

# INTERAGENCY ECOLOGICAL PROGRAM 2012 ANNUAL WORKSHOP

APRIL 18 – 20, 2012  
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 or Sutter Room, and the poster sessions will be held in the pavilion. Lunch will not be provided.

### WEDNESDAY, APRIL 18

8:00 – 10:00	IEP Registration and Poster Set-up
10:00 – 10:40	Joint CWEMF and IEP Introduction and Updates
10:40 – 12:30	Session I – Smelt Life Cycle Models
12:30 – 1:40	Lunch
1:40 – 2:40	Session II – Applied Hydrodynamic Modeling and Forecast Tools
2:40 – 3:20	The Delta Science Program Welcomes New Lead Scientist, Peter Goodwin
3:30 – 6:00	Joint CWEMF and IEP Poster Session

### THURSDAY, APRIL 19

8:30 – 10:10	Session III – What's New in the Salmon World?
10:10 – 10:30	Break
10:30 – 11:50	Session III (continued) – What's New in the Salmon World?
11:50 – 1:10	Lunch
1:10 – 2:50	Session III (continued) – What's New in the Salmon World?
2:50 – 3:10	Break
3:10 – 3:30	Poster Speed Introductions
3:30 – 4:50	Session IVa - Due North: Cache Slough Complex, Liberty Island and the Deep Water Shipping Channel
	Session IVb - Water Quality Effects, From Producers to Consumers
5:00 – 7:00	IEP Poster Reception

### FRIDAY, APRIL 20

8:30 – 10:10	Session Va – Under the Microscope and Lower Trophic Critters
	Session Vb – Marking, Counting and Detecting Fish: The Latest and Greatest from Suisun to the North Delta
10:10 – 10:30	Break
10:30 – 12:20	Session VI – Fall Low Salinity Habitat (FLaSH) Studies: Making Sense of Physical and Biological Conditions in 2011
12:20 – 1:30	Lunch
1:30 – 3:30	Session VI (continued) - Fall Low Salinity Habitat (FLaSH) Studies: Making Sense of Physical and Biological Conditions in 2011

## 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 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). 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 offering a full spectrum of current IEP activities. After a three-year transition period to a new location, the Lake Natoma Inn in Folsom, CA, this year's Workshop once again features a full three-day program and close coordination with the California Water and Environmental Modeling Forum (CWEMF, <http://cwemf.org/>). The CWEMF annual meeting is taking place April 16-18 at the Lake Natoma Inn. IEP and CWEMF are holding joint oral sessions on Wednesday, April 18. For the first time, IEP and CWEMF are also holding a joint poster session and reception in the afternoon of April 18. The joint oral and poster sessions on April 18 are open to all registered IEP and all registered CWEMF meeting participants.

**Chair, IEP Agency Coordinators:** Gregg Erickson (DFG)

**IEP Lead Scientist:** Anke Mueller-Solger (DSC)

**IEP Program Manager:** Kelly Souza (DFG)

**2012 IEP Workshop Program Committee:** Lenny Grimaldo (chair; Reclamation), Josh Israel, (Reclamation), Lori Smith (FWS), Pat Brandes (FWS), Li-Ming He (NMFS), Alex Parker (SFSU), Brett Harvey (DWR), Bill Templin (DWR), Stephanie Fong (CVRWQCB), Christine Joab (CVRWQCB), B.J. Miller (San Luis and Delta Mendota Water Agency), Anke Mueller-Solger (DSC), and Kelly Souza (DFG).

