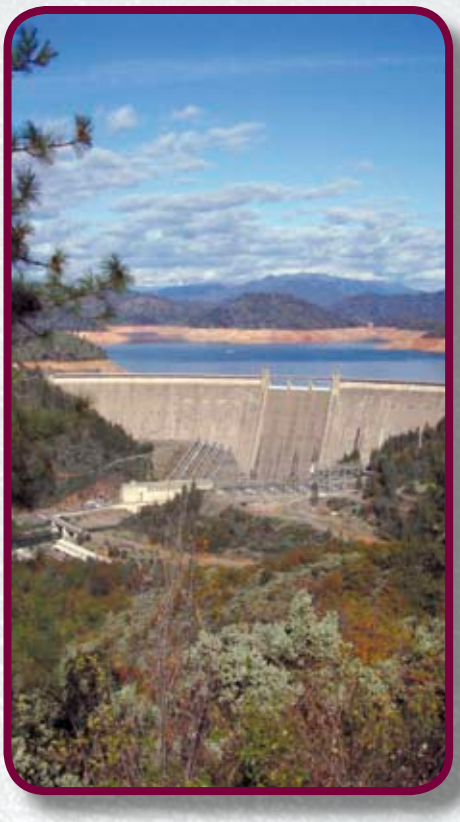
28th Annual Salmonid Restoration Conference
and the
44th Annual American Fisheries Society Cal-Neva Conference

Fisheries Restoration and Science in a Changing Climate

March 10-13, 2010, Redding Convention Center



2010 Conference Co-sponsors

US Bureau of Reclamation, California Conservation Corps, California Department of Fish & Game Restoration Grants Program, California Department of Water Resources, California State Coastal Conservancy, Cachuma Conservation Release Board, CH2M Hill, City of Redding, East Bay Municipal Utility District, ECORP Consulting Inc., Entrix, Graham Matthews & Associates, McBain & Trush, National Marine Fisheries Service, Northern California Council of Federation of Fly-Fishers, North State Resources, Northwest Hydraulic Consultants, Pacific Coast Fish, Wildlife and Wetlands Restoration Association, Pacific Gas & Electric, Pacific States Marine Fisheries Commission, Pacific Watershed Associates, Philip Williams and Associates, Prunuske Chatham, Solano County Water Agency, Sonoma County Water Agency, The Bay Institute, The Nature Conservancy, Trees Foundation, Trinity River Restoration Program, Trout Unlimited, US Fish and Wildlife Service, USFWS Anadromous Fish Restoration Program, Winzler and Kelly

For more information, please visit www.calsalmon.org & www.afs-calneva.org

Staff

Dana Stolzman
Executive Director

Dian Griffith
Bookkeeper

Melissa Scott
Registration Coordinator

Board of Directors

Don Allan, President
Redwood Community Action Agency

Allen Harthorn, Vice-President
Friends of Butte Creek

Steve Allen (alternate)
Winzler & Kelly

Don Baldwin
Department of Fish & Game

Mike Berry
Department of Fish & Game

Sean Carlson
Department of Fish & Game

Florence Consolati
CDFG Coastal Restoration Monitoring and Evaluation Program

Jodi Frediani (alternate)
Sierra Club

Josh Israel (alternate)
University of California, Davis

Andrew Jensen, M.S. (alternate)
Department of Fish & Game

Dave Kajtaniak (alternate)
PSMFC/Department of Fish & Game

Zoltan Matica
Department of Water Resources

Margo Moorhouse
Lindsay Creek Watershed Coordinator

Pat Moorhouse (alternate)
Pacific Coast Fish, Wildlife and Wetlands Restoration Association

Freddy Otte (alternate)
City of San Luis Obispo Biologist

Will Pier
Sonoma Ecology Center

Kent Reeves (alternate)
Yolo County Department of Parks & Natural Resources

Design & Layout
by Trees Foundation

28th Annual Salmonid Restoration Conference
44th Annual AFS Cal-Neva Conference

Salmonid Restoration Federation and the California-Nevada American Fisheries Society chapter will co-host the 28th Annual Salmonid Restoration Conference and the 44th Annual Cal-Neva AFS Conference in Redding, California. We are truly excited about this new collaborative effort. The theme of the conference is Fisheries Restoration and Science in a Changing Climate. The first two days of the conference will be filled with symposia, full-day workshops, continuing education classes, and field tours. A half-day plenary session will be followed by 1.5 days of technical, biological, and policy-related concurrent sessions. This conference will focus on a broad range of salmonid, fisheries, and watershed restoration topics of concern to restoration practitioners and the scientific fisheries community.

This year the conference will feature workshops on topics including Water Quality and TMDLs, Floodplain Restoration, a Fish Passage and Habitat Restoration Symposium and continuing education classes on presentation skills, acoustic tag training, and River2D instream flow modeling. Concurrent sessions include: the State of California Salmonids, Anadromous Salmonid Monitoring, Stream Channel Restoration, Central Valley Salmonid Recovery Planning, Marine and Estuarine Fisheries Research: Conservation and Management, Status, Ecology and Management of Inland Fishes and Anadromous/Migratory Fishes, Water Diversions and Fish Impediments, FERC Relicensing and Restoration Opportunities, Planning, Documenting, and Evaluating Fish Restoration Activities, Instream Flow for Salmonids, and a contributed papers session.

Field Tours will visit 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.

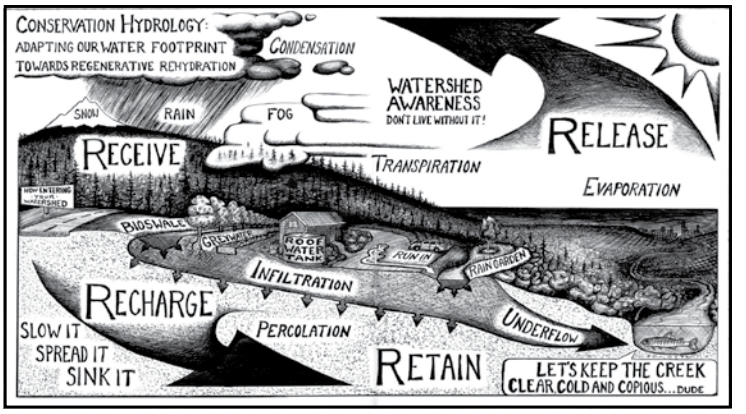
The Plenary session will feature fisheries' visionaries including David Montgomery, author of *King of Fish: the Thousand Year Run of Salmon* and *Dirt: the Erosion of Civilization*. Larry Brown from the US Geological Survey will discuss climate change and native fishes in the San Francisco Estuary and watershed. Dan Bottom from the National Marine Fisheries Service will present on "Pacific Salmon at the Crossroads and how Resilient are Salmon Ecosystems." And Maria Rea from NOAA's Protected Resources Division will discuss salmonid recovery planning efforts in California.

