

INTERAGENCY ECOLOGICAL PROGRAM 2013 ANNUAL WORKSHOP

APRIL 24 – 26, 2013
LAKE NATOMA INN
FOLSOM, CA



Interagency
Ecological Program

COOPERATIVE ECOLOGICAL
INVESTIGATIONS SINCE 1970

WORKSHOP AT A GLANCE

All oral presentations will be in the Sierra Ballroom and the poster reception will be held in the Pavilion. Lunch will not be provided.

WEDNESDAY, APRIL 24

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| 8:00 – 10:15 | IEP Registration and Poster Set-up |
| 10:15 – 10:20 | Joint IEP and CWEMF Introduction |
| 10:20 – 11:40 | Session I - Models of Ecosystem Dynamics |
| 11:40 – 1:10 | Lunch |
| 1:10 – 3:00 | Session I (continued) - Models of Ecosystem Dynamics |
| 3:00 – 3:20 | Break |
| 3:20 – 4:10 | Session II - IEP and MAST Update |
| 4:10 – 6:00 | IEP Poster Set-up and Viewing |

THURSDAY, APRIL 25

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| 8:30 – 9:50 | Session III - First Flush at Second Blush |
| 9:50 – 10:10 | Break |
| 10:10 – 10:30 | Haiku/Poetry Slam Poster Introduction Blitz |
| 10:30 – 12:10 | Session IV – From the Rivers to the Bay I: New Tools and Technologies for Understanding and Managing Rivers and Estuaries |
| 12:10 – 1:30 | Lunch |
| 1:30 – 3:10 | Session V - Making the Most of IEP Monitoring Data: Opportunities and Challenges |
| 3:10 – 3:30 | Break |
| 3:30 – 5:00 | Session VI - Everybody Talks About it, What are we Doing About it? Collaborative Science Panel Discussion |
| 5:00 – 7:00 | Poster Reception |

FRIDAY, APRIL 26

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| 8:10 – 10:10 | Session VII - Water Quality and Lower Trophic Dynamics |
| 10:10 – 10:30 | Break |
| 10:30 – 12:10 | Session VIII - Examining Health and Diet Thresholds of Delta Smelt |
| 12:10 – 1:30 | Lunch |
| 1:30 – 2:50 | Session IX – Tidal Habitat Restoration in the San Francisco Bay: Examples on How to Monitor and Detect Ecosystem Change |
| 2:50 – 3:10 | Break |
| 3:10 – 4:30 | Session X – From the Rivers to the Bay II: Examining Biological Production, Fish Movement and Trends |

GENERAL INFORMATION

Overview: The Interagency Ecological Program (IEP) for the San Francisco Estuary / Sacramento-San Joaquin Delta consists of nine member agencies, three State (Department of Water Resources, Department of Fish and Wildlife, and State Water Resources Control Board) and six Federal (Fish and Wildlife Service, Bureau of Reclamation, Geological Survey, Army Corps of Engineers, NOAA Fisheries, and Environmental Protection Agency). The IEP also partners with the San Francisco Estuary Institute, the Delta Science Program, and many academic and private scientists. The mission of the IEP is, in collaboration with others, to provide ecological information and scientific leadership for use in management of the San Francisco Estuary. More information about the IEP can be found at <http://www.water.ca.gov/iep/>.

The annual IEP Workshop serves as a focal point for IEP activities. The program for this year's Workshop is diverse, with many oral and poster presentations and some new activities. This year's Workshop once again features a full three-day program and coordination with the California Water and Environmental Modeling Forum (CWEMF, <http://cwemf.org/>). The CWEMF annual meeting is taking place April 22-24 at the Lake Natoma Inn, and a joint CWEMF-IEP session about ecosystem restoration modeling will be held on April 24. There will also be a panel discussion about collaborative science featuring IEP agency Directors, scientists and stakeholders of the IEP on April 25. Also on April 25, the IEP will host a luncheon for early career scientists to meet with established IEP professionals and academia.

2013 IEP Workshop Program Committee: Lenny Grimaldo (USBR, Chair), Josh Israel (USBR), Lori Smith (USFWS), Fred Feyrer (USBR), Steve Culberson (USFWS), Louise Conrad (CDWR), Elaine Bartolomew (CVRWQCB), Kari Daniska (CVRWQCB), B.J. Miller (San Luis and Delta Mendota Water Agency), Deanna Serrano (CCWD), Matt Moses (CCWD), Anke Mueller-Solger (DSC), and Kelly Souza (CDFW).

