Registration and Hospitality

9am

Workshops & Tours 9am

West Coast Floodplain Worksho
Multi-purpose Room
Courtyard Entrance

Evaluating Salmon Habitat and Watershed Condition Multi-purpose Room

Field Tours

Stanislaus River Restoration

Yolo Bypass and Putah Creek Restoration Projects

Watershed Day at the Capitol

Field Tour participants: please pack a lunch and meen outside the front entrance

Workshops & Tours 9am - 5pm

Workshops

Fish Passage from Tidewater to Sierra Multi-purpose Room

State of Beaver Restoration in California Club Room

Field Tours

Multi-Use Floodplain Projects in the Lower Sacramento Valley

American River Gravel Augmentation and Floodplain Restoration Tour **Meet in Game Room** **VMC Theater**

35th Annual Salmonid Restoration Conference

March 29-April 1, 2017 in Davis, CA

Restoring Watersheds and Rebuilding Salmon Runs



Conference Co-sponsors

AECOM, Aspen Environmental Group, Balance Hydrologics, Inc., Bureau of Land Management, Cachuma Operation and Maintenance Board, Callifornia Department of Fish & Wildlife, California Conservation Corps, California Trout, Cardno, cbec, inc. eco engineering City of Davis, Public Works Department, East Bay Municipal Utility District, Environmental Science Associates, GHD, Green Diamond Resource Company, Guadalupe-Coyote RCD,

HDR, Inc., ICF International, Karuk Department of Natural Resources, Lyme Redwood Forest Company, Manhard Consulting, Marin Municipal Water District, McBain & Associates, McCullough Construction, Inc., Mendocino County Resource Conservation District, Metropolitan Water District of Southern CA,

Michael Love and Associates, NOAA Fisheries, Northern California Water Association,

Northwest Hydraulic Consultants, Pacific States Marine Fisheries Commission, Pacific Watershed Associates, Prunuske Chatham, Inc., Putah Creek Council, Putah Creek Trout,

Restoration Design Group, Rincon Consultants, Inc., River Journey Adventures, Sacramento Regional County Sanitation District, San Lorenzo Valley Water District,

Solano County Water Agency, Sonoma County Agricultural Preservation and Open Space District, Sonoma County Water Agency, Stillwater Sciences, Sustainable Conservation, The Nature Conservancy, The Wildlands Conservancy, Trout Unlimited, West Coast Watershed, Westervelt Ecological Services













Reintroduction of Salmon to Historical Habitats: Part 1 VMC Theater

Visioning Salmon Recovery Multi-purpose Room

Hatchery Supplementation Club Room

Plenary Session
Brunelle Performance
Arts Theater

Planning and Restoration Brunnelle Theater Central Valley Recovery

Reintroduction of Salmon to Historical Habitats: Part 2 Multi-purpose Room

Reviving the San Joaquin Rive Club Room

Afternoon Concurrent Session

-1:15pm

Lunch 12:15

Swirling in Sediment Multi-puropse Room

Using Photogrammetric d Aerial Vehicle Technology Club Room

Protecting, Connecting, and Re-imaging Floodplain Habita

Estimating Juvenile Salmonid Survival VMC Theater

Poster Session

Membership Dinner Multi-Purpose Room

6:30pm 7pm

10pm

5:30pm

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 Phillis, Ph.D., Metropolitan Water District; and Brian Cluer, Ph.D., NMFS West Coast Region

Multi-purpose Room, Courtyard Entrance

Central Valley Salmonid Life History Models Corey Phillis, 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

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

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

Group Discussion / Activity

of Water Resources

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., chec, 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 and Prioritize Salmonid Recovery Actions

Workshop Coordinators: Thomas H. Leroy and Danny Hagans, 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 Katie Barnas, NOAA 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 Jonathan Warmerdam, North Coast Regional Water Quality Control Board, and Jennifer Carab, 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 Nossaman, University of California Sea Grant

Lunch

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

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

Part 3—Evaluating and Prioritizing for Treatment, Watershed Scale Impacts on Salmonid Habitat

Evaluating Sediment Effects and Utilizing Sediment Budget Elements to Prioritize Watershed Scale Salmonid Habitat Recovery to Reduce Cumulative Impacts Danny Hagans, Pacific Watershed Associates

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

Reintroduction of Salmon to Historical Habitats: Part II

Session Coordinators: Curtis Knight, California Trout, and Robert Lusardi, Ph.D., California Trout and UC, Davis

Reviving the San Joaquin River from Tributaries to the Delta

Session Coordinator: Rhonda Reed, Fishery Consultant

Protecting, Connecting, and Re-imagining **Floodplain Habitat**

Session Coordinators: Corey Phillis, Ph.D., Metropolitan Water District, and Brian Cluer, Ph.D., NMFS West Coast Region

