### Conference Co-sponsors


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### 35th Annual Salmonid Restoration Conference

**March 29-April 1, 2017 in Davis, CA**

**Restoring Watersheds and Rebuilding Salmon Runs**

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**Conference Program**

**Thursday**
- **Registration and Hospitality**

**Friday**
- **Plenary Session**
  - Brunelle Theater
- **Field Tours**
  - Multi-purpose Room
  - Courtyard Entrance

**Saturday**
- **Field Tours**
  - Multi-purpose Room
  - Club Room
- **Meet in Game Room**

**Workshops & Tours 9am - 5pm**

- **Workshops**
  - From Tidewater to Sierra: State of Beaver Restoration in California
  - Evaluating Salmon Habitat and Watershed Condition
  - Yuba Bypass and Putah Creek Restoration Projects
  - Watershed Day at the Capitol

**Poster Session**

**Annual Meeting**
- Multi-Purpose Room

**Membership Dinner**
- Multi-Purpose Room

**Sustainability Awards Ceremony, Cabaret, and Dance Band**

**Lunch** 12:15 - 1:15pm

**Conference Adjourns**

**Design & Layout by Trees Foundation**

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*photo by Jacob Katz*
March 29, Wednesday Workshops, 9am - 5pm

What We’ve Learned About West Coast Floodplains: Lessons from the Landscape
Workshop Coordinators: Eric Ginney, ESA; Jacob Katz, Ph.D., California Trout; Corey Phillips, Ph.D., Metropolitan Water District; and Brian Cheu, Ph.D., NMFS West Coast Region

Multi-purpose Room, Courtyard Entrance
Central Valley Salmonid Life History Models
Corey Phillips, Ph.D., Metropolitan Water District

Give Floods a Chance: Extending the Duration of Flood Events on Agricultural Landscapes in the Central Valley for Fisheries Benefits
Louise Conrad, California Department of Water Resources, and Pascale Goertler, California Department of Water Resources

Planning Tools to Evaluate Salmonid Habitat Restoration in the Yolo Bypass
Chris Campbell, ofc, inc.

Floodplain Restoration Strategies, Efforts, and Monitoring on the Lower Mokelumne River
Ruben Biskis, East Bay Municipal Utility District

Group Discussion / Activity

Lunch

Construction and Preliminary Assessment of a Coastal Floodplain Reconnection and Channel Incision Reversal Project on Butano Creek, San Mateo County, CA
Chris Hammersmark, Ph.D., oec, inc. eco engineering, and Irina Kogan, San Mateo County Resource Conservation District

Restoring Riparian Conditions on the Mattole Estuary Floodplain
John Summers, Mattole Restoration Council

Coho Habitat Enhancement on the South Fork Ten Mile River: Moving from Riverine to Estuarine
David Wright, The Nature Conservancy

Floodplain Restoration Planning in the South Fork Eel River
Julie Weeder, NOAA Fisheries

Lawrence Creek Off-Channel Habitat Restoration and Monitoring
Bob Pagliuco, NOAA Fisheries

Group Discussion / Activity

Evaluating Instream Habitat Variables and Watershed Conditions to Inform Workshop Coordinated Recovery Actions
Workshop Coordinators: Thomas H. Leroy and Danny Hughes, Pacific Watershed Associates

Multi-purpose Room

Part 1—Planning Salmon Habitat Improvement Projects
State of the Salmonids—Fish in Hot Water
Patrick Samuel, California Trout

Is Habitat Restoration Targeting Relevant Ecological Needs for Endangered Species? Using Pacific Salmon as a Case Study
Kate Barnos, NMFS Fisheries

Managing Landscape Cumulative Effects Using Innovative Planning Technology and Process
Barry Wilson, CE-Analytic Ltd.

Part 2—Evaluating and Measuring Stream and Fisheries Conditions
Assessing Salmonid Habitat Conditions and Management Actions in the Garcia Watershed Using the U.S. EPA’s Environmental Monitoring and Assessment Program (EMAP-West) and the California SWAMP Program
Jonathan Warmerd, North Coast Regional Water Quality Control Board, and Jennifer Carah, The Nature Conservancy

What Does Habitat Monitoring Data Mean to Salmonids? Creating Status, Trend, and Recovery Information from Field Data
Sean P. Gallagher, CDFW

Building on CMP Monitoring Efforts to Document Insufficient Stream Flow as a Bottleneck to Salmonid Survival in Tributaries of the Russian River, CA
Sarah Nassanan, University of California Sea Grant

Lunch

Developing and Deploying a Network of Water Quantity/Quality Sensors to Monitor and Protect Streams for Salmonids
Brad Jap, Pacific Watershed Associates

Factors Influencing Chinook Egg Survival in the Regulated Cle Elum River, WA
Mark D. Broem, Environmental Science Associates

