

Salmonid Restoration Federation

Summer 2007

10th Annual Coho Confab August 17-19, 2007 in Petrolia, CA on the North Coast

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. To confabulate literally means to informally chat or to fabricate to compensate for gaps in ones memory. 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. The Confab is an informal gathering of fishheads that 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. Each year the Confab is held in another location on the North Coast.



The 10th Annual Coho Confab will feature tours of the beautiful Mattole River estuary.
photo: courtesy Mattole Restoration Council archive

The 10th Annual Coho Confab will be held in the beautiful Mattole Valley on the North Coast of California. This landmark event is sponsored by Salmonid Restoration Federation, Trees Foundation, Sanctuary Forest, Mattole Restoration Council, Department of Fish and Game, and the Mattole Salmon Group. This year's Confab will feature restoration tours highlighting sudden oak death, road decommissioning, the Mattole Canyon Creek Delta restoration, installing in-

stream structures, and a tour of the headwaters of the Mattole addressing water conservation, sediment reduction, and acquisitions. Other field tours will visit *Wild and Working Forests* sites, in-stream structures in the lower Mattole to the Estuary, and Mill Creek. Workshops will focus on underwater fish identification, riparian invertebrate monitoring- stream health assessment, and high-tech water quality monitoring.

Open forums and resource workshops will include a discussion

of conservation easements with Noah Levy of Sanctuary Forest, plus "Stories and Songs of Salmon" with Freeman House, the author of *Totem Salmon*, singer-songwriter Joanne Rand, Seth Zuckerman, co-author of *Salmon Nation*, and David Simpson and Jane Lapiner of the theatrical troupe, Human Nature. Saturday night will culminate with a wild salmon feast, a cabaret, and the Joanne Rand band. The Sunday morning workshops include low-flow assessment in watersheds, monitoring riparian plantings, and the evolution of watershed restoration efforts in the Mattole.

For more information about the Confab, please visit www.calsalmon.org or www.treesfoundation.org

Advanced registration fees are \$100 that includes all camping, food (except Sunday brunch at the Mattole Grange), and lodging. After August 1st, registration is \$125. Limited scholarships and work trade positions are available. If you are interested in arranging a work trade position, please call SRF at (707) 923-7501.



Participants will learn about macro-invertebrate sampling, water quality monitoring, and low-flow conservation techniques.
photo: courtesy Trees Foundation archives



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Fish Passage Short Courses this Fall in Santa Cruz and Sonoma Counties

Salmonid Restoration Federation in conjunction with Department of Fish and Game, FishNet 4 C and Mike Love and Associates are sponsoring two Fish Passage short courses this fall. These courses will teach design and implementation of fish barrier removal projects with the goal of increasing fish passage, thereby helping to recover anadromous fish.

Salmon, steelhead and other aquatic life depend on the health of our coastal rivers and streams. Healthy streams provide cool water, clean gravel, natural meandering channels, and access to upstream habitat. California streams have been fragmented by roads, dams, culverts, concrete channels, low-water crossings or other structures that create difficult or impassable migration barriers for fish.

Coho salmon and steelhead were once abundant in California with millions returning each year to their natal streams to spawn. Coho salmon populations have dwindled to less than 10% of their historic abundance. One of the greatest factors in their decline has been migration barriers that prevent salmon and steelhead from reaching stream areas needed for spawning and rearing. Barriers not only create difficult or impassable heights for migration but can also alter the depth of jump pools and eliminate the riffles and resting areas fish need as they swim up or downstream. Barriers alter in-stream

flows, water temperatures, and the habitat diversity and complexity salmon and steelhead need to survive. Barriers also disrupt the biological and natural sediment balance in the stream, causing severe bank erosion, loss of property, and diminishing the downstream transport of sediment needed to replenish our beaches.

