butte, Deer, and Mill Creeks, overall salmon health and vitality is seriously compromised. Large numbers of fall-run hatchery fish compete with wild fish in the ocean and probably reduce overall food availability. On the flip side, for the ocean predators, such as orcas and others, the fall run are a tasty treat and may lower predation of the wild fish. The timing of the out migration of juvenile salmon is likely a critical factor in their survival. Exiting on the high spring flows, when the water is not all being diverted into the State and Federal pumps, wild spring run have the best chance of getting to suitable food sources in the ocean before summer conditions change the currents and food availability.

Hatchery fall run are released from trucks, with Highway 5 as their migration corridor, into San Pablo Bay, around the beginning of May. The timing is not based on the most optimal timing for the fish but on what works best for the hatcheries. If the fall run, released en masse, can't find food right away, they are unlikely to survive. Wild fish, migrating in small groups, and entering the ocean early seem to have a better chance of finding the important ocean food sources on their own. Hatchery fish, on the other hand, have one chance to find food. If the timing is off, success will be low.

Increased instream flows helped the Butte Creek population rebound yet recent fish kills have caused the population to steadily decline.



The Butte Creek Spring-run Chinook population is a likely choice to repopulate the San Joaquin River.

photos by Allen Harthorn

This brings us to the point of this article, wild spring run are an indicator of overall salmon health in the Sacramento-San Joaquin system. The success of hatchery fall run is as much based on luck as anything. Wild fish are the hardy survivors fishery biologists dream of. Wild spring run numbers have been fairly stable over the last 10 years or so, due in large part to the healthy Butte Creek runs. However the poor return of 2,561 fish in 2009, led many observers to question the predicted increased fall run returns for 2009. Agencies predicted 120,000 fish and only 40,000 returned. It seems that if the wild fish are not returning, the hatchery fish likely will not do any better. Opening fishing seasons with the predictions made by the agencies is playing roulette with what's left of our salmon. Using an early season in-stream escapement estimate of wild spring run may be a much better indicator of what's to come. So far, in 2010, the Butte Creek numbers do not look good. Flow conditions couldn't be better and poaching in the lower creek reaches will be seriously limited as a result. That means more fish will make it back. Let's keep our fingers crossed that the run rebounds this year and the weaker hatchery cousins have success as well. If not, perhaps we need to rethink how we determine if and when a fishing season is approved.

Join us for the 5th Annual Spring-Run Chinook Symposium in Chico July 22-23. Tours will feature Butte, Mill, Deer and Big Chico Creeks and the Feather River. Thursday evening will be a dinner and presentations on Spring-run Chinook research. Don't miss this opportunity to "Learn About the Wild."

Salmonid Restoration Federation



Hundreds of Fisheries Restorationists and Scientists Migrate to Attend the Historic Joint SRF and Cal-Neva AFS Conference



Participants in the Trinity River tour saw several large-scale floodplain restoration projects.
photo by Don Allan

In March, Salmonid Restoration Federation and the California-Nevada American Fisheries Society chapter hosted an historic joint 28th Annual Salmonid Restoration Conference and the 44th Annual Cal-Neva AFS Conference in Redding, California. This was a truly collaborative effort that engaged both the habitat restoration community and fisheries scientists. More than 650 people attended the conference from all over the Pacific Northwest. The theme of the conference was Fisheries Restoration and Science in a Changing Climate since the conference addressed the challenge of recovery and restoration efforts in the face of global climate change, water shortages, and California's evolving political landscape. In this era of climate change, a state budget crisis that has paralyzed the restoration field, and diminishing salmon returns, it is more important than ever for fisheries scientists and

restorationists to gather together to share resources, techniques, strategies and methodologies to restore habitat and recover wild salmon populations.

SRF and AFS created a dynamic conference agenda that addressed pressing issues that affect salmonid recovery and fisheries throughout the Pacific Northwest. The first two days of the conference included symposia, full-day workshops, continuing education classes, and field tours.

This year the conference featured workshops on topics including Water Quality and TMDLs, Floodplain Restoration, a Fisheries Engineering and Stream Restoration Symposium, Stormwater Pollution Workshop, and CE classes on acoustic tag training, and River 2 D technology.