Part 3—Evaluating and Prioritizing for Treatment, Watershed Scale Impacts on Salmonid Habitat
Danny Hughes, Pacific Watershed Associates

Evaluating Sediment Effects and Utilizing Sediment Budget Elements to Prioritize Watershed Scale Salmonid Habitat Recovery to Reduce Cumulative Impacts
Valley Bottom Geomorphology, Flow Inundation, and Floodplain Connectivity
Jay Stallman, Stillwater Sciences

Identifying and Prioritizing Off-channel Habitat Restoration Opportunities through Assessment of Evaluating Stream Channel Corridors for Habitat Improvement Projects
Thomas H. Leroy, PWA

April 1, Saturday Afternoon Concurrent Sessions

Room

Multi-purpose Room

Reintroduction of Salmon to Historical Habitats: Part II
Session Coordinators: Curtis Knight, California Trout, and Robert Laswardi, Ph.D., California Trout and UC, Davis

Reviving the San Joaquin River from Tributaries to the Delta
Session Coordinator: Rhonda Reel, Fishery Consultant

Part 1—Planning Salmon Habitat Improvement Projects
State of the Salmonids—Fish in Hot Water
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Reconciliowion & Reintroduction: A Community and Science-Based Recovery Plan for the Yuba River Watershed
Gary Reedy, South Yuba River Citizens League

Coalition Based Steelhead Recovery Efforts in Southern California—South Coast
Sandra Jacobson, Ph.D., California Trout

Estimating Potential Salmonid Habitat and Carrying Capacity in the Upper Mainstem Eel River, California
Emily Cooper, Humboldt State University

Salmonid Fish Rescue and Reintroduction Strategies
Michael Debo, California Department of Fish and Wildlife

Beyond Boundaries—Restoring Habitat and Building Tribal Capacity in the Headwaters of the Klamath Basin—A Yurok Tribe Story from Limkiln Gulch
David (Dj) Bandrowski, Yurok Tribe

The Persistence and Characteristics of Chinook Salmon Migrations to the Upper Klamath River Prior to Exclusion by Dams
John Hamilton, U.S. Fish and Wildlife Service

If You Build It Will They Come? A Perspective on 25 Years of Salmonid Restoration in the San Joaquin River Basin and the Future
Rhonda J. Reel, Fishery Consultant

Break

Restoration and Salmon Reintroduction in the Southern San Joaquin Basin: Exploring the Regulatory Framework
Jeff Abrams, NMFS, San Joaquin River Branch

What if It Doesn’t Flood? Examining Salmonid Rearing Habitat and Possible Management in the Tuolumne and San Joaquin Rivers
Gerald A. Dion and Heyo Tjarks, River Partners

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Break

Taking It Down a Notch: Reintroducing Juvenile Salmon Over Fremont Weir onto the Yolo Bypass Floodplain, Brett Harvey, Ph.D., California Department of Water Resources

A Contractor’s Perspective for Successful in-Stream Habitat Enhancement and Restoration Projects, Donna McCallugh, McMcallugh Construction Inc.

Restoring the Mattole Estuary with Hellwood Whole Trees, Stream Bars, and Riparian Plantings; An Anatomy of a Hellwood Project from Start to Finish
Sungneme Madrone, Mattole Salmon Group

1:15pm

Room

Multi-purpose Room

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Gary Reedy, South Yuba River Citizens League

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4:30pm

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Sungneme Madrone, Mattole Salmon Group

6:30pm

Banquet & Cabaret in the Multi-purpose Room
April 1, Saturday Morning Concurrent Sessions

**Session Coordinators:** Curtis Knight, California Trout, and Robert Lucarelli, Ph.D. CalTrout and University of California, Davis

### Visioning Salmon Recovery—Restoring Ecological Function in the Central Valley’s Working Landscapes through Science, Collaboration, and Structured Decision Making
- **Multi-purpose Room**
- **Club Room**

- Travis M. Hinkelmann, Ph.D., Center for Coastal Fisheries

#### A Vision for Salmon Restoration in the San Joaquin Valley: The Stanislaus River Example
- Jon Rosenfield, The Bay Institute

#### The Development of a Structured Adaptive Approach to Prioritizing Conservation and Restoration of Chinook Salmon in the Central Valley
- James T. Peterson, USGS, Oregon Cooperative Fish and Wildlife

### Hatchery Supplementation: Friend or Foe?
- **Multi-purpose Room**
- **Club Room**

#### Friend or Foe?
- John Carlos Garza, Ph.D., Southeast Fisheries Science Center, NOAA Fisheries, and UC Santa Cruz

#### California Department of Fish and Wildlife Fish Hatcheries as Drought Safe Haven: Self-Contained Recirculating Aquaculture Systems for Fish Populations in Peril
- Mark Clifford, Ph.D., CDFW