Protecting, Connecting,

to Juvenile Salmon

Reconciling Theory

Rocko A. Brown, Ph.D.,

with Practice

and Re-imagining Floodplain

the Benefits of Floodplains

Habitat: Strategies for Restoring

Brian Cluer, Ph.D., NOAA Fisheries

Mimicking Hydrologic Process

to Restore Ecological Function

Jacob Katz, Ph.D., California Trout

Environmental Science Associates

Rescaling Central Valley Rivers:

VMC Theater

Multi-purpose Room

1:15pm

Room

Reconciliation & 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

3:00pm

Break

Salmonid Fish Rescue and Reintroduction Strategies

Michael Dege, 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 Limekiln 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

Club Room

Revised Draft Substitute Environmental Document for Flow Objectives on the **Lower San Joaquin River and How It Benefits Fish** Brittany Kammerer, Ph.D., State Water Resources Control Board

Managing Precocious Maturation in Chinook Salmon Captive Broodstock

Paul Adelizi, California Department of Fish and Wildlife

Spawning Behavior and Habitat Selection of Chinook Salmon in the San Joaquin River, CA Andy J. Shriver, California Department of Fish and Wildlife

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?

Break

Excavating Salmonid Rearing Habitat and Possible Management in the Tuolumne and San Joaquin Rivers Gerald A. Dion and Heyo Tjarks, River Partners

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. Reed, Fishery Consultant

Break Taking it Down a Notch: Entraining Juvenile Salmon Over Fremont Weir onto the Yolo

Bypass Floodplain, Brett Harvey, Ph.D., California Department of Water Resources

A Contractor's Prospective for Successful In-Stream **Habitat Enhancement** and Restoration Projects, Dena McCullough, McCullough Construction Inc.

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

Banquet & Cabaret in the Multi-purpose Room 6:30pm

April 1, Saturday Morning Concurrent Sessions

Reintroduction of Salmon to Historical Habitats: Part I

Session Coordinators: Curtis Knight, California Trout, and Robert Lusardi, 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

Session Coordinators: Rene Henery, Ph.D., Trout Unlimited, and Jacob Katz, Ph.D., CalTrout

Hatchery Supplementation: Friend or Foe?

Session Coordinator: John Carlos Garza, Ph.D., Southwest Fisheries Science Center, NOAA Fisheries, and UC Santa Cruz

Room VMC Theater

9:00am A Collaborative Effort to Develop a Pilot Project and Assess the Feasibility of Reintroducing Chinook Salmon above Pardee

Reservoir on the Mokelumne River, CA Reuben Childress, Footbill

Conservancy, and Michelle Workman, EB MUD Fisheries & Wildlife Division

A Plan for Reintroduction of Winter-run Chinook Salmon to Battle Creek James Lecky, ICF

Techno-Arrogance: Why Trap and Haul Fails to Recover Salmon & Watersheds

Matt Stoecker, Stoecker Ecological

10:30am

Break

Achieving Reintroduction through the Federal Power Act Steve Edmondson, National Marine Fisheries Service

Salmon in the Sierra: Reintroduction into the North Yuba River

Chris Shutes, California Sportfishing Protection Alliance

Two-Way Trap and Haul as a Conservation Strategy for Anadromous Salmonids

Robert Lusardi, Ph.D., California Trout and University of California Davis

Multi-purpose Room

Emigrating Salmonid Habitat Estimation (ESHE): A Modeling Framework for Estimating Habitat Needs for Outmigrating Juvenile Salmonids

Travis M. Hinkelman, Ph.D., Cramer Fish Sciences

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

Break

Central Valley Spring-run Chinook Salmon and Steelhead Recovery and the Role of the Yuba River

Brian Ellrott, National Marine Fisheries Service

The Central Valley Salmon Habitat Partnership

Jacob Katz, Ph.D., California Trout, and Chris Unkel, Ph.D., American Rivers

Developing a Multi-Objective Rehabilitation Strategy for the Coon Creek Watershed

Jai Singh, chec, inc. eco engineering

Club Room

Hatchery Supplementation: Friend or Foe?

John Carlos Garza, Ph.D., Southwest Fisheries Science Center, NOAA Fisheries

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 Hatchery Program

Jeff Rodzen, Ph.D., California Department of Fish and Wildlife

Break

Evidence for Genetic Adaptation to Captivity and a Potential Mechanism to Account for Domestication in Hatchery-Reared Steelhead

Neil Thompson, Oregon State University

Can We Recover Central Valley Salmon and Steelhead Without a More Aggressive Approach to Management of Hatchery Produced Fish?

