Science for Solutions:

Linking DATA *and* DECISIONS

9th Biennial Bay-Delta Science Conference

November 15–17, 2016

Sacramento Convention Center, 1400 J St., Sacramento

The Biennial Bay-Delta Science Conference is a forum for presenting technical analyses and results relevant to the Delta Science Program's mission to provide the best possible, unbiased, science-based information for water and environmental decision-making in the Bay-Delta system. The goal of the conference is to provide new information and syntheses to the broad community of scientists, engineers, resource managers, and stakeholders working on Bay-Delta issues.

The conference program features oral and poster presentations that provide scientific information and ideas relevant to the topic sessions. The conference theme this year is "Science for Solutions: Linking Data and Decisions." Protection of the Bay-Delta ecosystem is at a pivotal point. This system has endured devastating drought cycles and shifting priorities that seek to supply water for cities and farms and improve the aquatic ecosystem for fisheries, recreation, and tourism. Achieving these goals requires science that expands our knowledge of ecosystem responses, produces data that directly supports decisions, and builds long-term, resilient solutions.

Organizing Committee

Conference Co-Chairs:
Nann Fangue, UC Davis
Erin Foresman, US EPA

Program Chairs:
Fred Feyrer, USGS
Jim Hobbs, UC Davis

Poster Chairs:
Meiling Roddam, SWRCB
Isa Woo, USGS

Student Judging Chairs:
Josh Israel, USBR
Joe Merz, Cramer Fish Sciences

Student Mentor Chairs:
Louise Conrad, DWR
Stephanie Fong, SFWCA

Art Chairs:
Rosemary Hartman, DFW
George Isaac, Delta Science Program

Brown-Nichols Science Award Chair:
Michelle Shouse, USGS

Public Information Chairs:
Eric Alvarez, Delta Stewardship Council
Leslie Gordon, USGS

Conference Coordinator:
Karen McDowell, SFEP

Committee Members:
Charlotte Ambrose, NOAA
Marina Brand, Delta Science Program
Kelsey Cowin, SFCWA
Kathryn Kynett, Delta Conservancy
Nir Oksenberg, Delta Science Program
Kelly Souza, Delta Science Program
Leanna Zweig, USFWS

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TAKE A LOOK!

Delta Science Program
Delta Stewardship Council

USGS
science for a changing world

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Schedule at a Glance

PLENARY SESSIONS, TUESDAY, NOVEMBER 15	
8:00 AM	REGISTRATION—3RD FLOOR LOBBY
9:00	**Plenary Session** (Room 308-313)
10:20	BREAK—3RD FLOOR LOBBY
10:40	**Plenary Session**
12:10–1:35 PM	LUNCH—EXHIBIT HALL B (1ST FLOOR)
12:25–1:25 PM	**SPECIAL EVENT:** Student/Early Career Scientist Mentor Lunch (Room 315)

SPECIAL EVENTS

Student/Early Career Scientist Mentor Lunch

Tuesday, November 15th
12:25 – 1:25 PM, Room 315

This event will be structured around broad career and science themes that will allow students, early career scientists, and mentors to exchange ideas and insights about career development, research interests and much more. Event organizers Louise Conrad and Stephanie Fong will welcome the group to kick things off. It's certain everyone will emerge from lunch energized and enriched! Pre-Registration is required for this event.

Town Hall: Building the 2017 Science Action Agenda

Wednesday, November 16th
12:20 – 1:20 PM, Rooms 308-310

Please join in a fun and interactive session to brainstorm priority science actions for inclusion in a 2017 Science Action Agenda that builds on the scientific advances highlighted in *The State of Bay-Delta Science, 2016* and furthers the achievement of implementing the Delta Science Strategy described in the Delta Science Plan.

The Art of Data Visualization Panel and Art Exhibition

Art Viewing: Tuesday & Wednesday, November 15th and 16th, 5:15 – 7:15 PM, Exhibit Hall B

Panel: Thursday, November 17th, 12:15 – 1:00 PM, Rooms 308-310

Using art and artistic principles to help communicate scientific concepts can enhance both scientific communication and artistic messages. At this year's conference, we have solicited art that blends the line between art and science, and we have organized a panel discussion to explore how art and science can work together to increase awareness of estuarine ecology. Many of the exhibits are collaborative projects between members of the science community and local artists. The lunch panelists include: Jane Hartman, Art Science Specialist; Amber Manfree (UC Davis), GIS Specialist and Shadow Puppet Performer; David Osti (34 North), GIS and Visualization Scientist; Gemma Shusterman (SFEI), Data Visualization Scientist; Christina Sloop (CDFW), Aerial Videographer and Environmental Scientist; Bonnie Veblen, Artist and Environmentalist; Ariel Rubissow Okamoto (Estuary News), Science Writer and Editor.

CONCURRENT SESSIONS, TUESDAY, NOVEMBER 15

	Room 306 Species and Community Ecology	Room 307 Water Quality and Fishes	Rooms 308-310 Sustainable Habitats and Ecosystems	Rooms 311-313 Water and Ecosystem Quality	Room 314 Integrative Applied Science
1:35–3:15 PM	**Estuarine Ecology** *John Durand, UC Davis*	**Food Web Foundations** *Steven Culberson, USFWS*	**Habitat Restoration and Conservation** *Stacy Sherman, DFW*	**Data Management and Tools** *Bob Fujimura, DFW*	**Re-Envisioning the Delta with New Knowledge from the Past** *Robin Grossinger, SFEI*
3:15–3:35	BREAK—3RD FLOOR LOBBY				
3:35–5:15	**Fish Biology and Ecology** *Kathy Hieb, DFW*	**Food Web Foundations** *Tara Morgan-King, USGS*	**Sea Level Rise** *Carol Ostergren, USGS*	**Data for Decisions: Structured Decision Making Tools for Planning and Implementing CVPIA Actions** *Rod Wittler, USBR*	**Re-Envisioning the Delta with New Knowledge from the Past** *Letitia Grenier, SFEI*
5:15–7:15 PM	POSTER SESSION, RECEPTION, AND ART EXHIBITION—EXHIBIT HALL B (1ST FLOOR)				

Schedule at a Glance

	WEDNESDAY, NOVEMBER 16				
8:20–10:00 AM	**Biology, Ecology and Management of Central Valley Salmonids** *Charlotte Ambrose, NMFS*	**Anatomy of the Spring 2016 Phytoplankton Bloom in the Delta** *Anke Mueller-Solger, USGS and Richard Dugdale, SFSU, RTC*	**Challenges in Meeting the Tidal Restoration Objectives of the Suisun Marsh** *Steve Chappell, Suisun RCD*	**Linking Sediment Dynamics to Long-Term Management Decisions** *Jessie Lacy, USGS, and Maureen Downing-Kunz, USGS*	**Integrated Scientific Approaches for Adaptive Management of Invasive Aquatic Plants in the Delta** *Patrick Moran, USDA-ARS*
10:00–10:20	**BREAK—3RD FLOOR LOBBY**				
10:20–12:00	**Biology, Ecology and Management of Central Valley Salmonids** *Leanna Zweig, USFWS*	**Lost in Translation: The Art of Interpreting Complex Science for Policymakers** *Randy Fiorini, Delta Stewardship Council*	**Tidal Wetlands Ecology** *Marissa Wulff, USGS*	**Linking Sediment Dynamics to Long-Term Management Decisions** *Michael MacWilliams, Anchor QEA, and Maureen Downing-Kunz, USGS*	**Integrated Scientific Approaches for Adaptive Management of Invasive Aquatic Plants in the Delta** *John Madsen, USDA-ARS*
12:00–1:35 PM	**LUNCH—EXHIBIT HALL B (1ST FLOOR)**				
12:20–1:20 PM	**SPECIAL EVENT: Town Hall: Building the 2017 Science Action Agenda (Rooms 308-310)**				
1:35–3:15	**Advances in Sturgeon Research** *Rebecca Fris, DFW*	**Delta Smelt** *Larry Brown, USGS*	**CASCaDE II: Computational Assessments of Scenarios of Change for the Delta Ecosystem** *Lisa Lucas, USGS*	**Adaptive Management in the Delta: Learning from Habitat Projects** *Martina Koller, DSC/DSP*	**Developing Spatially Explicit Agent-Based Models for Delta Fishes: Patterns, Processes, and Parameters** *Russell Perry, USGS*
3:15–3:35	**BREAK—3RD FLOOR LOBBY**				
3:35–5:15	**Species Invasions in the San Francisco Estuary** *Dave Contreras, DFW*	**Modeling Fish Populations** *David Ayers, USGS*	**CASCaDE II: Computational Assessments of Scenarios of Change for the Delta Ecosystem** *Noah Knowles, USGS*	**South Bay Salt Pond Restoration: Adaptive Management Success Story** *Jim Hobbs, UC Davis*	**Developing Spatially Explicit Agent-Based Models for Delta Fishes: Patterns, Processes, and Parameters** *David Smith, USACE-ERDC*
5:15–7:15 PM	**POSTER SESSION, RECEPTION, AND ART EXHIBITION—EXHIBIT HALL B (1ST FLOOR)**				
	THURSDAY, NOVEMBER 17				
8:20–10:00 AM	**Non-Native Predator Fish Research in the Sacramento-San Joaquin Delta** *Joseph Smith, University of Washington*	**Contaminant Issues in the Bay-Delta** *Richard Connon, UC Davis*	**Progress in Floodplain Ecology: Lessons from Yolo Bypass and other Central Valley Floodplains** *Ted Sommer, DWR*	**Ecosystem Impacts of Drought: Detailing the Response from Phytoplankton to Fish** *Louise Conrad, DWR; and Joshua Israel, USBR*	**Ecosystem Management Challenges** *Paul Work, USGS*
10:00–10:20	**BREAK—3RD FLOOR LOBBY**				
10:20–12:00	**Non-Native Predator Fish Research in the Sacramento-San Joaquin Delta** *Joseph Smith, University of Washington*	**Contaminant Issues in the Bay-Delta** *Stephanie Fong, SFCWA*	**Progress in Floodplain Ecology: Lessons from Yolo Bypass and other Central Valley Floodplains** *Jon Burau, USGS*	**Evaluating an Emergency Response: False River Drought Barrier Efficacy and Effects** *Karen Kayfetz, Delta Science Program*	**The Collaborative Science and Adaptive Management Program—Moving from Litigation to Collaboration** *Bruce DiGennaro, The Essex Partnership*
12:00–1:15 PM	**LUNCH—EXHIBIT HALL B (1ST FLOOR)**				
12:15–1:00 PM	**SPECIAL EVENT: The Art of Data Visualization Panel (Rooms 308-310)**				
1:15–2:55	**Winter-Run Chinook Salmon Science and Management in a Changing Climate** *Rachel Johnson, NOAA Fisheries*	**Assembling the Puzzle Pieces: Synthesis of Mercury Science in the San Francisco Bay-Delta and Beyond** *Yumiko Henneberry, DSC/DSP*	**Delta as an Evolving Place** *Skip Thomson, Delta Protection Commission*	**Climate, Drought and Water Management** *Mike Dettinger, USGS*	**Remote Sensing and Predictive Modeling to Improve Decision Making in Managing San Francisco Bay and Estuary** *Curtiss Davis, Oregon State University*
2:55–3:15	**BREAK—3RD FLOOR LOBBY**				
3:15–4:55	**Winter-Run Chinook Salmon Science and Management in a Changing Climate** *Jason Hassrick, ICF*	**Assembling the Puzzle Pieces: Synthesis of Mercury Science in the San Francisco Bay-Delta and Beyond** *Charles Alpers, USGS*	**Restoring Resilient Landscapes** *Levi Lewis, UC Davis*	**Ecological Flows and Flood Control** *Valentina Cabrara-Stagno, US EPA*	**Enviromental Models** *Joe Domagalski, USGS*
4:55 PM	**ADJOURN— RAFFLE (EAST LOBBY, 3RD FLOOR)**				