### Redband Trout: Fish Rescue Turned Conservation Hatching Program
- Jeff Rodzen, California Department of Fish and Wildlife

### Fish Passage from the Sierra to Tidewater
- **Workshop Coordinators:** Michael Love, Michael Love and Associates; Mike Garrolo, P.E., HDR Engineering, Inc.; and Russ Taylor, Russ Taylor and Associates

#### Multi-purpose Room

### What to Consider when Prioritizing Barriers within a Watershed?
- **State of Fish Passage Assessments and Prioritization in California**
- Russ Taylor, Russ Taylor and Associates and Anne Elston, PSMFC

#### The Need to Address Watershed Scale Channel Incision in our Passage Projects

#### One Size Does Not Fit All—Tools and Approaches to Addressing Stream Crossing Barriers

#### Establishing the Fish Passage Design Profile—Group Exercise

#### Regulatory Drivers: California—How Different Environmental Regulations May Influence Decisions to Build a Fish Passage Project at a High Dam
- Richard Womack, National Marine Fisheries Service (NMFS)

#### The Feasibility and Design Process from the Engineer’s and Biologist’s Perspective
- Michael Garrolo, P.E., HDR Inc.

### Key Fish Passage Parameters: What Is Important and Why Is It Important to Know?
- Michael Garrolo, P.E., HDR Inc.

### Technologies: How Do Others Do It and Is There Hope for Emerging Technologies?
- Michael Garrolo, P.E., HDR Inc.

#### Case Studies: Upstream Fish Passage
- Jonathan Mann, P.E., California Department of Fish and Wildlife

#### Case Studies: Downstream Fish Passage
- John Hannum, U.S. Bureau of Reclamation

#### Panel Discussions

#### Upstream Passage—When is Volitional Passage the Right Option for Fish Passage?—Group Exercise

#### Downstream Passage—Are Lessons Learned in the PNW Applicable to California High-dams and Reservoirs?

### March 30, Thursday Workshops, 9am - 5pm

**Workshop Coordinator:** Eli Asarian, Riverbend Sciences

#### Club Room

### The Physical Process Foundation for Stream Ecosystems: Why Restoring Beaver Dams is Important
- Brian Chais, Ph.D., NOAA Fisheries

### Lessons Learned from a 15-Year Beaver Dam Analogue Restoration and Monitoring Project—Applying Results to Other Watersheds
- Michael Pollock, Ph.D., NOAA Fisheries

### Do Beaver Have a Role in the Recovery of California Coho Salmon?
- Stephen Suades, Ph.D., Fisheries Branch, California Department of Fish and Wildlife

### Bucktail Beaver Dam Analogue Construction Process and Near-Term Results
- James Lee, Hopa Valley Tribe and Trinity River Restoration Program

### Demonstration of Carbon Sequestration and Biodiversity Benefits of Beaver and BDA Restoration Techniques in Chilis Meadow, Tehama County CA
- Sarah yarnell, Ph.D., Center for Watershed Sciences, UC, Davis

### Applications of Beaver Restoration Techniques in the Sierra Nevada
- Damion Cieett, U.S. Fish and Wildlife Service

### Lunch

### Beaver in California: Creating a Culture of Stewardship
- Kate Landquist, Occidental Arts and Ecology Center

### Adaptive Beaver Management Plans: A Tool for Mitigating Beaver Nuisance Behavior While Partnering With Beaver in a Restoration Context
- Eljah Portugal, Redwood Community Action Agency

### Scott Valley Beaver Dam Analogues: Year 3
- Betsy Stapleton, Scott River Watershed Council, and Michael Pollock, Ph.D., NOAA Fisheries

### Permit Guidance for Beaver Dam Analogues (BDAs) in the North Coast Region
- Jonathan Wermardn, North Coast Regional Water Quality Control Board

### Practical Permitting Guidance for Beaver Dam Analogue Restoration Projects
- Curt Babcock, California Department of Fish and Wildlife

### Panel Discussion on Improving the Restoration Permitting Process and Beaver Management
March 31, Friday Afternoon Concurrent Sessions

Central Valley Recovery Planning and Restoration
Session Coordinator: Charlotte Ambrose, NOAA Fisheries

Recovering Central Valley Chinook Salmon and Steelhead
Brian Elliott, National Marine Fisheries Service

Salmon Recovery NGO Experience
John M. Manusz, Golden Gate Salmon Association

Accelerating Salmonid Recovery: Expediting Permitting of Habitat Restoration in the Central Valley
Eric Ginney, ESA, Ruth Goodfield, NOAA Restoration Center, and Erika Lovejoy, Sustainable Conservation

Break

Funding Opportunities for Fisheries and Watershed Restoration Projects
Matt Wells, California Department of Fish and Wildlife

Conservation Banking 101
Hal Holland and Greg DeYoung, Westervelt Ecological Services