# WEDNESDAY, APRIL 18

## JOINT CWEMF AND IEP INTRODUCTION AND UPDATES

Moderator: Rich Breuer (DWR)

Location: Sierra Ballroom

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10:00-10:10	CWEMF: Highlights 2011 to 2012	Marianne, Guerin, RMA
10:10-10:20	IEP Program Highlights	Kelly Souza, DFG
10:20-10:40	IEP Science Highlights	Anke Mueller-Solger, DSC

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## SESSION I – SMELT LIFE CYCLE MODELS

Moderator: Lenny Grimaldo (Reclamation)

Location: Sierra Ballroom

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10:40-10:50	Understanding Life Cycle Models and Their Applications	Wim Kimmerer, SFSU (RTC)
10:50-11:10	<a href="#">Individual-Based Population Dynamics Model of Delta Smelt: Comparing the Effects of Food Versus Entrainment</a>	Kenny Rose, LSU
11:10-11:30	A State-space Multistage Life Cycle Model to Evaluate Population Impacts in the Presence of Density Dependence: Illustrated with Application to Delta Smelt	Richard Deriso, Tuna Commission
11:30-11:50	<a href="#">A Hierarchical Spatio-Temporal Model for Delta Smelt</a>	Ken Newman, FWS
11:50-12:10	Statistical Modeling of Unnatural Selection, and the Dialectics of Causation in the Decline of Delta Smelt	William Bennett, UCD
12:10-12:30	<a href="#">Development and Application of an Individual Based Model for Longfin Smelt in the San Francisco Estuary</a>	Erik Lobochevsky, UCD

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**12:30 – 1:40**

**Lunch**

Location: Area restaurants

## SESSION II– APPLIED HYDRODYNAMIC MODELING AND FORECAST TOOLS

Moderator: Ben Bray (EBMUD)

Location: Sierra Ballroom

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1:40-2:00	Investigating the Effect of Tidal Migration Behavior on Zooplankton Retention	Ed Gross, RMA
2:00-2:20	Forecasting Turbidity in the Sacramento-San Joaquin Delta	John DeGeorge, RMA
2:20-2:40	Climate Change Information for Ecological Modeling	Jamie Anderson, DWR

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**2:40 – 3:20 THE DELTA SCIENCE PROGRAM WELCOMES NEW LEAD SCIENTIST, PETER GOODWIN (DSP)**

**INTRODUCTION BY: ANKE MUELLER-SOLGER (DSC)**

**ACCELERATING KNOWLEDGE DISCOVERY THROUGH SCIENCE COMMUNITIES AND EMERGING TECHNOLOGIES**

**3:30 – 6:00**

**Joint CWEMF and IEP Poster Session**

Location: Pavilion

# THURSDAY, APRIL 19

## SESSION III – WHAT’S NEW IN THE SALMON WORLD?

Moderator: Jeff McLain (NMFS)

Location: Sierra Ballroom

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8:30-8:50	Salmon and IEP: Finding Holistic Approaches for Monitoring, Modeling and Management	Josh Israel, Reclamation
8:50-9:10	From Sabertooth Salmon to Conservation Hatcheries: Managing for Resilient Salmon Population in California’s Altered Riverscapes	Rachel Johnson, Reclamation
9:10-9:30	<a href="#">An Integrated System for Storing, Analyzing and Reporting Juvenile Chinook Salmon Data Collected with Rotary Screw Traps</a>	Doug Threlhoff, FWS
9:30-9:50	<a href="#">Migration Patterns of Juvenile Winter-Run Size Chinook Salmon (<i>Oncorhynchus tshawytscha</i>) Through the Sacramento-San Joaquin Delta</a>	Yvette Redler, NMFS
9:50-10:10	Estimates of Hatchery Contribution to California’s Central Valley Chinook Results of 2010 Constant Fractional Marking Program Recovery Data	Brett Kormos, DFG

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**10:10 – 10:30**      **Break**

## SESSION III – WHAT’S NEW IN THE SALMON WORLD? (CONTINUED)

Moderator: Ramon Martin (FWS)

Location: Sierra Ballroom

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10:30-10:50	<a href="#">Juvenile Salmon Survival Studies in the North Delta</a>	Russ Perry, USGS
10:50-11:10	<a href="#">An Overview of USGS Acoustic Telemetry Studies</a>	Jon Burau, USGS
11:10-11:30	<a href="#">South Delta Salmon Survival Studies</a>	Pat Brandes, FWS
11:30-11:50	Acoustic Telemetry Evaluations of Non-Physical Fish Barriers and Fish Protection Facilities in the Central Valley of California	Mark Bowen, Reclamation

