

# INTERAGENCY ECOLOGICAL PROGRAM 2008 ANNUAL WORKSHOP

FEBRUARY 27 - 29, 2008  
ASILOMAR CONFERENCE GROUNDS  
PACIFIC GROVE, CA



Interagency  
Ecological Program

COOPERATIVE ECOLOGICAL  
INVESTIGATIONS SINCE 1970

# WORKSHOP AT A GLANCE

## WEDNESDAY, FEBRUARY 27

- 1:00-1:10 Introductory Remarks
- 1:10-2:40 Status and Trends: Putting 2007 in Perspective
- 2:40-3:05 Break
- 3:05-5:05 Joint Session with the California and Environmental Water Modeling Forum
- 5:05-6:00 Registration/Break
- 6:00-7:00 Dinner
- 7:00-9:00 Keynote Speaker and Social

## THURSDAY, FEBRUARY 28

- 7:30-8:05 Breakfast
- 8:05-9:35 Delta Smelt & Pelagic Organism Decline Session I
- 9:35-9:55 Break
- 9:55-11:35 Delta Smelt & Pelagic Organism Decline Session II
- 11:35-1:00 Lunch
- 1:00-2:00 Delta Smelt & Pelagic Organism Decline Session III
- 2:00-2:15 Break
- 2:15-3:15 Poster Introductions
- 3:15-6:00 Break
- 6:00-7:00 Dinner
- 7:00-9:00 Poster Session

## FRIDAY, FEBRUARY 29

- 7:30-8:15 Breakfast
- 8:15-9:55 San Francisco Estuary in a Changing Climate: Beyond Failing Levees and Reduced Snowpack
- 9:55-10:15 Break
- 10:15-11:55 Contributed Papers
- 11:55-12:00 Concluding Remarks
- 12:00-1:00 Lunch

All oral sessions will be in the Chapel. The poster session will be in the Fred Farr Forum.

## GENERAL INFORMATION

**Overview:** The Interagency Ecological Program (IEP) for the San Francisco Estuary formally consists of nine member agencies, three State (Department of Water Resources, Department of Fish and Game, 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). Non-government organizations (San Francisco Estuarine Institute), as well as academic and private scientists are also heavily involved. IEP also works closely with the CALFED Science Program. Together, the groups work to develop a better understanding of the estuary's ecology and the effects of the State Water Project (SWP) and Federal Central Valley Project (CVP) operations on the physical, chemical, and biological conditions of the San Francisco Estuary and Sacramento-San Joaquin Delta.

The annual Workshop serves as a focal point for IEP activities. The program for this year's Workshop is diverse, with many oral and poster presentations offering a full spectrum of current IEP activities. A major focus of this year's Workshop will be delta smelt and the Pelagic Organism Decline.

**IEP Program Manager:** Chuck Armor (DFG)

**IEP Management Team Members:** Randy Baxter (DFG), Paul Cadrett (USFWS), Mike Chotkowski (USBR), Marty Gingras (DFG), Ted Sommer (DWR)

**2008 Workshop Program Committee:** Paul Cadrett (USFWS), Fred Feyrer (DWR), Kelly Souza (DFG), Erwin Van Nieuwenhuysse (USBR), Lori Wichman (USFWS)

# WEDNESDAY, FEBRUARY 27

## INTRODUCTION TO THE WORKSHOP

1:00-1:10 Chuck Armor (DFG)

## STATUS AND TRENDS: PUTTING 2007 IN PERSPECTIVE

Moderator: Randy Baxter (DFG)

1:10-1:20 **Happy as a Clam: The Environmental Monitoring Program's Benthic Element**  
Karen Gehrts (DWR)

1:20-1:40 **Phytoplankton Community Composition: The Rise of the Flagellates**  
Tiffany Brown (DWR)

1:40-2:00 **Zooplankton Distribution and Abundance Trends in the Upper San Francisco Estuary**  
April Hennessy (DFG)

2:00-2:20 **Abundance and Distribution Trends of Demersal Species in the Upper San Francisco Estuary**  
Max Fish (DFG)

2:20-2:40 **Distribution, Trends, and Abundance of POD Species in the Upper San Francisco Bay Estuary**  
Dave Contreras (DFG)

**Break 2:40-3:05**

## CONCEPTUAL OR QUANTITATIVE: HOW DO YOU PREFER YOUR MODEL?

## CALIFORNIA WATER AND ENVIRONMENTAL MODELING FORUM JOINT SESSION

Moderator: Kevin Reece (DWR)

3:05-3:25 **From Concept to Utility: The Use of Conceptual Models in Ecosystem Restoration Planning**  
Bruce Herbold (USEPA)

3:25-3:45 **What's Driving Spring-Run Chinook Populations?**  
Jody Lando (CFS)