SRF and AFS created a dynamic conference agenda that addresses pressing issues that affect salmonid recovery and fisheries throughout the Pacific Northwest. We are also combining some of the unique features of each of our conferences. AFS will host a social at Turtle Bay, a job fair as part of the joint poster session, the annual Cal-Neva business meeting, and a Saturday morning 5K Spawning Run. SRF will feature our annual meeting followed by the film screening of *Rivers of Renewal*. SRF & AFS will host the poster session and reception, as well as a banquet, awards ceremony, cabaret, and a dance. For more information about the conference, to see the agenda, or to register, please visit *www. calsalmon.org*

Some SRF Board & Staff members

Know Your Watershed

by Brock Dolman



Excerpts from an Interview in Eco-Hearth Zine *with peripatetic natural historian, Brock Dolman who is chairing and presenting in the "Instream Flows for Salmonids" session at the conference.*

Most referential feedback happens on a watershed scale. Everybody on the planet lives in a watershed. Besides its poetic ring, the idea is one of a cradle, or a container as water flows overland, collecting into a river, and sometimes making its way to the ocean. Basins of Relations® are three-dimensional topographical territories created over time by geology, hydrology, fire, and uplifted and eroded land. They are about honoring and rekindling our relationship with all our relations on the planet. The most efficacious place for this is in the watershed. This is where we can have social, local, intentional community with other life forms and inanimate processes, like the fire cycle and the hydrological cycle. It's not reductionist and it is not a NIMBY [not in my backyard—Ed.] opportunity. For a community to have regenerative settlement patterns, we'd better figure out the water cycle, which is tied to the soil and air. The fire cycle is tied to the air cycle, which is responsible for vegetation, photosynthesis, smoke and nutrient processes like those involving phosphorus and nitrogen.

Brock Dolman in his element.

Watersheds offer an important scale for relationship and feedback. Is the water quality cleaner and quantity more abundant or not? If the river doesn't reach the ocean or makes a dead zone at the mouth, we need to take pause and evaluate the cycle from ridgeline to river mouth. How are humans behaving there? What is their relationship to water, soil, nutrient cycle and biodiversity? We need baseline criteria. Where are we starting, and what are we comparing our watershed to?

In the pre-contact Pacific Northwest, the salmon were so plentiful "you could walk on their backs." What was the feedback mechanism that allowed them to flourish? If you choose indicators like the salmon, you identify keystone species. Certain critters, if you hold them up, help us track the health of a watershed from summit to sea. They reflect for us interspecies relationships.

In indigenous hydro-engineering systems like the acequias of northern New Mexico, Peru and Ecuador, or the chinampas of Mesoamerica, the whole is greater than the sum of its parciantes (water shareholders). It's called a hydro-democracy or aqua-democracy—truly a commonwealth, when the ditch is flowing.

Watersheds can be as vast as the Mississippi basin, the third-largest in the world that drains 41% of the lower 48 US states into the Gulf of Mexico, or they can functionally be as small as all the land in your neighborhood that flows from your yard, roof, driveway and streets to the storm drain and into your local creek or lake. Watersheds underlie all human endeavors and form the foundation for all future aspirations and survival.

At any time, less than 1% of the world's water is available as freshwater in lakes, rivers and accessible ground water for shared use by humans and other freshwater-dependent beings. The melting ice caps and glaciers are spilling into the saline oceans. As we drain wetlands and clear-cut forests, plow soils and pave over our watersheds, we further reduce freshwater supplies. OAEC's practical and philosophical response is Conservation Hydrology®, which advocates that humans move from a dehydration model—pave it, pipe it and pollute it—to a rehydration model—"slow it, spread it and sink it"®. Thankfully at a national level, as part of the Clean Water Act, stormwater management is increasingly based on waterspread restoration. Bio-swales and rainwater gardens serve to biologically filter storm water, enhancing its quality and allowing it to recharge aquifers while reducing floods flows.

One task at hand is permeating the headwaters in our own heads and our imprint on our watersheds. We are perched on the tipping point of a "watershed moment." Now is the time to bring our communities together to set in motion plans and processes that ensure our watersheds will remain healthy in perpetuity. Each process, like every watershed and its associated community, is unique. Often certain local, state and federal jurisdictions are ready to collaborate with communities. Get to know members on the regional water board, irrigation district, planning commission, board of supervisors or city council. Know your state and federal legislators. Your home basin of relations is your lifeboat.

To see this full interview with Brock Dolman, please visit : *www.ecohearth.com/eco-zine/eco-heroes/1088-know-your-lifeboat-*

Joint SRF & AFS 2010 Conference Registration

Fisheries Restoration and Science in a Changing Climate

Name: _____ Phone (work): _____

Address: _____ (home): _____

_____ Email: _____

Affiliation: _____ Please check box if you are a presenter ☐

Advanced Registration Closes February 10, 2010

Workshops, Field Tours, & Continuing Education Classes

Wednesday, March 10

	AFS/SRF Member	Non Member	Fee
1. River2D CE Class (March 10 & 11)	$100	$150	_____
2. Acoustic Tag Training CE Class (March 10 & 11)	$100	$150	_____
	Advanced Registration	**Late Registration**	
3. Water Quality and TMDL Planning Workshop	$55	$65	_____
4. Redding Urban Streams Tour	$55	$65	_____
5. Upper Trinity River Tour	$55	$65	_____
6. Clear Creek Restoration Tour	$55	$65	_____
***River of Renewal** film screening*	$10	$10	_____

Thursday, March 11

7. Presentation Skills CE Class	$55	$75	_____
8. Floodplain Restoration Workshop	$55	$65	_____
9. Fish Passage & Habitat Restoration Symposium	$55	$65	_____
10. Sacramento River Tour	$55	$65	_____
11. Shasta River Tour	$55	$65	_____
12. Battle Creek Tour	$55	$65	_____
13. Stormwater Pollution Runoff Workshop	$55	$65	_____
AFS Turtle Bay Evening Social	$20	$25	_____

Conference

Friday & Saturday, March 12-13

SRF / AFS Member	$125	$155	_____
Non-member	$175	$205	_____
Student (with ID)	$75	$85	_____
Morning Spawning Run	$25	$25	_____
Saturday Evening Banquet please check if a vegetarian ☐	$35	$40	_____

SRF Membership

Individual Membership: ❍ $35 Alevin ❍ $50 Fry ❍ $100 Smolt ❍ $250 Jack ❍ $500 Spawner

Payment Total _____

Method of Payment: ❍ Check ❍ Money Order ❍ Purchase Order

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

❍ VISA ❍ MasterCard Credit Card# _____ Exp. Date _____

Approval Signature _____

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

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

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

Training Workshops

All Workshops, Tours, and CE Classes are 9 am—5 pm

Wednesday, March 10

Continuing Education Classes

River2D Class (March 10 –11)

Class Instructors: Terry Waddle, US Geological Survey, and **Mark Gard,** US Fish & Wildlife Service

The River2D workshop is an intensive introduction to use of the River2D two-dimensional hydrodynamic model to represent segments of streams where quantitative information about aquatic habitats is needed.

Acoustic Tag Training (March 10-11)

Class Instructor: Caroline Mercado, Hydroacoustic Technology

This short course addresses all aspects of tracking fish movement and other aquatic life (e.g. eel, shrimp) using acoustic tags, including three-dimensional tracking with sub-meter resolution.

Workshops

The TMDL Road to Watershed Restoration—Doing Them, Implementing Them, and Monitoring Their Effectiveness

Workshop Coordinators: Jim Harrington, Department of Fish & Game (DFG) and **Andy Baker,** North Coast Regional Water Quality Control Board (NCRWQCB)

What is a TMDL and How are they Developed in California, **TBA,** Environmental Protection Agency

What the National Research Council Says About TMDLs, **Jim Harrington,** DFG

Tomales Bay TMDL, **Carmenn Fewless,** San Francisco Bay Regional Water Quality Control Board

Assisting Landowners with TMDL Implementation, **David Lewis,** UC Cooperative Extension

Shasta River TMDL, **Andy Baker,** NCRWQCB

Assisting Ranchers with TMDL Implementation and Water Quality Monitoring in the Shasta River, **David Webb,** Western Shasta Resource Conservation District

Tailwater Revealed: Uncovering how Agricultural Runoff Impacts Water Quality in the Shasta Valley, **Lisa Unkefer,** Aquaterra Consulting

Garcia River TMDL, **Jonathan Warmerdam,** NCRWQCB

Grassroots Efforts to Implement a TMDL in the Mattole River, **Joel Monschke,** Mattole Restoration Council

Strategies for Monitoring the Effectiveness of TMDLs and What every Fish Lover Needs to Know about Bugs, Bioassessment and Biocriteria, **Jim Harrington,** DFG

Redding Urban Streams: They are Worth the Effort to Rehabilitate

Tour Coordinator: Mike Berry, Department of Fish & Game

Beginning with the gold rush, Redding area streams have been impacted by human activity. The Redding urban streams tour includes stops at several streams where efforts from agencies and non-profit restorationists have enhanced salmonid habitat through erosion control, culvert baffling, grade control structures, barrier modification, gravel supplementation, riparian planting, and invasive species control.

