



Salmonid Restoration Federation Summer 2017



20th Annual Coho Confab in the Mattole

Salmonid Restoration Federation (SRF) is coordinating the 20th Annual Coho Confab that will take place August 24-26 in the beautiful Mattole river valley in Humboldt County. The Coho Confab is a field symposium to learn about watershed restoration and techniques to restore and recover coho salmon populations. The Confab provides an ideal opportunity to network with other fish-centric people and to participate in field tours that highlight innovative salmon restoration practices. This year, SRF is collaborating with several groups to produce this educational event including Sanctuary Forest, Mattole Restoration Council, and Mattole Salmon Group. This event is generously funded by California Department of Fish and Wildlife's Fisheries Restoration Grant Program.

The Coho Confab will open Thursday evening, August 24 with a community dinner and inspiring keynote presentations from Carlos Garza of NOAA Fisheries who will address prospects for recovery and restoration of

coho salmon in California. Sungnome Madrone, Executive Director of the Mattole Salmon Group, will present on landowner stewardship incentives. Tasha McKee, Program Director of Sanctuary Forest, and Elijah Portugal of Redwood Community Action Agency will give a presentation on what we can learn from beaver structures and apply towards salmon restoration planning.

Friday will start off with concurrent morning tours including a Mattole estuary tour featuring heliwood placement, terrace margin treatments, off-channel slough restoration, and riparian planting and bioengineering techniques. There will also be a Prosper Ridge prairie tour to showcase grassland reclamation and fuels reduction in King Range coastal prairie systems. After the morning tours, we will all corral up at the historic Mattole Grange for afternoon concurrent workshops including Coho Recovery Planning from state, ESU (Evolutionary Significant Unit), and watershed level with coho recovery coordinator from the Southern Oregon Northern California Coast ESU, Julie Weeder, Geneticist Carlos Garza, and Sungnome Madrone. Since the Coho

Recovery team is no longer meeting in person, this is a great opportunity to convene and brainstorm about recovery strategies that are effective, cost-efficient and applicable in the Mattole and other Northern California coastal regions.

Additionally, there will be a workshop focused on stewardship tools for landowners including road improvements, water conservation planning, resources, and rehabilitation. This workshop will feature several resource professionals including Matt Clifford, JD, of Trout Unlimited who can address water conservation planning, Tom Leroy of Pacific Watershed Associates to address Best Management Practices, and Cassie Pinnel, Executive Director of the Mattole Restoration Council. This is a great opportunity for landowners to participate in a constructive dialogue about stewardship opportunities.

On Friday night in Confab tradition, we will share a farm to table feast, have a lively campfire, and an impromptu talent show or homegrown Mattole cabaret!

The last day of the Confab will include two concurrent field tours including Beaver Dam Analogues and Groundwater Recharge Planning in the Mattole Headwaters with Tasha McKee, Water Project Director, and Elijah Portugal of RCAA's Natural Resources Division, and a Lower Salt River Restoration tour in the Eel River estuary that will be co- led by fisheries biologist, Ross Taylor, and Allen Renger of California Department of Fish and Wildlife.

Registration fees cover field tours, workshops, meals, and camping.

To register for the Confab or to view the full agenda please visit our website: www.calsalmon.org.



*Mattole River Estuary
during the 2013 Confab.
photo courtesy Mattole River
& Range Partnership*

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The salmon restoration field is comprised of scientists, engineers, planners, policy people, land managers, advocates, landowners, and decision-makers. It's a safe bet that we all believe in climate change, that we observe the change in seasons, river flows, and weather patterns. We bear witness to climate change and its subtle and not-so-subtle effects on salmon returns. We collectively have also borne witness to changes in our political climate that threaten the strides we have made in the salmon restoration and habitat conservation fields.

The legal bedrock of salmon recovery efforts is the Endangered Species Act (ESA) and the Clean Water Act. These landmark environmental laws govern endangered species recovery efforts and clean water standards respectively. The new fangled federal administration threatens the very core of conservation values and salmon protections by challenging the ESA, defunding agencies like Sea Grant and the Environmental Protection Agency, threatening environmental deregulation, and denying the man-made contributions to climate change.