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 personnel, 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

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Participants in the fish passage short courses will tour fish passage restoration sites.

photo: Darcy Astion

Flow Regimes as a Limiting Factor

by Josh Isreal

While the specific flow requirements of salmonids vary for each species, local populations of salmon and steelhead have additionally evolved the necessary physiological and behavioral characteristics for them to survive the dynamic flows encountered during each phase of their life history at a specific time of the year. Flow regimes are one of the most important drivers of habitat structure at micro-, reach, and riverscape scales. During critical stages while eggs incubate, young fry forage or drift, and adults struggle to return to spawn, the relationship between flow volume and velocity demonstrates the importance of a variable flow pattern over daily, seasonal, and annual time periods that is critical for the long-term persistence of salmonid populations. A critical review by Bjornn and Reiser (1991) summarized a majority of the known literature concerning flow regimes and their relationship to salmonid habitat.

Predation, fishing, and disease are pressures facing most local salmon and steelhead populations, yet the potential difficulty of finding preferred spawning habitat is also a significant limiting factor. The volume and velocity of water within a watershed is often a cue for initiating spawning migration, and can limit redd construction. Culverts present difficulties for adult and juvenile salmonids migrating upstream, though the extent to which this is a barrier to passage often depends upon a particular species leaping ability. Flows can be problematic in streams and rivers even when the watercourse does not pass through culverts. A shift in the peak flows may strand salmonids in the wrong portion of a watershed preventing them from reaching spawning habitat and potentially subjecting them to predation while waiting for additional flows to pass further into the watershed or forcing them to spawn in lower reaches where egg survival is limited. Although there appears to be little observational data about minimum depths necessary

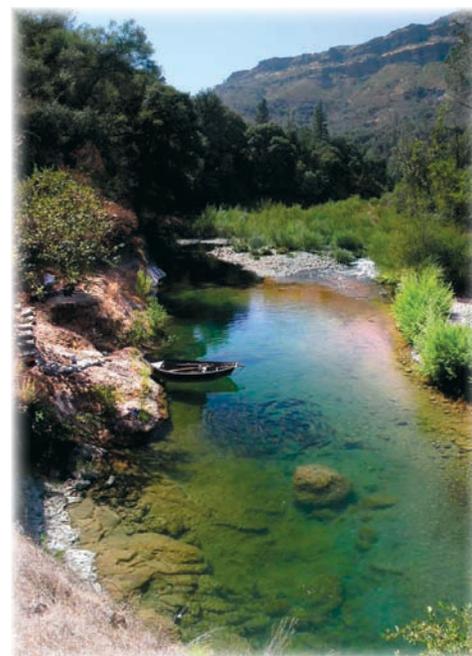


for passage, a minimum depth of 12 cm for trout, 18 cm for steelhead and coho salmon, and 24 cm for Chinook salmon are considered necessary for passage (Bjornn and Reiser 1991). FishXing (<http://www.stream.fs.fed.us/fishxing/resources.html>) is an awesome resource, which allows the user to evaluate and design fish passable culverts.

The timing and velocity of flows during spawning are critical characteristics of spawning reaches, and poor flow conditions can limit the survival of eggs and alevins. In locations like Butte Creek, redd imposition may limit the survival of earlier spawning Spring Run Chinook salmon, which are an important genetic component of this distinct stock of California Chinook salmon. With adequate management of flows released from upstream hydroelectric facilities, the quantity of spawning gravels available to Butte Creek Spring Run Chinook could be increased and egg survival potentially increased. Most salmonids need water depths of at least 15 cm, though this is also variable and dependent on spawner density and possible upwelling and hyporeic flows. Smith (1973) described the depth and velocity characteristics of 1,170 redds of

10 species of salmonids, including all the species in California. Regardless, flows need to be sufficient to not limit the velocity of oxygen-rich water through the stream's hyporeic zone. Kondolf (2000) suggested a unified approach for assessing the impacts of sediment during the critical spawning, incubation, and emergence stages and incorporated a life-stage specific evaluation of gravel and flow requirements.