The Evolution of Restoration on the Upper Trinity River

Tour Coordinator: Damon Goodman, US Fish and Wildlife Service

The Trinity River Restoration Program has implemented a host of management actions to restore and sustain natural production of fish populations downstream of Lewiston Dam. The tour will visit several of the recently completed bank rehabilitation sites and introduce participants to the many aspects of this large-scale restoration program.

Rebuilding Habitat for Central Valley Salmonids: Clear Creek Restoration Project Tour

Tour Coordinators: Matt Brown, Sarah Giovannetti, and **Jim Earley,** US Fish and Wildlife Service

Restoration projects on Clear Creek have improved habitat for steelhead, spring, fall, and late-fall Chinook salmon in the northern Central Valley. Join us as we visit restoration projects and vistas throughout the anadromous portion of the creek. Tour stops will include floodplain and stream rehabilitation sites, spawning gravel supplementation areas, Whiskeytown Reservoir overlook, and the newly constructed greenway project overlook.

Thursday, March 11

Presentation Skills Continuing Education Class

Class Instructor: JD Wikert, Anadromous Fish Restoration Program

The course is designed to improve the attendees ability to provide a quality presentation, with topics include identifying presentation goals, clearly stating the message, and the selection of appropriate content.

Feather River
photo: PWA, Ltd.

Restoring Channel and Floodplain Processes to Increase Salmonid Populations Workshop

Workshop Coordinator: Eric M. Ginney, MS. Philip Williams & Associates, Ltd. (PWA)

This workshop explores the functions of, and linkages between, the channel and its floodplain. Restoration practitioners will present the latest scientific information on aquatic science, project design, and implementation.

The Ecology of Salmonids in the River Ecosystem: How Fish Utilize Pools, Riffles and Floodplains, **Joseph Merz, PhD.,** Cramer Fish Sciences

The Role of Floodplains in the River Ecosystem: The Floodplain Activation Flow (FAF) as a Restoration Metric and Design Tool, **Elizabeth Andrews, PE.** Philip Williams & Associates, Ltd.

Impacted River Processes and How They Influence Channel and Floodplain Restoration Design, **Andrew Collison, PhD.,** PWA

Designing Pools and Riffles—New Approaches to Include Floodplain Function, **Rocko Brown, EIT.,** PWA

Evaluating Effects of the Trinity River Restoration Program's Rehabilitation on SONC Coho: Questions for Future Restoration Design, **Nina Hemphill, PhD.,** Trinity River Restoration Program

Channel and Floodplain Restoration: Case Studies and Hands-on Restoration Planning Exercises from the Feather and Trinity Rivers, **Eric M. Ginney, MS.,** PWA

Stormwater Pollution Runoff Workshop

Workshop Coordinator: Chris Pincetich, Salmon Protection and Watershed Network (SPAWN)

Effectively Navigating Through the Complex Realm of Storm Water Related Permit Regulations for Restoration/ Construction Sites in California, **Andrew Jensen,** Central Valley Regional Water Quality Control Board

Toxicity in Stormwater and Effects on Salmon, **David Baldwin,** NOAA EcoToxicology Group

Understanding the Environmental Toxicology of Pesticide Exposures in Stormwater Runoff to Salmon, **Chris Pincetich,** SPAWN

Field Sampling, Storage, and Transport: Practical Advice, **Nathan Hawley,** Basic Labs

A Systematic Approach for the Assessment and Reduction of Stormwater Related Impacts to Aquatic Systems, **Todd Kraemer,** Pacific Watershed Associates

Storm Water Pollution Prevention Plans and BMP Installations, **Clay Guzi,** ENPLAN

Fish Passage and Habitat Restoration Symposium

Symposium Coordinators: Marjorie Caisley, Department of Fish & Game (DFG), and **Joey Howard, P.E.** Northwest Hydraulic Consultants, Inc.

This symposium highlights the role engineers and geo-scientists play in species recovery and habitat restoration, and provides up to date information on project design and implementation. There will be presentations on recently completed fish passage and restoration projects and the DFG fish passage design review process.

Hydraulics of the Caspar Creek Fish Ladders: Labyrinth Weir Gates, Removable Weirs, Subterranean Viewing Ports and More, **Mike Love,** Love and Associates and **Steve Allen,** Winzler and Kelly

A Guide to the Department of Fish and Game Engineering Review Process for Fish Passage Projects, **Margorie Caisley** and **Marcin Whitman,** DFG

Upslope Habitat Restoration in Upper Redwood Creek (Humboldt County, CA): A Case Study of Results and Practical Lessons Learned During 10 years of Planning, Watershed Assessment, Treatment Prioritization and Restoration Implementation, **Mitch Farro,** Pacific Coast Fish, Wildlife and Wetlands Restoration Association, and **Randy Lew,** Pacific Watershed Associates

Construction and Monitoring of Fish Passage Structures in Sulphur Creek, **John McCullah,** Salix Applied Earthcare

A Decade of Fish Passage in the Five Counties Salmonid Conservation Program Area: A Synthesis of Project Design and Effectiveness, **Christine Jordan,** 5 Counties Salmon Conservation Program

Fish Passage Enhancement Project for Southern Steelhead on Cross Creek Ranch, El Jaro Creek, Santa Ynez River, **Ed Wallace,** North Coast Hydraulic Consultants, and **Tim Robinson,** Cachuma Conservation Release Board

Sacramento River, Dam to Dam Tour: Salmonid Enhancement Projects between Shasta and Red Bluff Diversion Dams

Field Tour Coordinator: Mike Berry, Department of Fish & Game

The Sacramento River is unique as the only known river in the world which supports four runs of Chinook salmon, steelhead and sturgeon. The tour will begin at the scenic Three Shastas overlook where we will meet Bureau of Reclamation and US. Fish and Wildlife Service personnel to discuss Shasta Dam, issues related to salmonids, and

On both the Sacramento River tour and the Shasta River tour participants will view glimpses of the glorious Mount Shasta.

photo: Carson Jeffres

the nearby Winter-run Chinook salmon conservation hatchery. We will continue downstream with stops to observe gravel enhancement, salmon stranding sites, and floodplain restoration opportunities. The day concludes at Red Bluff Diversion Dam, with a discussion of the history and impacts of the dam, solutions being implemented, and biological monitoring to assure all the efforts upstream are providing positive results.

Restoring the Shasta River Tour

Tour Coordinators: Andy Baker, North Coast Water Quality Control Board and, **Adriane Garayalde** and **David Webb**, Western Shasta Resource Conservation District

Discover why the Shasta River is considered to be the most productive salmon rearing stream in California. Explore the watershed from its headwaters atop Mount Shasta to the confluence with the Klamath River.