Salmonid Conservation Banking: Central Valley Case Studies
Gregg Sutter and Mark Young, Westervelt Ecological Services

Swirling in Sediment and Slowing Fisheries Recovery
Session Coordinator: Brian Cluer, Ph.D., and Michael Pollock, Ph.D., NOAA Fisheries

Swirling in Sediment and Slowing Fisheries Recovery
Brian Cluer, Ph.D., NOAA Fisheries

Engineering is the Easy Part
Jim Robins, Aplus Ecological

Incorporating Geomorphic Processes and Sediment Dynamics into Salmonid Habitat Restoration Design
James Q. White, Environmental Science Associates

Break

Clear and Simple Connections Between Dirt, Fish, Entrenchment, and Recovery
Mike Napolitano, San Francisco Bay Water Quality Control Board

Sediment for Salmon in San Francisco Bay: What’s Needed, What’s Available, and What’s Next?
Scott Dusterhoff, San Francisco Estuary Institute

Mechanical Scarcification of Gravel Beds to Increase Chinook Salmon Spawning Success—Field Experience in Lower Putah Creek
Ken W. Davis, Wildlife Survey & Photo Service

Using Photogrammetric and Aerial Vehicle Technology to Support Salmonid Restoration Planning and Engineering
Session Coordinator: Tom H. Lerey, Pacific Watershed Associates

State of the Art Geomorphic Monitoring and What It Tells Us About How Rivers and Streams Evolve
Michael Strom, Environmental Science Associates

Ground Based Application of Structure from Motion (SFM) to Quantify Gravel Storage in Response to Gravel Augmentation on a High Gradient
Mindi Curran, Humboldt State University Geology Department and McBain Associates

Identifying Salmonid Habitat Units Using High Resolution Imagery Acquired with a UAS in the Upper Eel River Watershed, California
Erik C. Kenas, Humboldt State University

Simulation of River Networks
Rebecca Buchanan, Ph.D., ICF

Automated Photogrammetric Particle Segmentation for Longitudinal and Temporal Sediment Surveillance of River Networks
Tim L. Bailey, Humboldt State University Geology Department

Improving Salmonid Restoration Efforts using Unmanned Aerial Systems and Structure-from-Motion Photogrammetry, Lower American River, California
Toby Stengman, obx, inc. co-engineering

Integration of Structure from Motion (SFM) Technology—Using 3D Models to Inform River Restoration Designs and Basin Wide Planning
David (DJ) Bandrowski, Ph.D., ICF

Break

Factors Affecting Delta Survival and Route Selection of San Joaquin River Fall-Run Chinook Salmon, 2010 – 2013
Rebecca Buchanan, Ph.D., University of Washington

Do Barriers for Deterring Juvenile Salmonids Away from High-Risk Migration Pathways Affect Survival at Important Channel Junctions in the Sacramento-San Joaquin Delta, CA?
Marin Greenwood, Ph.D., Pacifi c Watershed Associates

Estimating Relative Survival and Adult Return Rates of Coho Salmon that Rear in Stream and Estuary Habitats
Darren M. Ward, Ph.D., Humboldt State University Department of Fisheries and Wildlife

Estimating Juvenile Salmonid Survival Across Diverse Spatio-temporal Scales
Session Coordinators: Cynthia Le Dous-Bloom, Ph.D., AECOM

Survival and Movement Rates of Wild Chinook Salmon Smolts from Mill Creek through the Sacramento River and SF Bay
Jeremy Noto, NOAA and UC, Santa Cruz

Sacramento River Reach-Specific Movement and Survival Rates of Hatchery-Origin Winter-Run Chinook Salmon Juveniles
Arnold J. Ammann, NOAA Southwest Fisheries Science Center

Movement and Survival Rates of Spring-Run Chinook Salmon Juveniles from the Sutter Bypass to the San Francisco Bay
Flora Corduliani, Ph.D., NOAA Southwest Fisheries Science Center

Session Coordinators:
Erik C. Kenas, Humboldt State University

If Salmon Could Talk...
Felicia Marcus,
Chairwoman, State Water Resources Control Board

The Epic California Drought as Viewed from Space: Drought vs. Chronic Water Scarcity and Implications for Sustainability
Jay Famiglietti, Ph.D., Felicia Marcus, Ph.D., and John Famiglietti, Ph.D., NASA Jet Propulsion Lab, and UC Irvine

Salmon Restoration and the Re-engineering of Water in California
Jay R. Lund, Ph.D., Director, Center for Watershed Sciences, UC Davis

Damage to the Oroville dam spillway illustrated how vulnerable California’s water infrastructure is to historic flooding and climate variability.

Photos above by Kelly M. Grow / DWR, Brian Base / DWR

Photo left by Josh Edelson/ AFP/Getty Images