Withdrawing from the Paris climate accord exemplifies this administration's utter disregard for the global community, climate change science, sustainable energy, and environmental standards. **If action is the antidote for despair, this is the time for action.** Here are just a couple of the many issues facing the salmon restoration community:

- 1) The Federal administration's 2018 budget proposes the complete elimination of the Sea Grant program that is focused on fisheries, coastal ecosystems, and sea-level rise adaptation. Please contact your Senators and representatives and urge them to defend the critical Sea Grant program and other science-based programs that are threatened. Here's a link to a sample email https://caseagrant.ucsd.edu/sites/default/files/CASG.FY18_Sea_Grant_Individual_Sample_Email_of_Support.pdf
- 2) The White House budget calls for the elimination of the Corporation of National and Community Service which includes AmeriCorps. Please take a moment to write to show your support of programs like AmeriCorps' Watershed Stewards Program, <https://voicesforservice.org/take-action/>



Watershed Stewards Program members at the 2017 Conference in Davis. SRF and dozens of watershed restoration groups benefit greatly from WSP's involvement in service projects and restoring watersheds!

photo by Jody Weseman, WSP

Collaborative Water Management

A Framework for Improving Water Security for Landowners and Streamflows for Salmon

Salmonid Restoration Federation is excited to be partnering with The Nature Conservancy, Mendocino County Resource Conservation District, Trout Unlimited, and Sanctuary Forest to advance the development of a Collaborative Water Management framework and create a tributary-scale demonstration project plan in the Navarro River watershed in Mendocino County.

The Collaborative Water Management (CWM) framework is a model for voluntary, watershed-based and stakeholder-driven collaborative water management. By seeking to leverage existing policies (e.g. North Coast Instream Flow Policy, 1707 instream flow dedications, etc.) and established management tools (e.g. coordinated management of diversions, storage and forbearance, large wood restoration, etc.), the CWM is intended to maximize the opportunities and feasibility to implement projects. The overarching objectives of the CWM approach are to

Mid-winter flows in Mill Creek where studies are being conducted by to support environmental flow projects in the watershed.

photo by
Monty Schmitt, TNC



promote implementation of management actions and projects in the North Coast region to enhance summertime rearing habitat for coho and steelhead; increase water security for landowners; advance new environmentally protective water rights; and avert regulatory interventions.

The CWM concept is based on, and seeks to explore, the watershed approach included in the North Coast Instream Flow Policy (NCIFP) adopted by the Regional Water Board in 2014 as well as tributary collectives that are being developed by Sanctuary Forest and Salmonid Restoration Federation. The NCIFP establishes principles and guidelines for maintaining instream flows for the protection of fishery resources, while minimizing water supply impacts on other beneficial uses of water, such as irrigation, municipal use, and domestic use. The Water Board, with support from conservation groups, included a watershed approach to promote and support voluntary collaborative efforts to secure new water rights that improve environmental flows. The NCIFP approach, however, requires participants to provide specific provisions including formal agreements, management plans and monitoring to ensure measurable results. A goal of the CWM project is to advance and inform the NCIFP

watershed approach by providing tributary groups with the information and technical support necessary to not only achieve the requirements of the NCIFP but also support implementation of other water management projects and policies.

In 2016, the Mendocino County Resource Conservation District (MCRCD), The Nature Conservancy and Trout Unlimited were successful in securing a grant from the Wildlife Conservation Board (WCB) to develop a prioritized list of projects (storage and forbearance, LWD, and infiltration) and a voluntary coordinated water management model to improve summer base flows in the Navarro watershed. The CWM project The Nature Conservancy is spearheading will help satisfy the requirements of the WCB grant to develop the collaborative model and a plan for tributary-scale pilot project.

