Salmonid Restoration Federation
Winter 2004

Experience the 22nd Annual Salmonid Restoration Conference and the 14th International Salmon Enhancement Workshop - March 17 - 20, 2004 in Davis, CA

The Salmonid Restoration Federation will hold our 22nd Annual Salmonid Restoration Conference in Davis, CA from Wednesday, March 17 through Saturday, March 20, 2004. This year's conference is entitled, *"Collaborative Watershed Efforts for Salmonid Recovery,"* and the conference will be held in conjunction with the 14th International Salmonid Habitat Enhancement Workshop.

The first two days of the conference include full-day workshops on the following topics: fish-friendly agricultural practices, effectiveness and validation monitoring of restoration projects, urban creek restoration, advanced GIS analysis for watershed management, increasing your watershed and fish restoration organization's capacity, and instream flow requirements for salmonids.

Field sessions include tours of Putah Creek restoration efforts; Cache Creek basin and the Yolo bypass: steelhead restoration, fish passage, and flood control; Village Homes and Davis, CA: suburban watershed planning, and Mokelumne and American River restoration programs.

Eyak-Athabascan native from Alaska, Dune Lankard, will discuss *Wild Salmon as a Way of Life* at the Plenary Session.

Photo By Dana Stolzman

On Thursday evening, the theatre troupe Human Nature will perform their new musical comedy, *"What's Funny about Global Climate Change?"* This play is the brainchild of Mattole restorationist David Simpson and was spawned by David's concerns about the effects of global climate change on salmonids. This event will be co-sponsored by the Sacramento-based organization Friends of the River.

The plenary session will cover Global, Pacific Northwest, California and Regional salmonid issues. Scientist Robert Lackey from the EPA will address global fisheries issues and the future of salmon in the Pacific Northwest in his talk, "The Four Nations of the Salmon World." Dune Lankard, a Eyak-Athabascan native from Alaska will share his story of leaving a life of commercial fishing to devote himself to the recovery of wild salmon habitat in Prince William Sound after the devastating Exxon Valdez oil spill. Diana Jacobs, Deputy Director of California Department of Fish and Game will discuss the CALFED restoration program particularly in the Sacramento River Basin. Lastly, Mark Dubois, co-founder of Friends of the River and the International Rivers Network, will discuss the role of advocacy in preserving rivers and fisheries habitat on a local and global level.

The weir at Hasbrook Crossing is one of the sites that will be visited during the Putah Creek tour.

Photo By Rich Marovich

Technical and policy concurrent sessions will include presentations on conservation hatchery practices and research, opportunities for restoration through the FERC relicensing process, nutrient additions and water quality in California streams, in-channel and off-channel salmonid habitat enhancement projects, and lessons learned from the protection of neighboring watersheds: Putah Creek and Cache Creek. Other topics includes salmon in a global context: climate change, ocean conditions, and the salmon of the Pacific Rim; non-native and invasive species: controlling threats to salmonid habitats, and the human habitat: fostering lasting change through restoration education and outreach.

Attend the Salmonid Restoration Conference to network with other salmonid restorationists from around the state, learn how you can make a bigger difference in your organization and community, and gain new perspectives for integrating new science into your watershed restoration planning.

Please see the SRF registration packet inside this newsletter and visit our web site at *www.calsalmon.org* for more info on the workshops, field tours, and sessions, a preview of the Proceedings, discounted lodging, frequently asked questions, and scholarship opportunities.

King Salmon Speaks

By Josh Israel

Rain has returned to the Central Valley, and as in many coastal watersheds, my home creek saw salmon return and spawn in numbers unlike those seen over the past decade. Putah Creek is having a hopeful run of Chinook salmon this year with at least 13 spawners observed and as many redds counted. Many community members have worked tirelessly crafting partnerships for over a decade to restore flows to Putah Creek and to see salmon spawn there. Kudos!

Restorationists from around the North Coast report that they too are seeing a commitment to fish-friendly land use practices, restoration efforts, and community stewardship as influencing the return of terrific numbers of coho spawners to Freshwater Creek, and Chinook returning to Redwood Creek on the South Fork of the Eel River. While it is difficult to determine all the potential causes for the increased return of salmon into these creeks, the vigilance of communities to protect and restore the critical habitat of these fish is a factor.

Last fall, I attended the Public Officials for Water and Environmental Reform (POWER) conference. The theme of the 13th California Water Policy conference was "Juggling Our Water Future." Many of the sessions focused on water's influence on land planning from a policy perspective. While many people are starting to think of the landscape at a watershed scale, the restoration and recovery of salmonids and protection of a functioning aquatic and terrestrial ecosystem too often exist outside the framework for the growth planned in California communities. Unfortunately, many growth plans and strategies still represent flowing water as access and excess, when really these water quantities are already unsustainable and reduced below thresholds for supporting functioning ecosystems and healthy runs of salmonids.

Increasingly, state agency budget cuts may hinder state staff from offering technical support to assist watershed and fisheries restorationists, attending trainings and continuing education workshops, and being able to effectively do their jobs. California's restorationists must make their voices heard in support of agency staffing. State policy should increase assistance to community organizations and planning groups restoring California's wild salmonid runs and conserving water quantity and quality for a functioning ecosystem.

Josh Israel is a fisheries biologist graduate student, a green sturgeon scholar, and the agenda coordinator for this year's Conference.

SRF believes that each of its members can make a difference towards protecting and recovering salmonid populations. Participation is at the foundation of restoring our salmon and the watersheds they share with us. Here are simple actions that we can do in 2004 to be more effective at restoring salmonids and healthy watersheds:

Write our Representatives to ensure that California retains restoration funds. See the Prop 40 action alert on the next page.

Call and write your Assemblyperson once a season. Attend the California Watershed Network's Legislative Day on Wednesday, April 7, 2004. More information is on CWN's website at *http://www.watershednetwork.org/*. Send a letter to your Assemblyperson letting them know what watershed you live in, why restoration is important in management of your watershed, and what restoration-friendly bills you like. SRF's newsletters and website will contain information on these and other bills likely to influence restoration of salmon in California.

Participate in the California Watershed Council effort to integrate the public into a state Watershed Strategic Plan. Let the agencies managing our watersheds, restoration programs, and salmon runs know how you feel. Participation from each watershed and across the state is essential towards making huge restoration programs meaningful for on-the-ground differences in water-use practices, watershed planning and prioritization, and the involvement of community groups and small businesses. More information is available at *http://cwp.resources.ca.gov/*.

Watershed Sciences Approaches for Monitoring & Prioritization of Salmonid Restoration & Navigating through the Permitting Process

Salmonid Restoration Federation and the California Salmon Partnership sponsored a North Coast Field School November 10-14 at Jughandle Creek farm in Mendocino. Two workshops were offered: *Watershed Sciences Approaches for Monitoring and Prioritization of Salmonid Restoration* with hydrologist Randy Klein and fisheries biologist Walt Duffy, and *Navigating through the Permitting Process*. The Watershed Sciences workshop focused on using turbidity monitoring to assess watershed health. It included discussions and examples of the significance of turbidity from a biological perspective and the sources of turbidity from a watershed process perspective. Walt Duffy's presentations focused on monitoring fish to assess the response of watersheds to restoration, including discussion of appropriate life history stages for monitoring, methods for sampling juvenile stages for abundance, and estimating population size, relation of juvenile condition to habitat, smolt sampling, and adult escapement.

