

ASILOMAR

2003

February 25–28



California Water and
Environmental Modeling Forum
&
Interagency Ecological Program Workshop

10:15 –12:00 p.m.

Session One: Long-Term Water Planning Use

Moderator: Jay Lund (UC Davis)

Location: Chapel

Modeling Operation Response and Economics of Level 4 Refuge
Deliveries - John Jordan, Dean McLeod, and Josh Hoffman
(USBR)

CALVIN Climate Change - Jay Lund (UC Davis)

Delta Water Quality and Sea Level Rise - Jamie Anderson (DWR)

San Francisco Water Supply and O'Shaughnessy Dam Removal -
Sarah Null (UC Davis)

Session Two: Modeling Water Transfers

Moderator: Rob Tull (CH2M Hill)

Location: Oak Shelter

CALFED Perspectives on Transfers - Richard Hunn (CALFED)

Potential Water Transfer Modeling Approaches - Armin Munevar
(CH2M Hill)

Metropolitan's Evaluation of the 2003 Colorado River Contingency
Transfer - Paul Hutton (MWD)

CALSIM II Delta Carriage Water Model - Ryan Wilbur (DWR)

10:15 –12:00 p.m.

**Session Three: Sorting It All Out: Sources of Degradation Between
Old River and Contra Costa Water District's Pumping Plant**

Moderator: Lisa Holm (CCWD)

Location: Acacia

Flow Dynamics and Salt Flux Near Rock Slough (ADCP Field Work) - Jim
Scarborough (DWR)

Identifying Local Watershed Contributions to the Contra Costa Canal -
Samantha Salvia (CCWD)

Identifying Local Watershed Contributions to Rock Slough - Dave
Huston (DWR)

Lunch 12:00 - 1:00 p.m.

1:15 –3:15 p.m.

Session Four: DHI Water and Environment

Moderator: Nigel Quinn (LBL/USBR)

Location: Chapel

IMPACT, A Spatial Decision Support System for Prioritization of River
Restoration Projects - Jesper Weiergang, Jørgen Krogsgaard Jensen,
Carter Borden (DHI), Peter Goodwin and Piotr Jankowski (University
of Idaho)

Water Forecast: A Case Study from Copenhagen Harbour - Mikkel Andersen
and Karl Iver Dahl-Madsen (DHI)

Early Warning for Detection and Tracking of Pollutants in Canals and Rivers:
Integration of Hydrological Models and Real-Time Data Accumulation
Systems - Jesper Kjelds and Mads Madsen (DHI)

1:15 –3:15 p.m. continued

Session Five: Hydrodynamic Modeling

Moderator: Pete Smith (USGS)

Location: Oak Shelter

Modeling Rivers and Estuaries Using the UnTRIM Model - Ralph Cheng
(USGS)

Three-Dimensional Hydrodynamic Modeling of San Francisco Bay and
Tomales Bay - Ed Gross (Consultant)

An Eight-Reach Network Model for Daily Delta Salinity - Hubert
Morel-Seytoux (Hydrology Days Publications)

Session Six: CALFED ROD

Moderator: Chuching Wang (MWDSC)

Location: Nautilus

CALFED ROD Actions and ELPH Strategy - Linda Smith (MWDSC)

CVP Sharing of 8500 cfs Banks Pumping Plant: Analysis of Strategies for
Increased CVP Use of JPOD - Armin Munevar (CH2M Hill)

Potential Water Supply and Water Quality Benefit Associated with a Sites
Reservoir - Sean Sou (DWR)

Evaluation of Water Supply / Water Quality Benefit Associated with CALFED
ROD Actions - Chuching Wang (MWDSC)

Room Registration 3:15 –4:00 p.m.

4:00 –6:00 p.m.