The CWM Project will produce a report based on synthesizing existing informational resources with input from water resource management practitioners working in the North Coast region. The report will provide the essential information and practical guidance to incentivize and enable landowners to collaborate on projects and management action to improve streamflows.



Gauging station on Indian Creek that provides data to support new environmentally beneficial wintertime diversion water rights under the North Coast Instream Flow Policy.

photo Nancy Smith

9th Spring-run Chinook Symposium on Salmon River

The Salmonid Restoration Federation is hosting the 9th Spring-run Chinook symposium July 27-28 in Forks of Salmon, California. This is a truly collaborative educational event with diverse partners including Salmon River Restoration Council, Mid Klamath Watershed Council, and the Karuk Tribe.

SRF is excited to circle back to Forks of Salmon which is the center of community-based Spring-run Chinook recovery and restoration efforts. Nestled in a beautiful valley, the Salmon River receives snowmelt from the Trinity Alps and flows into the Klamath River. The event will be at the local Forks of Salmon school following the annual Salmon River dives. This remote part of California is stunningly beautiful with a rural community that revolves around stewardship of their totem salmon—Spring-run Chinook.

This year's symposium will include a welcome address by Josh Saxon and Leaf Hillman, tribal members of the Karuk tribe. The introduction will be followed by an exciting session called Spring Chinook Conservation Genetics with three speakers from the UC Davis Integrative Genetics and Genomics Lab including Michael Miller who will address the evolutionary basis of premature migration in steelhead and Chinook as well as presentations on how Rogue River and Salmon River Chinook provide insights into conservation and restoration potential in the Klamath.

After the genetics presentations, we will have monitoring and status reports from the Salmon River and South Fork



The pristine Salmon River
photo by Scott Harding

Trinity followed by a networking garden to table lunch.

The afternoon sessions will include a session on limiting factors for Spring-run Chinook with exciting presentations regarding life history and limiting factors, Salmon and Klamath River Chinook population proliferation through dam removal efforts, and an exciting talk entitled, *Where to Stay Cool in a Warming Climate: Thermal Refugia Status and Trends from the Salmon River's 20-year Monitoring Program* by Eli Asarian of Riverbend Sciences.

The agenda will conclude with a session focused on implementing recovery strategies for Spring-run Chinook including innovative floodplain and tail mining remediation projects, the Yurok tribe's heliwood projects on the South Fork Trinity, and the implications of

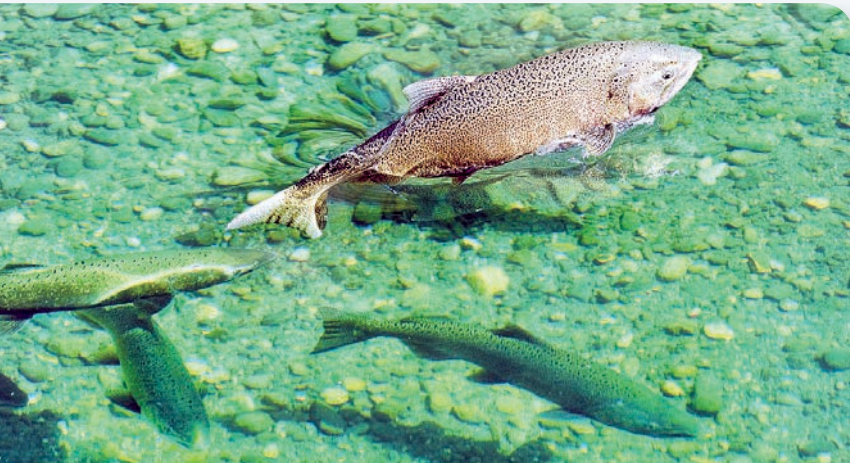
coho habitat restoration in the mid-Klamath on Spring-run populations and Reflections on Upslope Management in the Klamath Mountains.