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**11:50 – 1:10**      **Lunch**

Location: Area restaurants

## SESSION III – WHAT’S NEW IN THE SALMON WORLD? (CONTINUED)

Moderator: Josh Israel (Reclamation)

Location: Sierra Ballroom

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1:10-1:30	<a href="#">A Juvenile Salmonid Perspective on Delta Hydrodynamics: The Relative Influence of River Inflows, Tides and South Delta Exports</a>	Brad Cavallo, Cramer Fish Sciences
1:30-1:50	<a href="#">Predator Densities and Associated Salmonid Smolt Mortality Around Water Diversions</a>	Cyril Michel, NMFS
1:50-2:10	<a href="#">Who’s Your Daddy? Validating Length-Date Run Assignments with Genetics for Central Valley Chinook</a>	Brett Harvey, DWR

2:10-2:30	A Review of the IEP Delta Juvenile Fishes Monitoring Program and the Stockton FWS Salmon Survival Studies	Joe Kirsch (FWS)
2:30 – 2:50	Monitoring, Modeling and Management: How Can We Put it All together to Support Salmonid Conservation in the Central Valley?	Steve Lindley, NMFS

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**2:50 – 3:10**            **Break**

**3:10 – 3:30**            **Poster Speed Introductions**  
Moderator: Steve Culberson (FWS)  
Location: Sierra Ballroom

**CONCURRENT SESSION IVA – DUE NORTH: CACHE SLOUGH COMPLEX, LIBERTY ISLAND AND THE DEEP WATER SHIPPING CHANNEL**

Moderator: Ted Sommer (DWR)  
Location: Sierra Ballroom

3:30-3:50	<a href="#">Cache Slough Turbidity, Sediment and Salinity Trends in 2011</a>	Tara Morgan-King, USGS
3:50-4:10	<a href="#">CDFG’s Monitoring of the Sacramento Deep Water Shipping Channel: Pelagic Fishes, Zooplankton and Their Shared Habitat</a>	Julio Abid-Samii, DFG
4:10-4:30	<a href="#">Dredging Impacts to Delta Smelt and Other Fish Species in the Sacramento Deep Water Shipping Channel</a>	Jordan Gold, Mari-gold Environmental Consulting
4:30-4:50	<a href="#">Larval and Juvenile Fishes of Liberty Island</a>	Lori Smith, FWS

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**CONCURRENT SESSION IVB – WATER QUALITY EFFECTS, FROM PRODUCERS TO CONSUMERS**

Moderator: Stephanie Fong, CVRWQCB  
Location: Sutter Room

3:30-3:50	<a href="#">Determining Environmental Controls and Ecological Impacts of CyanoHABs in the San Joaquin-Sacramento Delta – A Multidisciplinary Approach</a>	Raphe Kudela, UCSC
3:50-4:10	<a href="#">Transcriptomics and Delta Monitoring: Accomplishments, Difficulties and Future Prospects</a>	Richard Connon, UCD
4:10-4:30	<a href="#">Contaminant Sources and Toxicity in the Cache Slough Region</a>	Don Weston, UCB
4:30-4:50	<a href="#">Detection and Potential Effects of Pharmaceuticals and Personal Care Products in the Sacramento River</a>	Erika Holland, UCD

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

# FRIDAY, APRIL 20

## CONCURRENT SESSION VA – UNDER THE MICROSCOPE AND LOWER TROPHIC CRITTERS

Moderator: Alex Parker (SFSU)