3:45-4:05 **The IOS Salmon Model: An Interactive "Blackboard" for Managers Evaluating Alternative Facilities, Operations and Enhancement Actions**  
Brad Cavallo (CFS)

4:05-4:25 **A Fishy Tale: Splittail Population Dynamics and Delta Water Management**  
Ted Foin (UCD)

4:25-4:45 **California and Environmental Water Modeling Forum**  
Tara Smith (DWR)

4:45-5:05 **Coastal Margin Observatories: What Role in Sacramento-San Joaquin Delta Issues?**  
Antonio M. Baptista (OHSU)

# WEDNESDAY, FEBRUARY 27, CONTINUED

**Registration/Break 5:05-6:00**

**Dinner 6:00-7:00**

**KEYNOTE SPEAKER AND SOCIAL 7:00-9:00**

Dr. Tracy Collier, Director of the Environmental Conservation Division of NOAA's Northwest Fisheries Science Center

## THURSDAY, FEBRUARY 28 DELTA SMELT & PELAGIC ORGANISM DECLINE

**Breakfast 7:30-8:05**

**SESSION I** Moderator: Ted Sommer (DWR)

8:05-8:15 **POD Introduction**

Ted Sommer (DWR)

8:15-8:35 **Estimating Population Abundance of Delta Smelt**

Ken Newman (USFWS)

8:35-8:55 **Genetic Population Structure of Delta Smelt**

Kathleen Fisch (UCD)

8:55-9:15 **Delta Smelt Food Habits in 2005 and 2006**

Steven Slater (DFG)

9:15-9:35 **Prey Selection of Larval Delta Smelt: Baked Potato or French Fry?**

Lindsay Sullivan (SFSU)

**Break 9:35-9:55**

**SESSION II** Moderator: Kelly Souza (DFG)

9:55-10:15 **So What's the Deal with Fall Habitat?**

Fred Feyrer (DWR)

10:15-10:35 **Spatially-Explicit, Individual-Based Modeling of Delta Smelt Population Dynamics**

Karen Edwards (SFSU)

10:35-10:55 **Artificial Selection Overriding Natural Selection: Complex Clues to Population Collapse of the Little Fish that Roared?**

Bill Bennett (UCD)

10:55-11:15 **Water Toxicity in the Delta: Results of the 2006-07 Monitoring Effort**

Inge Werner (UCD)

11:15-11:35 **New Insights From Old Data**

Erica Fleishman (NCEAS)

**Lunch 11:35-1:00**

# THURSDAY, FEBRUARY 28, CONTINUED

**SESSION III** Moderator: Fred Feyrer (DWR)

1:00-1:20 **Spreading Submerged Aquatic Vegetation and Decreasing Turbidity in the Delta**

David Schoellhamer (USGS) and Erin Hester (UCD)

1:20-1:40 **Food Limitation and the Pelagic Organism Decline: Quantifying Carbon Supply from Heterotrophic Bacteria to the Food Web of Suisun Marsh and the Northern San Francisco Estuary**

Alex Parker (SFSU)

1:40-2:00 **Diagnosis Metabolic Syndrome**

Anke Mueller-Solger (DWR)

**Break 2:00-2:15**

**POSTER INTRODUCTIONS** Moderator: Fred Feyrer (DWR)

2:15-3:15

**Break 3:15-6:00**

**Dinner 6:00-7:00**

**POSTER SESSION AND SOCIAL AT FRED FARR FORUM 7:00-9:00**

# FRIDAY, FEBRUARY 29

**Breakfast 7:30-8:15**

**SAN FRANCISCO ESTUARY IN A CHANGING CLIMATE: BEYOND FAILING LEVEES AND REDUCED SNOWPACK**

Moderator: Kathy Hieb (DFG)

8:15-8:35 **The California Current and Climate Change**

Steven Bograd (PFEL)

8:35-8:55 **California Salmon in a Changing Climate**

Steve Lindley (NMFS)

8:55-9:15 **Response of San Francisco Estuary's Biota to Changing Ocean Conditions**

Kathy Hieb (DFG)

9:15-9:35 **Managing Wetland Habitats with Rising Sea Level**

Jeremy Lowe (PWA)

9:35-9:55 **Climate Change and San Francisco Bay-Delta Tidal Wetlands**

Tom Parker (SFSU)

**Break 9:55-10:15**

# FRIDAY, FEBRUARY 29, CONTINUED

## CONTRIBUTED PAPERS

Moderator: Darcy Jones (CALFED)