Session Seven: CALSIM II Modeling Activities During 2002

Moderator: Sushil Arora (DWR)

Location: Chapel

CALFED/DWR/USBR CALSIM II Model Technical Coordination Team Effort -
Rob Leaf (CH2M Hill), Lloyd Peterson (USBR) and Sushil Arora (DWR)

Representation of Delta Salinity Requirements in CALSIM: Updated ANN
Implementation - Ryan Wilbur (DWR) and Armin Munevar (CH2M Hill)

Development of a Simplified SWP/CVP System Daily Time-Step CALSIM
Model - Dan Easton (DWR)

Comparison of Project Operations under Pre-Wanger and Post-Wanger
Decision Approaches to Implement CVPIA (b) (2) within CALSIM II -
Messele Ejeta (DWR)

Development of CALSIM 2.0: Progress Report - Ryan Wilbur, Andy
Draper and Clay Booher (DWR)

Session Eight: Delta Simulation Model 2 (DSM2)

Moderator: Tara Smith (DWR)

Location: Kiln

Determination of Maximum SWP Pumping Given the Constraints of Clifton
Court Forebay Stage and Old River Velocity - Bijaya Shrestha and
Parviz Nader-Tehrani (DWR)

DOC Source Contributions at Selected Locations Within the Delta Using DSM2
Fingerprinting - Jamie Anderson (DWR)

Calibrating DSM2 Dispersion Factors to Practical Salinity - Michael
Mierzwa (DWR)

4:00 –6:00 p.m. Continued

Session Eight: Delta Simulation Model 2 (continued)

Reformulation of Artificial Neural Networks Used to Emulate DSM2 - Ralph Finch and Aaron Miller (DWR)

A Graphical User Interface, Database, and Data Tools for DSM2 Input - Eli Ateljevich and Tawnly Pranger (DWR)

Simulating the Effects of South Delta Auxiliary Flows on the San Joaquin River Dissolved Oxygen Levels - Hari Rajbhandari (DWR)

Session Nine: Department of Water Resources (DWR)/Army Corps of Engineers (ACE) Comprehensive Study

Moderator: Mike Mirmazaheri (DWR)

Location: Oak Shelter

Storm Centering and HEC-5 Applications in the Comprehensive Study - Brett Within and Kyle Keer (ACE)

Applications of the UNET and FLO-2 Models in the Comprehensive Study - Scott Stonestreet (ACE)

Flood Damage Assessments Using UNET and FLO 2 Results - Steve Cowdin (DWR)

The Comprehensive Study's Ecosystem Function Model - Gary Lemon (DWR)

Dinner 6:00 - 7:00p.m.

Forum Social and Evening Program (Chapel)

7:30 Presentation of the Hugo B. Fisher Award

7:40 Remarks by Hugo B. Fisher Award Recipient

8:00 Featured Speaker

**River Restoration, Where We've Been and Where We're Going :
Are Good Intentions Enough?**

Matt Kondolph

UC Berkeley

Breakfast 7:00 a.m.

8:15 –9:30 a.m.

Modeling Forum Plenary Session

Location: Chapel

- 8:15 Welcome - Nigel Quinn (LBL/USBR)
- 8:20 Report on IGSM Review - Nigel Quinn (LBL/USBR)
- 8:25 Report on Instream Flow Assessment Review and Protocols - John Williams (CWEMF)
- 8:35 Report on Workshops and Other Activities - John Williams (CWEMF)
- 8:45 Executive Director's Report - John Williams (CWEMF)
- 9:00 Business Meeting
 - Ratification of New Executive Director
 - Election of Officers and Steering Committee
- 9:30 Adjourn

Break 9:30 –10:00 a.m.

10:00 –12:00 p.m.

Session Ten: International Perspectives on Environmental Support Systems

Moderator: Nigel Quinn (LBL/USBR)
Location: Chapel

An Integrated Decision Support Architecture for the Environmental Domain -
Ralf Denzer (Saarland State University, Germany)

Precision Evaluation of the Cost of Environmental Protection Measures in
Agriculture: One Example - David Swayne (University of Guelph,
Canada)

Integrated Environmental Modeling: Issues of Components, Frameworks and
Semantics - Robert Argent (University of Melbourne, Australia)

Concepts and Architecture for Environmental Monitoring Systems -
Gerald Schimak (Austrian Research Centers, Siebersdorf, Austria)

10:00 –12:00 p.m. continued

Session Eleven: Beyond Linear Regression

Moderator: Peter Baker (Stillwater Sciences)

Location: Kiln

Beyond Linear Regression - Peter Baker (Stillwater Sciences)

Comparing a Possibly Impacted Site with a Control Site: Testing for Ecological Bioequivalence Using Randomization Tests - Bryan Manly (WEST/ University of Otago)