The Permitting workshop included an overview of the permitting process and provided an opportunity for participants to learn about successful proposals, and have small group or individual consultations. Permitting presenters included representatives from USDA, Department of Fish and Game, NOAA, Water Quality Control Board, and representatives from Sustainable Conservation and Redwood Community Action Agency. To see handouts and summaries of the permitting presentation, please visit SRF's web site: *www.calsalmon.org*

Hydrologist Randy Klein demonstrates using different turbidity sampling monitors

Photo By Jodi Frediani

Take Action to Preserve Prop 40 and Keep Restoration Dollars Flowing in California

The California Department of Finance and the Resources Agency proposed withholding the sale of Proposition 40 Bonds in the upcoming 04/05 Fiscal Year. Prop 40 was approved by CA voters in March 2002 for the protection of our waterways and coastal environment. It is through the sale of these bonds that the state provides funds for the restoration of coastal watersheds for anadromous salmon, otherwise known as the Department of Fish and Game's Fishery Restoration Grants Program. The state provides both a hard match (bond dollars) and soft match (General Fund dollars in the form of necessary DFG project biologists and contract administrators) to implement on the ground habitat restoration projects. These funds allow California to access millions of dollars in federal matching funds at a ratio of 3:1, as well as significant private matching funds for individual projects. **Eliminating the Prop 40 and General Fund matching funds will end the state's ability to access these other funding sources.** The economic impact of shutting down the Department of Fish and Game's Fishery Restoration Grants Program would also be felt in coastal communities throughout California through the loss of tourism associated with commercial and recreational salmon fishing.

Please disseminate this information and contact the Governor, CA State Senators and State Assembly members who will be required to approve the budget for these changes to take place. You may want to mention these points:

* More than $54 million in federal dollars have come to coastal California since 2000 because of the states ability to provide matching funds. The projects funded through the Fishery Restoration Grants Program also significantly improve water quality and will help reduce future flood damage to public and private infrastructure in coastal communities.
* Watershed Restoration programs are active from Del Norte County in the North to Los Angeles County in the South, as well as inland counties through the Klamath and Trinity Rivers. DFG received upwards of 320 proposals last year alone, which would employ hundreds of people full-time in many coastal counties doing work approved by California's voters.
* A one-year hiatus in the Prop 40 bond funding for the Fishery Restoration Grants Program will likely result in the elimination of this vital habitat restoration program. If the state forfeits these Federal funds now they most likely will not be available in the future.

More Information: Total restoration dollars (state and federal) since Fiscal Year 00/01;

>> FY 00/01 - $24,088,000; >> FY 01/02 - $23,319,000; >> FY 02/03 - $29,253,000; >> FY 03/04 - $21,763,000 (estimated - money has not been released, pending the Governors budget)

Recent study (in draft) on the socio-economics of Restoration activities on the North Coast: *http://www.fcresearch.org/HTML/finalrestorationreport.html*

Contact your Representatives: It is very important to contact your elected representatives and tell them that it is critical for the state to provide Proposition 40 as matching funds for the Department of Fish and Game's Fishery Restoration Grants Program. To Find your Representative's contact info: go to *http://www.leginfo.ca.gov/*

The 6th Annual Coho Confab

Salmonid Restoration Federation joined the Trees Foundation in producing the sixth annual Coho Confab, held in August, 2003 on the Mendocino Coast. The successful Coho Confab has grown into a vital annual event that brings together community members, landowners, activists, scientists, and restorationists in an effort to enhance the recovery of imperiled salmon and steelhead in degraded North Coast watersheds.

The Confab is a weekend of hands-on restoration training workshops, project site tours, and networking. The Confab provides a venue to explore the potential for collaborative restoration and learn the field skills necessary to recover our home watersheds.

Visionary restorationist Richard Gienger, who created the Coho Confab, gave the opening campfire talk. Craig Bell of SRF followed with a talk about the state of coho recovery in northwest California. Chuck Williams from Redwood Valley Rancheria gave a slideshow explaining the use of sedges and other native plants for stream-bank stabilization and Native basketry. Attendees especially appreciated learning about the opportunities for achieving mutual restoration goals with Native American practitioners.

Full and half-day skills workshops included "Tools for Understanding Water Quality and Salmonid Health," with fisheries biologist, Patrick Higgins. This workshop provided a good introduction to ways in which stream water quality can be tested with and without professional tools and devices.

In-stream processes and aquatic wildlife identification were explored further in the fish identification and temperature and sediment monitoring workshop with instructor Maureen Roche of the Mattole River watershed. Using masks, snorkels and wetsuits, participants entered the cold depths of Ten Mile River and learned to distinguish salmon and steelhead fry. "Identification of Aquatic Macro Invertebrates" with entomologist John Lee, also known as the "bug" workshop, was highly educational, furthering the understanding of these sensitive indicator species. Additional workshops included "Underwater Estuary Exploration" with Bill Lemos and Robert Jamgoch from SONAR, the School of Natural Resources.

This years Coho Confab participants learned stream monitoring skills

Photo By Pat Higgins

Freeman House, author of *Totem Salmon,* and Jene McCovey, Yurok storyteller, led a workshop focussed on the role of stories honoring salmon.

Photo by Traci Thiele

A tour of model sustainable forestry sites at the Parker Ranch on Ten Mile River was a particularly popular workshop where people could see, first-hand, how a forest can be logged sustainably. Participants were able to directly ask questions of the forester and landowner. A tour of recent restoration sites with Steve Levesque of Hawthorne Campbell Timber Company provided participants with further examples of watershed protection practices intended to maintain the integrity of the forest as a whole on industrially managed land.

Other workshops addressed hands-on road rehabilitation, reversing a stream diversion gully, an introduction to Geographic Information System mapping and Global Postioning System monitoring, and workshops with native plants specialist Karen Gaffney of Circuit Riders Productions, and restorationist Teri Barber of Ridge to River. Each activity during the weekend included ample opportunity for attendees and presenters to exchange ideas, network, and build personal connections.

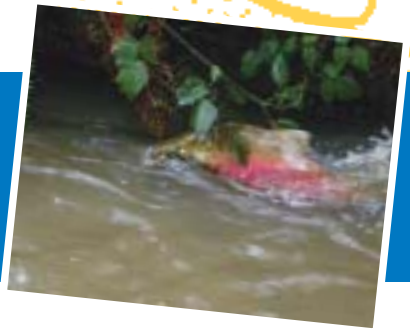
Yurok tribal member and storyteller Jene McCovey and pioneering restorationist Freeman House, author of *Totem Salmon*, added another perspective to the event. Tales and songs about the beauty of North Coast rivers and wildlife spoke to the human spirit involved in stewarding regional watersheds. It was noted how important it is to incorporate a workshop oriented toward the heartfelt creative reasons behind this challenging work. Entertainment also included Fred "Coyote" Downey sharing beautiful stories, songwriter and environmental educator Bill Oliver, river troubadour Melissa Crabtree, and local songwriters Louisa Morris and Francine Allen. All who attended were more informed, inspired, and motivated to work to bring back salmon to our North Coast watersheds. Next summer's Confab will take place in Marin County. We hope to see you there!

Tremendous gratitude goes to Jughandle Farm director Helene Chalfin, cooks Amy Shadwell and Michael, Traci "Bear" Thiele, and Americorps Watershed Stewards Project volunteers. Special thanks to Bagels Naturally, Clif Bar, Chatauqua Natural Foods, Ray's Shop Smart, Sentry Market, Corners of the Mouth, Signature Coffee, Tofu Shop, Bien Padre, Humboldt Creamery, North Coast Bakery, Brio Breadworks, Redway Liquor, Ukiah Brewing Co., Frey Vineyards, North Coast Brewing Co., Casa Lindra, Mrs. Denson's Cookies, Safeway, Harvest Market, as well as local farmers from the Humboldt and Mendocino regions.

Salmonid Restoration Federation's

22nd Salmonid Restoration Conference & 14th International Salmon Enhancement Workshop

March 17-20, 2004
Davis, California



CO-SPONSORS:

American Fisheries Society (Western Division and Fisheries Management Section), AmeriCorps Watershed Stewards Project, Bay Institute, Butte Creek Brewery, Cache Creek Casino, California Salmon Partnership-NOAA Fisheries, California Conservation Corps, Cal Trout, California Department of Fish and Game, California Watershed Network, City of Davis, East Bay Municipal Utility District, EDAW, Eyak Preservation Council, Forest, Soil and Water, Friends of the Eel River, Friends of the River, Information Center for the Environment, Jones and Stokes, La Rocca Vineyards, National Wildlife Federation, Northern California Environmental Grassroots Fund, Pacific Coast Federation of Fishermen's Association, Putah Creek Council, Prunuske Chatham, Inc., Solano County Water Agency, Sacramento River Watershed Program, South Yuba River Citizen's League, Trees Foundation, Trout Unlimited, Urban Creek Council, USDA Natural Resources Conservation Services of Davis

TRAINING workshops & FIELD TOURS

Wednesday March 17, 2004

All Workshops start and Field Sessions leave at 9am
Lunch making available at 8:30am

WORKSHOP 1: GIS FOR WATERSHED MANAGERS

This introductory to intermediate-level workshop will provide hands-on practice to review the tools of ArcGIS that are most useful in watershed applications and learn new GIS skills for working with raster data using the Spatial Analyst extension, including using Digital Elevation Models to derive slope and aspect parameters for watersheds and the generation of hydrographic networks. Prerequisite: Familiarity with ArcGIS or ArcView and GIS principles is strongly recommended.