Battle Creek Restoration Tour

Tour Coordinator: Tricia Parker, US Fish & Wildlife Service

This watershed is an example of more than a decade of effort to resolve limiting factors to restore salmon and steelhead to fifty miles of high-quality stream. This tour will highlight collaborative efforts to resolve some of the limiting factors including low flows and passage barriers due to hydropower production since the 1900s as well as view some of the completed projects including the integration of Coleman National Fish Hatchery's mitigation responsibility with natural fish production.

Fall-run Chinook returning to spawn in Battle Creek.

photo: Kathy Bishop

Conference Field Tours Highlights

Restoring the Shasta River Field Tour

Shasta River was historically one of the most productive salmon rearing streams in California. Explore the watershed from the flanks of Mount Shasta, an active volcano, to the confluence with the Klamath River. Learn about geology, coho recovery, TMDL implementation, monitoring, research and how the many stakeholders including ranchers, local entities and government agencies are working together to restore this precious resource. We will visit Big Springs Ranch, an active cattle ranch which was recently acquired by The Nature Conservancy. The ranch has large spring complexes that originate from melted snow and glaciers atop Mt Shasta and flow though lava tubes that emerge on the ranch. These spring complexes provide amazing salmonid habitat and are being studied by leading fisheries experts for the first time. The ranch is also undergoing an extensive stream restoration program that combines ranching, tailwater management, riparian protection and planting. We will also visit one of several small dam removal projects that are occurring in the watershed. The field trip will conclude in the Shasta River Canyon (known as Salmon Heaven) with a stop on the Klamath River. Tour guides include watershed and fisheries experts from the Western Shasta Resource Conservation District, CDFG, and UC Davis.

Rebuilding Habitat for Central Valley Salmonids: Clear Creek Restoration Project Tour

Salmonid restoration in Clear Creek, a tributary of the Sacramento River near Redding, has included increased stream flows, dam removal, large-scale floodplain and stream channel reconstruction, gravel augmentation, erosion control, and fuels reduction. Restoration projects on Clear Creek have improved habitat for steelhead, spring, fall, and late-fall Chinook salmon in the northern Central Valley. Additional work remains to acquire channel maintenance flows, develop a long-term flow prescription, secure a long-term supply of spawning gravel, create additional spawning habitat and manage water temperatures in the face of global warming. Our collaborative restoration process has involved diverse federal, state, and local agencies, local landowners, and representatives of power and water companies.

Recent increases in the adult populations of steelhead and the three runs of Chinook salmon in Clear Creek indicate that restoration efforts have been successful

photo: courtesy Fish & Wildlife Service archives

AFS Social at the Turtle Bay Museum and Exploration Park 5:30-10 pm

The social includes attendance to the museum, appetizers, two drink tickets, and good fun!

www.turtlebay.org

Conference Events & sessions

Friday, March 12

Friday Morning Plenary Session

Plenary Session Master of Ceremonies: Mike Furniss, Redwood Science Lab

***Dirt: The Erosion of Civilization,* David Montgomery**, author of *King of Fish* and *Dirt: the Erosion of Civilization*

***Climate Change and Native Fishes in the San Francisco Estuary and Watershed,* Larry Brown**, US Geological Survey

***Salmonid Recovery Planning Efforts in California,* Maria Rea**, Protected Resources Division, NOAA Fisheries

***Pacific Salmon Beyond the Crossroads: How Resilient Are Salmon Ecosystems?,* Dan Bottom**, National Marine Fisheries Service

Friday Afternoon Sessions

State of California Salmonids

Session Chair: Sabra Purdy, UC Davis

***State of California Salmonids Report,* Sabra Purdy**, UC Davis

***Shasta River Policy and Science: In Time to Save Coho Salmon?,* Curtis Knight**, CalTrout

***Were Southern Resident Orcas Threatened by the Demise of California's Fall run; or Was it the Other Way Around? What Happens when One Endangered Species Opposes Another?,* Bill Bennett**, UC Davis

***Challenges in Restoring the Rarest Trout in North America: the Paiute Cutthroat Trout,* William Somer**, California Department of Fish and Game

***California Spring-run Chinook Salmon: Where Are they At? Where Are they Going?,* Lisa Thompson**, UC Davis

***Collapsing Fisheries and Collapsing Communities,* Zeke Grader**, Institute for Fisheries Resources

Planning, Documenting, and Evaluating Fish Restoration Activities

Session Coordinator: Jim Harrington, Aquatic, Bioassessment Laboratory, Department of Fish and Game

***Riparian Fencing is Effective in Restoring the Shasta River,* Kim Mattson**, Ecosystems Northwest

***Monitoring Stream Health and Recovery in the Garcia River Watershed,* Jennifer Carah**, The Nature Conservancy

***A Multi-Scale Evaluation of Restoration Effectiveness of Chinook Salmon and Coho Salmon Rearing Habitat on a Large Regulated River System: Trinity River,* Damon Goodman**, US Fish and Wildlife Service

***Adaptive Management in the Delta: Testing the 2-Gates Fish Protection Demonstration Project,* Ramona Swenson**, Entrix

***South Delta Temporary Barriers Fish Monitoring Study,* Kevin Clark**, Department of Water Resources

***The Importance of Using Standardized Bioassessment Techniques to Monitor Stream Health and Recovery,* Jim Harrington**, DFG

FERC Relicensing and Opportunities for Restoration

Session Organizer: Dougald Scott, Northern California Council Federation of Fly Fishers

***The Use and Development of Scientific Information in the Implementation of the Klamath Hydroelectric Settlement Agreement,* Mike Belchik**, Senior Fisheries Biologist, Yurok Tribe

***The Yuba River Watershed in the Next Fifty Years—Citizens Approach Salmon Restoration Through Relicensing,* Jason Rainey**, Executive Director, SYRCL

***A Licensee's Perspective on the Process and Restoration Opportunity,* Mary Richardson**, Pacific, Gas & Electric

***Restoring Central Valley Salmon and Steelhead through FERC Relicensing,* Chris Shutes**, FERC Projects Director, California Sportfishing Protection Alliance, and **Cindy Charles**, President, Golden West Women Fly Fishers and Northern California Council Federation of Fly Fishers Board Member

***Dam Removal and Salmonid Reintroduction Opportunities Through FERC,* Steve Rothert**, American Rivers

***Managing Red Tape in the FERC Process,* Richard Roos-Collins**, Natural Heritage Institute

AFS Cal-Neva President-elect, Mark Gard, collecting substrate and cover data. Photo credit: US Fish and Wildlife Service Instream Flow Branch staff.

The New Hatchery Management Dynamic

Session Coordinators: Josh Israel, UC Davis, **Shirley Witalis**, National Marine Fisheries Service, and **Joel Setka**, East Bay Municipal Utility District

Exploring the Impacts of and Ways to Improve Salmon Hatcheries as a Recovery Tool in Small Coastal Watersheds, **Sean A. Hayes**, National Marine Fisheries Service SWFSC Fisheries Ecology Division

Supporting Coho Salmon Recovery in California: The Russian River Coho Salmon Captive Broodstock Program, **Manfred Kittel**, DFG

Methods Used to Determine the Appropriate Level of Production for Coho Salmon at Trinity River Hatchery, California, **Seth Naman**, National Marine Fisheries Service

Accomplishing the Mission of Mitigation in an ever Changing Regulatory Climate: The Case of the Mokelumne River Fish Hatchery, **Jose D. Setka**, Supervising Biologist, EBMUD Fisheries and Wildlife Division

Lahontan Cutthroat Trout Program, **Lisa G. Heki**, Program Manager for the Lahontan Fish Hatchery Complex, U.S. Fish and Wildlife Service