The one-day symposium will culminate with a BBQ and river merriment at the beautiful Nordheimer campground followed by a full-day of field tour options including a Mid-Klamath River Restoration and cool water refugia raft tour. The tour will highlight restoration projects including fish passage, habitat enhancement, and invasive plant removal. Participants will have an opportunity to snorkel and experience the wonders of the activity at the many creeks that provide cool water refugia.

Additionally, Salmon River Restoration Council will offer a Salmon River Floodplain and Fisheries Restoration tour to visit floodplain and stream rehabilitation sites including large wood loading, floodplain and riparian enhancement, and mine tailing restoration concepts.

Please register in advance to be sure that you can enroll in one of these exciting tours. To see the full agenda and register for the symposium and field tours, please visit www.calsalmon.org/programs/spring-run-chinook-watershed-symposia/cooperative-dives-and-spring-run-chinook-symposium-0

Salmonid Restoration Federation



Spring-run Chinook salmon in the beautiful salmon river.
photo by
Janjaap Dekker

35th Annual Salmonid Restoration Conference Recap

On March 29 – April 30, Salmonid Restoration Federation produced the 35th Annual Salmonid Restoration Conference in Davis, California. The theme of the conference was *Restoring Watersheds and Rebuilding Salmon Runs*. The conference agenda focused on a broad range of salmonid and watershed restoration topics of concern to restoration practitioners, watershed scientists, fisheries biologists, resource agency personnel, land-use planners, and landowners.

The agenda highlighted innovative efforts to recover salmonid populations, salmon reintroduction to historic habitats, and our shared vision to revive and restore ecological function to Central Valley working landscapes.

Over 550 people attended the Davis Conference that featured over 100 presenters, four intensive habitat restoration workshops, five field tours, and ten concurrent sessions as well as a mentor-mentee lunch, poster session, and evening networking events.

Workshops focused on floodplain ecology and restoration, evaluating instream habitat variables and watershed conditions to inform and prioritize salmonid recovery actions, a technical and interactive fish passage workshop; and an overview of efforts to restore

streams in California using beavers and beaver dam analogues.

Full-day field tours included a legislative tour of the Capitol that started at the Cal EPA building with legislative speakers and visits with representatives. The Stanislaus river restoration tour offered participants a rare opportunity to float a segment of the river to visit restoration sites that enhanced spawning gravels, created channel complexity, and reconnected off-channel habitats. Additional tours included tours of the Yolo Bypass and Putah Creek; an American River tour that featured gravel augmentation and floodplain restoration sites; and a *Fins, Feathers, Farms and Floodplain Fecundity Tour of Multi-Use Floodplain Projects in the Lower Sacramento Valley*.

Concurrent sessions included a Central Valley track focused on recovery planning and restoration, reviving the San Joaquin river, and restoring ecological function in the Central Valley's working landscapes through science, collaboration, and structured decision-making. A strategies and techniques track explored the reintroduction of salmon into historic habitats; and utilizing aerial vehicle technology to support salmonid restoration planning and engineering. A biology and physical track explored



The Stanislaus River Restoration rafting tour during the 2017 SRF Conference.

photo by Shane Abeare USFWS

how sediment slows fishery recovery, the complicated role of hatcheries, and how to estimate juvenile salmonid populations across diverse spatio-temporal scales.

The Plenary session focused on restoring salmon and sustainable water management in California from global, state, and regional perspectives. The all-star line-up of keynote speakers included NASA Scientist Jay Famiglietti who presented *The Epic California Drought as Viewed from Space: Drought vs. Chronic Water Scarcity and Implications for Sustainability*. Jay Lund from the Center of Watershed Sciences and co-author of the book *Managing California's Water: From Conflict to Resolution* presented on salmon restoration and re-engineering of water in California. Felicia Marcus, chairwoman of the State Water Resources Control Board, presented on water management challenges and opportunities.