Workshop Chair: Josh Viers, Information Center for the Environment

WORKSHOP 2: INCREASING YOUR WATERSHED AND FISH RESTORATION ORGANIZATIONAL CAPACITY

Participants will learn methods for increasing the capacity of their organizations through building landowner partnerships, involving scientists, and developing the staff and budgets necessary to restore their watershed's habitat for salmonids and associated species.

Workshop Chairs: Chris Larson, Mattole Restoration Council & Sungnome Madrone, Redwood Community Action Agency

Capacity Building resources: Web sites, manuals, and more! Sungnome Madrone, For Sake of Salmon.

Running an effective meeting, Kevin Wolf, Wolf and Associates.

Working Successfully with Private Landowners, Liza Prunuske, Prunuske Chatham, Inc.

Panel Discussion on maintaining staffing, membership, community involvement and outreach: Chris Larson, Mattole Restoration Council; Sungnome Madrone, Redwood Community Action Agency; Kevin Wolf, Wolf and Associates; Liza Prunuske, Prunuske Chatham, Inc.

Creating budgets that supports you organization, Sungnome Madrone, Redwood Community Action Agency.

Funding Panel and Question and Answer with Allen Harthorn of the California Watershed Network and the other presenters.

Knowing your watershed's communities and landowners: Using GIS and public records for watershed work & Thoughts on Technical Advisory Committees, Chris Larson, Mattole Restoration Council.

WORKSHOP 3: FARMING WITH THE WILD: FARM AND RANGELAND STEWARDSHIP STRATEGIES TO BENEFIT SALMONIDS AND ASSOCIATED ECOSYSTEMS.

This workshop will focus on developing the framework for why fish-friendly practices are necessary, the status of consumer labeling programs for "salmon safe" production, and growers' restoration projects. Examples will range from farmers and ranchers in Oregon, and Yolo, Solano, and Napa Counties.

Workshop Chairs: Vance Russell, California Audubon & Dan Kent, Salmon Safe

Framework for wildlife friendly practices:

Farming with the Wild: Enhancing Biodiversity on Farms and Ranches, Dan Imhoff.

Strategies for Conserving Riparian Corridor Integrity for Salmonid Habitat Enhancement, Jeremy Thomas, UC-Berkeley.

Reconciling scientific uncertainty, regulations, and human nature-connecting TMDL to fisheries conservation in central CA, Mike Napolitano, Regional Water Quality Control Board.

On-the-ground programs:

Restoring Habitat on Farms & Ranches: a Collaborative Approach, Vance Russell, Audubon California.

Fish Friendly Farming: A Collaborative Watershed Approach to Restore and Sustain Fish Habitat, Laurel Marcus, Laurel Marcus and Associates.

Clean Water for Salmon: The Salmon-Safe Project in the Pacific Northwest, Dan Kent, Salmon Safe.

On-farm application, practices and case studies, with Lundberg Family Farms, David Batcheller, Batcheller Ranch; Bill Hamilton Blue Oak Ranch; Mary Kimball, Center for Land-Based Learning; Rachel Long, UC Cooperative Extension; and Paul Robins, Yolo County RCD.

Funding opportunities for farming with the wild, Wendell Gilgert, Natural Resources Conservation Services

Fish friendly wine tasting and local produce.

FIELD SESSION A: PUTAH CREEK RESTORATION SITES

This field session will visit current and future restoration sites related to fish passage, in-channel habitat, bank stabilization, channel creation, and control of invasive species from Monticello Dam downstream and onto the Yolo Bypass.

Field Session Chair: Rich Marovich, Putah Creek Streamkeeper

FIELD SESSION B: SUBURBAN WATERSHED PLANNING WITH FISHERIES AND WILDLIFE IN MIND

This session will follow the flow of water through Village Homes into the City of Davis' water system and onto the Yolo Bypass while participants discuss the design, utility, and importance of integrating a watershed perspective into municipal and suburban growth design and creating wildlife habitat.

Field Session Chairs: Robert Thayer, Thayer and Associates and John McNerney, City of Davis

SRF Annual Meeting 5:30pm

Thursday March 18, 2004

WORKSHOP 4: RESTORATION EFFECTIVENESS MONITORING AND RECOVERY OF ANADROMOUS SALMONIDS

Presentations will explore the techniques and appropriate scales for measuring different watershed and population attributes necessary for decision-making, highlight case studies of successful monitoring efforts, and end with a discussion of what is needed to truly measure the effectiveness of individual projects, regional programs, and statewide recovery efforts.

Workshop Chairs: Richard Harris, UC-Berkeley and Fraser Shilling UC-Davis

From Monitoring to Evaluation: Learning More from River Restoration Projects, Matt Kondolf, UC-Berkeley.

Implementing Salmonid Restoration and Coho Salmon Recovery Monitoring – Establishing a Watershed/Anadromous Salmonid Monitoring P1rogram, Kevin Shaffer, CA Dept. of Fish & Game.

Integrating Monitoring into Federal Recovery Programs, Pete Adams, NOAA-Fisheries.

Continued On Page 10

SALMONID RESTORATION FEDERATION 2004 CONFERENCE
INDIVIDUAL REGISTRATION FORM (PLEASE USE ONE FORM PER PERSON)

• Advanced Registration Must Be Postmarked By March 1, 2004 •

Name: _____ Phone (work): _____

Address: _____ (home): _____

_____ email: _____

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

	Advance Registration	On-Site Registration	FEE
TRAINING WORKSHOPS*			
Wednesday, March 17, 2004			
1. GIS for Watershed Managers (*limited to 15 people*)	$50	$60	_____
2. Capacity Building Workshop	$45	$55	_____
3. Farming with the Wild Workshop	$50	$60	_____
A. Putah Creek Restoration Sites *(Field tour limited to 35)*	*$50*	*$60*	_____
B. Suburban Watershed Planning *(Field tour limited to 35)*	$50	$60	_____
Thursday, March 18, 2004			
4. Restoration Effectiveness Monitoring Workshop	$45	$55	_____
5. Instream Flow Requirements *(limited to 40)*	$50	$60	_____
6. Urban Stream Restoration Workshop	$45	$55	_____
C. Cache Creek Basin and the Yolo Bypass (*limited to 40*)	$50	$60	_____
D. Mokelumne and American Rivers *(Field tour limited to 40)*	$50	$60	_____

*No lunch is provided at the workshops. Field tours include a bagged lunch and transportation. Please wear clothing, raingear and shoes appropriate for field tours.

CONFERENCE (Includes Friday and Saturday lunch and a copy of the Proceedings)

Friday and Saturday March 19-20, 2004			
SRF Member (individual membership only)	$75	$95	_____
Non-member	$125	$150	_____
Student (with photocopy of student ID)	$70	$75	_____

LIVE THEATER PERFORMANCE Thursday, March 18

Human Nature's *"What's Funny About Climate Change?"* *$10* _____

SATURDAY BANQUET

(Preference: Salmon____ Chicken ____ Vegetarian____) $25 $25 _____

MEMBERSHIP ___New ___ Renewal

Individual Memberships: ___$25 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, P.O. Box 277 Avila Beach, CA 93424

Registration Questions (805) 473-8221 FAX (805) 473-8167

Make checks payable to: SRF

PLEASE NOTE We do not give refunds - Receipts provided upon request

e-mail: srf@northcoast.com • www.calsalmon.org

SRF Questionnaire

Please take a minute to complete this questionnaire to help SRF better serve the salmonid restoration community

Can we add you to SRF's new email listserve? yes___ no___

What types of trainings would you like to see offered at a SRF field school?