Effect of Inland Fishing Closure on Feather River Fish Hatchery Spring-run Chinook Salmon Program, **Ryan Kurth**, Department of Water Resources

Effects of Groundwater Withdrawals

Session Coordinator: Jim Reynolds, University of Alaska, Fairbanks

Protecting Water Levels at Devils Hole, **Jennifer Back**, National Park Service, Colorado

Predicting the Effects of Declining Water Level on the Devils Hole Pupfish, **Mike Bower**, National Park Service, Las Vegas, NV

Effects of Groundwater Pumping on Desert Springs Biota, **Don Sada**, Desert Research Institute, Las Vegas, NV

Predicted Hydrologic Effects of Groundwater Pumping by the Southern Nevada Water Authority, **Tim Durbin**, West Yost Assoc., Davis, CA

Influence of Groundwater Pumping on Surface and Subsurface Water Levels in a Northern California Coastal Stream, **Rocco Fiori**, Hydrologist, California State Parks

Role of Geology and Chemistry in Defining Sections of Streams Susceptible to Groundwater Pumping along Snake Creek, southern Snake Valley, Nevada, **Christine Hatch**, University of Nevada, Reno, NV

Contributed Papers Session, 5-7pm

Session Coordinator: Cynthia LeDoux, Department of Water Resources

I. Non-Anadromous Native Fishes and their Habitat Restoration

Otolith Derived Insights about the Ecology and Conservation of the Tidewater Goby, **Eucyclogobius newberryi,** ***in a Northern California Lagoon,*** **Michael Hellmair (student)**, Humboldt State University

Food Habits of Native Fishes in Lagunitas and Olema Creeks, **Marin County. Barbara Martin**, U.S Geological Survey

Long-term Isolation and Genetic Divergence Between Populations of the Threatened Rough Sculpin (**Cottus asperrimus*****) Separated by Hat Creek Fault,*** **Andrew Kinziger**, Humboldt State University

Effects of a Restored Freshwater Tidal Wetland Complex on Habitat for Imperiled Native Fish, **Gina Benigno**, Department of Water Resources

Stream Restoration Tools to Address Stream Channel Degradation in the Lower Clear Creek Floodplain Restoration Project, **S.A. Pittman**, Graham Matthews and Associates

Paiute sculpin, Cottus beldingi
photo: Jacob Katz

II. Klamath River Salmonids

Evaluation of Ceratomyxa shasta and Parvicapsula minibicornis in Returning Adult Chinook Salmon (**Oncorhynchus tshawytscha*****) throughout the Klamath River Basin,*** **Ryan Slezak**, U.S. Fish & Wildlife Service

Reproductive Attributes of Sympatric Chinook Salmon (**O. tshawytscha*****) Runs,*** **James Hearsey (student)**, HSU

Limitations of Genetic Stock Identification of Chinook Salmon (**O. tshawytscha*****) in the Klamath-Trinity Basin, and Implied Consequences for Wild Stock Recovery,*** **Michael Hellmair (student)**, Humboldt State University

This year the Poster Session will include a "Fishbowl" screening room where participants can see fisheries flicks including Thomas Dunklin's *Restoring the Balance* about the Klamath dam removal process and *SalmonsKin* as well as new underwater footage from the Smith, Blue Creek, Mill Creek, and some dam removal blasts !

Please email *poster@calsalmon.org* to sign up for the poster session or call SRF at (707)923-7501 for more information.

Saturday, March 13

AFS Spawning Run

Join us for an approximately 5k fun run/walk on Saturday morning. Meet at the Convention Center lobby for a 6:30 AM start. Get some exercise, see Redding from a different perspective, and get a great start to the last day of the conference. You can sign up at the registration desk on Thursday or Friday, but there will be no registration on Saturday morning. For more information please email *run@calsalmon.org*

Saturday Morning Concurrent Sessions

Status, Ecology and Management of Inland Fishes

Coordinator: Lisa Thompson, Department of Wildlife, Fish and Conservation Biology, University of California, Davis

California Fish Species of Special Concern Report, **Peter Moyle,** Department of Wildlife, Fish and Conservation Biology, University of California, Davis

Mono Basin Restoration: The Reason, The Fish, The Process and the People, **Dr. Mark Drew,** Eastern Sierra Program Manager, California Trout

Sources of Production Supporting Trout Production in Four Terminal Lakes with an Emphasis on Resource Utilization in Pyramid Lake, **Sudeep Chandra,** University of Nevada, Reno

Minnows at the Intersection of Taxonomy and Conservation, **Jacob Katz,** Graduate Group in Ecology Department of Wildlife, Fish, and Conservation Biology, UC, Davis

Potential Interactions Among Native and Non-native Fishes in a Large River in the Western Great Basin, Nevada, USA, **Joe Sullivan,** University of Nevada, Reno

Distribution and Ecology of the Russia River Tule Perch, **David Cook,** Sonoma County Water Agency

Stream Channel Restoration

Session Coordinator: Wayne Lifton and Mitchell Katzel, Entrix

Bed Mobility and Channel Change Monitoring to Inform Levee Setback Design on Deer Creek, **Matt Kondolf,** UC, Berkeley

Restoration Design and Construction Implementation to Restore Channel Morphology and Floodplain Connectivity on the Upper Truckee River, **Lake Tahoe,** California, Brendan Belby, Entrix

Design and Monitoring a Large River Bioengineering Project: Flood Fencing in the Braided Reach of the Skykomish River, **Paul DeVries,** R2 Resource Consultants, Inc.

Incremental Restoration of an Anabranching River, Upper Quinault River Valley, Washington, **Tim Abbe,** Entrix

Off Channel Habitat for Salmonids in the Russian River: Historic Context and Restoration Opportunities, **Mitchell Swanson,** Swanson Hydrology & Geomorphology

Using PIT Tools to Inform Habitat Restoration and Population Recovery Efforts, **Gregg Horton,** Sonoma County Water Agency

Stream Channel Restoration

photo: Mark Gard

Instream Flow for Salmonids

Session Coordinator: Brock Dolman, Occidental Arts & Ecology Center's Water Institute (OAEC)

Slow It Spread It Sink It for Salmon: Upland Infiltration for Instream Flow Enhancement, **Brock Dolman,** OAEC

Groundwater Storage for Streamflow Enhancement in the Mattole Headwaters, **Tasha McKee,** Sanctuary Forest

Water Use in the Shasta and Scott River Basin Under Coho Salmon Incidental Take Permits (ITPs) and Prospects for Pacific Salmon Restoration, **Patrick Higgins,** Kier Associates

Getting Into the Flow: A Legal and Policy Perspective on Protecting Instream Flows in CA's Coastal Watersheds, **Brian Johnson,** California Water Project Director and Staff Attorney, Trout Unlimited and Mary Ann King, Stewardship Coordinator, California Water Project, Trout Unlimited

Water Conservation and Streamflow Augmentation in the Salmon Creek Watershed: Water Security for Fish and People, **Lauren Hammack,** Geomorphologist/ Watershed Planner, Prunuske Chatham, Inc.