Flow and water depth are also critical determinants of rearing habitats for fry, parr, and adult residents and together comprise the amount of habitat available to salmonids in streams. High flows can be responsible for side- and off-channel habitat formation, which provide critical micro-habitat for rearing. Flow regime is one of the factors dictating salmonids emigration from freshwater to the



Butte Creek is a prime example of how increased water flow releases have contributed to the recovery of salmonid populations in that watershed.

photo: Allen Harthorn

ocean. While long-term flow increases are likely necessary to support a steady rate of out-migration of populations far from the ocean, even small short-term increases can be an important stimulus for coho and Chinook salmon. Beechie et al. (1994) determined that 73% of summer habitat loss and 91% of winter habitat losses for a coastal Washington population of coho salmon were associated with hydromodifications associated with agriculture and urban lands. NMFS (PCSRF 2005) ranked degraded freshwater habitats and flows as moderate limiting factors to coho salmon recovery. The return of a dynamic, natural flow regime will be critical to minimize the threats of these limiting factors. Roni et al (2002) reviewed strategies for restoration and suggested a tiered watershed approach that first restored connectivity, then returned natural hydrologic and geologic variability and processes, before finally focusing on instream restoration that is necessary for salmonid recovery.

To see the Bibliography for the references that are listed in this article, please see the online version of this article at www.calsalmon.org in the limiting factors section under the Tools menu.

25th Annual Salmonid Restoration Conference Recap

Over 500 watershed enthusiasts migrated to the North Coast to attend the 25th Annual Salmonid Restoration Federation Conference in Santa Rosa, California. This silver anniversary conference was entitled, "Celebrating a Generation of Salmonid Restoration and Recovery," and highlighted the evolving restoration field and global issues that are affecting salmonid recovery. The conference included full-day workshops on dam removal and FERC relicensing, fish passage barrier removal tools, and estuary and lagoon restoration. Field tours visited sustainable grazing sites in southern Sonoma and western Marin counties, vineyards with salmon-friendly agricultural practices, Dutch Bill Creek watershed, steelhead habitat restoration projects on Upper Sonoma Creek, bioengineering and in-stream restoration projects, a tour from the headwaters to the mouth of Austin Creek watershed, as well as a short tour of urban creek restoration projects in the Prince Memorial Greenway.

Concurrent sessions focused on environmental, biological, and policy issues that affect Salmonid habitat restoration and recovery of native fish populations including North Coast water diversions, Coho Recovery efforts in California, the economic, cultural and recovery impacts of fisheries closures, coastal watershed planning and restoration, salmonid and watershed environmental education, Salmonid recovery downstream of large reservoirs, measuring watershed condition and management performance, fluvial geomorphology, assessing Best Management Practices, and regional land use planning and implementation strategies in aquatic conservation.



Mitch Farro (far right) was the recipient of the 2007 Restorationist of the Year award. He is pictured here with some former ROY award recipients including Bill Eastwood, Mel Krebs, Danny Hagans, Gary Flosi, Richard Gienger, Mike Cronin (standing in for his dad), Dave Highland, and Gary Peterson.

photo: Eileen Baglivio

The plenary session featured prominent keynote speakers including UC Davis Fisheries Professor Peter Moyle who addressed "Climate Change and the State of California Salmonid Recovery Efforts," Nat Scholz from NOAA Fisheries who discussed coho recovery in light of toxicity in urban streams, Freeman House, author of *Totem Salmon*, who addressed grassroots watershed efforts in the face of global warming, and Brock Dolman who provided a local perspective on watershed restoration. Seth Zuckerman, editor of *Salmon Nation*, facilitated the Plenary.

Other highlights of the conference included the Wild and Scenic Environmental Film Festival, SRF's annual meeting, a poster session and reception, and a cabaret, a Copper River salmon banquet, and a lively dance party with Latin-dance band, Sambada.

The 2008 conference will be in Lodi, CA in the San Joaquin Valley on March 5-8. To learn more about Salmonid Restoration Federation trainings, please visit www.calsalmon.org.

Restorationist of the Year: Mitch Farro

This year the ROY award went to Mitch Farro. Several of his cohorts (Jen Jenkins, Tom Weseloh, Gary Flosi, and Pat Moorhouse) staged a hilarious skit parodying the game show Jeopardy with a focus on watershed acronyms. Mitch not only won the coveted Restorationist of the Year award but he also won the award for the organization with the worst acronym: PCFWWRA!

Mitch Farro has been passionate about fish since he began fishing in his teens and spent several years fishing commercially. He was one of the pioneer fishery restorationists on the west coast and blended on-the-ground work with education and public advocacy.