What kinds of intensive workshops would you like SRF to offer?

What info would you like available on the SRF web site?

SRF has limited **scholarship and work trade opportunities**.
Please email srf@northcoast.com if you would like to apply.

SRF Merchandise

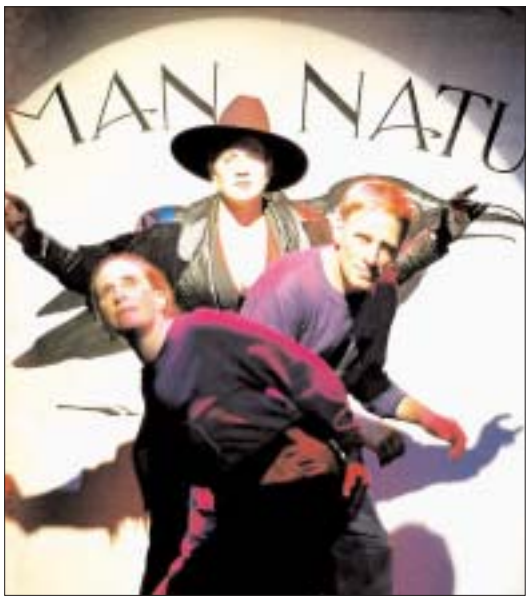
Hat Designs

Here are some samples of SRF's new line of merchandise.
All prices include shipping and handling.
You can receive a free t-shirt, tote, or baseball cap for a $50 membership.
Please pick up your free gift at the conference. If you are not attending the conference and want to renew your membership, please send a check and merchandise request to:
SRF, PO Box 784, Redway, CA 95560

SRF Merchandise Order Form

	Price	Med	Large	XL	XXL	XXXL	Total Qty	Total $
Ray Troll t-shirt	$20							
SRF t-shirt	$18							
tye-dye t-shirt	$18							
tote bags	$20							
Spawn Hats	$20							
Yin Yang Hats	$20							
Fish Worship Hats	$20							
2003 Proceedings	$ 5							
SRF mugs	$12							
							ORDER TOTAL	

Human Nature Theater Troupe will perform *What's Funny About Climate Change?*



Critics have described the show as "hilarious whip-quick satire" or "an exquisite blend of passion, fact, hyperbole and hope" One commentator went so far as to say "If this show can't save the world, nothing will."

Photo By Joel Shapiro

In *Queen Salmon*, Human Nature's musical comedy about salmon and timber issues, a mythological female character, the regal Spirit of Salmon, beseeches the powers of the universe to produce a storm. Her people, in this case adult salmon, are trapped by lack of rain in pools in the lower river unable to get to the prime spawning areas upstream.

The Spirit's plea is altogether too successful. The maelstrom that follows in the play is huge. The heavy rain causes a landslide on a recently logged hillside that threatens to destroy not only the annual spawning run but also the human infrastructure downstream.

The situation in the play was based loosely on the mid-1970's autumn drought pattern that for three years hampered salmon runs in watersheds all up and down the northern coast and subjected the larger fish to extremes of human predation. These conditions were devastating to chinook and provided the initial motivation for salmon restoration. Yet, this theatrical scenario more closely resembles recent seasons.

In the Mattole, a drought, building quietly over several years and exacerbated by expanded human water use, had produced by the late summer of 2002 a harsh scenario. The river's headwaters simply dried up, first the flow between pools and then all but the deepest pools themselves. The juvenile salmonids in those pools, especially the coho, started to disappear, victims of predators and declining oxygen content. Meanwhile, in the fall, adult spawners were stranded for over a month in the lower river, forced in many instances to spawn where they were.

Then a series of huge storms struck the Northcoast, dropping record rainfalls onto the Mattole. An average of almost 50 inches of rain fell over the whole watershed within a month. The salmon, juveniles and adults alike, were brutalized by this one-two punch, first deprived of minimal flows and then subjected to the untender mercies of the sustained high waters and the sediment bedloads of a record-breaking deluge. It was clear that human habitation and habitat, too, were endangered: weeks long power failures, slide-related road closures, homes damaged by falling trees and limbs or inundated with silt.

So with little or no awareness of it, we, the creators of *Queen Salmon*, had kicked the dirt from around a restoration land mine, the subterranean truth that threatened all of our early gains hard-won over the past 25 years. The results of all of our work in habitat restoration, stock enhancement, conservation resource management and community dialogue could easily be undone by climatic factors far beyond our control and mobilized by forces far outside the boundaries of our little watershed.

Clearly, it was ever more necessary to stabilize eroding watersheds and prevent additional damage, but a new irony was forced upon us. Just when recovering systems most needed stability of climate, we were least likely to get it. Droughts alternating with deluges, always a potential in the Old West threatened now to become an implacable, recurrent reality. All the old formulas were skewed by these new truths. Precedents, even long-time colloquial wisdom, were rendered useless. And quotas, bag limits, water allocations, harvest regulations, and long-term management planning all seemed, suddenly, a wild crap shoot. Welcome to watershed restoration in a global warming time.

What does one do? The most common response throughout society has seemed to be denial in one guise or another, scrupulously engineered from above and abetted by a deep desire in us all for normalcy. Change nothing and hope for the best. Being who we, Human Nature, are—watershed people who love to clown our way toward progressive solutions—our response to this daunting scenario was, again, theatrical. We set out in 2000 to try to create a show or shows about Global Warming for a broad audience. What emerged first was a comedy review, *What's Funny About Climate Change?*

The show was at first a series of broad comic vignettes surrounded by a cohesive narrative. Forty performances in 38 venues for a diverse series of audiences, many at colleges and universities, honed the show and its humor to a finer point and made it a powerful whole. By examining the disparities of what we as a species and a culture need to do and what we are actually doing, *What's Funny About Climate Change?* opened a radical but rich vein of material for humor. **Join us for an evening of laughter and brainstorming solutions at the SRF conference on Thursday, March 18. Proceeds will benefit Friends of the River.** Please order your ticket in advance (use the registration form, page 7).

The challenge of climate change lies in the path of all humanity today, not just that of restorationists. It makes what restorationists do, though, all the more critical—the little new islands of stability we piecemeal build into natural systems become a very real and essential part of the glue that can hold our watersheds and our world together under new duress. The small adaptive strategies we develop to boost the odds for salmon survival in a warming era can be critical for stock survival through the next several decades.

The challenge of global warming, we are just now discovering, links us and our efforts with people everywhere, especially those working to lessen human impacts on the atmosphere and oceans. As restorationists, we find ourselves faced with an expanded mandate for the new millennium—To save the world, we must save our watersheds one by one, and to save our watersheds we must, indeed, save the whole world. Maybe laughing together can help make this new responsibility seem less daunting and more fun.

Monitoring Fish Habitat Restoration Projects, Richard Harris, UC-Berkeley.

Relative weight of juvenile coho salmon: a measure of habitat quality?, Walt Duffy, California Cooperative Fish Research Unit, HSU.

The Effects of Oroville Dam on Downstream River Morphology and Fish Habitat, Koll Buer, DWR.

Monitoring at the Watershed Scale, Kathleen Morgan, Gualala River Watershed Council.

Monitoring Adult Salmonid Escapement, Jim Waldvogel, UC-Sea Grant Program.

Monitoring Riparian Restoration: Multiple Scales and Diverse Species, Karen Gaffney, Circuit Rider Productions.

Monitoring Restoration of Geomorphic Processes, Joan Florsheim, UC-Davis.

Water Quality Monitoring and Design Issues for Central Valley Streams, Charles Kratzer, USGS.

WORKSHOP 5: INSTREAM FLOW REQUIREMENTS FOR SALMONIDS

The goal of this workshop is to provide hands-on experience with different federal and state agencies and private interest groups' methodologies for determining allowable diversions as each participant derives a minimum baseflow recommendation for salmonid spawning habitat in a specific small stream. Prerequisite: Bring a calculator and notepad.