The Plenary talks are available at <https://dctv.davismedia.org/content/35th-annual-salmonid-restoration-conference-plenary-session-full>

Select presentations are available online at www.calsalmon.org/conferences/35th-annual-salmonid-restoration-conference/presentations



NOAA Fisheries and the California Conservation Corps celebrating the NOAA Veteran's Program.

photo courtesy NOAA Fisheries

Summer 2017

Navigating Low Flows in Redwood Creek, SF Eel River

Since 2012, SRF has been engaged in community outreach and low flow monitoring in Redwood Creek, a critical tributary in the South Fork Eel watershed. Redwood Creek has historically provided important rearing habitat for threatened coho salmon, and the South Fork Eel river is considered a priority watershed for flow enhancement projects, and coho salmon recovery on the North Coast.

In 2015 and 2016, SRF conducted low flow monitoring with the support of a North Coast Regional Water Quality Control Board planning, assessment, and monitoring grant. This grant enabled us to continue taking weekly flow measurements and add data loggers to some of our mainstem and tributary sites in order to have continuous flow data that we could compare to our spot measurements.

The objectives of the hydrologic monitoring are to quantify low flows at a variety of sites selected to represent potential juvenile salmonid rearing habitat; identify locations where flows may be impaired by human use; and prioritize stream reaches where we can

potentially augment flow to optimize benefits to juvenile salmonids.

In concert with our monitoring efforts, SRF worked with Stillwater Sciences to produce a feasibility study of the social, economic, and environmental feasibility of creating a water conservation program like the Mattole headwaters storage and forbearance program that could enhance instream flows for salmon in Redwood Creek. The Feasibility Study includes conceptual designs, water usage estimates, a cost assessment of various water conservation techniques, and a target flow memo that makes informed recommendations for implementation projects that would improve streamflow timing and volume within the project area.

A variety of factors influence low flows, such as, climate (rainfall, temperature, fog, relative humidity, wind speed), vegetation species and age distribution, ground disturbance, streambed sediment depth, and water use for domestic and agricultural purposes. Of these, only vegetation, ground disturbance, human water use, and possibly riparian aquifer

storage are subject to human influences and therefore might be modified to improve low flows.

As part of this effort, Stillwater Sciences created conceptual designs for several rainwater catchment ponds and an innovative groundwater recharge project that would contain infiltration galleries and provide over 50 million gallons of water storage. SRF has recently submitted a planning grant to the Fisheries Restoration Grant Program to fund the planning and design work for this innovative groundwater recharge project that would provide significant water storage near the headwaters of Redwood Creek.

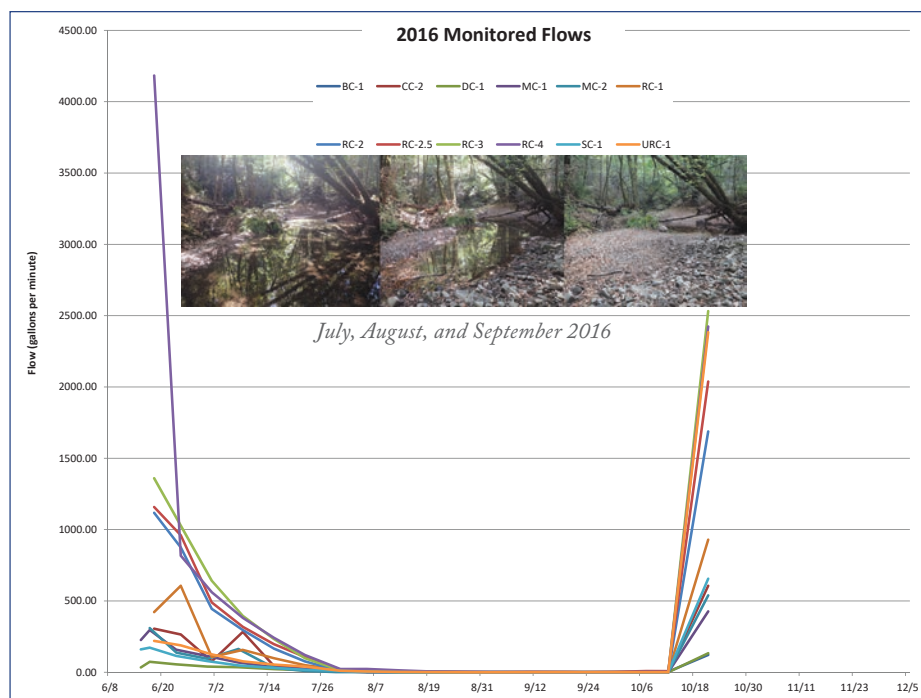
This summer SRF will be conducting streamlined monitoring in the Redwood Creek watershed and we are eager to see how this heavy rainfall year will affect flows during the summertime. SRF's Redwood Creek project has evolved into a sustainable program that includes community outreach and education, capacity building, a scientific monitoring component, and data analysis to ensure that our water conservation and restoration efforts are scientifically sound. We hope that this project can serve as a model for community-based restoration programs that could be expanded to other watersheds throughout Northern California.