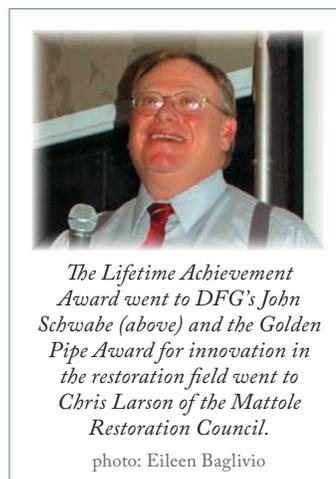
In 1991 Mitch started the non-profit Pacific Coast Fish, Wildlife and Wetlands Restoration Association (PCFWWRA) in McKinleyville, CA and has employed several former commercial fishermen since then.

Under Mitch's direction PCFWWRA has assessed hundreds of miles of roads on the North Coast for sediment sources and decommissioned over 30 miles of road—including roads in the Headwaters Forest Reserve and Redwood Creek. In addition to his on-the-ground work, Mitch has also been deeply involved with the legislative process. He helped write SB 271 which provided \$43 million toward salmonid restoration throughout the state. Mitch is renowned for his understated style, progressive techniques, and holistic approach to watershed and salmonid recovery and restoration.



Brock Dolman led a tour of the Dutch Bill Watershed from rivermouth to ridgeline.

photo: Joelle Geppert



The Lifetime Achievement Award went to DFG's John Schwabe (above) and the Golden Pipe Award for innovation in the restoration field went to Chris Larson of the Mattole Restoration Council.

photo: Eileen Baglivio



Salmon River Dives and Spring-run Chinook Symposium

Forks of Salmon, Salmon River, CA July 24-27



Attendees at the Salmon River Dives and Spring-run Chinook symposium will have a chance for underwater exploration.

photo: Scott Harding

The Salmonid Restoration Federation and Salmon River Restoration Council are hosting the 2nd Annual Spring-run Chinook symposium following the annual Salmon River Spring Chinook and Summer Steelhead Dives. This is a truly collaborative educational event with diverse symposium co-sponsors including the Department of Fish and Game, Klamath tribes, the Mid-Klamath Watershed Council, US Fish and Wildlife Service, US Forest Service, and the Bureau of Reclamation.

SRF is pleased to offer this opportunity for local landowners, restorationists, tribes, fisheries biologists and agency staff to participate in the Salmon River Dives and the Chinook Symposium including workshops, field tours and presentations on problems and solutions specific to Spring-run Chinook. The event kicks off with a dive safety training on Tuesday, July 24, and the actual dives or a Salmon River Education and Exploration workshop on July 25. A locally organized event, the dives bring together a coalition of agency personnel, tribal members, and concerned citizens who form small teams to dive the entire Salmon River in order to get the best possible estimate of the salmonids holding in the Salmon River. The Salmon River Surveys are a focal point in the effort to protect

and restore Klamath Spring Chinook, bringing together communities, tribes, academia and agencies in a cooperative approach to recovery.

The Spring-run Chinook Symposium offers restoration practitioners training and networking opportunities on issues affecting California's threatened Spring-run Chinook populations. The Thursday symposium will begin with an orientation with several Klamath tribe speakers followed by three concurrent field tours. The Karuk Tribe will host a Traditional Management Practices and Current Restoration Techniques tour, including road decommissioning, riparian restoration and forestry management for fire fuels reduction. Toz Soto, Leroy Cyr and Will Harling will lead a Mid-Klamath Mainstem Thermal Refugia Float, with a discussion of refugia use and importance, creek mouth enhancement, and salmonid identification. Petey Brucker and Nat Pennington of the Salmon River Restoration Council will lead a workshop and tour about community approaches to restoration of Salmon River Spring Chinook that will include a snorkel tour. Thursday evening will include a FERC relicensing and Klamath Dam removal presentation with Kelly Catlett from Friends of the River, Craig Tucker, Karuk Tribe, and Mike Belchik, fisheries biologist with the Yurok tribe.