Workshop Chair: Bill Trush, McBain and Trush

WORKSHOP 6: URBAN STREAM RESTORATION

Presentations will focus on the planning, assessment and design of bank stabilization, fish passage, and flood control projects in urban watersheds with panels discussing case studies on urban watershed projects in the Bay Area, Sacramento Area, and Northern California region.

Workshop Chairs: Susan Oldland, Kurt Malchow, Sara Denzler, Dept. of Water Resources, Urban Streams Restoration Program

Morning Focus: How to Restore an Urban Stream

Perspectives on Watershed Stewardship, Stefan Lorenzato, DWR.

Field Analysis and Management Plan for Dry Creek and its Tributaries in Placer County, CA, Debra Bishop, EDAW.

How One Local Group Got Involved in Creek Restoration, Igor Skaredoff, Friends of Alhambra Creek.

Urban Stream Restoration: What it is and What it is not, Ann Riley, State Water Resources Control Board.

Urban and Suburban Creek Restoration - A View of a Project: Piute Creek Restoration in Memorial Park, Susanville, Lassen County, CA, Jorgen Blomberg, Philip Williams & Associates.

Afternoon Focus: Case Studies for Urban Stream projects: Successes and Challenges.

Sulphur Creek Restoration Project, Redding, CA, Fraser Sime, Department of Water Resources and John McCullah, Watershed Action Group.

Dry Creek Restoration Project, Roseville, CA, Riley Swift, Restoration Resources; Mark Morse, City of Roseville, Gregg Bates, Dry Creek Conservancy; and Nicole Beck, Swanson Hydrology and Geomorphology.

Go with the Flow - Collaborative Planning and Integrated Resource Management by the Sacramento Area Flood Control Agency (SAFCA) in the Watersheds of the Sacramento Region, Pete Buck and Tim Washburn, SAFCA.

Alameda Creek Restoration, Jeff Miller, Alameda Creek Alliance.

Group Discussion: Questions and Answers - Current Hot Issues

FIELD SESSION C: CACHE CREEK BASIN AND THE YOLO BYPASS: STEELHEAD RESTORATION, FISH PASSAGE, AND FLOOD CONTROL

Participants will learn about the biological and physical elements of a restoration program at sites from the confluence of Bear Creek and Cache Creek downstream to Woodland and finally to the Davis Wetlands Stormwater Plant and Vic Fazio Wildlife Refuge. Presenters will discuss water quality and the importance of the Yolo Bypass to restoring salmonids to Cache Creek.

Field Tour Chair: Bob Schneider

FIELD SESSION D: MOKELUMNE AND AMERICAN RIVERS

The field tour will view completed and on-going restoration projects on these two large rivers including gravel enhancement projects, the Murphy Creek dam removal site, fish passage improvements, and bank stabilization projects occurring in the tributaries and lower reaches of these rivers. Presenters will discusss integrating scientific research and monitoring into projects, community involvement, and permitting issues.

Field Tour Chairs: Jim Smith, EBMUD and Trevor Burwell, Sacramento County Dept. of Parks, Recreation, and Open Space.

Human Nature's "What's Funny about Climate Change?" Show at 7:30pm at the Veteran's Memorial Theatre. Proceeds to benefit Friends of the River. Doors open at 7pm. Tickets $10 for conference attendees.

Come learn about this local success story and historic accord at the conference.

Photo Provided By PCC

PUTAH CREEK ACCORD SETS PERMANENT ENVIRONMENTAL FLOWS

Putah Creek begins at springs on Cobb Mountain in Lake County, flowing through Lake and Napa Counties to the Monticello Dam, which forms Lake Berryessa. From Monticello Dam, Putah Creek flows to the Solano Diversion Dam forming Lake Solano. After Lake Solano, Putah Creek forms the boundary between Yolo and Solano Counties. The water moves on to the Putah Creek Sinks at the Yolo Basin and into the Sacramento River, eventually to the San Francisco Bay via the Delta. The Putah Creek Council's area of focus is the lower 30 miles of Putah Creek from the Monticello Dam to the Yolo Wildlife Area.

In 1989, Putah Creek went dry after a seven-year drought. The council and others entered into a lawsuit seeking permanent environmental flows for the 23 miles of Putah Creek below the Putah Diversion Dam. The Putah Creek Accord provides resident native fish flows, anadromous fish flows, a schedule for extended droughts, a new forum for management through the creation of the Lower Putah Creek Coordinating Committee, and restoration and monitoring funds.

For the Solano agencies, the new era brought water security, mutual reductions during extended droughts, a clear management strategy for riparian diversions, and some operational flexibility. For the environment, there are flows for resident fish and ocean-run salmon and steelhead, substantial restoration funds, a permanent streamkeeper, and the Lower Putah Creek Coordinating Committee.

EVENT conference & PANELS

Friday March 19, 2004

Plenary starts at 8:30am

Plenary Session

FROM ALASKA TO CALIFORNIA AND AROUND THE WORLD: WHAT SCIENCE AND SALMON ARE TEACHING US.

Moderator: Martha Turner, Environmental Planner and Facilitator

Robert Lackey, U.S. Environmental Protection Agency, *The Four Nations of the Salmon World.*

Dune Lankard, Founder of the Eyak Preservation Council, *Wild Salmon Are a Way of Life.*

Diane Jacobs, Deputy Director of CA Department of Fish and Game, *CALFED's Restoration Program.*

Mark DuBois, Co-founder of Friends of the River and the International River Network, *Inspiring Reasons for Hope - The Growing Strength of NGOs Dedicated to Preserving Rivers and Recovering Fisheries Both Regionally and Internationally.*

AFTERNOON SESSION 1: THE HUMAN HABITAT: FOSTERING LASTING CHANGE THROUGH RESTORATION EDUCATION AND OUTREACH

Session Chairs: Vance Howard, Adopt-a-Watershed and Jan Duncan-Vaughn, Eel River Salmon Restoration Project

Putting it into Practice- Restoration and Education Strategies for Success, Daniel Leroy, The Center for Land Based Learning.

New Opportunities for Environment-based Education, Tricia Broddrick, Office of Integrated Education, California Integrated Waste Management Board.

Growing and Sustaining Student Restoration Programs, Kim Stokely, Adopt-A-Watershed.

Assessment and Evaluation of Science Education in California, Dianne Hernandez, California Department of Education.

Panel Disscussion: Moving Forward with Your Program

AFTERNOON SESSION 2: CONSERVATION HATCHERY PRACTICES AND RESEARCH

Session Chair: Louise Conrad, CDFG

Conservation Hatchery Protocols for Pacific Salmon, Thomas Flagg, NOAA-Fisheries.

Evaluation of Conservation Hatchery Rearing and Release Strategies for Steelhead Recovery in the Hamma Hamma River, Barry Berejikian. NOAA-Fisheries.

An Overview of Current Research and Operations at the Cle Elum Supplementation & Research Facility, Jason Rau, Cle Elum Supplementation & Research Facility/Yakima Klickitat Fisheries Program.

The Russian River Coho Captive Broodstock Program: Overview of Objectives and Monitoring Strategy, Louise Conrad, CDFG.

Genetic Management of Coho Salmon Captive Broodstock, Carlos Garza, NOAA-Fisheries.

Streamside Incubation: A Low-Tech, Low-Cost Approach to Atlantic Salmon Restoration, Kevin Dunham, Maine Atlantic Salmon Commission.

Native Salmonid Restoration Using Streamside Incubators, Don Duff, Trout Unlimited.

AFTERNOON SESSION 3: IN-CHANNEL AND OFF-CHANNEL SALMONID HABITAT ENHANCEMENT PROJECTS

Session Chair: Bob Coey, CDFG

Floodplain Reconnection and Salmonid Habitat Enhancement on Lower Redwood Creek, Marin County, Carolyn Shoulders, Golden Gate National Recreation Area.

Believe It Or Not, Gravel Mining and Salmon Habitat Improvement; Austin Creek California, Brian Cluer, NOAA-Fisheries.

Salmonid Habitat Improvement In Bull Creek, Allan Renger, CDFG.

Siuslaw Basin Restoration Project, Paul Burns, Siuslaw N.F. Oregon.

The Evolution of Monitoring Goals and Methods to Evaluate the Success of Riparian Woodland Restoration Along California's Large Rivers, Tom Griggs, River Partners.