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Tuesday, November 15

	Plenary Session Rooms 308-313
9:00–9:10 AM	**Welcome** *Nann Fangue, University of California, Davis*
9:10–9:35	**Lessons from the Ocean for Integrating Science in Policy Decisions** *Steve Gaines, Dean, Bren School of Environmental Science and Management at UCSB*
9:35–10:00	**The Scientific Challenges of Establishing Appropriate Baselines for Watershed Restoration** *Daniel Schindler, Harriet Bullitt Endowed Chair in Conservation, School of Aquatic and Fishery Sciences, University of Washington*
10:00–10:20	**Brown-Nichols Science Award**
10:20–10:40	**BREAK—3RD FLOOR LOBBY**
10:40–11:00	**Academic Research, Delta Smelt, and Public Policy** *Peter Moyle, Center for Watershed Sciences and Department of Wildlife, Fish, and Conservation Biology, University of California, Davis*
11:00–11:20	**Use of Science in Complex Public Policy Decision-Making** *Felicia Marcus, Chair, State Water Resources Control Board*
11:20–11:40	**A Guide for the Perplexed** *Phil Isenberg, former Chair and Vice-Chair, Delta Stewardship Council*
11:40–12:00	**Data, Decisions, Delta Science Program, and Delta Directions** *Cliff Dahm, Independent Lead Scientist, Delta Science Program*
12:00–12:10 PM	**The Art of Data Visualization Panel and Art Exhibition Preview**
12:10–1:35	**LUNCH—EXHIBIT HALL B (1ST FLOOR)**
12:25–1:25	**SPECIAL EVENT: Student/Early Career Scientist Mentor Lunch** (Room 315)

	Room 306 Species and Community Ecology	Room 307 Water Quality and Fishes	Rooms 308-310 Sustainable Habitats and Ecosystems	Rooms 311-313 Water and Ecosystem Quality	Room 314 Integrative Applied Science
	Estuarine Ecology *John Durand, UC Davis*	**Food Web Foundations** *Steven Culberson, USFWS*	**Habitat Restoration and Conservation** *Stacy Sherman, DFW*	**Data Management and Tools** *Bob Fujimura, DFW*	**Re-Envisioning the Delta with New Knowledge from the Past** *Robin Grossinger, SFEI*
1:35 PM	Regional Selenium Exposures of Adult Sacramento Splittail in the San Francisco Estuary *A. Robin Stewart, USGS*	Blue Carbon in the Delta: Its History and and the Prospects for Increased Carbon Storage through Wetland Restoration *Judith Drexler, USGS*	Quantifying and Characterizing Bird Response to Tidal Restoration: A Multi-Species Approach *Julian Wood, Point Blue Conservation Science*	The Delta Restoration Hub Demonstration Projects: Proving the Potential of Open Data and Advanced Data Tools for Ecosystem Restoration Decisions in the Cache Slough Complex and McCormack-Williamson Tract *Mark Tompkins, FlowWest*	Science-Based Strategies to Restore Key Ecosystem Processes in the Delta *Julie Beagle, SFEI*

* Denotes student presenter

Tuesday, November 15

1:55	Unraveling Sources and Pathways of Se Exposure in Wild Sacramento Splittail with Spinal Deformities *Rachel Johnson, NOAA Fisheries*	Compositional Drivers of Dissolved Organic Matter Utilization by Microbes *Peter Hernes, UC Davis*	Avian Response to Restoration of North Bay Salt Ponds: Managed Versus Breached Ponds *Tanya Graham, USGS*	Connecting Scientific Research Projects and Data Through Computer Science: An Opportunity for Collaboration and Data Synthesis *Amye Osti, 34 North*	Landscape-Scale Integration of Process-Based Restoration Strategies to Support Desired Ecological Functions in the Sacramento San Joaquin Delta *April Robinson, SFEI*
2:15	Fish Nursery Areas and Migratory Corridors in Suisun Marsh *Denise De Carion,* UC Davis*	Evaluation of Delta Subregions for Nutrient Monitoring and Assessment *Thomas Jabusch, SFEI-ASC*	Salt Marsh Harvest Mouse Habitat Past, Present and Future: Our Evolving Understanding of the Habitat Requirements of this "Habitat Specialist" *Katie Smith, UC Davis and CDFW*	California Estuary Monitoring Workgroup —Using Web Portals to Improve Scientific Understanding *Kristopher Jones, California Water Quality Monitoring Council*	Primary Production in the Delta, Then and Now *James Cloern, USGS*
2:35	Rearing Habitats of Larval Pacific Herring in Shallow Open Water and Tidal Marsh Habitats of San Pablo Bay and the Western Delta *Jillian Burns, ICF*	Vertical Biogeochemical Variability in Sloughs Impacts Habitat Quality and Metabolic Rate Estimates *Philip Bresnahan, SFEI*	Restoring Saline Tidal Wetlands: 20 Years of Physical and Biological Monitoring at the Sonoma Baylands Restoration *Michelle Orr, ESA*	Hatch: Moving Towards Seamless Database Protocols for Ecological Data *Alex Fremier, Washington State University*	Reinvesting in the Delta's Food Web Portfolio *Charles Simenstad, University of Washington*
2:55	Native Submerged Aquatic Vegetation in the San Francisco Estuary: Causes and Implications of Morphological Variation and Phenotypic Plasticity *Melissa Patten,* SFSU, RTC*	Using Stable Isotopes to Evaluate the Effects of Seasonal and Spatial Changes in Flow and Nutrients on Biogeochemical Processes, Habitat Quality, and Ecosystem Health in the Sacramento River, northern Delta, and northern San Francisco Bay, 2006-2016 *Carol Kendall, USGS*	If You Build It, Will They Come? Fish Response to Hamilton Wetland Restoration Project *Christopher Fitzer, ESA*	Development of Interactive Tools for Fisheries Management *Philip Sandstrom, Washington Department of Fish and Wildlife*	A Tale of Two Deltas: A Comparison of Transport Processes in the Historical and Contemporary Delta *Jon Burau, USGS*
3:15 PM	**BREAK—3RD FLOOR LOBBY**				
	Fish Biology and Ecology *Kathy Hieb, DFW*	**Food Web Foundations** *Tara Morgan-King, USGS*	**Sea Level Rise** *Carol Ostergren, USGS*	**Data for Decisions: Structured Decision Making Tools for Planning and Implementing CVPIA Actions** *Rod Wittler, USBR*	**Re-Envisioning the Delta with New Knowledge from the Past** *Letitia Grenier, SFEI*
3:35	Differences in Salinity Tolerance in Two populations of Sacramento Splittail *Nann Fangue, UC Davis*	Using Stable Isotopes to Identify Changes in Nitrogen Sources, Processes, and Uptake Over Time in the San Joaquin River and Eastern Delta *Megan Young, USGS*	Addressing Sea Level Rise in the San Francisco South Bay, California *Thomas O'Neill, The Habitat Institute*	The ARM of the Central Valley Project Improvement Act: Putting Science into Decision Making *Cesar Blanco, USFWS*	A New Dimension to Historical Ecology: Insights from a 3D Hydrodynamic Model of the Pre-Development Estuary *Samuel Safran, SFEI*
3:55	The Highs and Lows of Twenty Years of Juvenile Winter-Run Chinook Salmon Abundance Monitoring at Red Bluff Diversion Dam *William Poytress, USFWS*	Spatial Variability Reveals Complex Controls on Phytoplankton Abundance and Community Structure in a Shallow Tidal Freshwater System *Elizabeth Stumpner, USGS*	A Novel Approach to Sea Level Rise in the Baylands and Delta: Taking the "Habitat-Friendly" Levee to the Next Level *Carlos Diaz, ESA and Mark Lindley, ESA*	Providing the Fuel for a Structured Decision Making Framework: Serving up Juvenile Salmon Data Collected with Rotary Screw Traps *Douglas Threloff, USFWS*	Time Travel in the Sacramento-San Joaquin Delta: Developing Photorealistic Images of the Historical Landscape to Inspire Restoration *Erica Spotswood, SFEI and David Osti, 34 North*
4:15	Life on the Edge: Temperature and Flow Restrict Steelhead Productivity in a Large Central Valley, California River *Whitney Thorpe, DFW and Sacramento State University*	Are Zooplankton and Clams Dining on Super Food or Junk Food? Application of a Phytoplankton Food Quality Index *Tara Schraga, USGS*	Planning Transportation and Ecosystem Adaptation to Sea Level Rise *Fraser Shilling, UC Davis*	A Structured Adaptive Approach to Prioritizing Chinook Salmon Conservation and Restoration *James Peterson, USGS and Oregon State University*	**Science Panel** Previous presenters in the session will take questions from the audience about their scientific work.
4:35	Larval Fish Assemblage Structure and Prey Availability in Liberty Island *Lori Smith, USFWS*	High-Throughput Genetic Sequencing Provides Novel Insight into the Cache Slough Complex Food Web *Ann Holmes,* SFSU, RTC*	Tidal Marsh Habitat Changes in Response to Sea Level Rise *Edwin Grosholz, UC Davis*	Connecting Concepts to Numbers: Visualization to Support Shared Understanding and Decisions *Mike Urkov, WRE*	How an Understanding of Past and Present Condition is Linked to Management and Implementation of Restoration in the Delta *Carl Wilcox, DFW*
4:55	Physics to Fish: Linking Stationary and Dynamic Habitat Features to Small-Scale Fish Distribution in the Sacramento-San Joaquin Delta *Frederick Feyrer, USGS*	Long-Term Seasonal Trends in the Prey Community of Delta Smelt (*Hypomesus transpacificus*) Within the Sacramento-San Joaquin Delta, California *Joe Merz, Cramer Fish Sciences*	**Questions & Answers**	Lessons in Model Parameterization: Quantifying Floodplain Rearing Habitat for Juvenile Salmon in a Population Model *Mark Tompkins, FlowWest*	**Management Experts Panel** *Carl Wilcox (DFW), Cliff Dahm (DSP), David Okita (EcoRestore), Campbell Ingram (Delta Conservancy), Lauren Hastings (DSP)*
5:15–7:15 PM	**POSTER SESSION, RECEPTION, AND ART EXHIBITION—EXHIBIT HALL B (1ST FLOOR)**				