How Beaver Dams Can Be Used to Increase Stream Flows, **Michael Pollock,** NOAA Fisheries

Marine and Estuarine Fisheries: Research, Conservation, and Management in a Changing Climate

Session Coordinator: Cynthia LeDoux-Bloom, Staff Scientist, Department of Water Resources

Variation in Response of Pacific Salmon to Environmental Variability, **Louis W. Botsford, Ph.D.,** Professor, Department of Wildlife, Fish and Conservation Biology, UC, Davis

Forecasting Returns of Coho and Chinook salmon in the Northern California Current: a role for High-Frequency Long-term Observations, **William Peterson, Ph.D.,** Northwest Fisheries Science Center, NOAA Fisheries

Modeling the Effects of Future Freshwater Flow on the Abiotic Habitat of an Imperiled Estuarine Fish, **Frederick Feyrer,** Applied Science Branch, U.S. Bureau of Reclamation

Ecological Response to Climate-Change Induced Water Temperature Changes in the Sacramento-San Joaquin Delta, **Wayne Wagner,** Department of Civil and Environmental Engineering, UC Berkeley

What Resource Managers and Researchers Need in Planning for Climate Change?, **Russell J. Bellmer, Ph.D.,** Coordinator Coho Recovery Plan, Fisheries Branch, California Department of Fish & Game

Climatic and Anthropogenic Factors Affecting the Marine and Estuarine Environments, **Joseph E. Merz, Ph.D.,** Cramer Fish Sciences

Central Valley Salmonid Recovery Planning and Biological Opinions

Session Coordinator: Brian Ellrott, National Marine Fisheries Service (NMFS)

Overview of the Biological Opinion on the Long-term Operations of the Central Valley Project and State Water Project, **Garwin Yip,** Water Operations and Delta Consultations Branch Chief, NMFS

Central Valley Salmon and Steelhead Recovery Plan, **Brian Ellrott,** Fisheries Biologist, NMFS

Web-based Spatial Representation and Implementation Tracking of the Central Valley Salmon and Steelhead Recovery Plan, **Gretchen Umlauf,** NMFS

Recovery Actions for the Yuba River: Progress and Possibility, **Gary Reedy,** South Yuba River Citizens League

Residence of Winter-Run Chinook Salmon in the Sacramento-San Joaquin Delta: The Role of Sacramento River Hydrology in Driving Juvenile Abundance and Migration Patterns in the Delta, **Rosalie B. del Rosario,** National Marine Fisheries Service

The Anadromy/Residency Question in O. mykiss—Old and New Hypotheses, **Dave Swank,** NMFS

Saturday Afternoon Concurrent Sessions

Status, Ecology and Management of Anadromous/Migratory Fishes

Session Coordinator: Jacob Katz, UC Davis

Longfin Smelt and Pelagic Organism Decline in the San Francisco Bay Estuary, **Dr. Jim Hobbs,** Research Scientist, UC, Davis

Weakened Portfolio Effects in California's Recently Collapsed Central Valley Fall-run Chinook Salmon, **Stephanie Carlson,** UC Berkeley

Sacramento Perch, New Findings on California's Only Endemic Sunfish, **Pat Crain,** UC Davis

Delta Smelt: How Did We Get Here, and Are We Just Flirting with Time?, **Bill Bennett,** UC, Davis

Riverscape Management for Green Sturgeon, **Josh Israel,** UC, Davis

Butte Creek Spring-run Chinook Salmon

photo: Thomas B. Dunklin

Status, Ecology, and Management of Coastal California Steelhead, **Gordon Becker,** Center for Ecosystem Management and Restoration

Water Diversions and Fish Impediments—Can California's Water System and Delta Fisheries be Fixed With the New State Legislation and Bond Act?

Session Coordinator: Tom Stokely, Water Policy Coordinator for California Water Impact Network

A Trail of Broken Promises, **Tom Stokely,** Water Policy Coordinator for California Water Impact Network

A Stacked Deck Geared For Destruction of the Bay-Delta Estuary, **Dante Nomellini,** Attorney/Manager for Central Delta Water Agency

Making Historic Decisions in the Face of Continued Scientific Uncertainty; What Have we Learned from the Last 20 Years?, **Jason Peltier,** Chief Deputy Manager, Westlands Water District

The 2009 Water Deal- Where's the Magic?, **Bill Kier,** Institute for Fisheries Resources

Protecting Fish our Rivers and the Delta while Finding Practical Water Supply Solutions for 38 Million People, **Spreck Rosekrans,** Economic Analyst, Environmental Defense Fund

Half a Loaf—and More Work Ahead to Achieve Viable Fisheries and Reliable Water Supply for California, **Christina Swanson,** Executive Director, The Bay Institute

Climate Change and Salmonid Recovery

Session Coordinator: Mike Furniss, Redwood Sciences Lab

Integrating Global Climate Change into Salmon and Trout Conservation: the Klamath River, California, **Rebecca M. Quiñones,** Wildlife and Fisheries Conservation Biology, UC, Davis

An Integrated Framework for Streamflow Management in Mediterranean-Climate Streams: Eexamples from Sonoma County, California, **Ted Grantham,** UC, Berkeley

Quantification of the Effects of Global Climate Change on Endangered Species Habitat: Application to ESA and NEPA, **Anna Toline,** Entrix

Climate Change and Butte Creek Spring-run Chinook Salmon: Predictions and Management Options from Coupled Watershed and Population Dynamics Models, **Lisa C. Thompson**, UC Davis

Aquatic Ecosystems and Water Supplies in a Rapidly Warming World: Integrating Conceptual Frameworks and Operational Conservation Strategies from Global to Watershed Scales, **Michael J. Furniss**, Pacific Northwest Research Station, Arcata, CA

Effects of Elevated Water Temperature on Early Life Stage Development and Survival of Spring-run Chinook Salmon in the Trinity River, California, **Keith Marine**, North State Resources

Anadromous Salmonid Monitoring

Session Coordinator: Doug Threloff and Mark Gard, US Fish and Wildlife Service

Using Trap Catches of Salmonid Smolts Migrating Downstream to Index Population Abundance: Does it Work?, **Michael D. Sparkman**, Department of Fish & Game

An Overview of Long-term Coho Monitoring Programs for the Central California Coast Coho Salmon Evolutionary Significant Unit (CCCESU), **Brannon Ketcham** and **Sarah Carlisle**, National Park Service

3D-Modeling of Steelhead/Rainbow Trout Passage in Southern Santa Barbara County, **Tim Robinson**, Cachuma Conservation Release Board

Large-scale Parentage Inference for Fishery Management and Ecological Investigation, **Carlos Garza**, NOAA Fisheries

Mainstem Trinity River Salmon Spawning Distribution 2002-2009, **Charles D. Chamberlain**, US Fish and Wildlife Service

Dip, Drop, or Alarm: Coho Salmon Status and Trends in Mendocino County, California 2000 to 2009 and Beyond, **Sean Gallagher**, Department of Fish & Game

Hands-on stream restoration on a tributary of the Klamath River.

photo: Will Harling, MKWC

Stream Channel Restoration II

Session Coordinator: Wayne Lifton and **Mitchell Katzell**, Entrix

Restoration on Big Springs Creek, Shasta River: Where You Can Have Your Cattle and Your Restoration Too, **Carson Jeffres**, Center for Watershed Sciences, UC Davis

Large Wood in Channels: Re-defining the Problem, **Neil S. Lassettre**, Entrix

Habitat Enhancement in the Upper Klamath Basin—Historical Channel Reactivation on the Sprague River, **Troy Brandt**, Fisheries Biologist, River Design Group, Inc.

Mega Wood Loading Projects for Coho Recovery: How Do We Get There? Examples from North Coastal California, **Rocco Fiori**, Fiori GeoSciences and California State Parks

Technically Challenging Problems and Solutions Associated with the Decommissioning of Stream Crossings on Fish Bear Streams in Forested Watersheds, **Tom Leroy**, Pacific Watershed Associates

Instream with California Conservation Corps—California's Future Restoration Workers, **Leah Mahan**, NOAA Fisheries

Cabaret & Banquet

6:00pm Wild Salmon Banquet
7:00pm Awards & Cabaret
8:30pm Dance to Absynth Quintet

Logistics

SRF Has Arranged Discounted Rates at the Following Hotels:

The Red Lion: (*www.redlion.com*) is offering rooms for $84/ single room occupancy and $94 for doubles with continental breakfast. For booking information call (800) 733-5466. The Red Lion is located at 1830 Hilltop Drive. To book the group rate, please call (800) Red-Lion by February 20 and let them know you are attending the SRF & AFS Conference.