Evaluation of a Spawning Habitat Enhancement Site for Chinook Salmon on a Regulated California River, Jose Setka, EBMUD.

Randall Slide Restoration Project, Steven Chatham, Prunuske Chatham, Inc.

Friday Night Reception & Poster Session
5-7pm at the Veteran's Memorial Center

Saturday, March 20, 2004

Sessions start at 9am

MORNING SESSION 1: SALMON IN A GLOBAL CONTEXT: CLIMATE CHANGE, OCEAN CONDITIONS, & SALMON OF THE PACIFIC RIM

Session Chair- Seth Zuckerman, Ecotrust

The PDO, Human Impacts and Climate Change Interactions, and How Shifting Ocean Conditions Affect the Impact of Hatchery Releases on Wild Stocks, Phil Levin, NOAA-Fisheries.

Protecting Russia's Wild Salmon Populations, Dave Martin, Wild Salmon Center.

Recovering Canada's Wild Salmon Populations, Rich Chapple, Pacific Salmon Foundation.

Atlantic Salmon Recovery in Maine: A Case Study in Collaboration Melissa Halstead, Kennebec Soil and Water Conservation District.

MORNING SESSION 2: OPPORTUNITIES FOR SALMONID RESTORATION IN FERC RELICENSING

Session Chair- Kelly Catlett, Friends of the River.

Salmonid Restoration through FERC Relicensing, Laura Norlander, California Hydropower Reform Coalition.

Use of Section 401 of the Clean Water Act in the FERC Hydroelectric Relicensing Process to Achieve Salmonid Restoration, Russ Kanz, SWRCB.

Opportunities for Restoration Through the FERC Relicensing Process: The Future of Stakeholder Negotiated Resolutions to FERC Relicensings, Chuck Bonham, Trout Unlimited.

Opportunities for Restoration Through the FERC Relicensing Process: Tribal Role and Authority, Mike Belchik, Yurok Tribe.

Opportunities for Salmonid Restoration in FERC Relicensing: A Licensee's Perspective, Alan Soneda, Pacific Gas & Electric.

Continued On Page 12

SATURDAY NIGHT *banquet & cabaret*

6:00 pm Banquet 7:30 pm Awards & Cabaret;*
9:00 pm Dance with lively salsa band Sambada

*Banquet tickets $25, please indicate your preference for wild salmon, chicken, or a vegetarian entree.

Saturday March 20 Continued From Page 11

MORNING SESSION 3: NON-NATIVE AND INVASIVE SPECIES: CONTROLLING THREATS TO SALMONID HABITATS

Session Chair- Erin Williams, US FWS, Non-Native & Invasive Species Program

Tamarisk and Arundo Control, Jan Lowrey, Cache Creek Conservancy.

The Known and Potential Impacts of New Zealand Mudsnails (Potamopyrgus antipodarum) on Aquatic Ecosystems, David Bergendorf, USFWS.

Response to the New Zealand Mudsnail (Potamopyrgus antipodarum) infestation in Putah Creek, Erin Williams (USFWS), Susan Ellis (CDFG), Ken Davis.

Ongoing Invasion Potential of Redeye Bass (Micropterus coosae) into California Waterways, Beth A. Chasnoff, UC-Davis.

An Update on Northern Pike in Lake Davis, Julie Cunningham, CDFG.

Status of Paiute Cutthroat Trout Recovery, Chad Mellison, USFWS.

AFTERNOON SESSION 4: NUTRIENT ADDITIONS AND WATER QUALITY IN CALIFORNIA STREAMS

Session Chair- Lisa Thompson, University of California Extension

Nutrient Restoration, Natural Escapement, and Effects on Water Quality, Hal Michael, WDFW.

Do Salmon Carcass Analogs Mimic Food Pathways Provided by Salmon Carcasses?, Todd N. Pearsons, Washington Department of Fish and Wildlife.

Water Quality Dynamics in Coastal and West-Slope Sierra Nevada Streams, Kenneth W. Tate, UC-Davis.

Water Quality – Food Resource Dynamics in Central Valley Rivers, California, Randy A. Dahlgren, UC-Davis.

Effects of River Regulation on Water Quality in the Sierra Nevada, California: Implications for Habitat Management for Salmonids, Dylan S. Ahearn, UC-Davis.

Estimating Nutrient Losses Resulting from Elimination of Anadromous Salmonid Runs by Dams: The Oroville Project Example, Philip Unger, MWH.

Using Marine-Derived Nitrogen in Riparian Tree Rings to Assess Nutrient Flux and Salmon Escapement, Joseph D. Kiernan, UC-Davis.

AFTERNOON SESSION 5: THE SPECTRUM OF LESSONS LEARNED FROM THE PROTECTION OF NEIGHBORING WATERSHEDS: PUTAH CREEK AND CACHE CREEK

Session Chair: Lois Wolk, CA Assemblywoman

Putah Creek Collaboration History and Restoration Panel:

Joe Krovoza, Putah Creek Council (PCC) and LPCCC; David Okita, Solano County Water Agency; Rich Marovich, Putah Creek Streamkeeper; Dawn Lindstrom, PCC.

Cache Creek Collaboration History and Restoration:

Greg Thomas, Natural Heritage Institute; Chad Roberts, Tuleyome and Yolo Audubon Society, Tim O'Halloran, Yolo County Flood Control and Water Conservation District: Jan Lowery, Cache Creek Conservancy.

AFTERNOON SESSION 6: CONTROLLED FLOOD RELEASES ON REGULATED SALMONID RIVERS OF CALIFORNIA

Session Chair: Joe Merz, East Bay Municipal Utility District (EBMUD)

The Effects of Mokelumne River Flood Releases on Hyporheic Water Quality Within Spawning Habitat of Chinook Salmon and Steelhead, Tim Horner, CSU-Sacramento.

Effect of a Controlled Flow Release on Rooted Aquatic Vegetation in Chinook Salmon Spawning Habitat of the Mokelumne River, California, Jim Smith, EBMUD

Effects of a Controlled Water Release on Water Quality in the Mokelumne River, California, S.S. Henson, UC-Davis.

Fish Response to a Controlled Spring Flood Release on the Lower Mokelumne River, California, Michelle Workman, EBMUD

Slope Creation as a Tool for Spawning Habitat Rehabilitation below Camanche Dam, Mokelumne River, Eve Elkins, UC-Davis.

Beginning a New Paradigm of Controlled Flood Releases on the Trinity River, California, Daryl Peterson, Trinity River Restoration Program.

Movement of Sacramento Sucker (Catostomus occidentalis) and Hitch (Lavinia exilicauda) During a Spring Pulse Flow in the Mokelume River, California Below Camanche Dam, Carson Jeffres, John Muir Institute of the Environment.

The California Salmon Partnership will meet from 10am to noon on Sunday, March 21 at the Hallmark Inn to discuss proposals.

Logistics

Directions to the Veteran's Memorial Center, 203 E 14th St. Davis, CA:

From Sacramento: Take I 80 West. Take the Richards Blvd. exit toward Downtown Davis (0.3 miles). Turn slight right onto Richards Blvd. (0.1 miles). Richards Blvd. becomes E St.(0.3 miles). Turn right onto 5th St. (0.0 miles).Turn left onto F St.(0.6 miles). Turn left onto E 14th St. (0.2 miles).

From Berkeley: Merge onto I-80 E toward Richmond/Sacramento. Drive 58.3 miles. Merge onto CA-113 N toward Woodland. Drive 3.1 miles. Take the Covell Blvd. exit toward Road 31. Go (0.2 miles). Turn right onto W Covell Blvd. and drive 0.8 miles. Turn right onto Oak Ave. (0.3 miles). Turn left onto W 14th St. (0.2 miles).

Lodging: SRF has arranged a discounted rate at the Hallmark Inn in Davis. Please call 1 800 753-0035 to make your reservation. To receive the discounted rate of $75 call before February 15 and let them know that you are attending the SRF conference.

For additional lodging options, visit *www.calsalmon.org*

To sign up for the Cabaret please call 707/318-4618.

To sign up for the Poster Session please call 707/986-9517.