Please check out our website for bi-weekly flow updates

www.calsalmon.org/programs/redwood-creek-low-flow-monitoring

To see the recently published Low Flow Stream Discharge Monitoring Report for the Redwood Creek watershed, www.calsalmon.org/sites/default/files/files/Klein_2016_RC_Low_Flow_Stream_Discharge_Monitoring_Report_0.pdf

Redwood Creek Flow Enhancement Feasibility Study www.calsalmon.org/sites/default/files/files/Redwood_Creek_Feasibility_Study.pdf



—excerpted from Laura Allen's book *The Water Wise Home*

SRF with the support of the Watershed Fund is excited to announce a Greywater workshop and installation with greywater guru, Laura Allen. This event would include presentations on the benefits and nuts and bolts of greywater installation, an overview of California's plumbing code pertinent to greywater applications, and Humboldt County's greywater policy. The event will also include a demonstration project where participants will have a hands-on opportunity to learn about the design elements, plumbing requirements, layout, and actually install a greywater system.

The event will also include a book signing of Laura Allen's new book *Greywater, Green Landscape*. Laura Allen is one of the founders of Greywater Action—a collaborative of educators who teach residents and tradespeople about affordable and simple household water systems that dramatically reduce water use and foster sustainable cultures of water. Through hands-on workshops and presentations, they have educated thousands of people about greywater system design and construction and they have an excellent track record of working with policymakers and water districts to develop codes and incentives for greywater, rainwater harvesting, and composting toilets. Greywater Action and SRF believe strongly that decentralized conservation measures can play a critical role in drought resilience, climate adaptation, and the return of healthy stream ecosystems.

Understanding your local greywater codes is important for a few reasons. If your project requires a permit, understanding the perspective of your regulatory agency will help you work together. If you're working on policy change, you must figure out how to have a functional code that simultaneously addresses concerns of health and safety officials.

Historically, plumbing codes did not distinguish between greywater and blackwater (from toilets). Greywater was required to be collected together with blackwater and sent to the sewer or septic systems, and reusing greywater was illegal. This began to change in the early 1990s when drought-prone California realized this potential source of irrigation water was being wasted. The state plumbing code changed to allow legal reuse. Greywater advocates from that time will tell you how this code, though a positive first step, was practically useless. It treated greywater like septic water, requiring a small septic-type system to dispose of it deep underground (with a tank and gravel-filled leach lines). People interested in irrigating with greywater still had to build illegal systems. California alone had an estimated 1.7 million unpermitted systems. States like Arizona, which followed California's example code, had a similar experience.

Types of Greywater Codes: Performance-Based and Prescriptive

Performance-based codes describe health and safety requirements for greywater systems. Systems that meet the requirements are legal; those that don't are not. Performance-based codes don't typically require inspections or fees, yet provide legal grounds for a city to take action against a problem system. For example, "no pooling or runoff" is a common guideline that prevents exposure to greywater, but many codes don't specify how to meet this requirement. Performance-based codes are written in simple, straightforward language. States and local jurisdictions can provide further guidance, such as how to size a system to avoid pooling and runoff, but the more specific details are left out of the code.