WEDNESDAY, APRIL 24

JOINT CWEMF AND IEP INTRODUCTION AND RESTORATION MODELING SESSION

Moderator: Lenny Grimaldo (USBR)

Location: Sierra Ballroom

10:15 – 10:20

SESSION I – MODELS OF ECOSYSTEM DYNAMICS

Moderator: Chris Enright (DSC)

Location: Sierra Ballroom

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| 10:20-10:40 | We Need to do the Modeling: Imagining How Models and Modelers Advance Understanding of the San Francisco Estuary | Chris Enright, DSC |
| 10:40-11:00 | Physical Processes Influencing Habitat at a Breached Delta Island: Implications for Restoration Management and Planning | Matt Brennan, ESA |
| 11:00-11:20 | Bay-Delta EDT: A Tool for Restoration Planning | Chip McConnaha, ICF |
| 11:20-11:40 | Are Shallower, Slower Habitats Necessarily “Greener”? How Clams Upend Conceptual Models Guiding Ecosystem Management in the Delta | Lisa Lucas, USGS |

11:40 – 1:10 **Lunch** Location: Area restaurants

SESSION I (CONTINUED) – MODELS OF ECOSYSTEM DYNAMICS

Moderator: Marianne Guerin (RMA)

Location: Sierra Ballroom

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|-----------|--|-----------------------------|
| 1:10-1:30 | Yolo Bypass Ecosystem Reconciliation – Insights from Many Models and Lots of Field Work | Robyn Suddeth, UCD |
| 1:30-1:50 | Mathematical Models in Support of Restoration: Examples from the Klamath Basin and Beyond | Mike Deas, Watercourse Eng. |
| 1:50-2:10 | San Joaquin River Restoration Program Use of Modeling Tools to Guide Floodplain Restoration | Katrina Harrison, USBR |
| 2:10-2:30 | Applying Modeling Results to Tidal Restoration Project Alternatives Development and Selection: Prospect Island | Stuart Siegel, WWR |
| 2:30-3:00 | Habitat Restoration in the Delta: The Delta Independent Science Board Review | John Wiens, Delta ISB |

3:00 – 3:20 **BREAK**

SESSION II – IEP INTRODUCTION AND MAST UPDATE

Moderator: DAVID VAN RIJN (USBR)

Location: SIERRA ROOM

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| 3:20-3:50 | IEP Introduction, Science Highlights, and Program Update | Anke Mueller-Solger, DSC and Gregg Erickson, CDFW |
| 3:50-4:10 | MAST Synthesis Report: A Four Year Comparison of Delta Smelt Drivers | Larry Brown, USGS |

THURSDAY, APRIL 25

SESSION III – FIRST FLUSH AT SECOND BLUSH

Moderator: Gonzalo Castillo (USFWS)

Location: Sierra Ballroom

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| 8:30-8:50 | Delta Sediment Transport and Turbidity During the December 2012 'First Flush' Runoff Event | Scott Wright, USGS |
| 8:50-9:10 | The Hydrodynamics of Position Maintenance and Upmigration of Delta Smelt | Jon Burau, USGS |
| 9:10-9:30 | Riders on the Storm: Tides, Turbidity, and Transitory Traveling Delta Smelt | Bill Bennett, UCD |
| 9:30-9:50 | Feeding Ecology of Adult Delta Smelt During a Seasonal Pulse of Turbidity | Aaron Johnson, SFSU-RTC |

9:50 – 10:10 **Break**

10:10-10:30 Haiku/Poetry Slam Poster Introduction Blitz

Moderator: Steve Culberson (USFWS)

SESSION IV – FROM THE RIVERS TO THE BAY I: NEW TOOLS AND TECHNOLOGIES FOR UNDERSTANDING AND MANAGING RIVERS AND ESTUARIES

Moderator: Tanis Toland (USACE)

Location: Sierra Ballroom

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|-------------|---|---------------------|
| 10:30-10:50 | Facilitating Science Communication and Community: California Estuary Monitoring Workgroup Tool | Val Connor, SFCWA |
| 10:50-11:10 | The Pulse of the Estuary: Continuous Monitoring Reveals How Conditions in the Lower Sacramento River are Connected to Processes in Liberty Island | Bryan Downing, USGS |
| 11:10-11:30 | DNA Barcoding of Zooplankton from Delta Smelt Gut Contents | Tomo Kurobe, UCD |

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| 11:30-11:50 | Application of Telemetry and Hydrodynamic Data for Levee Design on the Sacramento River | Dave Smith, USACE |
| 11:50-12:10 | SmeltCam: Underwater Video Codend for Trawled Nets: An Application to the Distribution of Delta Smelt | Fred Feyrer, USBR |

12:10 – 1:30 **Lunch**
Location: Area restaurants

12:10-1:30 **Early Career Scientist Mentor Social**
Folsom Room

SESSION V – MAKING THE MOST OF IEP MONITORING DATA: OPPORTUNITIES AND CHALLENGES AHEAD

Moderator: Joe Kirsch (USFWS)

Location: Sierra Ballroom

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|-------------|---|---|
| 1:30-1:50 | Collapse of South and East Delta Fishes in the Summer Townet Survey | Katherine Osborne, CDFW |
| 1:50-2:10 | Estimating the Reproductive Potential of Delta Smelt | Lauren Damon and Julio Adib-Samii, CDFW |
| 2:10-2:30 | Through a Glass Darkly: Issues With Inferring Distribution and Abundance from Survey Data | David Fullerton, MWD |
| 2:30-2:50 | Catch Me if You Can: Quantifying Relative Species and Size Selectivity of IEP Fish Trawls | Matt Dekar, USFWS |
| 2:50 – 3:10 | Implementation of Central Valley Steelhead Monitoring | Ryan Fournier, CDFW |

3:10 – 3:30 **Break**

SESSION VI – EVERYBODY TALKS ABOUT IT, WHAT ARE WE DOING ABOUT IT?