Location: Sutter Room

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8:30-8:50	The Effect of Ambient Irradiance on Phytoplankton Nutrient Uptake in San Francisco Estuary	Dick Dugdale, SFSU (RTC)
8:50-9:10	<a href="#">Assessing Phytoplankton Communities in the Sacramento and San Joaquin Rivers Using Microscopic and Indirect Analytical Approaches</a>	Erika Kress, SFSU (RTC)
9:10-9:30	<a href="#">Role of Salinity and Temperature in <i>Corbula amurensis</i> Energetics in the upper San Francisco Bay Estuary</a>	Nate Miller, SFSU (RTC)
9:30-9:50	Abundance, Distribution and Clearance Rates of the Brackish-Water Hydromedusa <i>Blackfordia virginica</i>	Jessica Donald, SFSU (RTC)
9:50-10:10	<a href="#">Introduction of the Siberian Prawn, <i>Exopalaemon modestus</i>, into the San Francisco Estuary: Ten Years Later</a>	Tiffany Brown, DWR

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## CONCURRENT SESSION VB – MARKING, COUNTING AND DETECTING FISH: THE LATEST AND GREATEST FROM SUISUN TO THE NORTH DELTA

Moderator: Louise Conrad (DWR)

Location: Sierra Ballroom

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8:30-8:50	<a href="#">California Striped Bass: A Species Contested for the Prey it Ingested</a>	Jason DuBois, DFG
8:50-9:10	<a href="#">SmeltCam III: Making Science Fiction a Reality with Fish Species Recognition Technology</a>	Don Portz, Reclamation
9:10-9:30	<a href="#">Genetic Detection of Predation on Larval Delta Smelt in the North Delta</a>	Brian Schreier, DWR
9:30-9:50	<a href="#">Preliminary Evaluation of Individual Identification for Delta Smelt by Means of Natural Marks</a>	Gonzalo Castillo, FWS
9:50-10:10	<a href="#">Laboratory Design and Testing of an Electrical Crowder for Predator Reduction at the Tracy Fish Collection Facility</a>	Mike Horn, Reclamation

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**10:10 – 10:30 Break**

## SESSION VI – FALL LOW SALINITY HABITAT (FLASH) STUDIES: MAKING SENSE OF PHYSICAL AND BIOLOGICAL CONDITIONS IN 2011

Moderator: Erwin van Nieuwenhuyse, Reclamation

Location: Sierra Ballroom

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10:30-10:40	Introduction to the Fall Low Salinity Habitat Studies of the San Francisco Estuary	Erwin Van Nieuwenhuyse, Reclamation
10:40-11:00	<a href="#">Pelagic Fish Distribution and Growth Patterns</a>	Dave Contreras, DFG
11:00-11:20	<a href="#">FLaSHy Fish Food: Just Add Water!</a>	April Hennessey, DFG
11:20-11:40	<a href="#">What's New on the Menu? Regional Feeding Patterns</a>	Steve Slater, DFG

11:40-12:20 [of Delta Smelt in a Wet Year](#)  
[FLaSH: Health and Nutritional Analyses of Delta smelt](#) Jim Hobbs, Shawn Acuna and  
[“Benchmarks for Health”](#) Saikrithika Gandhi, UCD

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**12:20 – 1:30 Lunch**  
Location: Area restaurants

**SESSION VI – FALL LOW SALINITY HABITAT (FLASH) STUDIES: MAKING SENSE OF PHYSICAL AND BIOLOGICAL CONDITIONS IN 2011 (CONTINUED)**

Moderator: Larry Brown (USGS)

Location: Sierra Ballroom

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1:30-1:50	<a href="#">Big Surprises Come in Small Packages: 2011 Phytoplankton Monitoring Results</a>	Anke Mueller-Solger, DSC/IEP
1:50-2:10	<a href="#">Nutrient and Phytoplankton Distributions During the Fall Low Salinity Habitat (FLaSH) Study in Suisun Bay</a>	Frances Wilkerson, SFSU (RTC)
2:10-2:30	<a href="#">Water and Particle Properties as Measures of Habitat Quality</a>	Brian Bergamaschi, USGS
2:30-2:50	<a href="#">Going With the Flow: The Distribution, Biomass and Grazing Rate of <i>Corbula</i> and <i>Corbicula</i> with Varying Freshwater Flow (May and October 2009-2011)</a>	Jan Thompson, USGS
2:50-3:10	<a href="#">Comparison of Seston Composition and Sources in the Delta During Two High-Flow Falls (2006 and 2011)</a>	Carol Kendall, USGS
3:10-3:30	<a href="#">Synthesis of Studies in Fall Low Salinity Habitat of the San Francisco Estuary</a>	Larry Brown, USGS

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## 2012 IEP Workshop Poster Presentations

Note: A single asterisk (\*) signifies posters displayed in both the joint CWEMF/IEP poster session on 4/18/12 and the IEP-only poster session on 4/19/12. A double asterisk (\*\*) signifies posters displayed in the joint CWEMF/IEP poster session only.