Field Tours visited restoration projects in Clear Creek, Battle Creek, the Upper Trinity River, the Shasta River,

the Upper Sacramento River, and a Redding urban streams tour including Sulphur Creek, Salt Creek, and gravel augmentation projects. Redding was an exciting place to host the conference since it is close by to so many large-scale restoration projects and inspiring collaborative efforts.

Tribal leader Caleen Sisk-Franco of the Wimmenu Wintu tribe gave an opening ceremonial prayer and an impassioned call to bring back the native Mokelumne wild salmon that are now extinct but whose genetic stock was introduced in the Maori ancestral homelands in New Zealand. Her opening blessing



Tribal spiritual leader Caleen Sisk-Franco of the Wimmenu Wintu tribe opened the plenary session.

photo by Dana Stolzman

and plea provided a global context to the plenary session. Plenary keynote presenters included David Montgomery, author of *King of Fish: the Thousand Year Run of Salmon* and *Dirt: the Erosion of Civilization*, who spoke about the demise of civilizations based on agricultural practices that depleted soils, denuded upslope areas, and brought sediment to rivers thus impacting fisheries.

Next year's SRF conference will be in San Luis Obispo, CA March 23-26, 2011. For more information about other SRF educational opportunities, please visit www.calsalmon.org



The Joint SRF and AFS Poster Session had over 70 presenters and was attended by nearly 700 people.

photo by Allen Harthorn

Summer 2010

ACCW Reaches Out to the Fisheries Restoration Grant Program

The Association of Conservation Contractors and Workers (ACCW) is a broad association of California conservation organizations, several members of which are involved in anadromous fisheries restoration and participate in the Fisheries Restoration Grant Program (FRGP). Here is an excerpt from the letter that the ACCW wrote to the FRGP expressing concerns with some of the changes to the Program's requirements and limitations revealed in the 2010 Proposal Solicitation Notice.

This summary highlights the main concerns the ACCW has with the new guidelines and specific ideas for potential improvements to make the FRGP as effective as possible.

Absence of communication with and feedback from regular FRGP participants in developing the new guidelines. The 2010 PSN included sweeping changes and gave very little time for restoration organizations to understand, let alone adapt to the new requirements and priorities. We urge greater collaboration with the organizations that have contracted with DFG for many years, and grown up with the FRGP. These contractors should be in a partnership relationship with the FRGP, which was established largely to serve citizen-run and locally-specific initiatives. Soliciting and incorporating feedback from restoration contractors in designing the parameters of the program is essential to ensuring that FRGP funds are put to most effective use.

Geographic limitation to documented coho and southern steelhead tributaries. We agree that these species are most severely threatened at this time, and projects focused on their current distribution are important. However, we are concerned that by directing resources there to the exclusion of all other waterways (those containing Chinook but not coho for example), we risk missed opportunities to keep other species from becoming imperiled. The focus areas designated with endangered coho and steelhead populations is based on prior status reviews, and does not necessarily reflect current populations status.

Geographic limitation of monitoring projects. We are concerned that important watersheds have been excluded from consideration for monitoring funding. The process by which watersheds were designated eligible for monitoring support has not been transparent, and nonsensically excludes key watersheds with longstanding existing datasets. We feel it is premature to limit the watersheds eligible for monitoring funds while we are still awaiting guidance from the State in the form of the Coastal Monitoring Plan and the Federal recovery plans for North Coast ESUs. Monitoring priorities should be targeted to Independent Core Populations as designated (or under review for designation) by NOAA.

Elimination of the Education category. Public education projects have been a successful part of the FRGP for many years. Education is an essential element that complements on-the-ground restoration and monitoring, and should not be eliminated. It is through education programs that conservation principles and practices are communicated to the general

public and especially to young people who are the resource users and managers of the future.

Projects that have been identified under previous FRGP planning grants may now be ineligible for implementation.