Salmon and Climate Disruption

By Seth Zuckerman

Hotter weather increases the demand for irrigation which leaves less water in streams for fish and increases the risk of fish kills like the one that hit Butte Creek in 2003.

Photo By Allen Harthorn

Move over undersized culverts, water diversions, impassable dams. A new threat is casting its shadow across efforts to restore salmon populations. The climate that once enabled salmon to thrive in California rivers is beginning to change in ways that further threaten their survival.

In the last century, temperatures across the entire planet increased an average of one degree Fahrenheit, according to the 2001 report of the Intergovernmental Panel on Climate Change, an international scientists' forum. The report forecasts a further warming of 2.5 to 10.4 degrees by 2100, along with a rise in sea level of somewhere between four inches and three feet. The cause? Continuing use of fossil fuels, emissions of methane from rice paddies and livestock, and deforestation.

The same models that predict the planet's overall roasting also spell out specific regional changes that would influence salmon both at sea and in fresh water. For instance, in a warmed California, more precipitation would fall as rain instead of snow, and such snowpack as did accumulate would melt earlier in the spring, says a 1999 study from the Union of Concerned Scientists and the Ecological Society of America. As a result, snow-fed streams would be drier in the summertime. In California, the dry summer season is a critical period in the freshwater chapters of a salmon's life. That's when streams are lowest and water temperatures already approach or even exceed the maximum that the fish can tolerate.

"The effects of climate change could be extremely devastating to salmonid populations, especially here [in California] at the southern end of their range," says Dan Freed, a biologist with the Arcata office of NOAA Fisheries (formerly the National Marine Fisheries Service). "Water temperature and flow are the two big [factors]. There isn't a lot of room for change to occur before it would be catastrophic." And higher flows in winter could also be damaging, as they can scour salmon eggs out of the gravel beds where they are laid, and can flush young fish downstream before they are ready.

The picture is a little murkier in the ocean. The most destructive marine phenomenon for California's salmon in recent years has been El Niño, a warming of the eastern Pacific that disrupts the upwelling of water from ocean depths, which brings nutrients to the surface that invigorate the marine food chain. The shortage of nutrients percolates all the way up the food chain, diminishing plankton populations, and then crustaceans and herring in turn, which means less for salmon to eat. The 1997-98 El Niño event coincided with unusually low survival rates for salmon at sea, particularly for fish that first reached the ocean then.

An over-heating world could trigger more frequent El Niños, although links between climate change and El Niño are still ambiguous, according to University of Washington climatologist Nate Mantua. "We get surprised by El Niño all the time," he says. In essence, adding greenhouse gases to the atmosphere amounts to a high-stakes roll of the dice when it comes to El Niño. On land, by comparison, Mantua says, continued global warming is sure to push the terrestrial climate beyond the range of variation seen during modern times.

For those working to protect salmon habitat, the implications are many. "On a project level, it means having to build to a higher design standard," beefing up construction so that habitat improvement projects can withstand more frequent and more intense flooding, says Chris Larson, executive director of the Mattole Restoration Council. On a regional scale, it means planning for the disruption that climate change would bring. As sea level rises, for instance, estuaries will naturally tend to migrate upriver and outward along the floodplain. But if levees or seawalls are built to protect fields and pastures, the fertile habitat along the estuary's edge would be lost. Land trusts can play a role, Larson suggests, by purchasing land around river mouths to give estuaries the breathing room they'll need.

Other human adjustments to hotter, drier summers could aggravate the effects on fish. For instance, if snowpack decreases, and run-off comes earlier in the year, water users might move to build new reservoirs to store that runoff, says Peter Frumhoff of the Union of Concerned Scientists. Those reservoirs would harm salmon by inundating stream habitat and impeding salmon migration. Similarly, if hotter weather increases the demand for irrigation, the extra water consumed would leave less in streams for the fish. The Trinity and Eel rivers and the Sacramento Delta already suffer from a scarcity of fresh water — and extra demand would imperil their diminished salmon populations even further.

Even if people immediately stopped burning the fossil fuels that are disrupting the climate, some shifts in weather patterns are already underway. The best we can do now is not to deny or ignore them, but to adapt as best we can, while working to prevent them from becoming any worse.

Seth Zuckerman is on leave from his home watershed, the Mattole, for a temporary stay in the Puget Sound region. Excerpted and adapted from a longer article in the Autumn 2003 issue of Coast & Ocean. *For a copy, email the State Coastal Conservancy at* calcoast@igc.org.

Reducing Sediment Delivery from Rural Roads

By J. Geppert

Rural roads and driveways are known to be a major source of sediment that can impact salmonid spawning and rearing habitat. Increased awareness by road owners and users can help prevent these impacts, often by employing relatively simple, inexpensive monitoring and maintenance techniques.

Restorationist Bill Eastwood overseeing a culvert replacement.

Photo By Harry Vaughn

These include constructing or maintaining waterbars using hand tools, or clearing debris from road side ditches and culverts. Plugged culverts or inadequate road drainage may concentrate water on the road surface or over erodible soil and cause fill failures and gully erosion. Culvert outlets can result in excessive erosion if too much water is directed onto unprotected slopes or stream banks. With so much focus these days on the use of heavy equipment to correct sediment sources, it may be easy to overlook simple methods of correcting or reducing the impact of such sediment sources. There is a great deal that can be done using hand tools and on-site materials that can significantly reduce the amount of sediment entering streams. Such measures can be installed almost anytime of year without heavy equipment and usually without permits.

The following measures can be implemented to significantly reduce the volume of sediment entering our waterways:

Waterbars are small ditches, approximately 6 inches deep with a 6 inch berm, constructed diagonally across the road. If you observe rill or gully erosion, placement of hand dug waterbars can be an effective means of reducing surface erosion. Existing waterbars need to be monitored to ensure they are functioning or in need of maintenance.

Energy Dissipaters at Culvert Outlets. If there is erosion of the channel at a culvert outlet, placement of rock or wood chunks at the outfall can reduce the water's energy thereby reducing the erosion and sediment delivery. When placing energy dissipaters, one must be careful not to cause diversion of the stream flow into a stream bank.

Trash Racks at Culvert Inlets. If your culvert is on a well traveled road and can be routinely cleared, placement of a trash rack can help to reduce the potential for blocked culverts. Trash racks can be as simple as a single piece of rebar placed in the channel at a distance upstream of the inlet equal to twice the diameter of the culvert. The purpose of this type of trash rack is to turn pieces of wood that are being transported downstream so that the wood doesn't get caught across the culvert inlet causing plugging. A single piece of wood caught across a culvert's inlet can reduce the flow capacity of the culvert by more than a third!

Keep ditches free flowing but prevent them from downcutting. If your road is outfitted with inside ditches to handle surface drainage, keep them clear to avoid failure of the ditch. Ditch failures can also cause water to be diverted onto the road surface causing additional erosion and sediment delivery to nearby streams.

Seed and Mulch bare soil that can erode and be transported into streams.

Armor waterbar outlets that can carry suspended sediments to watercourse. Rock or slash can be very effective at capturing fine sediments as well as reducing the potential for erosion at the waterbar outlet.

Tools and materials that can be used for short-term erosion control include:

Shovels, chainsaws, handsaws, Pulaskis, etc.

Straw. It's best if you can be assured that your straw source is free of seed of invasive species. Try using rice bales if available in your area.

Native seed or nons-invasive annual seed for green mulch. Annual seed works well for immediate surface erosion protection in areas where other native vegetation will soon out grow and shade out the annual crop. Check to be sure that you are not near an area where accidental spread of your seed will not impact a sensitive plant community, such as near parks, biological reserves, etc.

Native cuttings such as willow or alder for stabilization of eroding stream banks.

Rock: (onsite or imported). If you are using rock that is onsite (i.e., near your culvert outlet), be sure that moving the rock will not dislodge stored sediments or will destabilize an area. Be sure your rock is of adequate size as not to be moved downstream during high flows. One simple method of sizing rock is to look for rock that is bigger than most of the rock in the stream channel upstream and downstream of the culvert.