### [\\*Investigating Infections of Mycobacterium in Delta Smelt \(\*Hypomesus transpacificus\*\) from the San Francisco Estuary](#)

D.V. Baxa<sup>1</sup>, S.J. Teh<sup>1</sup>, J.C. Lindberg<sup>2</sup>, E.P. Scott Weber III<sup>3</sup> <sup>1</sup> School of Veterinary Medicine, Department of Anatomy, Physiology, and Cell Biology, University of California, Davis <sup>2</sup> Department Biological and Agricultural Engineering, Fish Conservation and Culture Laboratory (FCCL), University of California, Davis <sup>3</sup> School of Veterinary Medicine, Department of Medicine and Epidemiology, University of California, Davis

### ["Bona fide" Scientific Research Permitted Activities](#)

R. Bellmer, D. Kratville, K. Barnes, and S. Rajappa  
California Department of Fish and Game, Fisheries Branch

### [Steelhead Monitoring Program in California: Past, Present and Into the Future](#)

R. Bellmer, J. Nelson, K. Barnes, and R. Fortier  
California Department of Fish and Game, Fisheries Branch

### [Water and Particle Properties as Measures of Habitat Quality](#)

B. Bergamaschi<sup>1</sup>, B. Downing<sup>1</sup>, M. Sauer<sup>1</sup>, P. Hernes<sup>2</sup>  
U.S. Geological Survey<sup>1</sup>  
University of California, Davis<sup>2</sup>

### [An Experimental Study of Diuron and Imazapyr Herbicide Effects on Phytoplankton Assemblages in the San Francisco Estuary](#)

S. Blaser, F. Wilkerson, and A. Parker  
Romberg Tiburon Center for Environmental Studies, San Francisco State University

### [\\*The Toxicity and Interactions Among Common Aquatic Contaminants in Binary Mixtures](#)

K. Callinan<sup>1</sup>, L. Deanovic<sup>1</sup>, I. Werner<sup>2</sup>, S. Fong<sup>3</sup>, S. Teh<sup>1</sup>  
<sup>1</sup> School of Veterinary Medicine, Department of Anatomy, Physiology, and Cell Biology, University of California, Davis  
<sup>2</sup>Eawag Überlandstrasse 133, Switzerland  
<sup>3</sup>Central Valley Regional Water Quality Control Board

### [\\*\\*2D Hydrodynamic Modeling in the Yolo Bypass to Support Habitat Evaluation](#)

**C. Campbell, A. Sawyer, and C. Bowles**  
CBEC, Inc.

### [\\*\\*CALVIN Groundwater Update](#)

H. Chou, P. Zinkalala, C. Buck, J. R. Lund, J. Medellín-Azuara  
University of California, Davis

### [Nutrient Fluxes from San Francisco Bay Delta Sediments](#)

J. Cornwell, M. Owens, P. Glibert, J. Alexander,

University of Maryland Center for Environmental Science, Horn Point Laboratory

**\*Sacramento River Chinook: Viability in the Face of Environmental Variability**

C. Cunningham<sup>1</sup>, R. Hilborn<sup>1</sup>, N. Hendrix<sup>2</sup> and R. Lessard<sup>3</sup>

<sup>1</sup>School of Aquatic and Fishery Sciences, University of Washington

2R2 Resource Consultants, Inc.; Affiliate Faculty at University of Washington

<sup>3</sup>Columbia River Inter-Tribal Fish Commission

**Survival, Behavior and Feeding of Juvenile Delta Smelt (*Hypomesus transpacificus*) Under Varied Turbidity Conditions**