Friday will begin with an "Overview of Spring Chinook Salmon in California" by Dr. Peter Moyle, author of *Inland Fishes of California*. Petey Brucker from the Salmon River Restoration Council will discuss Spring Chinook on the Salmon River and the Klamath Salmon

Spring Chinook Voluntary Recovery Program. Concurrent sessions will include "All about Spring Chinook" focusing Chinook Stock Identification, life history investigations, and limiting factors, Fish Disease including Cal-Nevada Fish Health Lab and Hoopa Tribal presenters, and Spring Chinook of the Trinity River. Another presentation will follow entitled, "Spring Chinook Reintroduction in the Klamath River Basin and the Importance of Having a Metapopulation" with fisheries biologists from the Klamath tribes.

The symposium will conclude with a panel discussion about Klamath Basin Spring Chinook Conservation Management with moderators Will Harling, Petey Brucker, and presenters from the symposium. The overarching question that participants and presenters will discuss is: "What do we need to do to create a conservation strategy and management objectives for Spring Chinook in the Klamath River Basin?"

After the symposium, folks can migrate to the Jammin' for the Salmon music festival at Forks of Salmon.

So come for the Dives and the Symposium, do underwater networking while counting the last of the wild Klamath spring Chinook, then stay Friday night and Saturday, July 27 and 28 for the "Jammin' for the Salmon" benefit concert. For more information about this exciting event please check out the Salmonid Restoration website at www.calsalmon.org or www.srrc.org or call (530)462-4665.

Salmon River Dive participants will receive diving and white water safety training on July 24 to prepare for the annual Spring-run diving counts on July 25.

photo:
courtesy of Salmon River Restoration Council archives



A Summary of California Watershed Related Bills

This legislative season there have been several watershed-related bills addressing issues including how funds from *Proposition 84* will be allocated, water runoff pollution, and securing a long-term revenue source for watershed restoration projects by levying a bottled water fee. All of these water bills have water quality, fishery restoration, and watershed management components.

The big question in Sacramento is how the funds allocated in *Proposition 84* will be dispersed. In order to compete for the one billion dollars allocated for water supply, groundwater management, water quality and watershed projects under *Prop 84* one must work within the rubric of the Department of Water Resources' existing guidelines for the Integrated Regional Watershed Management Program (IRWMP). The IRWMP is intended to promote and practice integrated regional water management to ensure sustainable water uses, reliable water supplies, better water quality, environmental stewardship, efficient urban development, protection of agriculture, and a strong economy. Funds for this program were allocated under *Proposition 50* and with the recent passage of *Proposition 84*.

 **PROPOSITION 84**, the Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Act, was passed by California voters in November 2006. Watershed partnerships found the first round of IRWMP planning and implementation grants difficult to access, confusing, and expensive to participate in the regional transactions used to set priorities for the use of these funds. Thus, a coalition of organizations including Planning and Conservation League, Environmental Justice for Water, Sierra Nevada Alliance and California Watershed Coalition is trying to work with legislators to put language in *SB732* and *AB1489* to make this program more accessible to non-profits, small local governments and disadvantaged communities.

 **SB 732** would provide statutory direction and requirements with regard to the implementation of *Prop 84* including developing project solicitation and evaluation guidelines. Additionally, *SB 732* would require each agency to hold at least one public meeting prior to finalizing the guidelines, publish draft guidelines, and require each state agency to provide outreach to disadvantaged communities to promote access and participation in those meetings.

Proposition 84 authorizes \$180 million for Bay-Delta and coastal fishery restoration projects. Of that amount, \$20 million is to be used for the development of a Natural Community Conservation Plans (NCCP) for the CALFED Bay-Delta Program and up to \$45 million for coastal salmon and steelhead fishery restoration projects. *SB 732* requires that funds allocated for a NCCP comply with the NCCP Act, California Environmental Quality Act, and that projects near Native American sites consult with the local California Native tribes.

 **AB 1489**, introduced by Assembly member Jared Huffman, establishes principles to guide implementation of the relevant provisions of *Prop. 84*. This bill would create the Groundwater Protection Fund and authorizes the deposit

of \$60 million in *Prop. 84* bond funds if appropriated by the Legislature and money recovered from parties responsible for groundwater contamination. The bill would also require DWR to conduct a study of groundwater resources that identifies major groundwater basins in critical overdraft condition and develop a sustainable management plan for each basin where overdraft will significantly impact surface water or natural resources.