Slash: Trimmings from standing vegetation or sticks and duff on the ground from the immediate area can be cut and used to stabilize exposed soil or as energy dissipaters at waterbar outlets. When placing slash as a means of mulching it is critical that the slash be in good contact with the ground. Place smaller branches down first and build up with heavier, coarser material. Using a chainsaw to break up larger pieces once they are placed can improve the slash/soil contact.

It is important to monitor erosion control measures to evaluate how they are functioning. Inspect frequently and adjust or reapply measures, as necessary. Keep in mind that these suggestions are not comprehensive and may not be appropriate in all situations. Be creative and sensitive with each specific location. And remember, never perform erosion control work on someone else's road without their permission.

If you have concerns about implementing measures, consider contacting your local watershed group, National Resource Conservation Service, Recourse Conservation District, Department of Fish and Game, or Regional Water Quality Control Board for assistance. For chronic erosion problems that require expensive fixes consider contacting these agencies for obtaining financial assistance.

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Richard Gienger seen with cohorts: Traci Bear Thiele, Freeman House, and Fred Coyote Downey at this year's Coho Confab

North Coast Salmonid Update:

By Richard Gienger

Both human and salmonid residents of the North Coast are reaping the benefits of last year's wet spring and the return of the autumn rains. Most stream reaches that were bone dry at the end of last summer had flowing water this fall. This may enable greater survival of juvenile salmon and steelhead from last winter's modest-sized runs. There has been a lot of salmon and steelhead recovery, watershed and habitat restoration work happening all over the North Coast. There's a huge road decommissioning and crossing removal project underway in the Sinkyone Wilderness. Sanctuary Forest continues its work in the upper Mattole. Parks and Recreation is hard at it in Bull Creek.

Sanctuary Forest has included one grade control in this season's work at a critical site to prevent erosion from adversely affecting fisheries habitat. Work being done in Hollow Tree Creek, a very important and large tributary of the South Fork Eel River, includes erosion prevention measures with large wood placement to help control sedimentation and improve fish habitat. Hopefully restoration practices will improve in the next couple of years to include adequate stabilization and habitat improvement measures. Appropriate protocols for various types of situations need to be established. The cost issues also need to be dealt with and adequate funding allocated at all levels.

- The saga of the Five Adversely and Significantly Cumulatively Impaired by Sediment Watersheds, so declared by State Agencies in December of 1997, continues. Elk River and Freshwater, Bear, Jordan, and Stitz Creeks have been a sore issue for several agencies. The second Report of the Independent Scientific Review Panel is out and is contentious amongst PL, the North Coast Regional Water Quality Control Board (WQ), other agencies and the public. New developments include calls for dredging parts of Elk River and Freshwater Creek to give a quick fix to aggraded reaches from sedimentation that have increased the frequency and magnitude of flooding. WQ has also nominated the Elk River for designation as a 'Sensitive Watershed' at the Board of Forestry (BOF).
- The Department of Fish & Game's (DFG) Coho Recovery Plan/Strategy process to deal with the listed coho salmon issue continues. Lots of paper has been generated and many 'good positions and measures' have received majority votes by the Recovery Team – (comprised of over twenty 'stakeholders'), but how it will be implemented is the question.
- In the midst of the big flurry over the recall election, legislation was signed by outgoing Governor Davis. Some noteworthy examples:
- **SB 810** *(Burton)* — Gives WQ a voice equal to CDF's in approving harvest plans in sediment-impaired watersheds in range of the coho. Much amending compromised this bill, but this is a significant advance. Kudos to Joe Nation, John Burton, Paul Mason, and others in getting this made into law.
- **AB 47** (*Simitian*) — A bill initially dealing with various aspects of cumulative impacts. It was amended mercilessly. The only surviving provision of the original bill states that THP submitters must map harvests and other projects conducted for the previous 10 years, as well and current and future projects, in the Watershed Assessment Area. However, the bill specifically prohibits mapping of projects older than 10 years as well as projects that have proprietary information. Projects older than 10 years often have the biggest adverse impacts on a watershed. Also, the industry usually won't divulge future projects, claiming proprietary information. Sad situation. At one time AB 47 required that riparian areas lacking shade and other essential elements be mapped. This would have provided information vital for replanting of those areas to benefit salmon and steelhead and other aquatic life and watershed residents. Apparently that was too controversial.
- **SB 297** (*Chesbro*) — A modest bill that allows DFG to contract for watershed restoration work for up to five years, rather than the current two years. This is seen to benefit complex projects, monitoring needs, reduction of adverse short-term impacts, and worker benefits such as greater certainty of employment and better training.

Richard Gienger is a restoration practitioner and a tireless advocate for forestry reform and salmonid protection.

REDUCING SEDIMENT CONTINUED FROM PAGE 14

These agencies often have grant money available to help landowners with erosion problems that are adversely impacting water quality.

A useful guide, for more information, is the *Handbook for Forest and Ranch Roads,* by Weaver and Hagans. The handbook can be obtained from the Mendocino County Resource Conservation District, 405 Orchard Street, Ukiah, CA 95482, (707) 468-9223.

Joelle Geppert is an engineer at North Coast Water Quality Control Board and serves on the SRF Board of Directors.

Garcia River Watershed Victory!

Last December, Chris Kelley, of the Conservation Fund and Craig Bell, Garcia River watershed coordinator and a director of SRF, presented before the State Coastal Conservancy in support of acquiring a significant portion of the Garcia River. The result was a vote to commit ten million dollars for the purchase of approximately 40% of the Garcia River watershed. A long-range management plan will be developed for timber management that will be unlike anything that has been tried before. Elements will include conservation easements creating very wide stream buffers, long harvest cycles with the goal of producing high quality saw logs, and comprehensive restoration. The purchase area includes three of the four sub basins that currently support coho salmon. This acquisition can provide great opportunities for local restoration employment and heavy equipment operators as well as a great venue for future SRF field schools.

Salmonid Restoration Federation
PO Box 784
Redway, CA 95560

www.calsalmon.org
srf@northcoast.com

Conference Registration Packets Are Inside

THE 30,000 SALMON PROJECT

For years, the Klamath River Watershed in Northern California has been at the center of a variety of competing issues: native history and culture, fishing interests, agricultural needs, water rights, recreational use, mining, government agencies, and conflicting policies. But for the salmon that live in these waters, there is only one issue: survival. In the summer of 2002, over 30,000 spawning salmon died on the Klamath River from a bacterial infection of the gill tissue. This disease can result from low water levels, high water temperatures, reduced oxygen levels, or high nitrate levels.

The survival of the salmon deeply concerns me. My work as an artist involves a direct connection to my environment and a personal response to the images, events, and natural phenomena in that environment. When I heard about the immense scope of the salmon kill, I felt compelled to respond. The numbers of dead Chinook, coho and steelhead were difficult to imagine, so I decided to visit the Klamath River to see for myself.

Although my visit and research were weeks after the initial disaster, the sight and smell were overwhelming. The shock of witnessing such a disaster further emphasized the emotional, social, economic, and spiritual connections we share with all life.

As many tribal, environmental, and governmental groups now meet to address the issues of the Klamath River, these things are clear to me: The challenges we face will not disappear overnight, and the solutions we create will affect our environment long into the future. And finally, what ever our differences we must act wisely, for the children of our community will inherit the environment we create.These concerns have led me to develop an art exhibit called "The 30,000 Salmon Project." It will be constructed from 30,000 different objects contributed by students from local California communities, and I invite you and your students to participate.

In March 2004, the installation will be designed by art students from Humboldt State University and College of the Redwoods, and will be exhibited at the First Street Gallery in Eureka. The exhibit will open during Arts Alive in Old Town, Eureka, on April 3, 2004. The goal is 30,000 objects, so I need your help. Possible projects include art projects such as fish prints, drawings and sculptures as well as projects about math, science, English, and history. Teachers from other disciplines will be encouraged to use these projects to team-teach lessons in science, ecology, Native American culture, and local history. Through these creations, we can all experience a journey in and through 30,000 salmon.

I am looking forward to working with a core group of teachers, artists and artists-in-residence at local elementary schools, middle schools, and high schools to make The 30,000 Salmon Project a reality. I hope you will join me. Projects must be completed by the end of February, 2004.

For more information, please contact:
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