L. Deanovic<sup>1</sup>, D. Markiewicz<sup>1</sup>, M. Stillway<sup>1</sup>, A. Javidmehr<sup>1</sup>, I. Werner<sup>2</sup>, S. Teh<sup>1</sup>

<sup>1</sup> School of Veterinary Medicine, Department of Anatomy, Physiology, and Cell Biology, University of California, Davis

<sup>2</sup>Eawag Überlandstrasse 133, Switzerland

**The North Delta: Refugia for Native Fishes in the Upper San Francisco Estuary**

D. De Carion<sup>1</sup>, B. Schreier<sup>2</sup>, L. Conrad<sup>2</sup>, A. Sih<sup>1</sup>

<sup>1</sup>Department of Environmental Science & Policy, University of California, Davis

<sup>2</sup> Aquatic Ecology Section, California Department of Water Resources

**Temperature as a Driver of Cyanobacteria Blooms in the San Francisco Estuary Delta: Evidence from Experimental Enclosures**

M. DuBose, A. Johnson, A. E. Parker, F. P. Wilkerson

Romberg Tiburon Center, San Francisco State University

**Delta and Longfin Smelt Bioenergetics: Determining Maximum Consumption**

K.J. Eder<sup>1</sup>, R. C. Kaufman<sup>2</sup>, N. A. Fanguie<sup>2</sup>, and F. J. Loge<sup>1</sup>

<sup>1</sup>Department of Civil and Environmental Engineering, University of California, Davis

<sup>2</sup> Department of Wildlife, Fish and Conservation Biology, University of California, Davis

**Advancements in Delta Smelt Acoustic Tagging**

K. J. Eder<sup>1</sup>, T. Hung<sup>2</sup>, D. E. Thompson<sup>1</sup>, R. H. Piedrahita<sup>2</sup>, and F. J. Loge<sup>1</sup>

<sup>1</sup> Department of Civil and Environmental Engineering, University of California, Davis

<sup>2</sup> Department of Biological and Agricultural Engineering University of California, Davis

**The Effect the Pyrethroid Pesticide, Bifenthrin, on Reproductive Endpoints of Steelhead (*Oncorhynchus mykiss*)**

K.L. Forsgren, N. Riar, and D. Schlenk

Department of Environmental Sciences, University of California, Riverside

**\*Use of Two Dimensional Hydraulic and Sediment Transport Modeling in Design of Salmonid Rearing Habitat in the Sacramento River Floodplain**

P. Frank and M. Tompkins, Newfields

**\*Development of a Modeling Framework for Assessing Flood Management Performance and Floodplain Habitat Creation in the South Delta**

P. Frank, M. Tompkins, and J. Thomas, Newfields

**The California Delta: A World-Class Bass Fishery - Adult Largemouth Size and Growth Distribution in the Sacramento-San Joaquin Delta**

J. Frantzich and N. Ikemiyagi , Division of Environmental Science, Aquatic Ecology Section, California Department

of Water Resources

**[The Biomass of Invasive Bivalves in the Low Salinity Zone in August 2011](#)**

H. Fuller<sup>1</sup>, K. Gehrts<sup>1</sup>, D. Riordan<sup>1</sup>, and J. Thompson<sup>2</sup>

<sup>1</sup>California Department of Water Resources

<sup>2</sup>U.S. Geological Survey

**[Study on the Effect of Xenobiotics by Using Multiple Biomarkers on Delta Smelt \(\*Hypomesus transpacificus\*\)](#)**

S. Gandhi and S. Teh

Aquatic Health Program, University of California, Davis

**[Elevated Ammonium Concentrations Inhibit Total Nitrogen Uptake and Growth, Not Just Nitrate Uptake](#)**

P. Glibert<sup>1</sup>, J. Alexander<sup>1</sup>, D. Dugdale<sup>2</sup>, F. Wilkerson<sup>2</sup>, A. Parker<sup>2</sup>