Assessing Quantitative Relationships Between Chinook Salmon (*Oncorhynchus tshawytscha*) and GIS-derived Habitat Data - Rob Schick (NMFS)

Time Series of Abundance from Sparse Data Sets: Comparing Delta-GLM Methods - Edward Dick (NMFS)

State-Space Modeling of Sacramento River Winter-Run Chinook Salmon - Ken Newman (University of Idaho)

Session Twelve: Integrated Hydrological Models

Moderator: Tariq Kadir (DWR)

Location: Oak Shelter

A Review of IGSM - Graham Fogg and Eric Labolle (UCD)

IGSM2: Features, Documentation, Availability, and Technical Support - Can Dogrul and Monica Martin (DWR)

Field Testing InHM - Joel Vanderkwaak (Integrated Hydrology, Inc./Stanford University), Keith Loague, Christopher Heppner, Adrienne Carr and Brian Ebel (Stanford University)

An Effective Numerical Approach for Multi-Scale Conjunctive Modeling of Surface-Groundwater Flow and Solute Transport - Sorab Panday, Peter Huyakorn, and W. Jones (Hydrogeologic, Inc.)

Lunch 12:00 -1:00 p.m.



Wednesday Afternoon

Session One: Program Overview

Moderator: Chuck Armor (DFG)

Location: Chapel

1:00 IEP Update - Chuck Armor (DFG)

1:20 CALFED Science - Sam Luoma (CALFED Science)

1:40 Modeling Forum Update - Nigel Quinn (USBR/LBL)

2:00 Summary of Population Indices Workshop - Mike Chotkowski (USBR)

Break 2:20 - 2:40 p.m. (Chapel)

Session Two: Modeling Forum / IEP Joint Presentations

Moderator: Mike Chotkowski (USBR)

Location: Chapel

2:40 Applications of 3-D Hydrodynamic and Particle Tracking Models to the Bay and Delta - Pete Smith (USGS)

3:05 Quantifying Conceptual Models - Mike Healey (University of British Columbia)

3:30 California Water Plan Update 2003 - Kamyar Guivetchi (DWR)

Room Registration: 4:00 - 6:00 p.m.

Break-out Sessions: 4:00 - 6:00 p.m.

Wednesday Afternoon

Break-Out Session One: Bulletin 160

Moderator: Ray Hoagland (DWR)

Location: Chapel

Modeling for the California Water Plan - Mohammad Rayej (DWR)

Urban Water Management Modeling with LCPSIM - Ray Hoagland (DWR)

CALSIM II Model Evaluation: Simulation of Historical Conditions, and 2030 Hydrological Development Updates - Andy Draper, Sina Darabzand and Erik Reyes (DWR)

Break-Out Session Two: CWEMF Protocols for Instream

Flow Assessment

Moderator: John Williams (CWEMF)

Location: Kiln

Introduction to the Protocols - John Williams (CWEMF)

Hydraulic Models in Instream Flow Assessment - Mike Deas (Watercourse Engineering)

Biological Models in Instream Flow Assessment - Bill Bennett (UCD)

Resources Selection Functions - Bryan Manly (WEST/University of Otago)

Break-Out Session Three: San Joaquin Basin Hydrology & Simulation

Moderator: Walter Bourez (MBK Engineers)

Location: Oak Shelter

Hydrology Development and Simulation - Walter Bourez (MBK Engineers)

Operations in the San Joaquin Basin - Dan Steiner (Consultant)

CALSIM Coding for the San Joaquin Basin - Nancy Parker (USBR)

Wednesday Evening

Dinner: 6:00–7:00 p.m.

Featured Speaker: 7:00 – 8:30 p.m. (Chapel)

An Overview of Everglades Restoration: Scientific Goals and Logistical Challenges

Carole McIver, USGS
Science Center for Coastal and Watershed Studies
St. Petersburg, Florida

Reception: 8:30 - 10:00 p.m.

Thursday Morning

Breakfast 7:30 - 8:15 a.m.

Announcements 8:15 a.m.