- 10:15-10:35 **Multiple Stressors and their Effects on the Striped Bass Population in the San Francisco Estuary**  
David Ostrach (UCD)
- 10:35-10:55 ***Microcystis* Blooms and the Delta's Calanoid Copepods: Mechanism and Extent of Nutritional and Toxicity Impacts**  
Ali Ger (UCD)
- 10:55-11:15 **Variation of Physical Habitat for Estuarine Fish with Freshwater Flow**  
Wim Kimmerer (SFSU)
- 11:15-11:35 **How Do Altered Ecosystems Work? One Bass, Two Bass, Don't Grow Too Fast**  
Matt Nobriga (CALFED)
- 11:35-11:55 **High and Low Frequency Material Flux in a Shallow Tidal Wetland, Liberty Island CA**  
Peggy Lehman (DWR)

## CONCLUDING REMARKS

11:55-12:00 Chuck Armor (DFG)

**Lunch            12:00-1:00**

## **POSTER PRESENTATIONS** *(in no particular order)*

### **Striped Bass Habitat Use Determined by Otolith Microchemistry & the Bioaccumulation of Contaminants in the San Francisco Estuary**

David J. Ostrach (UCD)

### **Histological Evaluation and Viral Survey of Juvenile 0+ Longfin Smelt and Threadfin Shad Collected from the Sacramento - San Joaquin Delta, April – October 2006 and 2007**

J.Scott Foott, R. Stone, and K. True (USFWS)

### **Evaluating Underwater Video Technology for Identifying and Measuring Abundance of Pelagic Fishes**

Don Portz (USBR) and Gina Benigno (DWR)

### **Four Bad Years in the Lives of Delta Smelt**

BJ Miller

### **Delta Smelt Survival Rates and Modeling**

Phil Unger (WC) and Rick Sitts (MWDSC)

### **Fish Salvage Release Site Predation Study (CHTR Element 2)**

Rogelio Padilla & Javier Miranda (DWR), Mike Horn (USBR), and Jerry Morinaka (DFG)

### **Fish Salvage Mock Release Site Study (CHTR Element 3)**

Javier Miranda & Rogelio Padilla (DWR), Geir Aasen (DFG), Brent Mefford (USBR), Virginia Afentoulis (DFG), and Mark Bowen & David Sisneros & John Boutwell (USBR)

### **How Does *Corbula* Influence the Nitrogen Regime of Suisun Bay?**

Amy Kleckner and Frances Wilkerson (SFSU)

### **Hazard Analysis Critical Control Point (HACCP): A Tool for Preventing the Spread of Invasive Species in Natural Resource Management Activities**

Jonathan L. Thompson (USFWS)

### **What's Up With the Splittail? Recent Abundance Indices in Relation to Past Trends**

David H. Wright (DFG)

### **Optimizing SWP Pumping Operations Using Delta Smelt Salvage Analysis**

Abdul Khan, Andy Chu, and Tracy Hinojosa (DWR)

### **Steelhead Pre-screen Losses in Clifton Court Forebay**

Kevin Clark (DWR), Mark Bowen (USBR), and Ryan Mayfield (DFG)

## **POSTER PRESENTATIONS, CONTINUED**

### **Assessing the Non-Target Impacts of the Aquatic Herbicides Imazapyr and Triclopyr TEA to Frogs**

Joel Trumbo (DFG)

### **Pilot PIT Tagging Experiments on Delta Smelt**

Jerry Morinaka (CDFG), Gonzalo Castillo (USFWS), Joan Lindberg (UCD), Bradd Baskerville-Bridges (UCD), Robert Fujimura (CFDFG), and Luke Ellison (UCD)

### **Including Water Exports into Stock-Recruitment Models of Delta Smelt**

Gonzalo Castillo (USFWS)

### **An Overview of the 2008-09 North/Central Delta Regional Salmon Outmigration Study Plan**

Jim Wilde (DWR), Jon Burau and Aaron Blake (USGS)

### **Origins of High Nutrients and Low Productivity Conditions in Suisun Bay, and the Sacramento and San Joaquin Rivers**

R. Dugdale, A. Parker, A. Mueller-Solger, F. Wilkerson, A. Marchi, V. Hogue. (SFSU)

### **Recent Measurements of pCO<sub>2</sub> in the San Francisco Estuary**

Jim Fuller, Frances Wilkerson, Alexander Parker, Richard Dugdale, Al Marchi, Victoria Hogue (SFSU)

### **Development and Application of a Microarray to Investigate Molecular Stress Responses in the Delta Smelt**

Richard E. Connon and I. Werner (UCD)

### **Using Delta Hydrodynamics and Turbidity to Understand Conditions Affecting Entrainment of Delta Smelt**

Joseph J. Simi, Peter E. Smith, Catherine A. Ruhl, and John M. Donovan (USGS)

### **Ebb and Flood at Liberty Island - Summer of 2006**

Leiji Liu, Shawn Mayr, Alison Tang, and Matt Mulligan (DWR)