The Oxford Suites: (*www.oxfordsuitesredding.com*) rooms for $84 which includes a full breakfast and complimentary drinks from 5-9 pm. To book the group rate, please call (530) 221-0100 by February 20. The group code is FISH. The Oxford Suites is located at 1967 Hilltop Drive.

The Holiday Inn: (*www.ichotelsgroup.com*) To book the group rate of $84, please call (530) 221-7500 by February 20, the group code is FISH. Holiday Inn is located at 1900 Hilltop Drive.

2010 Conference Poster Session

If you are interested in presenting at the 2010 Conference Poster Session scheduled for Friday evening, March 12, please email: *poster@calsalmon.org*

Exhibitor Space

If you are interested in having exhibitor space at the joint conference, please email: zachary_jackson@fws.gov

AFS Job Fair: *March 12, 2010*

If you are interested in presenting at the AFS Job Fair please email: bcavallo@fishsciences.net

SRF Call for Awards Nominations for 2010 Conference

SRF Presents Awards for Outstanding Achievements in the Salmonid Restoration Field. If you would like to nominate someone for the Restorationist of the Year award, the Lifetime Achievement award or the Golden Pipe award, please submit 200 words describing the accomplishments of the nominee by February 10, 2010 to *srf@calsalmon.org*

Water, Climate Change, and Forests

by Mike Furniss

"Good management is the art of making problems so interesting and their solutions so constructive that everyone wants to get to work and deal with them. ..... **Paul Hawken**

History provides vivid examples of societies that were either destroyed or maintained when climates changed. Noted scientist and author Jared Diamond (2005) discussed the Greenland Norse (986–c.1420 A.D.) who thrived during a warm period, but were unable to survive like their native Inuit counterparts when the climate cooled. Accounts of the Norse settlements' demise suggest that they did not anticipate that changes would be long-term and require adaptation. They were inflexible and did not adopt the approaches that allowed the Inuit to persist.

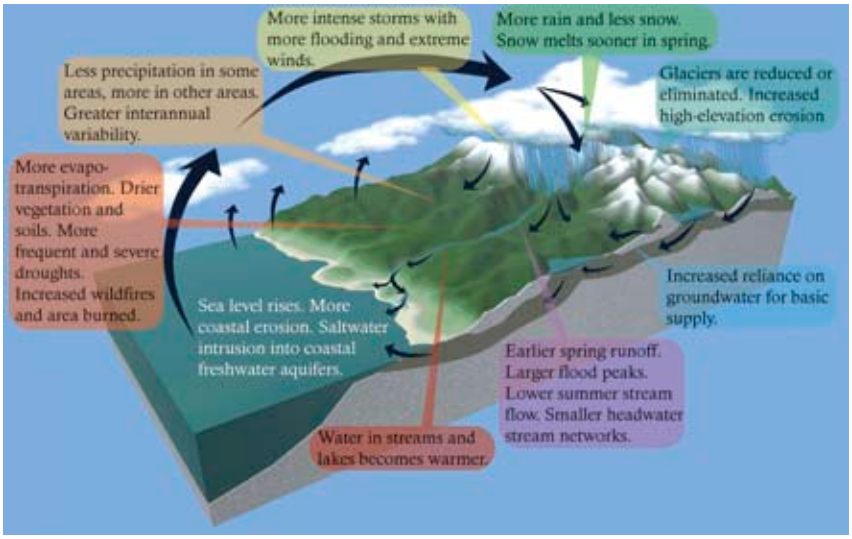
Today, overwhelming scientific evidence synthesized by the Intergovernmental Panel on Climate Change, the U.S. Climate Change Science Program, and others indicates trends of increasing temperatures and variable precipitation patterns that have begun to affect people and communities around the world. Scientists, governments, and industries are anticipating the consequences of warming and investing in research to reduce uncertainties and understand options. Resource managers, landowners, and citizens are working to understand these changes, the range of future conditions, and options for maintaining ecosystems, communities, and livelihoods.

The stakes for good watershed stewardship are raised dramatically by climate change and population growth. How best to respond is no mystery: watersheds must remain resilient to adapt to land use and climate change, rebound from disturbances, and adjust to new conditions. There is much we can do, and we have a long history and abundant knowledge and experience in doing this work: the science and practice of sound watershed stewardship.

We have good reason to hope and every reason to act. We know how to practice effective stewardship so that the watersheds we depend on and value will remain intact and continue to provide life-supporting services. Climate change offers us the opportunity to advance our skills, rethink our stewardship, innovate, and work with our partners for the benefit of healthy watersheds and communities.

America's forests and grasslands are immensely valuable, locally and globally. They will certainly remain as national jewels in a warming, crowded, and challenging future. These lands are and will continue to be crucial refuges for plants, animals, and fish displaced from other lands and waters. These lands will remain the "water towers" of the nation, providing water security and prosperity to a growing population and coming generations. As we work together, we can ensure that these valuable watersheds persist to meet the many needs of people and nature into the next millennium.

Excerpt from *Climate Change, and Forests: Watershed Stewardship for a Changing Climate*. In Press. PNW General Technical Report. Portland, OR: USDA-Forest Service, Pacific Northwest Research Station.



Climate change is hydrologic change. Potential direct and indirect effects of climate change on the hydrologic cycle. Base image from the COMET Program, used by permission. chart: PWA, Ltd.

How Climate Change Affects Water Quality & Aquatic Species

Water is a central organizer of ecosystems. Thus changes in the hydrologic system and associated disturbance regimes will likely have significant impacts on forests and the flow of watershed services they provide to people. Water temperatures are expected to increase due to the combined effects of increased air temperatures and wildfire. Erosion is expected to increase as a result of higher peak flows and reductions in ground cover from reduced snowpacks and increased wildfire activity. Sediment loads are thus expected to increase, affecting municipal water supplies and aquatic habitats. Seasonally flowing streams are expected to show decreases in flow duration due to changes in precipitation timing and type, and the majority of streams are likely to show reduced annual runoff and shifts in runoff timing. Decreased flows will likely shrink habitats of all aquatic species from the upstream end. The same influences will result in the contraction and loss of wetlands. Altered flows and higher air temperatures will result in warmer water temperatures at sites where flow remains present, with resulting changes in the composition of aquatic communities and increases in primary productivity. Temperature changes will likely shrink habitats of thermally-sensitive species from the downstream end, compounding losses from the upstream end.