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Wednesday, November 16

	Room 306 **Species and Community Ecology**	Room 307 **Water Quality and Fishes**	Rooms 308-310 **Sustainable Habitats and Ecosystems**	Rooms 311-313 **Water and Ecosystem Quality**	Room 314 **Integrative Applied Science**
	Biology, Ecology and Management of Central Valley Salmonids *Charlotte Ambrose, NMFS*	**Anatomy of the Spring 2016 Phytoplankton Bloom in the Delta** *Anke Mueller-Solger, USGS and Richard Dugdale, SFSU, RTC*	**Challenges in Meeting the Tidal Restoration Objectives of the Suisun Marsh** *Steve Chappell, Suisun RCD*	**Linking Sediment Dynamics to Long-Term Management Decisions** *Jessie Lacy, USGS, and Maureen Downing-Kunz, USGS*	**Integrated Scientific Approaches for Adaptive Management of Invasive Aquatic Plants in the Delta** *Patrick Moran, USDA-ARS*
8:20 AM	Quantifying the Effects of Hatchery Management on the Portfolio Effect in Salmon *Allison Dedrick,* UC Davis*	How Unusual Was the 2016 Phytoplankton Spring Bloom in the Delta? *Anke Mueller-Solger, USGS*	Effectiveness Monitoring of Tidal Restoration Projects *Ramona Swenson and Robert Capriola, ESA and Westervelt Ecological Services*	Remote Sensing to Infer Surface Suspended Particulate Matter in San Francisco Bay *Joseph Adelson,* Stanford University*	Environmental Drivers of Water Hyacinth and Other Floating Aquatic Macrophytes, and Their Impact on Water Quality and Habitat *John Madsen, USDA ARS*
8:40	Salmon Strategies in the Central Valley Portfolio: Risk Spreaders vs. Risk Takers *Anna Sturrock, UC Berkeley*	Field and Satellite Observations of the Spring 2016 Phytoplankton Bloom in the Northern San Francisco Estuary *Richard Dugdale, SFSU, RTC*	Designing Tidal Restoration Projects for Physical Processes *Brian Wardman, Northwest Hydraulic Consultants*	Evaluation of the Effects of Long-Term Trends in Sediment Supply and Wind Speeds on Suspended Sediment and Turbidity in Suisun Bay and the Delta *Michael MacWilliams, Anchor QEA*	Environmental Drivers and Effects of Invasive and Native Submerged Aquatic Macrophytes in Suisun Bay and the Delta *Katharyn Boyer, SFSU, RTC*
9:00	Identifying Hatchery Versus Wild Origin of Chinook Salmon (*Oncorhynchus tshawytscha*) on the Feather River Spawning Grounds using Otolith Strontium Isotope Ratios *Malte Willmes, UC Davis*	Nutrients, Phytoplankton and Zooplankton in the Lower Sacramento River and Deepwater Ship Channel, 2012-2016 *Erwin Van Nieuwenhuyse, USBR*	Tidal Restoration in the Suisun Marsh and Conflicting Regulatory Requirements and Permits *Robert Capriola, Westervelt Ecological Services*	Observations of Cohesive Sediment Flocculation in San Francisco Bay: Implications on Sediment Transport and Light Availability *Ivy Huang,* Stanford University*	A Delta-wide Programmatic Approach: Evaluating the Effects of Aquatic Invasive Macrophyte Control on ESA-listed Salmonids and their Habitat *Melanie Okoro, NOAA*
9:20	Adaptive Genetic Variation, Conservation, and Fisheries Management in the Age of Genomics *Devon Pearse, NMFS Southwest Fisheries Science Center*	Spring Phytoplankton Bloom in the Delta Determined with Dissolved Oxygen Data *Hwaseong Jin, DSP/DSC*	Problems and Promise of Restoring Tidal Marsh to Benefit Native Fishes in the North Delta during Drought and Flood *John Durand, UC Davis*	Three-Dimensional Modeling of Turbidity in the Sacramento-San Joaquin Delta to Investigate the Mechanisms Resulting in Tidal Time-scale Lateral Turbidity Gradients *Aaron Bever, Anchor QEA*	Watershed-Scale Modeling of Land-Use and Altered Environment Impacts on Aquatic Weed Growth in the Delta *David Bubenheim, NASA Ames Research Center*
9:40	Selection of Donor Stock for Salmonid Reintroduction Projects *John Carlos Garza, NOAA and UC Santa Cruz*	Views of the 2016 Spring Bloom from Multiple Spatial and Temporal Scales *Brian Bergamaschi, USGS*	Tidal Restoration in the Suisun Marsh and Mitigating the Impacts to Waterfowl *Cliff Feldheim, DWR*	Influence of the 2016 Yolo Bypass Flood Event on Suspended Sediment in Little Holland Tract *Emily Carlson, USGS*	High-Resolution Mapping for Determining Long-Term Trends in the Distribution of Floating and Submerged Aquatic Macrophytes in the Delta *Shruti Khanna, UC Davis*
10:00 AM	**BREAK—3RD FLOOR LOBBY**				

* Denotes student presenter

	Biology, Ecology and Management of Central Valley Salmonids *Leanna Zweig, USFWS*	Lost in Translation: The Art of Interpreting Complex Science for Policymakers *Randy Fiorini, Delta Stewardship Council*	Tidal Wetlands Ecology *Marissa Wulff, USGS*	Linking Sediment Dynamics to Long-Term Management Decisions *Michael MacWilliams, Anchor QEA, and Maureen Downing-Kunz, USGS*	Integrated Scientific Approaches for Adaptive Management of Invasive Aquatic Plants in the Delta *John Madsen, USDA-ARS*
10:20	Timing of Hatchery and Wild Winter-Run Chinook Salmon Caught in the Sacramento River and Chipps Island Trawls for the Implementation of Delta Management Actions *Patricia Brandes, USFWS*		Describing Invertebrate Diversity Across Wetland Habitat Types *Rosemary Hartman, DFW*	Mudflat Morphodynamics and the Impact of Sea Level Rise in South San Francisco Bay *Mick van der Wegen, UNESCO-IHE and Deltares*	Testing New Herbicides for Control of Invasive Aquatic Plants in the Delta *Guy Kyser, UC Davis*
10:40	Migration and Survival of Natural Juvenile Chinook Salmon in the Delta *Li-Ming He, NOAA*		A High-Frequency Solution to Understanding Tidal Wetlands as Fish Habitat *David Ayers, USGS*	Morphologic Change and Mercury Mobilization in Alviso Slough, South San Francisco Bay *Amy Foxgrover, USGS*	The Present and Future Contribution of Biological Control to Integrated Adaptive Management of Water Hyacinth and other Invasive Aquatic Macrophytes in the Delta *Patrick Moran, USDA-ARS*
11:00	Comparing In-River Survival of Coleman National Fish Hatchery- and Nimbus Fish Hatchery- Origin Steelhead Smolts Released in the Lower American River *Annie Brodsky, Cramer Fish Sciences*		Ecology of Non-Native Clams and Jellyfish in Suisun Marsh *Teejay O'Rear, UC Davis*	Seasonal Variations in Suspended Sediment in San Pablo Bay Shallows *Rachel Allen,* UC Berkeley*	Early Results of Improved Delta-Wide Integrated Adaptive Management of Water Hyacinth, Brazilian Waterweed and Curly-Leaf Pondweed *Angela Llaban, CSP, DBW*
11:20	Where They Go and How They Grow: Using Otoliths to Reconstruct Habitat-Specific Growth Patterns for Endangered Winter-Run Chinook *Maya Friedman,* UC Santa Cruz*		The Influence of Climate on Vegetation Change Over 15 Years at China Camp and Muzzi Marsh *Dylan Chapple,* UC Berkeley*	Linking Sediment Flux to Marshes with Dynamics in Bay Shallows *Jessie Lacy, USGS*	Analysis of Satellite and Airborne Imagery for Detection of Water Hyacinth and other Invasive Floating Macrophytes in the Delta *Christopher Potter, NASA Ames Research Center*
11:40	Survival and Movement Rates of Wild Chinook Salmon Smolts from Mill Creek through the Sacramento River, Sacramento-San Joaquin River Delta and San Francisco Bay, 2013-2016 *Jeremy Notch,* UC Santa Cruz*		Species-Specific Plant Responses to Salinity and Inundation in Tidal Wetlands of the San Francisco Bay-Delta Ecosystem *Christopher Janousek, Oregon State University*	Wetland Sedimentation in Natural and Restored Tidal Wetlands in San Francisco Bay *John Callaway, USF*	Bio-Economic Modeling of Invasive Aquatic Weed Management *Karen Jetter, UC Davis*

Discussion Panel

This session will explore communicating complex science for decision-making by featuring discussions between authors of chapters in *The State of Bay-Delta Science, 2016* and the policymakers grappling with decisions related to the authors' chapters.