Additionally, the bill would require DWR to provide technical assistance and grants using \$50 million authorized in *Prop. 84* to develop, update or improve integrated regional water management plans (IRWMP) that enable broad and diverse participation in such planning.

 **AB 1338**, also sponsored by Assembly member Huffman, is an important coastal protection measure that will increase coordination between the regional water boards and the coastal commission resulting in reduced polluted runoff.

 **SB 917**, authored by California State Senator Carole Migden and Assembly members Jared Huffman and Loni Hancock, introduced legislation to strengthen California's local and regional conservation partnerships and supports community-based efforts to conserve natural resources. *SB 917* is sponsored by the California Watershed Coalition.

For several decades the state has relied largely on periodic bonds to finance resource management and restoration. More than 300 California cooperative conservation partnerships currently conduct erosion control, fish and wildlife enhancement, and water-quality improvement projects yet there is no long-term sustainable source of restoration funding. *SB 917* creates the California Watershed Conservation Protection Fund in the state treasury to create a permanent funding stream for watershed restoration projects and cooperative conservation partnerships. Funding would be generated through fees paid by water-bottling companies that currently pay as little as \$473 a year in state licensing fees for water procured from California's lakes, rivers, groundwater and watersheds.

This bill would fund existing state programs including the Coastal Conservancy watershed restoration programs, and the Coastal Salmonid Restoration Program and would create funds to sustain a statewide watershed program to replace the now sunseting CALFED watershed program. This new watershed program will serve the whole state, not just the CALFED Bay-Delta area, and use a more local and regional approach for setting priorities for the use of the funds. Since the source of funding does not have the same restrictions as bond source funds, it can be used for education, capacity building, watershed and habitat assessments, maintenance and other activities that are hard to access for the watershed restoration community.

For more info about the status of these watershed bills, please visit www.legislature.ca.gov



Only Wild Fish Count!

A Federal district judge ruled that only wild fish matter for “endangered” counts when he nullified a Bush administration policy that counts hatchery fish along with wild fish when making decisions about which species should be protected under the Endangered Species Act. This counting method, the judge, John C. Coughenour, wrote, “departs from the law’s central purpose, which is to promote and conserve naturally self-sustaining populations.”

In the 1990s, when most of the 27 Northwestern salmon species currently protected under the act were being evaluated, the fisheries service made its decisions on the status of the naturally spawning fish. Depending on how many generations a fish species have spent in the hatchery and what other stocks they have mingled with, they can be genetically identical to the wild stocks or significantly different.

Several environmental groups, including Trout Unlimited, American Rivers and the Sierra Club, filed suit after one species of salmon, the Upper Columbia steelhead, was downgraded to threatened from endangered under the new policy.

The judge agreed that to commingle the numbers of hatchery and wild populations when deciding on protections is contrary

“Our ultimate goal must be the return of healthy wild fish stocks so we eventually can eliminate our dependence on hatcheries,” said Jim Lichatowich, scientist and author of the book Salmon without Rivers.

underwater photo:
Nat Pennington



to the best available scientific evidence and that a healthy hatchery population is not necessarily an indication of a healthy natural population.

Jan Hasselman, an attorney with Earthjustice concluded that, “Salmon and people need clean water, swimmable streams, and healthy habitat. We all win when we protect and recover wild salmon and their habitat. Hatcheries never were meant to be a replacement for self-sustaining populations of salmon in healthy streams.”

—excerpted from an Earth Justice Press Release

KLAMATH RIVER CONDITIONS COULD SPELL ANOTHER FISH KILL

As Klamath River temperatures rise and the region’s below average snow pack continues to recede, the Klamath River’s salmon are again in trouble. These conditions, coupled with increased observation of disease, mortality, and average run size predictions have prompted the Klamath Fish Health Assessment Team (KFHAT) to increase its fish kill readiness alert level to yellow.