Prescriptive codes specify exactly how to build a greywater system including what materials and parts can be used.

Instead of stating "No pooling or runoff allowed," they may estimate greywater production based on number of bedrooms in the house and size the irrigation area based on soil type. A detailed code that spells out how to construct a greywater system will result in safer, better-built systems, right? Unfortunately, that's not the case. Greywater systems are complex; they interact with the living world of soils and plants, and are influenced by water-use habits, fixtures, climate, and physical layout of the house and landscape. Unless the code considers all these variables (and in fact it never does), it results in overly restrictive requirements, adding unnecessary cost, or creates an inefficient irrigation system. When a code is out of touch with reality, people ignore it and build illegal systems, with no guidance. After all, since it's common sense to reuse the water we already have, why should it be difficult to get a permit, or the fees be expensive?

National Codes and Standards

Wouldn't it be great if there were just one code for the whole country, so each state didn't have to reinvent the wheel around greywater law? The International Association of Plumbing and Mechanical Officials (IAPMO) writes codes that are adopted across the nation, and it has a new one on greywater (find it in the Uniform Plumbing Code). Unfortunately, this UPC code isn't very good. States who adopt it will need to alter it—like California did for its 2013 plumbing code—or risk minimal compliance from the public.



Salmonid Restoration Federation

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www.calsalmon.org



New SRF Merchandise!

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Upcoming SRF Events

Greywater Workshop and Demonstration Project

July 22, Bayside, CA

SRF with the support of the Watershed Fund will host a Greywater workshop, installation, and book signing with greywater instructor, Laura Allen.

9th Spring-run Chinook Symposium & Field Tours

July 27-28, Forks of Salmon, CA

The 9th Spring-run Chinook symposium will feature presentations and panel discussions on Spring-run Chinook conservation genetics, monitoring efforts, limiting factors, and restoration techniques to improve coho salmon and Chinook habitat. On July 28 we will offer concurrent field tours of Klamath River Restoration projects and cool water refugia and a Salmon River floodplain and fisheries restoration tour.

20th Annual Coho Confab

August 24-26, Petrolia, CA

This Coho Confab will feature field tours of the Mattole estuary, heliwood placement, off-channel slough, coastal prairie and fuels reduction restoration, and tours of Beaver Dam Analogues and groundwater recharge planning as well as the Salt River restoration work in the Eel river estuary. Workshops will focus on coho salmon recovery, and land and water stewardship tools for rural landowners.



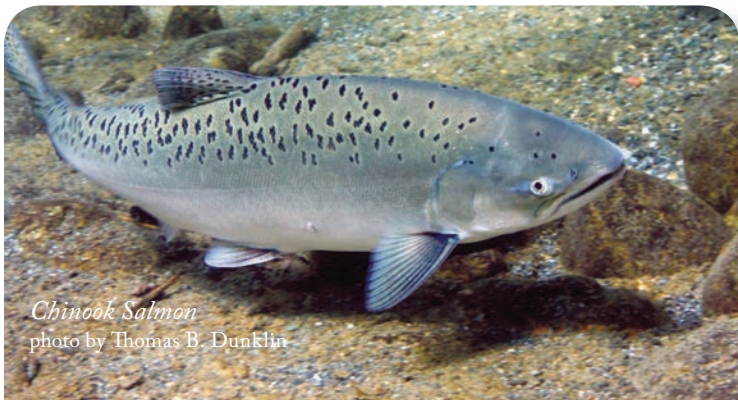
Coho Salmon

36th Annual Salmonid Restoration Conference

Save the Date! April 11-14, 2018 Fortuna, CA

The Call for Proposals is Now Open. To submit a proposal for a workshop, session, or field tour, please email abstracts@calsalmon.org by July 13. The First Call for Abstracts will be posted in August, 2017

To learn more about these events, read full articles inside and to register, please visit www.calsalmon.org



Chinook Salmon

photo by Thomas B. Dunklin