Exclusion of subcontracting costs from overhead calculation. We are concerned that this is, in effect, significantly reducing the amount of overhead the FRGP will pay, because restoration projects by their nature involve a high proportion of subcontracting costs. Sufficient overhead compensation is essential to the effective functioning of our organizations. Those of us participating in the FRGP for many years now have found that the overhead paid (10% of total budget) has barely covered our costs. This is exacerbated by the unchanged requirement that 10% of each invoice be withheld from payment until final project completion. This new guideline would, in many cases, render our lines of credit insufficient to sustain solvency between invoice and receipt of contract monies, which is often a long and expensive wait.

We are concerned that these and other new limitations could result in relatively poor projects receiving funding because they fit the new narrower criteria and face reduced competition from excellent projects now ineligible for consideration.

Our goal is to help make FRGP as effective as possible. Input from the community of organizations and practitioners who utilize the grant program should be a real part of the process of adjusting the requirements of the program. Here are some ideas we have for moving forward:

Hold meetings between restoration practitioners and FRGP staff to further this dialogue. Consider the possibility of a second PSN that would be open to projects excluded in the current PSN such as those focused on Chinook or public education. This overall amount to be distributed through the first PSN could be shared with the second.

If it is not possible to reverse the change to the way overhead is paid, consider adopting the State Water Board's model in which retention is not held from each invoice, but instead, once 90% of the grant amount has been spent, the remaining 10% is withheld until final project completion.

Provide explanations for why changes have been made and incorporate grantee feedback into future iterations of the Program's parameters.

Many in the community of conservation contractors and workers are eager to use what influence we collectively have to help FRGP gain access to its full due from Prop 84. Increased communication and a mutually collaborative approach could facilitate this.

Note: the FRGP staff met with representatives of SRF, Cal Trout, Mattole Salmon Group, and ACCW to discuss these issues. An open forum will be held at the Coho Confab to further this dialogue.

Water for Fish:

Recent Developments in the Efforts to Preserve Instream Flows for Fish



Green Sturgeon holding below Daguerre Point Dam which is up for FERC relicensing.

photo by Thomas B. Dunklin

Water4Fish is an organization whose primary purpose is to represent the interests of fishermen and wildlife supporters in the restructuring of California's water management. Their website includes an article which describes several rivers where salmonids are suffering due to lack of adequate instream flows and other problems. The intent is to raise public awareness and encourage public participation in the ongoing efforts to save our rivers and the fish that depend on them. The following brief discussion is based on that article. The full article can be viewed at www.water4fish.org/other-rivers/

Butte Creek is a 140 mile-long tributary of the Sacramento River. Spring-run Chinook salmon populations declined drastically over the last few decades due to dams, water diversions, high water temperatures, pollution, sedimentation, and habitat loss. In 1979 the Butte Creek Spring-run population dwindled to ten fish. Over the following decades collaborative efforts helped restore Butte Creek's spring runs of Chinook salmon. Several projects were completed including stream monitoring, fish screens at diversions, fish ladders at dams, habitat acquisition and restoration, and removal of six small irrigation dams. The population rebounded to 10,000 fish after instream flow conditions improved. After a recent fish kill, the population has recently plummeted. NMFS recently concurred that FERC relicensing of the Centerville Dam must consider the effects of global climate change and stress from high water temperatures when they consider relicensing the hydroelectric facilities in the Butte Creek watershed. For more information and to support Friends of Butte Creek: www.buttecreek.org

The Eel River once supported salmon and steelhead runs that exceeded a half million fish. Now declines are over 99%. On March 1, 2010, Friends of

the Eel River (FOER) filed a legal petition to eliminate, or at a minimum, to substantially reduce PG&E's current water rights for the Potter Valley Hydroelectric Projects. The State Resources Water Control Board contends that they have no jurisdiction of PG & E's water rights. For more information and to support FOER: www.eelriver.org

Restoration of the Trinity River is in progress. The restoration program is under way and the river's fisheries are improving. However, it is critical that we remain vigilant given the Bureau of Reclamation's history of trying to export more of the Trinity's flows to agricultural interests in the Central Valley. For more information: www.trrp.net/RestorationProgram/index

The Tuolumne River once supported the largest salmon run of any tributary to the San Joaquin River. The ongoing diversions are too excessive and should be reduced.