The KFHAT is a collaboration of agencies, tribes, and restoration organizations which formed during the summer of 2003 with the purpose of providing early warning and a coordinated response plan to avoid, or at least address, a fish kill event such as occurred in the fall of 2002. The 2002 fish kill was referred to as the largest in U.S. history, an estimated 68,000 Chinook died of diseases after entering the Klamath River to spawn.

In recent years juvenile salmon have been taking the brunt of the Klamath’s woes as several fish diseases plague the Klamath’s juvenile salmon.

“These diseases are particularly lethal in combination with increased temperature and static flow conditions caused by the Klamath Dams. Citizens monitoring the river have already reported seeing dead fish,” according to Regina Chichizola, the Klamath Riverkeeper. In recent years a diverse coalition of stakeholders has been urging PacifiCorp to remove their lower four dams to fix this problem. Tribes, fishermen, conservationists and business owners see dam removal as a critical step in restoring the Klamath’s ecological and economic health.

The U.S. Fish and Wildlife Service monitors disease infection rates in Klamath River juvenile Chinook salmon. Although it is impossible to predict the fate of a diseased fish, preliminary findings for May and early June show that up to seventy percent of sampled Chinook juveniles near Iron Gate Dam are infected with disease.

—excerpted from the Klamath Salmon Media Collaborative Press Release

Fish Passage Short Courses, continued from page 2

of these constraints and the methodology to work toward successful restoration projects.

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, stream simulation design, grade control techniques, retrofitting existing crossings, contracting and implementation, monitoring, and adaptation. Instructors include Mike Love, Ross Taylor, and Ken Kozmo Bates.

In addition, DFG staff will provide instruction on the DFG/NOAA design standards, and local county staff will be available to present case studies. The workshops include two days in the classroom, comprised of presentations, group exercises and local case studies and a 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 Santa Cruz field school will be November 7-9 and the Sonoma County one will be held November 13-15. For more info, stay tuned to www.calsalmon.org and subscribe to our monthly newsletter on the SRF home page.



Salmonid Restoration Federation

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Save These Dates!

26th Annual Salmonid Restoration Conference

March 5-8, 2008 Lodi, CA

The 26th Annual Salmonid Restoration Conference will be held March 5-8, 2008 in the northern San Joaquin Valley. The conference will probably feature all day field tours of Toulumne River restoration projects, Delta Water Systems, East Bay MUD Fisheries Monitoring and Management, and a tour of the Mokelumne River.

Workshops will include Fins and Zins: Sustainable Agriculture and Watershed Management, Fluvial Geomorphology, Floodplain Management and Tidal Marsh Restoration, Restoring Natural Hydrographs, and Invasive Species removal. Concurrent sessions will focus on the Delta Smelt, Coho Salmon Recovery efforts, the San Joaquin Restoration Plan, Native Trout restoration, Recovery Planning models, Central Valley Chinook and Steelhead, Recovery Planning models, Climate Change, and Natural Flow Regime and Delta Management. To see the call for abstracts, please visit www.calsalmon.org



Looking downstream on the Toulumne River from Roberts Ferry Bridge at a floodway expansion project, implemented in 2000

photo: courtesy McBain & Trush, Inc. archives

Central Coast Field School August 14-16, 2007 in Arroyo Grande, CA

SRF and Central Coast Salmon Enhancement will offer a course addressing culvert and road drainage practices to protect and benefit steelhead and water quality in the central



SRF and Central Coast Salmon Enhancement will host a Bioengineering field school with Evan Enger on the Central Coast this fall and next spring.

photo: Darcy Aston

coast region with Pacific Watershed Associates. This course will include several sessions in the field and will focus on proper ditch relief and stream crossing culvert installation as well as installation of critical rolling dips or measures to eliminate stream diversions. Classroom and field methods will highlight appropriate culvert sizing for peak stream flows. The class will include approaches for addressing potential road fill and landing failures, as well as spoil disposal techniques and a variety of road bed and ditch drainage approaches. Participants will learn how to properly excavate a stream crossing fill to minimize post excavation erosion and sediment delivery to streams, and how to reduce roadbed width on excessively wide segments of road. An additional course will be held October 23-25 in Santa Barbara.