<sup>1</sup>University of Maryland Center for Environmental Science, Horn Point Laboratory

<sup>2</sup>Romberg Tiburon Center for Environmental Studies, San Francisco State University

**[\\*A Framework for Developing Stream Flow and Thermal Regimes for Multiple Salmonid Species in the Central Valley](#)**

Li-Ming (Lee) He

NOAA's National Marine Fisheries Service, Southwest Region, Central Valley Office

**[\\*The Growth and Development of Copepods in the Food Limited San Francisco Estuary](#)**

T. Ignoffo<sup>1</sup>, A. Gould<sup>2</sup>, A. Slaughter<sup>1</sup> and W. Kimmerer<sup>1</sup>

<sup>1</sup>Romberg Tiburon Center for Environmental Studies, San Francisco State University

<sup>2</sup>University of Michigan

**[Integrated Regional Water Management Economic Assessments](#)**

R. Juricich

California Department of Water Resources

**[Statewide Water Analysis Network \(SWAN\)](#)**

R. Juricich

California Department of Water Resources

**[Water Plan Update 2013](#)**

R. Juricich

California Department of Water Resources

**[Water Planning Information Exchange](#)**

R. Juricich

California Department of Water Resources

**[Water Sustainability Indicators Framework](#)**

R. Juricich

California Department of Water Resources

**[An Analysis of Copepod Feeding Using FlowCAM](#)**

K. Kayfetz and W. Kimmerer

Romberg Tiburon Center, San Francisco State University

**[\\*Factors Influencing Delta Smelt Take During Chinook Salmon Monitoring Near Chipps Island Within the San Francisco Estuary](#)**

J.E. Kirsch, L.M. Smith, G. Castillo, and D.M. Barnard  
U.S. Fish and Wildlife Service

**[\\*DNA Barcoding of Toxin Producing Cyanobacteria in Clear Lake and Sacramento-San Joaquin Delta](#)**

T. Kurobe<sup>1</sup>, D.V. Baxa<sup>1</sup>, C. Mioni<sup>2</sup>, R. M. Kudela<sup>2</sup>, S. J. Teh<sup>1</sup>  
<sup>1</sup>School of Veterinary Medicine, Department of Anatomy, Physiology, and Cell Biology, University of California, Davis <sup>2</sup>Institute of Marine Sciences, University of California, Santa Cruz

**[If We Build It, Who Will Come? Importance of Predator-Prey Habitat Overlap to Restoration](#)**

Cynthia LeDoux-Bloom, Ph.D Candidate  
Animal Biology Graduate Group, University of California, Davis

**[\\*The Importance of Vegetated Ponds to Water Quality and Phytoplankton Carbon Production in Liberty Island, California](#)**

P. W. Lehman<sup>1</sup>, S. Mayer<sup>2</sup> and B. A. Larsen<sup>2</sup>  
<sup>1</sup>Division of Environmental Services, California Department of Water Resources  
<sup>2</sup>North Central Region Office, California Department of Water Resources

**[\\*Trends in Microcystis Abundance and Toxicity in San Francisco Estuary, 2004 to 2008](#)**

P. W. Lehman<sup>1</sup>, K. Marr<sup>1</sup>, G. Boyer<sup>2</sup>, S. Acuna<sup>3</sup> and S. Teh<sup>3</sup>  
<sup>1</sup>Division of Environmental Services, California Department of Water Resources  
<sup>2</sup>College of Environmental Science and Forestry, State University of New York  
<sup>3</sup>School of Veterinary Medicine, University of California, Davis

**[\\*Isotope Identification of Particulate Organic Matter and Nutrient Sources During \*Microcystis\* Blooms in San Francisco Estuary](#)**

P. W. Lehman<sup>1</sup>, C. Kendall<sup>2</sup>, S. Silva<sup>2</sup>, M. Young<sup>2</sup> and M. Guerin<sup>3</sup>  
<sup>1</sup>Division of Environmental Services, California Department of Water Resources  
<sup>2</sup>U.S. Geological Survey, Menlo Park, California  
<sup>3</sup>Resouce Management Associates, Fairfield, California