That process begins in 2011 and is scheduled for completion in 2016. In the meantime, the Tuolumne's fish runs continue to be destroyed. Problems in the San Joaquin River and the delta threaten the Tuolumne's fish runs. Adult fish returning to the Tuolumne must survive pollution, low flows, and high water temperatures in the San Joaquin. Juvenile fish suffer high mortality as they attempt to migrate out of the San Joaquin and through the delta to the ocean. These problems must be addressed if we are to fully protect and restore the Tuolumne's fish runs. Tuolumne River Trust has been at the forefront in the fight for these protections. For more information and to support Tuolumne River Trust: www.tuolumne.org

The Yuba River still supports runs of wild Chinook salmon and steelhead trout. Estimates of historic (pre-gold

rush) runs suggest that the Yuba once supported 10% of the total Sacramento Basin salmon and steelhead runs of 1-2 Million fish per year. The Yuba's salmon and steelhead populations are now dangerously low due to habitat destruction that has been caused by dams, water diversions, destructive logging and clear cutting, agricultural pesticide use, and the legacy impacts of gold and gravel mining. Many of these destructive practices still continue today. Fish passage at Daguerre Point and Englebright Dams could provide the greatest benefit at the lowest cost for restoration of anadromous fish beyond the foothills of the Sierra Nevada. Ambitious efforts are under way to improve physical habitat conditions (e.g. riparian and side channels) in the lower river, and to restore wild salmon and steelhead in the upper river. For more information and to support South Yuba River Citizens League: www.yubariver.org

Recently Federal Judge Wanger of Fresno favored California agribusiness over adequate flows for fish when he issued a ruling challenging the federal biological opinion protecting Sacramento River chinook salmon, Central Valley steelhead, green sturgeon and southern resident killer whales. The Judge concluded that the federal government did not properly develop a management plan that restricted water exports to protect endangered salmon, steelhead and other fish. Environmental, fishing and tribal groups said the ruling was bad news for collapsing populations of salmon and other species and the coastal and inland communities that depend on healthy fisheries, while agribusiness advocates celebrated the ruling as a victory of "farmers over fish."

Salmonid Restoration Federation

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Fish Passage Design & Engineering Field School

November 15-17, San Luis Obispo, CA

With Engineers Michael Love,
Ross Taylor, and Kosmo Bates

Sponsored by Salmonid Restoration Federation, California
Department of Fish & Game, and NOAA Fisheries

The cumulative effect of culverts, road crossings, and other structures up and down the coast has impaired fish passage greatly. The need exists to train county personnel, engineers, CalTrans, hydrologists, and fisheries biologists how to remove barriers, large and small, as an essential part of recovering coastal salmon and steelhead.

Fish passage improvement projects are often complicated by various site constraints and socioeconomic challenges, requiring creative approaches. Techniques for retrofitting existing structures are constantly evolving based on lessons learned from previous projects, such as the evolution of corner baffles. Innovative design methods, such as stream simulation and natural roughened channels, address the passage of both fish and other aquatic species. These techniques, however, require a more thorough understanding of stream morphology and sediment transport than the traditional stream crossing design. This workshop aims to provide an overall understanding of these constraints and the methodology to work toward successful restoration projects. Additionally, Southern and Central Coast fish passage project planners would benefit from a technical education training that addressed design considerations that are unique to the streams on the Central Coast.

These hands-on workshops will assist engineers, but are also intended for hydrologists, biologists, and environmental planners, or any other staff who are involved in the design and implementation of fish passage projects. The workshop will cover the design and implementation process, including:

- Biological considerations
- Site surveys and geomorphic assessment
- State and federal fish passage design guidance



Dam removal upstream of Cuesta Grade in San Luis Obispo Creek

photo by Antonio Llanos

- Stream simulation design
- Grade control techniques
- Retrofitting existing crossings
- Contracting and implementation
- Monitoring and adaptation

The field school will include two days in the classroom, comprised of presentations, group exercises and local case studies. The third day will feature field visits to local projects, and a specialized half-day workshop targeted specifically for engineers to explore in more detail the calculations used to develop successful designs. The agenda will also highlight the new "Fish Passage and Design Implementation" chapter of the California Salmonid Stream Habitat Restoration Manual that addresses fish passage at road-stream crossings, small dams, and other in-stream obstructions. It details contemporary design methods and provides guidance on implementation.