- **Threatened and Endangered Species:** *Jim Hobbs (UC Davis) and Paul Souza (USFWS)*
- **Contaminants:** *Richard Connon (UC Davis) and Adam Laputz (Central Valley Regional Water Quality Control Board)*
- **Delta Levees:** *Steve Deverel (Hydrofocus) and Dustin Jones (Delta Stewardship Council)*
- **Predation:** *Gary Grossman (University of Georgia) and Dorene D'Adamo (State Water Resources Control Board)*
- **Landscape Ecology and Integrative Science:** *Michael Healey (University of British Columbia) and Petrea Marchand (Consero Solutions/Yolo Habitat Conservancy)*

12:00–1:35 PM LUNCH—EXHIBIT HALL B (1ST FLOOR)

12:20–1:20 PM SPECIAL EVENT: Town Hall: Building the 2017 Science Action Agenda (Rooms 308-310)

	Advances in Sturgeon Research *Rebecca Fris, DFW*	Delta Smelt *Larry Brown, USGS*	CASCaDE II: Computational Assessments of Scenarios of Change for the Delta Ecosystem *Lisa Lucas, USGS*	Adaptive Management in the Delta: Learning from Habitat Projects *Martina Koller, DSC/DSP*	Developing Spatially Explicit Agent-Based Models for Delta Fishes: Patterns, Processes, and Parameters *Russell Perry, USGS*
1:35 PM	How Long Does it Take for Selenium to Bioaccumulate in the Diet and Tissues of Sturgeon? *William Beckon, USFWS*	Does Life History Diversity Provide Population Resilience in Delta Smelt? *Eva Bush, UC Davis*	An Overview of the CASCaDE II Project *Noah Knowles, USGS*	Food Web Fuel: Differences across Space and Time, with Implications for Restoration *Matthew Young,* UC Davis*	The Effect of Three Agricultural Barriers on Migrating Anadromous Salmonid Juveniles in the Southern Portion of the Sacramento-San Joaquin River Delta *Mark Bowen, ESA*
1:55	Fin Ray Microchemistry as a Tool to Reconstruct the Migratory History of White Sturgeon *Acipenser transmontanus* *Kirsten Sellheim, Cramer Fish Sciences*	Linking Temporal and Spatial Data Sets for Hierarchical Bayesian Network Analysis and Prediction of Delta Smelt Populations *William Miller, Consulting Engineer*	Sea Level Rise and Climate Change Scenarios for the Bay-Delta *Daniel Cayan, UC San Diego*	Advancing Tidal Wetland Restoration in a Regional Adaptive Management Framework *Gerrit Platenkamp, ESA*	Combining Models of the Critical Streak Line and the Cross-Sectional Distribution of Juvenile Salmon to Predict Fish Routing at River Junctions *Dalton Hance, USGS*

* Denotes student presenter

Wednesday, November 16

	Room 306 **Species and Community Ecology**	Room 307 **Water Quality and Fishes**	Rooms 308-310 **Sustainable Habitats and Ecosystems**	Rooms 311-313 **Water and Ecosystem Quality**	Room 314 **Integrative Applied Science**
2:15	Selenium in San Francisco Estuary White Sturgeon *Jennifer Sun, SFEI*	Predicting the Presence/Absence of Juvenile Smelt in the Bay Delta *Robert Oliver, UC Berkeley*	Hydrological and Management Responses to Scenarios of Climate Change in the Bay-Delta Watershed *Noah Knowles, USGS*	The Importance of Emergent Vegetation Dynamics in Post-Restoration Outcomes of the Novel Freshwater Marshes *Iryna Dronova, UC Berkeley*	Vector and Optomotor Analyses Indicate that Adult and Juvenile Green Sturgeon Exhibit Rheotaxis *Peter Klimley, UC Davis*
2:35	Fish on the Edge: Assessing Environmental Constraints for Recruitment of White Sturgeon in the San Joaquin River, California *Laura Heironimus, USFWS*	A Life Cycle Model and Population Viability Analysis for Wild Delta Smelt *Leo Polansky, Consultant*	Conditional Simulation of Streamflow Time Series and Application to Boundary Conditions in the San Francisco Bay-Delta Watershed *Colin-Cronkite Ratcliff, USGS*	Geospatial Initiatives to Support Adaptive Management in the Delta and the Watershed *Carol Ostergren, USGS*	Are All Who Wander Lost? Evaluating the Mechanistic Potential for Altered Juvenile Salmonid Routing and Navigation in a Hydrodynamically Complex and Modified Tidal Estuary *Bradley Cavallo, Cramer Fish Sciences*
2:55	Applying a Simplified Energy-Budget Model to Explore the Effects of Temperature and Food Availability on Life History of the Green Sturgeon (*Acipenser medirostris*) *Natnael Hamda, NOAA*	A Delta Smelt Life Cycle Model: Separating Entrainment from Other Sources of Mortality *William Smith, USFWS*	Future Trends of Sediment Supply to the San Francisco Bay-Delta Using Downscaled CMIP5 Climate Scenarios and a Calibrated Watershed Model of the Sacramento River Basin, CA *Michelle Stern, USGS*	Human Use of Restored and Naturalized Delta Landscapes *Brett Milligan, UC Davis and Alejo Kraus-Polk, UC Davis*	Using an Individual-Based Model to Explore How Routing, Predation, and Export Salvage Can Influence Through-Delta Survival for Juvenile Salmonids Originating from the San Joaquin River Basin *Travis Hinkelman, Cramer Fish Sciences*
3:15 PM	**BREAK—3RD FLOOR LOBBY**				
	Species Invasions in the San Francisco Estuary *Dave Contreras, DFW*	**Modeling Fish Populations** *David Ayers, USGS*	**CASCaDE II: Computational Assessments of Scenarios of Change for the Delta Ecosystem** *Noah Knowles, USGS*	**South Bay Salt Pond Restoration: Adaptive Management Success Story** *Jim Hobbs, UC Davis*	**Developing Spatially Explicit Agent-Based Models for Delta Fishes: Patterns, Processes, and Parameters** *David Smith, USACE-ERDC*
3:35	Mechanisms for the Effective Biological Control of the Invasive Water Hyacinth in the Sacramento-San Joaquin Delta *Julie Hopper, UC Davis*	Juvenile Chinook Salmon: A Need for Population-Specific Bioenergetics Models? *Steve Blumenshine, Fresno State University*	Projections of Bay-Delta Hydrodynamics under Future Climate and Hydrology Conditions using a 3D Numerical Model *Rosanne Martyr-Koller, UC San Diego*	Red Light/Green Light: A Decade after the Start of Restoration, How is the South Bay Salt Pond Restoration Project Performing? *Laura Valoppi, USGS and John Bourgeois, South Bay Salt Pond Restoration*	Hydrological Landmarks, Hydrodynamic Transport, Final Destinations and Travel Times of Commuter Salmon in an Urban Estuary *Vamsi Krishna Sridharan, UC Santa Cruz, NOAA*
3:55	Food Web Impacts of Invasive Aquatic Weed Control in the Sacramento-San Joaquin Delta *Marie Stillway, UC Davis*	The Central Valley Spring-Run Chinook Life Cycle Model: A Tool to Manage the Recovery of Threatened Salmon Populations *Flora Cordoleani, UC Santa Cruz*	Three-Dimensional Chemical Transport Modeling of Selenium in the San Francisco Bay-Delta *James Bishop, USGS*	Sediment Supply for Restoring and Sustaining South San Francisco Bay Tidal Marsh *David Schoellhamer, USGS and John Bourgeois, South Bay Salt Pond Restoration*	ELAM (Evaluating Likely Animal Movement) at Georgiana Slough: Leveraging 52 Data Sets Over 17 Years toward Representing Fish in Any 2-D/3-D Hydrodynamic and Water Quality Model *R. Andrew Goodwin, USACE*
4:15	Detecting Invasions and Changes in San Francisco Estuary Sessile Invertebrate Communities over Sixteen Years (2000-2015) in Response to Salinity and Temperature Conditions *Andrew Chang, SERC*	Life-Cycle Models for Evaluating the effects of Hydromanagement on Chinook Salmon in the Central Valley *Noble Hendrix, QEDA Consulting, LLC*	Physical Models to Ecological Response: Challenges in Understanding the Effects of Climate Change on the San Francisco Estuary *Larry Brown, USGS*	South Bay Salt Ponds Restoration: Managing for Mercury Contamination *Mark Marvin-DiPasquale, USGS and John Bourgeois, South Bay Salt Pond Restoration*	Examining Hypothesized Delta Smelt Environmental Cues and Swimming Behaviors using an Agent-Based Model *Benjamin Saenz, Resource Management Associates, Inc.*
4:35	What is the California Department of Water Resources' Spatially Intensive (GRTS) Benthic Sampling Telling us? A Clearer Picture of Bivalve Reality *Jan Thompson, USGS*	Quantifying Uncertainty in Estimates of Juvenile Salmoinid Loss at the Central Valley and State Water Projects *Steven Zueg, Cramer Fish Sciences*	Impact of Sea Level Rise and Foreseen Engineering Measures in Sediment Trapping Efficiency by Means of a 2D Process-Based Model *Fernanda Achete, UNESCO-IHE*	Measuring Waterbird Response to Salinity, Depth and Foraging Area Manipulation: An Experiment to Inform Adaptive Management *Susan De La Cruz, USGS and John Krause, DFW*	Using Gaussian Process Models to Fit an Enhanced Particle Tracking Model to Acoustic Telemetry Data of Juvenile Salmon *Russell Perry, USGS*
4:55	Understanding a Drought Induced Die-back of *Lepidium latifolium* in Invaded Tidal Marshes *Rachel Wiggington,* UC Davis*	A Road Map for Designing and Implementing a Biological Monitoring Program *Ken Newman, USFWS*	**Questions & Answers**	**Discussion Panel** Delta and South Bay Adaptive Management	Particle Swarm Optimization Techniques for Estimating Juvenile Salmon Behavioral Parameters in an Enhanced Particle Tracking Model *Adam Pope, USGS*
5:15–7:15 PM	**POSTER SESSION, RECEPTION, AND ART EXHIBITION—EXHIBIT HALL B (1ST FLOOR)**				

* Denotes student presenter

Science for Solutions:

Linking DATA *and* DECISIONS

Thursday, November 17

	Room 306 **Species and Community Ecology**	Room 307 **Water Quality and Fishes**	Rooms 308-310 **Sustainable Habitats and Ecosystems**	Rooms 311-313 **Water and Ecosystem Quality**	Room 314 **Integrative Applied Science**
	Non-Native Predator Fish Research in the Sacramento-San Joaquin Delta *Joseph Smith, University of Washington*	**Contaminant Issues in the Bay-Delta** *Richard Connon, UC Davis*	**Progress in Floodplain Ecology: Lessons from Yolo Bypass and other Central Valley Floodplains** *Ted Sommer, DWR*	**Ecosystem Impacts of Drought: Detailing the Response from Phytoplankton to Fish** *Louise Conrad, DWR and Joshua Israel, USBR*	**Ecosystem Management Challenges** *Paul Work, USGS*
8:20 AM	Quantifying the Abundance, Distribution, and Predation of Salmon by Non-Native Fish Predators in the San Joaquin River *Joseph Smith, University of Washington*	Evaluation of the Impacts of California's Mandatory Minimum Penalty Enforcement Program on Effluent Quality and Surface Water Quality in the Sacramento-San Joaquin Delta *Victor Vasquez, UCLA*	Oh Give Me a Floodplain: Comparison of Food Web and Juvenile Salmon Growth across Four Central Valley Floodplains *Louise Conrad, DWR*	Changes in Phytoplankton Community Composition and Biovolume during Prolonged Drought *Tiffany Brown, DWR*	Cost-Benefit Analysis of the California WaterFix *Jeffrey Michael, University of the Pacific*
8:40	Insight into the Diets of the Primary Fish Predators of the California Delta using DNA Barcoding, and Implications for Salmonid Populations *Cyril Michel, NOAA*	Is there a Toxic Algae Problem in San Francisco Bay? *Melissa Peacock, UC Santa Cruz*	The Knaggs Study—Comparing Food Resources and Growth of Juvenile Salmon Between Flooded Agricultural Fields, the Toe Drain and the Sacramento River *Carson Jeffres, UC Davis*	The Impact of Two Years of Successive Drought on Microcystis Blooms in San Francisco Estuary *Peggy Lehman, DWR*	Adapting Information Mangement to Improve Natural Resource Management *Tony Hale, SFEI-ASC*
9:00	Development of Predation Event Recorders (PERs) to Quantify Predation of Juvenile Chinook Salmon (*Oncorhynchus tshawytscha*) in a River Environment *Nicholas Demetras, UC Santa Cruz*	Disrupting Aquatic Communities from Bottom-Up: A Long-Term Assessment of Herbicides *Simone Hasenbein, UC Davis*	Mimicking Hydrologic Process to Restore Ecological Function *Jacob Katz, CalTrout*	The Effect of Drought on Smelt: The Long-Term Ecological Response of Native Smelt in the San Francisco Estuary *James Hobbs, UC Davis*	Lessons Learned as Chair of the Science Advisory Team for the Marine Life Protection Act Initiative *Stephen Barrager, Baker Street Publishing*
9:20	Do Barriers for Deterring Juvenile Salmonids Away from High-risk Migration Pathways Affect Survival at Important Channel Junctions in the Sacramento-San Joaquin Delta, California? *Marin Greenwood, ICF*	Mixtures of Current-Use Pesticides Detected in Surface Waters of the Sacramento/San Joaquin Delta Watershed *James Orlando, USGS*	Evidence that Seasonal Floodplain-Tidal Slough Complex Could Support Improved Life History Diversity and Population Resilience *Pascale Goertler, DWR*	Evidence of Regime Shift and Drought Impacts in the Sacramento-San Joaquin Delta Littoral Fish Community *Brian Mahardja, DWR*	Assessing Extinction I: Extinction as a Process *Jason Baumsteiger, UC Davis*
9:40	Shocking for Survival: An Overview of the Pilot Year Effort to Remove Non-Native Predatory Fish from Clifton Court Forebay *Mike Cane, DWR*	An Investigation of Pesticide Input to the Bay-Delta Area *Dan Wang, DPR*	Yolo Bypass: Potential Refuge for Delta Smelt? *Naoaki Ikemiyagi, DWR*	Winter-Run Chinook Salmon Responses to Drought: Impacts on Population Viability Criteria *Joshua Israel, USBR*	Assessing Extinction II: Delta Fishes *Peter Moyle, UC Davis*
10:00 AM	**BREAK—3RD FLOOR LOBBY**				

* Denotes student presenter

	Room 306 Species and Community Ecology	Room 307 Water Quality and Fishes	Room 308-310 Sustainable Habitats and Ecosystems	Room 311-313 Water and Ecosystem Quality	Room 314 Integrative Applied Science
	Non-Native Predator Fish Research in the Sacramento-San Joaquin Delta *Joseph Smith, University of Washington*	**Contaminant Issues in the Bay-Delta** *Stephanie Fong, SFCWA*	**Progress in Floodplain Ecology: Lessons from Yolo Bypass and other Central Valley Floodplains** *Jon Burau, USGS*	**Evaluating an Emergency Response: False River Drought Barrier Efficacy and Effects** *Karen Kayfetz, Delta Science Program*	**The Collaborative Science and Adaptive Management Program—Moving from Litigation to Collaboration** *Bruce DiGennaro, The Essex Partnership*
10:20	Mobile Acoustic Methods to Survey Salmon Smolt Predators and their San Joaquin River Habitat *David Demer, NOAA*	Comprehensive Organic Contaminant Assessment and Link to Effects on Invertebrates in the Cache Slough Ecosystem *Thomas Young, UC Davis*	Survival and Travel Time of Acoustically Tagged Juvenile Chinook Salmon in Yolo Bypass during the "Godzilla" El Niño of 2016 *Russell Perry, USGS*	Bathymetric Mapping for the 2015 False River Barrier—Solving Problems with Better Data *Shawn Mayr, DWR*	Supporting Decisions through Collaborative Science: How CSAMP Works *Bruce DiGennaro, The Essex Partnership*
10:40	Multibeam Mapping of Bathymetry, Riverbed Type, and Predator Habitats in the San Joaquin River *George Cutter, NOAA*	A New Approach to Identifying the Substance Causing Mortality in Bay-Delta Toxicity Monitoring *Don Weston, UC Berkeley*	Hydrodynamics in a River Bend Adjacent to the Fremont Weir: Implications for Design of Fish Passage Structures *Paul Stumpner, USGS*	Salinity Response, Hydrodynamic Change and Performance Limiters under the EDB and 2015 Hydrology *Eli Ateljevich, DWR*	Collaborative Adaptive Management Team (CAMT) Investigations: Using New Modeling Approaches to Understand Delta Smelt State Salvage Patterns at the State Water Project and Central Valley Project *Lenny Grimaldo, ICF*
11:00	Acoustic Detection, Tracking, and Enumeration of Salmon Smolt Predators *Suzanne Manugian, UC Santa Cruz*	Pyrethroid Insecticide Resistance is Widespread in the Non-Target Crustacean *Hyalella azteca* *Helen Poynton, University of Massachusetts, Boston*	Techniques for Estimating Entrainment Rates in Riverine Junctions under Future Engineering Scenarios *Aaron Blake, USGS*	High Speed Mapping of Water Isotopes with Simultaneous Water Quality Measurements to Determine Effects of the Emergency Drought Barrier *Brian Downing, USGS*	Evaluating Potential Swimming Behaviors of Adult Delta Smelt by Application of a Particle-Tracking Model with Alternative Behavior Rules *Edward Gross, Research Management Associates*
11:20	Linking Predation Mortality to Predator Density and Survival for Out-Migrating Chinook Salmon in the Lower San Joaquin River and Delta *Alison Collins, MWD*	Toxicity, Bioaccumulation and Tropic Transfer of Permethrin in Pyrethroid-Resistant *Hyalella azteca* *Michael Lydy, Southern Illinois University*	Integrating Hydrodynamics and Fish Physiology to Estimate Entrainment Rates for Fremont Weir Notch *Dave Smith, USACE-ERDC*	Characterization of the Impacts of the Emergency Drought Barrier on Nutrients and Phytoplankton in the Lower San Joaquin River *Alex Parker, CSU Maritime Academy*	Effects of Water Project Operations on Juvenile Salmon Survival in the Delta: Literature and Data Review *Rebecca Buchanan, University of Washington*
11:40	Predator Diet and Movement Patterns in the Lower Feather River and their Effects on Hatchery Smolts *Andrew Hampton, PSMFC / DWR*	Multiple Stressors over Multiple Generations: Assessing the Combined Risk of Endocrine Disruptors and Climate Change *Bethany DeCourten,* UNC Wilmington*	Ecological Importance of Fall Flows in Yolo Bypass *Jared Frantzich, DWR*	Effects of the Emergency Drought Barrier on the Transport of Zooplankton to Delta Smelt Habitat *Wim Kimmerer, SFSU*	CAMT Salmonid Scoping Team — Recommendations for Future Salmonid Investigations *John Ferguson, Anchor QEA*
12:00–1:15 PM	**LUNCH—EXHIBIT HALL B (1ST FLOOR)**				
12:15–1:00 PM	**SPECIAL EVENT: The Art of Data Visualization Panel (Rooms 308-310)**				
	Winter-Run Chinook Salmon Science and Management in a Changing Climate *Rachel Johnson, NOAA Fisheries*	**Assembling the Puzzle Pieces: Synthesis of Mercury Science in the San Francisco Bay-Delta and Beyond** *Yumiko Henneberry, DSC/DSP*	**Delta as an Evolving Place** *Skip Thomson, Delta Protection Commission*	**Climate, Drought and Water Management** *Mike Dettinger, USGS*	**Remote Sensing and Predictive Modeling to Improve Decision Making in Managing San Francisco Bay and Estuary** *Curtiss Davis, Oregon State University*
1:15 PM	Status of Sacramento River Winter Run Chinook Salmon: What is Needed to Achieve Viability? *Steve Lindley and Maria Rea, NOAA*	Bridging the Divide: Communicating Science Synthesis to Meet Decision Makers' Needs *Cliff Dahm, Delta Science Program*	Measuring the Delta as a Place: A Regional Opportunity Index and Economic Indicators *Alejo Kraus-Polk, UC Davis*	Hydrology of the Recent California Drought and Comparison with Past Droughts *Maurice Roos, DWR*	Overview of the RIO-SFE Program and Remote Sensing with Landsat 8 *Curtiss Davis, Oregon State University*
1:35	There and Back Again: Winter Run Chinook Salmon Drought/Temperature Management from 1988-2013 *James Smith, USFWS*	Building a Scientific Foundation to Manage the Mercury Threat in the San Francisco Estuary *Jacob Fleck, USGS*	What Do We Know About Recreation in the Delta? *David Rolloff, CSU Sacramento*	Drought Water Right Curtailment *Wesley Walker,* UC Davis*	In situ Measurements of Optical Properties and Lower Trophic Level Dynamics in the San Francisco Estuary, Made during Drought and El Niño Conditions (RIO-SFE Study) *Frances Wilkerson, SFSU, RTC*