Brad Cavallo, Cramer Fish Sciences

March 30, Thursday Workshops, 9am - 5pm

Fish Passage from the Sierra to Tidewater

Workshop Coordinators: *Michael Love*, *Michael Love* and Associates; *Mike Garello*, *P.E.*, *HDR Engineering*, *Inc.*; and *Ross Taylor*, *Ross Taylor and Associates*

Multi-purpose Room

What to Consider when Prioritizing Barriers within a Watershed?

Status of Fish Passage Assessments and Prioritization in California

Ross Taylor, Ross Taylor and Associates and Anne Elston, PSMFC

The Need to Address Watershed Scale Channel Incision in our Passage Projects Michael Love, Michael Love & Associates, Inc.

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

Michael Love, P.E., Michael Love & Associates, Inc.

Establishing the Fish Passage Design Profile—Group Exercise

Lunch

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

The Feasibility and Design Process from the Engineer's and Biologist's Perspective *Michael Garello*, *P.E.*, *HDR Inc.*

Key Fish Passage Parameters: What Is Important and Why Is it Important to Know? *Michael Garello*, *HDR Inc.*

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

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

Case Studies: Downstream Fish Passage John Hannon, 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?



State of Beaver Restoration in California

Workshop Coordinator: Eli Asarian, Riverbend Sciences

Club Room

The Physical Process Foundation for Stream Ecosystems: Why Restoring Beaver Dams Is Important Brian Cluer, 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 Swales, Ph.D., Fisheries Branch, California Department of Fish and Wildlife

Bucktail Beaver Dam Analogue Construction Process and Near-Term Results

James Lee, Hoopa Valley Tribe and Trinity River Restoration Program

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

Applications of Beaver Restoration Techniques in the Sierra Nevada

Damion Ciotti, U.S. Fish and Wildlife Service

Lunch

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

Adaptive Beaver Management Plans: A Tool for Mitigating Beaver Nuisance Behavior While Partnering With Beaver in a Restoration Context Elijah 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 Warmerdam, 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



Plenary Session

Richard Brunelle Performance Hall 315 W. 14th St. Davis, California 95616

Master of Ceremonies: Thomas Williams,

NOAA Fisheries, Southwest Fisheries Science Center

The Epic California Drought as Viewed from Space:
Drought vs. Chronic Water Scarcity
and Implications for Sustainability
Jay 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

If Salmon Could Talk... Felicia Marcus,

Chairwoman, State Water Resources Control Board







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 Baer /

Photo left by Josh Edelson/ AFP/Getty Images

March 31, Friday Afternoon Concurrent Sessions Central Valley Recovery Planning Swirling in Sediment Using Photogrammetric and Aerial Estimating Juve

Session Coordinator:

Charlotte Ambrose, NOAA Fisheries

and Restoration

Brunelle Theater

Swirling in Sediment and Slowing Fisheries Recovery Session Coordinators:

Brian Cluer, Ph.D., and Michael Pollock, Ph.D., NOAA Fisheries

Using Photogrammetric and Aerial Vehicle Technology to Support Salmonid Restoration Planning and Engineering

Session Coordinator: *Tom H. Leroy*, Pacific Watershed Associates

Estimating Juvenile Salmonid Survival Across Diverse Spatio-temporal Scales

Session Coordinators:

Cynthia Le Doux-Bloom, Ph.D.,

AECOM

Multi-purpose Room Clu

Recovering Central Valley Chinook Salmon and Steelhead

Brian Ellrott, National Marine Fisheries Service

Salmon Recovery NGO Experience *John McManus*,

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

Engineering is the Easy Part Jim Robins, Alnus Ecological

Incorporating Geomorphic Processes and Sediment Dynamics into Salmonid Habitat Restoration Design Jason Q. White,

Jason Q. White, Environmental Science Associates

Club Room

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

VMC Theater

Survival and Movement Rates of Wild Chinook Salmon Smolts from Mill Creek through the Sacramento River and SF Bay Jeremy Notch, 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 Cordoleani, Ph.D., NOAA Southwest Fisheries Science Center

Break

3:00pm

Room

1:15pm

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

SIERRA NEVADA

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 Scarification of Gravel Beds to Increase Chinook Salmon Spawning Success—Field Experience in Lower Putah Creek

Ken W. Davis, Wildlife Survey & Photo Service

Break

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 Stegman, chec, inc. eco-engineering

Integration of Structure for Motion (SfM) Technology—Using 3D Models to Inform River Restoration
Designs and Basin Wide Planning
David (DJ) Bandrowski, P.E., Yurok Tribe



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., ICF

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 Biology