Understanding the Environmental Toxicology of Pesticide Exposures in Stormwater Runoff to Salmon

Christopher A. Pincetich, Salmon Protection and Watershed Network (SPAWN)

Pesticide pulses in rural and urban watersheds originating from stormwater discharges can have both short and long-term effects on salmonids at all life-stages, and understanding the combined toxic effects of these exposures over the life of a salmon are critical to managing their recovery. Pesticide exposures can last from a few hours to days, co-occur with the presence of migrating adults, and effect sensitive embryogenesis in salmonid bearing systems. Three pesticides currently used in the Sacramento Valley, which has historically supported the majority of California's Chinook salmon (*Oncorhynchus tshawytscha)* spawning grounds, were chosen to model the exposure of salmon during embryo development to storm-water discharges. The results of static-renewal (96 h EPA method) exposures of dinoseb, diazinon, and esfenvalerate to eyed eggs and alevins resulted in acute toxicity, abnormal development, and significant changes in metabolism. This study clearly demonstrated that sub-lethal effects from the 96 hr exposures resulted delayed mortality, undermining current reliance on EPA testing methods to determine ecological effects of contaminant exposures in salmonid early life-stages. Other studies detailing the effects of environmentally relevant concentrations of pesticides in stormwater show the disabling the olifactory organ of salmonids, which is critical to migration success, and maternal transfer of contaminants from adult fish to their embryos. The combined effects of co-exposure to pesticides can be additive or synergistic, resulting in the underestimation of the environmental effects of complex pesticide exposures, especially to salmon already under temperature or parasitic stress. The Salmon Protection and Watershed Network (SPAWN) is currently working on educating retailers and consumers about the harmful affects of specific classes of pesticides to salmon, and advocating the application of current scientific knowledge and regulatory policy governing pesticide applications towards providing increased protection for the endangered coho salmon in the Lagunitas Watershed of West Marin, California.

Stormwater Runoff entering a salmon-bearing creek.

photo: Andrew Jensen

Restoring Channel and Floodplain Processes to Increase Salmonid Populations

Eric Ginney, Phillip Williams & Associates, Ltd.

Oblique satellite view of levee setback alignment and conceptual floodplain connectivity project; lower Feather River, Yuba and Sutter Counties, CA

Rivers and their floodplains are among the most productive and diverse ecosystems on Earth. In California, they are also one of the most-altered ecosystems. In many past restoration efforts and programs, there has been a strong emphasis on restoration of spawning gravel through augmentation and mechanical enhancement. However, in review of river restoration to benefit salmonid populations, there is increasing recognition of the importance of rivers being connected to their floodplains in supporting key ecosystem functions that can increase the number of successfully out-migrating smolts—and also produce larger and healthier juvenile fish which can ultimately lead to higher escapement. Perhaps not so unconnected is that in-channel restoration (i.e., gravel augmentation, riffle construction, LWD placement) commonly targets creation of the form we associate with proper habitat, and the function is assumed to come with it—despite any quantifiable metrics for defining or monitoring the intended function. In this workshop, we explore the functions of, and linkages between, the channel and its floodplain. We also examine how channel and floodplain restoration projects can benefit from a synergistic, comprehensive approach that includes quantifiable metrics to guide design, monitor success, and enable learning—all important aspects of the adaptive management approach that is commonly sought for restoration.

Keynote David Montgomery: A Genius on Salmon and Dirt !

Macarthur Fellow David R. Montgomery studies geomorphology, the evolution of landscapes. He graduated from Stanford University with a B.S. in geology and from U.C. Berkeley with a Ph.D. in geomorphology. He is a professor in the Department of Earth & Space Sciences at the University of Washington. His research interests range from the co-evolution of the Pacific salmon and the topography of the Pacific Northwest to the environmental history of Puget Sound rivers, interactions among climate, tectonics, and erosion in shaping mountain ranges, giant glacial floods in eastern Tibet and northeastern India, Martian geomorphology, and the role of agricultural soil erosion in the longevity of human societies. He has published over 200 papers in the scientific literature and is the author of *Dirt: The Erosion of Civilizations* and *King of Fish: The Thousand-Year Run of Salmon*.

David Montgomery recently received the MacArthur Fellows Genius Award for his ground-breaking books on salmon and erosion.

The New Hatchery Management Dynamic

Josh Israel, Jose Setka, and Shirley Witalis

Management is not simple in today's fish hatcheries. The reliance on and inherent risks of salmonid aquaculture has broadened our vision of hatcheries beyond what enters the fish ladder. Increasing evidence on the relationship between hatchery management practices and salmonid viability in the natural environment challenges fish culturists, biologists, and resource managers to apply scientific and ecological principles to propagation programs. Problem solving, experimentation, and adaptive management are critical to program success. To succeed in this new and dynamic environment a hatchery manager relies on appropriate monitoring in the natural environment to evaluate effectiveness of program strategies and provide feedback for adaptive management. Biologists focused on research concerning interactions between hatchery and natural fish provide essential information on the demographic, behavioral, and ecological effects of propagated fish that leads to experimentation and problem solving in the hatchery. Hatchery programs have played and continue to evolve a role in salmonid reintroduction and recovery strategies. The 2001 California Department of Fish and Game-NOAA's National Marine Fisheries Service (CDFG-NMFS) Hatchery Review Committee and the recently released CDFG Environmental Impact Report, Environmental Impact Statement (EIR, EIS) on the state hatchery system provide recommendations for minimizing hatchery risks to natural fish. Other efforts, including an interagency panel investigating the implications of mass marking and mark-selective fisheries for California's salmon stocks and an impending Hatchery Scientific Review Panel, will play an important role in balancing hatchery production with fishery management and the recovery of fish listed under the Endangered Species Act. This session presents examples of hatchery managers and biologists conducting monitoring and research to improve hatchery programs, and highlights successful research collaborations that demonstrate the benefits of ecosystem-based approaches to hatchery operations and management.

Incubation racks at Livingston Stone National Fish Hatchery, US, Fish and Wildlife Service.

photos: Josh Israel

Circular tanks for segregating families of fry winter run Chinook at Livingston Stone NFH.

Salmonid Restoration Federation
PO Box 784
Redway, CA 95560

www.calsalmon.org
srf@calsalmon.org

Non Profit Org
US Postage
PAID
Permit #470
Santa Rosa CA

SRF & AFS Conference Events

Showing of *River of Renewal* at the SRF & AFS Conference

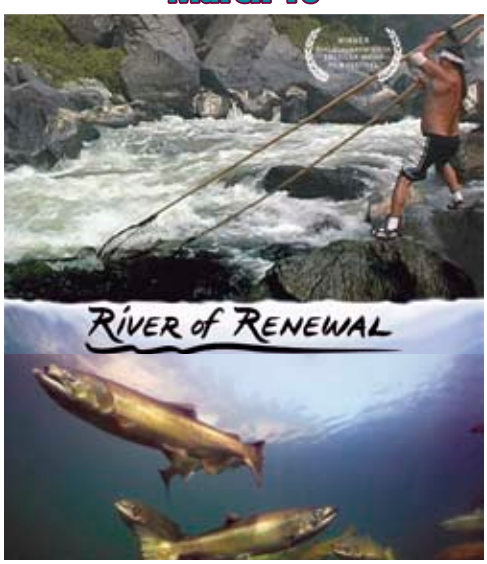
On March 10 SRF will host our annual meeting and a screening of *River of Renewal.*

The film tells the story of conflict over the resources of California and Oregon's Klamath Basin. Over the years, different dominant groups have extracted its minerals, trees, and water with disastrous consequences, including the collapse of industries and of wild salmon populations.

River of Renewal documents protest and acts of civil disobedience as Indian tribes, farmers, and commercial fishermen defend their ways of life. It witnesses a remarkable turnaround as politically polarized stakeholders and government agencies overcome bitter divisions in reaching a consensus about the future.

In September 2009, the Secretary of the Interior announced the agreement between the California and Oregon governors and Warren Buffett's PacifiCorp to remove the four hydroelectric dams on the Klamath River. The plan aims to restore economic viability along with the ecological integrity of a region larger than nine of the fifty states. There are many ways in which it could fail, but if the Klamath does become a river of renewal, that success would have a ripple effect around the world.

March 10



March 11
AFS Reception at Turtle Bay

March 12
Poster Session & Job Fair

March 13
Banquet, Awards, & Absynth Quintet