* Denotes student presenter

1:55	Coupling Headwaters, Reservoirs, and Rivers to Model Water Flows and Temperatures *Miles Daniels, UC Santa Cruz*	The Delta Doughnut: A Persistent Pattern for Methylmercury Metrics *Lisamarie Windham-Myers, USGS*	Exploring the Creation of Food Hub in the Delta: The Sacramento-Yolo Rural-Urban Connections Strategy *David Shabazian, Sacramento Area of Council of Governments*	An Innovative Ensemble Modeling System for Improved Water Supply Forecasts in the Sacramento-San Joaquin Delta *Minxue He, DWR*	Development, Implementation, and Validation of a Modeling and Forecast System for the San Francisco Bay *Yi Chao, Remote Sensing Solutions*
2:15	Why Lab-Derived Estimates of Thermal Tolerance Failed to Predict Survival of Winter-Run Eggs in the Sacramento River and What We Can Do About It *Benjamin Martin, UC Santa Cruz/SWFSC*	Using Recent Science to Advise the Delta Methylmercury TMDL *Janis Cooke, CVRWQCB*	Delta Narratives: Highlighting the Delta's Cultural and Historic Resources *Bob Benedetti, CSU Sacramento*	Comparing Methods to Estimate Consumptive Use in the Sacramento-San Joaquin Delta: Preliminary Findings *Yufang Jin, UC Davis*	Modeling the San Francisco Bay Ecosystem Dynamics *Qianqian Liu, University of Maine*
2:35	Impacts of Shasta Dam Water Operations on Endangered Winter-Run Chinook Salmon *Eric Danner, NOAA*	**Discussion Panel** *Moderator: David Krabbenhoft, USGS*	**Discussion Panel** Opportunities for Preserving and Enhancing the Delta's Unique Values	Multi-Year Persistence of the 2014–15 West Coast Marine Heat Wave *Nate Mantua, NOAA*	Delta Dash: Bay-Delta SCHISM Operational Modeling *Eli Ateljevich, DWR*
2:55 PM	**BREAK—3RD FLOOR LOBBY**				
	Winter-Run Chinook Salmon Science and Management in a Changing Climate *Jason Hassrick, ICF*	**Assembling the Puzzle Pieces: Synthesis of Mercury Science in the San Francisco Bay-Delta and Beyond** *Charles Alpers, USGS*	**Restoring Resilient Landscapes** *Levi Lewis, UC Davis*	**Ecological Flows and Flood Control** *Valentina Cabrara-Stagno, US EPA*	**Environmental Models** *Joe Domagalski, USGS*
3:15	Genetic Evaluation of Sacramento River Winter-Run Chinook Salmon *Christian Smith, USFWS*	Mercury Studies in the Cache Creek Settling Basin, Yolo County: Preliminary Results from 2010–2014 *Charles Alpers, USGS*	Resilient Landscapes: A Science-based Approach to Creating Recommendations for How to Return Desired Functions to Highly Altered Ecosystems *Letitia Grenier, SFEI*	Before and After: Evaluating Spring Freshwater Inflow Regulations for the San Francisco Bay Estuary *Christina Swanson, NRDC*	SacPAS: A Real Time Decision Support System to Predict and Assess Operational Benefits and Risks to Central Valley Salmon *James Anderson, University of Washington*
3:35	Potential Impacts of *Ceratonova shasta* and *Parvicapsula minibicornis* Infection on Survival of Natural Sacramento Juvenile Chinook Salmon: Comparison to Rivers of Known Infectivity *Scott Foott, USFWS*	In Situ Control of Methylmercury Production in Sediments Using Redox-Buffering Mineral Amendments *Dimitri Vlassopoulos, Anchor QEA*	Restoration Tells a Story: Mapping of Delta Habitat Projects, Data and Science *Martina Koller, Delta Stewardship Council*	Assessing Functional Flows at a Global Scale: Implications for Environmental Flow Management Strategies in California *Jenny Ta, UC Merced*	Hydrodynamic Modeling of Flood Hazards for the Southern Eden Landing Portion of the South Bay Salt Pond Restoration Project *Megan Collins, AECOM*
3:55	Predator Swamping and Movement under High Flows: Comparing Winter-Run Chinook Juveniles Released only Days Apart *Arnold Ammann, NOAA*	An Experiment to Decrease Methylmercury Export from Managed Wetlands *Mark Marvin-DiPasquale, USGS*	Southport Levee Setback Project: Ecologically Functional Floodplains Under Construction on the Sacramento River *Chris Bowles, cbec*	Improving Multi-Objective Ecological Flow Management with Flexible Priorities and Turn-Taking: A Case Study from the Sacramento River Basin and the San Francisco Bay Delta Estuary *Clint Alexander, Essa Technologies Ltd.*	Seismic Hazard in Sacramento-San Joaquin River Delta using UCERF3 Source Models and NGA-West2 Ground Motion Models *Paolo Zimmaro, UCLA*
4:15	Otolith Chemistry Reveals the Diverse Rearing Habitats of Winter-Run Chinook Salmon *Corey Phillis, MWD*	Methylmercury and Total Mercury Imports and Exports of Two Tidal Wetlands in the Yolo Bypass and Suisun Marsh *Petra Lee, DWR*	Resilient Silicon Valley: Increasing Landscape Resilience through Interdisciplinary Science and Multi-Sector Collaboration *Robin Grossinger, SFEI*	Basin Planning for Coldwater Functional Flows *William Anderson, SWRCB*	Modification of the WARMF Model to Track Pollutant Sources from the Delta to their Upstream Sources *Scott Sheeder, Systech Water Resources, Inc.*
4:35	Effects of Out-Migration Size and Timing on Early Marine Survival of Chinook Salmon in the Ocean *Brian Wells, NOAA*		Improving Habitat Along Delta Levees *Daniel Huang, Delta Stewardship Council*	Flood Control 2.0: Integrating Habitat Restoration into Flood Risk Management at the Bay Interface *Scott Dusterhoff, SFEI*	Integrated Environmental Modeling of Estuarine Systems *Peter Goodwin, University of Idaho and Josue Medellin-Azuara, UC Davis*
4:55 PM	**ADJOURN— RAFFLE (EAST LOBBY, 3RD FLOOR)**				

* Denotes student presenter

2016 Bay-Delta Science Conference Poster List *Listed by Presenting Author*

POSTER CLUSTERS

Aquatic Invasive Species Activities in California/Bay-Delta: Threats, Prevention, and New Invaders

Marine Invasive Species in San Francisco Bay
Karen Bigham, DFW

Decreasing the Risk of Aquatic Species Invasion from Vessels Arriving at Bay-Delta Ports
Jonathan Thompson, SLC; Raya Nedelcheva, SLC

Invasive Watersnake Poses Threat to California Native Species
Louanne McMartin, USFWS

Invasive Watersnakes (*Nerodia* spp.) in California: Monitoring, Detections, and Eradication
Valerie Cook Fletcher, DFW

Assessing Invasiveness of Aquatic Plants to Facilitate Management in the Sacramento-San Joaquin Delta
Helen Benson, DFW

Creation of Mercury Models for the Delta and Yolo Bypass: Linking Modeling and Delta Regulatory Decisions

An Overview of the Creation of Mercury Models for the Delta and Yolo Bypass: Linking Modeling and Delta Regulatory Decisions
Carol DiGiorgio, DWR

Modeling Mercury in the Yolo Bypass, a Mercury-Contaminated Floodplain
Reed Harris, Reed Harris Environmental Ltd.

Progress on Extending a Delta Model to Include Mercury and Sediment
Jamie Anderson, DWR

Erodibility of Yolo Bypass Sediments as a Mercury Vector
Paul Work, USGS

Sediment – Water Exchange of Inorganic and Methyl Mercury in the Yolo Bypass
Wesley Heim, Moss Landing Marine Labs

Methyl Mercury Production from Senescence Vegetation During Flooding in the Yolo Bypass
Mark Stephenson, Moss Landing Marine Labs

Mercury and Methylmercury Mass Balance Estimates of the Yolo Bypass During Flooding Events
David Bosworth, DWR

Methylmercury Imports and Exports of a Freshwater Tidal Wetland in the Yolo Bypass
Petra Lee, DWR

Evaluating an Emergency Response: False River Drought Barrier Efficacy and Effects

The 2015 Emergency Drought Barrier: Huge Management Action, Huge Science Opportunity
Karen Kayfetz, DSP, DSC

Setting the Stage for the Science: Planning and Implementing the 2015 West False River Emergency Drought Barrier Project
Jacob McQuirk, DWR

Water Quality Effects of the 2015 False River Barrier
Patrick Scott, DWR

Effects on Listed Fishes from the 2015 West False River Emergency Drought Barrier Project
Marin Greenwood, ICF

Headwater Mercury Source Reduction Strategies

Headwater Mercury Source Reduction Strategy in the Sierra Nevada
Carrie Monohan, The Sierra Fund and CSU Chico; Alexandria Keeble-Toll, The Sierra Fund and CSU Chico

Sediment and Mercury Loads to Humbug Creek: A Sierra Nevada Tributary Impacted by the Malakoff Diggins Hydraulic Mine
Carrie Monohan, The Sierra Fund and CSU Chico

Mercury in Fish of the American and Bear Watershed Reservoirs: Baseline Conditions and Exposure Risk at Lake Clementine and Rollins Reservoir, CA
Alexandria Keeble-Toll, The Sierra Fund and CSU Chico*

Metal-Based Coagulant Effect on Dredged Sediment Slurry for Lake Combie Reservoir Sediment and Mercury Removal Project, Grass Valley CA
Nicholas Graham, CSU Chico*

Shallow Subsurface Groundwater Quality and Flow Paths in the Malakoff Diggins Hydraulic Pit
Travis Moore, CSU Chico*

Linking Sediment Dynamics to Long-Term Management Decisions

Assessing the Role of Sediment Supply in Mudflat Width at Decadal and Seasonal Time Scales
Bruce Jaffe, USGS

Climatology of Salinity and Suspended Particulate Matter in San Francisco Bay
Carlos Schettini, Federal University of Pernambuco

Sediment Flux Measurements at the Golden Gate: Progress toward Closing the Sediment Budget for San Francisco Bay
Maureen Downing-Kunz, USGS

Primary Sediment Supply, Pathways and Transport Mechanisms to the Central Sacramento-San Joaquin Delta
Tara Morgan-King, USGS

Wave Attenuation Across China Camp Tidal Marsh
Madeline Foster-Martinez, UC Berkeley*

Mapping the Invasive Plant *Arundo donax* and Prioritizing it for Eradication in the Legal Delta

Invasive Plant *Arundo donax*: Mapping and Prioritizing Its Eradication in the Sacramento-San Joaquin Delta Region of Northern California
Alex Young, Sonoma Ecology Center

Index-Based Multispecies Conservation Value (IMCV) Model for Prioritizing Invasive Weed Eradication
Alex Young, Sonoma Ecology Center

Microcystis Drought Response Program Collaborative Research

Microcystis Drought Response Program Collaborative Research Summary
Peggy Lehman, DWR

Sampling and Analyses Conducted for the 2014 and 2015 Microcystis Drought Response Program
Mary Xiong, DWR

The Impact of Successive Drought Years on Microcystis Blooms in San Francisco Estuary
Peggy Lehman, DWR

Rates of Primary Production for the 2015 Microcystis Bloom in the San Francisco Estuary
Sarah Blaser, Romberg Tiburon Center, SFSU

Abundance of Key Cyanobacteria Species and Cyanotoxin Concentrations During Severe Drought Years, 2014 and 2015
Tomo Kurobe, UC Davis

2014 and 2015 Critical Drought Effects on Zooplankton Composition during Microcystis Blooms
Sarah Lesmeister, DWR