COLLABORATIVE SCIENCE PANEL DISCUSSION

3:30-5:00

MODERATOR: BOB LOHN (RETIRED, NMFS REGIONAL ADMINISTRATOR)

PARTICIPANTS: JEFF KEAY (USGS), REN LOHOEFENER (USFWS), TIM VENDLINKSI (USEPA), BYRON BUCK (STATE AND FEDERAL CWA), CHRISTINA SWANSON (NRDC), PETER GOODWIN (DSC)

5:00 – 7:00 **IEP Poster Reception**
Location: Pavilion

FRIDAY, APRIL 20

SESSION VII – WATER QUALITY AND LOWER TROPHIC DYNAMICS

Moderator: Erin Gleason (USFWS)

Location: Sierra Ballroom

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| 8:10-8:30 | Sediment Concentration Declines in the San Francisco Bay and Delta: A Summary | Tara Morgan-King, USGS |
| 8:30-8:50 | Influence of Particle Properties on Habitat Quality in the San Francisco Estuary | Mike Sauer, USGS |
| 8:50-9:10 | Distribution of the Copepod <i>Pseudodiaptomus forbesi</i> in Salinity-space | Karen Kayfetz, SFSU-RTC |
| 9:10-9:30 | Stable Isotope Analysis of Historical Zooplankton Samples Documents Food Web and Biogeochemical Changes in the San Francisco Estuary | Julien Moderan, SFSU-RTC |
| 9:30-9:50 | Limnology of the Sacramento River Deepwater Ship Channel, 2012 | Erwin Van Nieuwenhuyse, USBR |
| 9:50-10:10 | Effects of the Cyanobacteria <i>Microcystis aeruginosa</i> on a Copepod in the San Francisco Estuary | Rita Dumais, SFSU-RTC |

10:10 – 10:30 Break

SESSION VIII – EXAMINING HEALTH AND DIET THRESHOLDS OF DELTA SMELT

Moderator: Erin Foresman (EPA)

Location: Sierra Ballroom

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| 10:30-10:50 | The Effect of Winter Food Limitation on Delta Smelt Growth and Reproduction – A Pilot Study | Meredith Nagel, UCD |
| 10:50-11:10 | Evaluation of Delta Smelt Diet and Nutritional Status During Juvenile Rearing and Adult Spawning Stages | Shawn Acuna, UCD and Steve Slater, CDFW |
| 11:10-11:30 | Temperature-dependent Food Consumption of Different Delta Smelt Life Stages | Kai Edler, UCD |
| 11:30-11:50 | Does Turbidity Matter for the Health and Reproductive Condition of Delta Smelt | Dolores Baxa, UCD |
| 11:50-12:10 | Turbidity, Salinity and Temperature Effects on Physiological and Molecular Stress Responses and Feeding in Juvenile Delta Smelt (<i>Hypomesus transpacificus</i>) | Matthias Hasenbein, UCD |

12:10 – 1:30 Lunch

Location: Area restaurants

SESSION IX – TIDAL HABITAT RESTORATION IN THE SAN FRANCISCO BAY: EXAMPLES OF HOW TO MONITOR AND DETECT ECOSYSTEM CHANGE

Moderator: Rachel Johnson (USBR)

Location: Sierra Ballroom

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|-----------|---|---------------------|
| 1:30-1:50 | Fish Monitoring in the South Bay Salt Pond Restoration Program | Jim Hobbs, UCD |
| 1:50-2:10 | Exploring Agricultural Land as Rearing Habitat for Juvenile Salmon at Knaggs Ranch in the Yolo Bypass | Louise Conrad, CDWR |
| 2:10-2:30 | Ecological Modeling of the Liberty Island Marsh Ecosystem | Enrique Reyes, ECU |
| 2:30-2:50 | Restoration at the Landscape Scale in the San Francisco Bay Delta | Michelle Orr, ESA |

2:50- 3:10 BREAK

SESSION X – FROM THE RIVERS TO THE BAY II: EXAMINING BIOLOGICAL PRODUCTION, FISH MOVEMENTS AND TRENDS

Moderator: Pat Brandes (USFWS)

Location: Sierra Ballroom

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| 3:10-3:30 | Does Elevated Ammonia Negatively Impact Phytoplankton Biomass and Community Composition? | Mary Lou Esparza, CCCSD |
| 3:30-3:50 | Does the Past Predict the Future? Trends and Cycles in San Francisco Estuary Fish Populations from 30+ Years of IEP Sampling | Kathy Hieb, CDFW |
| 3:50-4:10 | Late-fall Run Chinook Salmon (<i>Oncorhynchus tshawytscha</i>) Smolts and the San Francisco Estuary: Friend or Foe? | Bruce MacFarlane, NFMS |
| 4:10-4:30 | Seasonal Movement and Residence Patterns of Sub-adult Striped Bass in the San Francisco Estuary Watershed | Cynthia LeDoux-Bloom, CDWR |