**[The Effect of Using Yearly-Changing Historical Land Use on DSM2 Simulation of Historical Delta Conditions](#)**

L. Liang  
California Department of Water Resources

**[\\*\\*Integrated Regional Water Management Tool: HydroDMS](#)**

J. Long, S. Najmus, A.Taghavi, Y. Noor, and M. Cayar  
RMC

**[Projected Impacts of Climate Change, Urbanization, and Water Management Scenarios on Ecology and Habitats of Waterfowl and Other Waterbirds in the Central Valley of California](#)**

E.L. Matchett<sup>1</sup>, J.P. Fleskes<sup>1</sup>, M.J. Petrie<sup>2</sup>, D.R. Purkey<sup>3</sup>, C.A. Young<sup>3</sup>, M. E. Reiter<sup>4</sup>, and J.M. Eadie<sup>5</sup>.  
<sup>1</sup>Western Ecological Research Center, U.S. Geological Survey  
<sup>2</sup>Ducks Unlimited, Inc, Vancouver, Washington  
<sup>3</sup>Stockholm Environment Institute, United States Center  
<sup>4</sup>PRBO Conservation Science

<sup>5</sup> Department of Wildlife, Fish & Conservation Biology, University of California, Davis

\* [Adventures in Multibeam Bathymetry in the Sacramento-San Joaquin Delta](#)

S. Mayr, S. Flory, W. Pearsall

<sup>1</sup>Division of Environmental Services, California Department of Water Resources

\* [Stable Isotope Analysis of Historical Zooplankton Samples to Document Food Web and Biogeochemical Changes in the San Francisco Estuary: Effect of Preservation Methods](#)

J. Modéran and W. Kimmerer

Romberg Tiburon Center for Environmental Studies, San Francisco State University

\*\* [Smart Particle Tracking Using DSM2-PTM](#)

K. Nam

California Department of Water Resources

\*\* [Suspended Sediment Predictions in California](#)

G. Nichol

[State Water Project Chloride Modeling Analysis](#)

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[Modifying Analytical Methods to Keep Up With Changing Pesticide Use in the San Francisco Estuary](#)

J. Orlando, M. Hladik, K. Smalling, and K. Kuivila,

California Water Science Center, U.S. Geological Survey, Sacramento, CA

[Temperature Preference – Avoidance Behavior of Adult Delta Smelt \(\*Hypomesus transpacificus\*\)](#)

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**Bird Response to Delta Restoration**

A. Pawley and R. Melcer

FloodSAFE Environmental Stewardship and Statewide Resources Office, California Department of Water Resources

[Data Management](#)

E. Reddy

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\*\* [Enhancement of the Sacramento-San Joaquin Delta Island Consumptive Use Estimates and Water Quality Redetections](#)

L. Siegfried and W. E. Fleenor

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\* [Predation Impact and Reproductive Rate of \*Acartiella sinensis\*, an Introduced Predatory Copepod in San Francisco Estuary](#)

A. Slaughter, T. Ignoffo and W. Kimmerer

Romberg Tiburon Center for Environmental Studies, San Francisco State University

**\*\*Towards a Systems Analysis of Yolo Bypass Uses and Opportunities**

R. Suddeth

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**Impact of Groundwater Banking and Extraction Program on Stream-Aquifer Interaction in North American GW Subbasin**

A. Taghavi<sup>1</sup>, R. Swartz<sup>2</sup> and M. Cayar<sup>1</sup>

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**\*\*San Joaquin River Restoration Daily Flow Model**

T. Vandegrift

U.S. Bureau of Reclamation, TSC

**\*\*Using Nitrate Stable Isotopes to Identify Dominant Nitrate Sources and Processes Impacting Groundwater and Surface Water in the Central Valley, California**

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# ***IEP NEWSLETTER***

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- Issue 3 – June 29, 2012
- Issue 4 – Sept 28, 2012
- Issue 1 – Jan 18, 2013