Characterizing Biodiversity and Relative Abundance of Cyanobacteria by Shotgun Metagenomic Sequencing Analysis
Tomo Kurobe, UC Davis

Non-Native Predator Fish Research in the Sacramento-San Joaquin Delta

Water Quality in the Delta and Chinook Salmon: a hot issue with murky consequences
Brendan M. Lehman, UC Santa Cruz/SWFSC

Seasonal Movements and Distribution of Central Valley Striped Bass (*Morone saxatilis*)
Megan Sabal, UC Santa Cruz*

Examining the Spatial and Temporal Distribution of Striped Bass within the Delta in Wet vs. Dry Years
Joseph Smith, University of Washington

* Denotes student presenter

GENERAL SESSIONS

Bird Biology, Ecology, & Protection

Phoning It In: A New Approach to Tracking Movement Patterns and Habitat Nuances of Diving Ducks
Mason Hill, USGS

Factors Influencing the Abundance of Wintering Western Snowy Plovers at Crown Beach State Memorial Park
David Riensche, EBRPD

Fish Biology, Ecology, & Protection

Estuary Monitoring Platform: Standardized Biological Sampling Across Habitat Types
Jesse Anderson, Cramer Fish Sciences

Effects of Bifenthrin on the Estrogenic and Dopaminergic Pathways in Embryos and Juveniles of Zebrafish (*Danio Rerio*)
Luisa Bertotto, UC Riverside*

Examining Effects of Wastewater Effluent upon Growth Rates of Inland Silversides in San Francisco Bay Tributaries
Zachary Bess, UC Davis

Hydraulic Conditions Near a Model Louver System in a Laboratory Flume
Kara Carr, UC Davis

Behavior of Green Sturgeon *Acipenser medirostris* Near a Model Louver System in a Laboratory Flume
Dennis Cocherell, UC Davis

Developmental Toxicity of 2- and 6-Hydroxychrysene in Zebrafish Embryos
Graciel Diamante, UC Riverside*

Understanding Catch Patterns of Invasive Catfish Species in the Yolo Bypass
Mary Jade Farruggia, DWR

Effects of Temperature on the Endocrinology of Smoltification in Juvenile Rainbow/Steelhead Trout (*Oncorhynchus mykiss*)
Marissa Giroux, UC Riverside*

Migratory Behavior of Acoustically-Tagged Adult White Sturgeon and Chinook Salmon in the Yolo Bypass, 2012-2016
Myfanwy Johnston, UC Davis*

Inter-population Differences in Osmoregulation of Sacramento Splittail
Paige C. Mundy, UC Davis*

Temperature and Feeding Rate Interact to Impact Growth and Survival of Larval Green Sturgeon
Trinh Nguyen, UC Davis

Efforts to Conserve Pacific Lamprey
Alicia Seesholtz, DWR

Lots of Data without the Fishy Smell: Application of Acoustic Imaging to Evaluate Fish Behavior near Tidal Wetlands
Collin Smith, USGS

Occurrence of Large-Scale Loach (*Paramisgurnus dabryanus*) in the Sacramento-San Joaquin Basin, CA
Ronald Smith, USFWS

Reconstructing Fish Life History using Strontium Isotope Laser Ablation MC-ICP-MS Analysis of Scales, Spines, and Fin Rays as a Non-Lethal Alternative to Otolith
Malte Willmes, UC Davis

The Effect of Chlorpyrifos on Salinity Acclimation of Steelhead Trout: Changes of Serum Hormone and Gene Expression in Liver, Gill and Rosette
Elvis Xu, UC Riverside

Time- and Oil-Dependent Genomic and Physiological Responses to Deepwater Horizon Oil in Mahi-Mahi (*Coryphaena hippurus*) Embryos
Genbo Xu, UC Riverside

Fish Biology, Ecology, & Protection: Salmon

Aerobic Scope Reveals High Thermal Performance in Juvenile Chinook Salmon, *Oncorhynchus tshawytscha*
Sarah Baird, UC Davis

2016 South Delta Chinook Salmon Survival Tag Retention Study: Increased Tag Burden Results in Increased Tag Expulsion
Denise Barnard, USFWS

Calculating Potential Fish Benefits from NMFS Delta Actions
Russ Brown, ICF

Dynamic Visualization of Tethered Salmon Smolt and their Predators in San Joaquin River Habitats
George Cutter, NOAA

Monitoring for Pathogens and their Effects on Out-Migrating Chinook Salmon in the Delta
Matthias Hasenbein, UC Davis

Emigration Rate and Survival of Winter-Run Chinook Salmon
Jason Hassrick, ICF

Differential Impacts of Outmigration, Survival, and Biocomplexity for the Central Valley Chinook Salmon Population
Sebastien Nussle, UC Berkeley

Central Valley Passive Integrated Transponder (PIT) Tag Array Feasibility Study.
Dave Rundio, NOAA

Migratory Behavior and Survival of Reintroduced Spring-Run Chinook Salmon Smolts in the San Joaquin River and Delta
Gabriel Singer, UC Davis*

A Brief History of Central Valley Hatchery Releases in Time and Space
Anna Sturrock, UC Berkeley

Fall Run Chinook (*Oncorhynchus tshawytscha*) Salmon Upstream Migration Behavior in San Joaquin River Basin
H. Steve Tsao, DFW

Fish Biology, Ecology, & Protection: Smelt

Growth Rate Comparison of Longfin Smelt (*Spirinchus thaleichthys*) Between Wet and Dry Years Through Otolith Analysis
James Chhor, UC Davis

Temperature Tolerance and Metabolism of Threatened Smelt
Brittany Davis, UC Davis*

Putting Extreme Drought into a Long-Term Context: Growth Rate Variability and Recruitment Success in Response to Environmental Conditions
Mackenzie Gilliam, UC Davis

Growth and Life History of Delta Smelt Utilizing the Yolo Bypass
Brian Healey, UC Davis

Development and Evaluation of Using Environmental DNA Sampling to Detect and Monitor Wild Delta Smelt
Ann Holmes, UC Davis; Ted Sommer, DWR*

Phenotypic Effects of Domestication on Captive-Bred Cultured Delta Smelt
Tien-Chieh Hung, UC Davis

The Search for the Spawning Habitat of Delta Smelt
Rob McLean, DFW

Maternal effects on egg quality in Delta Smelt (*Hypomesus transpacificus*)
Meredith Nagel, UC Davis*

Longfin Smelt Distribution, Abundance and Evidence of Spawning in San Francisco Bay Tributaries
Christina Parker, UC Davis

Field Calibration of the SmeltCam
Oliver Patton, USGS

Identification of Individual Cultured Delta Smelt Using Visual and Automated Analysis of Natural Marks
Marade Sandford, UC Davis

Can We Tag Delta Smelt? Feasibility of PIT and Acoustic Tagging of Cultured Adults
Rick Wilder, ICF

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Food Webs

Trophic Ecology of Zooplankton and Larval Fish the Cache Slough Complex
Jeff Cordell, University of Washington

Are there Non-Target Impacts of *Eichhornia crassipes* Management on Aquatic Invertebrate Communities?
Erin Donley Marineau, UC Davis*

Response of the Yolo Bypass Floodplain to a Spring Flow Pulse
Jared Frantzich, DWR; Rachel Fichman, DWR

What's For Dinner? A Compositional Study of Particulate Organic Carbon in the San Francisco Bay-Delta
Jennifer Harfmann, UC Davis*

Is the Cache Slough Complex a Source Region for Zooplankton in the Upper San Francisco Estuary?
Toni Ignoffo, Romberg Tiburon Center, SFSU

Carbon Uptake by Single Celled Microalgae in the Benthic and Pelagic Zones of Historical Wetlands
Tricia Lee, Romberg Tiburon Center, SFSU

Phytoplankton Community Structure in the Lower South Bay Margins
Ryan Mayfield, City of San Jose

Sacramento River Phytoplankton Growth: Relative Importance of River-Water Sources, Light, Nutrients, and Clam and Zooplankton Grazing
Tim Mussen, Regional San

The Molecular Ecology of SF Delta Microcystis
Timothy Otten, Oregon State University

Are Current Sampling Programs Accurately Describing Zooplankton Distributions on Scales Relevant to Feeding by Fish?
Anne Slaughter, Romberg Tiburon Center, SFSU

Delta Boundary Conditions: Plankton Communities and Water Quality in the Sacramento River and its Tributaries
Lisa Thompson, Regional San

Habitat & Ecosystem Function Restoration

Comparative Restoration Attributes in the Cache Slough Complex
Nicole Aha, UC Davis*

Beyond the Levee: Strategies for Ecologically Functional High Tide Refugia in San Francisco Bay Tidal Marshes
Peter Baye, Annapolis Field Station; Christina Toms, SF Bay Water Board

Testing a Novel Adaptation Strategy in a California Salt Marsh
Evyan Borgnis, SCC

Facilitating Salt Marsh Formation through Vegetative and Physical Barriers to Erosion
Margot Buchbinder, Romberg Tiburon Center, SFSU*

Decker Island Restoration Project
Ling-ru Chu, DWR; Phillip Poirier, DFW

Giving Land to Water, Placemaking of an Experimental Flooded Polder in the Sacramento-San Joaquin Delta
John Durand, UC Davis

Comprehensive Ecology of *Schoenoplectus californicus*: Recommendations for Restoration of Tule Marsh
Mark Hester, University of Louisiana at Lafayette

Restoration Approaches and Planning for the Prospect Island Tidal Habitat Restoration Project
Noah Hume, Stillwater Sciences

Advancing Transition Zone Restoration: Application of Soil Amendments to Increase Vegetation Establishment
Nissa Kreidler, Save The Bay; Rachelle Cardona, Save The Bay

Climate Change Adaptations in a North Bay Centennial Marsh
Meg Marriott, USFWS

A Storm Water Basin with Growing Diversity
Mary Helen Nicolini, Friends of the Marsh Creek Watershed

The Oro Loma Horizontal Levee Demonstration Project - Scaling Up Native Species Propagation Methods to Accommodate Large Transition Zone/Ecotone Projects of the Future
Jessie Olson, Save the Bay

Restoration Design in the Sacramento-San Joaquin Delta: Lessons from Case Studies
Bruce Orr, Stillwater Sciences; Amy Merrill, Stillwater Sciences

Invertebrate Responses to Eelgrass and Oyster Restoration in a San Francisco Estuary Living Shorelines Project
Cassie Pinnell, Romberg Tiburon Center, SFSU

Coon Creek Watershed Assessment: An Interdisciplinary Approach for Evaluating Impacts and Developing a Restoration Strategy for a Foothill Watershed
Jai Singh, cbec

What do Skaggs Island and Sagrada Familia have in Common?
Renee Spenst, Ducks Unlimited, Inc.; Russ Lowgren, Ducks Unlimited, Inc.

Long-Term Changes in Spatial Structure of Restored Wetlands within the Sacramento-San Joaquin Delta of California
Sophie Taddeo, UC Berkeley

Field-Based Monitoring of Restoration Progress in Wetlands of the Sacramento-San Joaquin Delta
Sophie Taddeo, UC Berkeley; Kelsey Therese, UC Berkeley

Integrative Applied Science

Use of UAVs in the Design, Construction Observation and Post-Project Monitoring of Salmonid Rehabilitation Projects
Jesse Barker, cbec

SacPAS: Demonstration of a Real-time Decision Support System to Predict and Assess Operational Benefits and Risks to Central Valley Salmon
O. Towns Burgess, USBR

A Comparison of Two Sampling Gear Types in Liberty Island
Dave Contreras, DFW

Potential GHG Emissions Reductions on Agricultural Lands in the Sacramento-San Joaquin Delta
Steve Deverel, HydroFocus, Inc.

The Delta Research Station: A Glimpse at the Future Hub for Monitoring and Research in the Bay-Delta
Kevin Fisher, Horizon Water and Environment

Raising the Bar and Dropping the Cost of Aerial Imagery for Monitoring and Assessment
Stuart Siegel, SF NERR, SFSU, and Siegel Environmental

Modeling

Spatio-Temporal Ecological Modeling of Water Hyacinth Environment on the Performance of a Biological Control Agent
Emily Bick, UC Davis*

Planning Tools to Evaluate Salmonid Habitat Restoration in the Yolo Bypass
Chris Campbell, cbec

Modeling the Effects of Varying Disturbance Frequency and Magnitude on Population Persistence in Predator-Prey Systems
Christian Commander, University of North Carolina, Wilmington*

Advancing the Integration of Vegetation in Floodplain Modeling and Management to Achieve Multi-Objective Benefits for Flood Risk Reduction
Kevin Coulton, cbec

Interactions of Ending Overdraft and Delta Water Management
Mustafa Dogan, UC Davis*

Developing a High Resolution Bathymetric/Topographic DEM of the San Francisco Bay - Delta for use in CASCaDE II Models
Theresa Fregoso, USGS; Bruce Jaffe, USGS

Cost-Effective Shallow Water Bathymetric Modeling
Thomas Handley, UC Davis

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Biogeochemical Modeling for Nutrient Management in San Francisco Bay
Rusty Holleman, SFEI

Riparian Forest Dynamics along the Sacramento River, California (USA): Constructing Tree Age Models to Illustrate Successional Patterns
Andrea Irons, SUNY*

A New Public Domain Hydrodynamic Model for the Yolo Bypass
Jeanette E. Newmiller, UC Davis

Downscaling Wind and Wave Fields for 21st Century Coastal Flood Hazard Projections in San Francisco Bay
Andrea O'Neill, USGS

A Large-Scale, Infrared Quantitative Imaging System for Measuring the Instantaneous Surface Velocity Field in Natural Flows
Seth A. Schweitzer, Cornell University

Climate Change Effects on Optimal Bypass Capacity
Alessia Siclari, UC Davis*

Central Valley Refuge Management under Non-stationary Climatic and Management Conditions
Karandev Singh, UC Davis

Yolo Bypass Model: Providing a Public Model to Evaluate Future Options
Lily Tomkovic, UC Davis*

Quantifying Spatio-temporal Inundation Patterns for Floodplain Restoration on the Lower Cosumnes River, California
Alison Whipple, UC Davis*

Natural Resource Management

The Central Valley Habitat Exchange: Quantifying Benefits for Multiple Species at Parcel and Landscape Scales
Amy Merrill, Stillwater Sciences; Daniel Kaiser, Environmental Defense Fund

Desalination Cost Analysis for California
Ellie White, UC Davis

Natural Resource Management: Endangered Species

Adaptive Immunogenetic Variation in Endangered Salt Marsh Harvest Mouse Populations
Anastasia G. Ennis, Romberg Tiburon Center, SFSU

Development and Use of an Environmental DNA (eDNA) Method for Determining Presence/Absence of Freshwater Mussels in the Tidally Influenced Delta
Ellen Preece, Robertson-Bryan Inc.

Salt Marsh Harvest Mice (*Reithrodontomys raviventris*) Distribution, Abundance, and Population Trends in the East Bay Regional Park District
David Riensche, EBRPD

Using DNA from Beetle Feces to Improve Cryptic Species Monitoring
Andrea Schreier, UC Davis

Predation of Salt Marsh Harvest Mice in the Suisun Marsh
Katie Smith, UC Davis, DFW

Attenuation of Unionid Mussel Environmental DNA in a River Environment
David Thomas, Robertson-Bryan, Inc.

Analyses of Longterm Monitoring Data to Address Priority Data Gaps for Endangered Salt Marsh Harvest Mice, *Reithrodontomys raviventris*
Isa Woo, USGS

Outreach & Communication

Reducing Human Exposure to Mercury in the Sacramento-San Joaquin Delta
Lauren Baehner, CDPH; Brian Keegan, Sacramento-San Joaquin Delta Conservancy

DTSC's Safer Consumer Products Program: Linking Data and Decisions
Anne Cooper Doherty, DTSC

Effective at Any Scale: Watershed-Based Decision Support Tools
Cristina Grosso, SFEI-ASC

California EcoRestore
Erik Loboschefsky, DWR

Funding Science and Restoration in Bay-Delta Ecosystems: An Overview of New CDFW Grant Programs
Hildie Spautz; DFW; Adam Ballard, CDFW; Erin Aquino-Carhart, CDFW

Physical Processes

Seasonal Patterns in Sediment Deposition across Two San Francisco Bay Estuary Tidal Marshes
Kevin Buffington, Oregon State University, USGS*

Seasonal Variations Between Perimeter and Channel Dynamics in South San Francisco Bay
Olivia Hoang, UC Berkeley*

Wavy River Bed: The Sacramento River at Georgiana Slough – 2010 to 2016
Amy Zuber, DWR

Research Synthesis & Data Management

The Cache Creek Resources Management Plan: 20 Years of Applied, Integrated, Science for Adaptive Management
Paul Frank, FlowWest

Text Mining of IEP Articles for Characterizing the Association of Native and Non-Native Fish Species and Water Quality Parameters in the San Francisco Estuary
Tewdros Ghebremariam, UC Davis

Enhancing the Vision for Managing California's Environmental Information
George Isaac, Delta Stewardship Council

Enhancing Regional Capacity for Habitat Project Tracking, Assessment and Reporting
Kathryn Kynett, Sacramento-San Joaquin Delta Conservancy

San Francisco Estuary and Watershed Science and The State of Bay-Delta Science Update, 2016
Lauren Muscatine, UC Davis

The USGS Research Vessel Polaris Retires; We Reflect on What She Taught Us
Erica Nejad, USGS

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Water and Sediment Quality

Reducing Dissolved Organic Carbon and Mercury Export from Subsided Delta Islands with Coagulant–Wetland Treatment Systems
Sandra Bachand, Bachand and Associates

Clues to Physiological Pathways in Diatoms from Stable Isotope Investigations - Influence of Irradiance and Nitrogen Source
Mine Berg, Applied Marine Sciences

Sources and Transformations of Dissolved Organic Matter in the San Francisco Bay Estuary as Indicated by Biomarkers
Chia Ying Chuang, UC Davis

Predicting the Ecological Implications of Leachates from North Pacific Gyre Plastics from In Vitro and In Vivo Models
Scott Coffin, UC Riverside*

Changes in DOC Concentration, Composition, and Reactivity During Passage Through Constructed Wetlands of the Central Delta: Implications for Drinking Water Quality
Angela Hansen, USGS

Elevated Se Concentrations in Biological Tissue Occur during Unprecedented Drought in the San Francisco Estuary
Ursula Jongebloed, Dartmouth University*

The Sensitivity of a Resident California Freshwater Mussel (*Anodonta oregonensis*) to Ammonia and Possible Regulatory Implications
Brant Jorgenson, Pacific EcoRisk

Net Ecosystem Fluxes of Methyl Halides from a Coastal Salt Marsh with Invasive Pepperweed
Malte Julian, Deventer

Drivers of Phytoplankton in the Sacramento River: Comparing Phytoplankton Abundance and Composition in the Presence and Absence of Treated Wastewater Effluent
Tamara Kraus, USGS

Spatial Patterns of Phytoplankton, Nutrients, and Cell Health From the Sacramento River to Suisun Bay: Are There Biological Hotspots?
Raphael Kudela, UC Santa Cruz

Using Multivariate Analysis to Understand the Yolo - Cache Slough Complex's Water Quality Variability
Otome Lindsey, DWR

South Bay Salt Ponds Restoration: Tracking Changes in Surface Water Mercury Contamination in Response to Reconnecting Tidal Flow to Historic Wetlands
Mark Marvin-DiPasquale, USGS

A Change in Character: Agricultural Sediments Release Compositionally Distinct Dissolved Organic Matter
Sandrine Matiasek, CSU Chico

Optimizing Sampling Methods for Monitoring Pollutant Trends in San Francisco Bay Urban Stormwater
Aroon Melwani, Applied Marine Sciences

Ammonium and Nitrate Sources and Patterns in the Bay Delta Using Stable Isotope Techniques
Rachel Mixon, USGS

Targeted and Non-Targeted Analysis of Aqueous Film Forming Foam (AFFF)-Related PFAS in a Wastewater Treatment Plant
June-Soo Park, CA EPA

Management Implications for Small Urban Reservoirs Based on a Multi-Year Study of Three East Bay Watershed-Reservoir Pairs
Laura Rademacher, University of the Pacific; Kristina Faul, Mills College

Nutrient Budget Study of Nitrogen Related Constituents in the Sacramento River at Hood
Marcia Scavone-Tansey, DWR

Coagulant and Sorbent Efficacy in Removing Mercury from Surface Waters in Cache Creek
Erica Schmidt, USGS

Sediment Accretion in Constructed Wetlands of the Central Delta: Comparisons between Untreated Cells and Those Treated with Iron and Aluminum Based Coagulants
Elizabeth Stumpner, USGS

Non-targeted Analysis of Water-soluble Compounds in Ambient Bay Water and Wastewater to Identify Emerging Contaminants
Jennifer Sun, SFEI

Record-High Observations of Water Temperature and Specific Conductance, San Francisco Bay, CA
Paul Work, USGS

Simple Mass Budget Model to Evaluate Long Term PCB Fate in the Emeryville Crescent Sub-embayment
Donald Yee, SFEI

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