Location: Chapel

Session Three: Delta Smelt

Moderator: Kevin Fleming (DFG)

Location: Chapel

- 8:20 Delta Smelt Strategic Plan - Bruce Herbold (USEPA)
- 8:40 Louver Efficiency at the Tracy Fish Collection Facility - Mark Bowen (USBR)
- 9:00 Maturity Status and Distribution of Pre-spawning Delta Smelt in the Sacramento-San Joaquin Delta: Results from the 2002 Spring Kodiak Trawl - Kelly Souza (DFG)
- 9:20 Status of the Production and Research of Delta Smelt - Bradd Baskerville-Bridges (UCD)
- 9:40 Effect of Spawning Substrate and Water Velocity on Spawning Response of Captive Delta Smelt - Joan Lindberg (UCD)

Break 10:00 - 10:20 a.m. (Fred Farr Forum)

Poster Session 10:00 - 12:00 p.m.

Coordinator: Peggy Lehman

Location: Fred Farr Forum

Lunch 12:00 - 1:00 p.m.

Thursday Afternoon

Session Four: Collection, Handling, Trucking, and Release:

What We Know and What We Don't Know

Moderator: Ken Lentz (USBR)

Location: Chapel

- 1:00 Introduction - Ken Lentz (USBR)
- 1:05 Historical Collection, Handling, Transportation and Release - 1901 to 1996 - Dan Odenweller (NMFS)
- 1:20 Recent USBR Experiences and Assessments of Fish Holding at Facilities in the Central Valley - Charles Liston and Brent Bridges (USBR)
- 2:00 Transporting and Redistributing Fish in the South Delta: a California Bay-Delta Authority (formerly CALFED) Perspective on Needs - Darryl Hayes(CH2MHill)
- 2:20 Questions & Answers

Break: 2:30 - 6:00 p.m.

Dinner: 6:00 - 7:00 p.m.

Session Five: Potpourri

Moderator: Matt Nobriga (DWR)

Location: Chapel

- 7:00 Hydrodynamics of Sherman Lake: A Shallow Estuarine Environment- Cathy Ruhl (USGS)
- 7:20 Come Hell or High Water: Rearing Juvenile Chinook Salmon in a Large River Floodplain - Ted Sommer and Fred Feyrer (DWR)
- 7:40 Scampi Please - Kathy Hieb (DFG)

Talent Show and Reception: 8:15 - 10:30 p.m. (Chapel)

Friday Morning

Breakfast: 7:30 - 8:15 a.m.

Announcements: 8:15 a.m. (Chapel)

Session Six: Water Quality and Plankton

Moderator: Peggy Lehman (DWR)
Location: Chapel

- 8:20 Long-Term Trends in Phytoplankton - Peggy Lehman (DWR)
- 8:45 The New Face of the IEP Environmental Monitoring Program - Anke Solger-Muller (DWR)
- 9:05 Bay Salinity Monitoring - Greg Shellenbarger (USGS)
- 9:30 Can We Revise the Methods Used in Zooplankton Monitoring? - Wim Kimmerer (Romberg Tiburon Center)

Break: 10:00 - 10:20 a.m. (Chapel)

Session Seven: Salmon

Moderator: Paul Cadrett (USFWS)
Location: Chapel

- 10:20 Current Status of Spring-run Chinook Salmon in Sacramento River watershed Related to Habitat Restoration - Qinqin Liu (DFG)
- 10:40 An Assessment of Indirect Mortality on Late-Fall Juvenile Salmon in the Delta - Pat Brandes (USFWS)
- 11:00 Evaluation of Salmon Smolt Behavior Related to Delta Hydrodynamics - Dave Vogel (Natural Resource Scientists, Inc.)

Wrap-Up: 11:20 a.m. - Chuck Armor

Lunch 12:00– 1:00 p.m.

Fisheries Posters

Early Life History of Fishes in the San Francisco Estuary and Watershed: Symposium and Proceedings Volume

Frederick Feyrer¹, Larry Brown², James Orsi³ and Randall Brown⁴

¹CA Department of Water Resources, Sacramento, CA

²US Geological Survey, Sacramento, CA

³CA Department of Fish and Game, Stockton, CA

⁴CALFED, Sacramento, CA

The Spring Head of Old River Barrier Timeline: A Tale of Entrainment

Andrew Rockriver - CA Department of Fish and Game, Stockton, CA

Species Composition and Emigration Patterns of Lower Feather River Fishes

Alicia Seesholtz, Brad Cavallo, Jason Kindopp, and Ryon Kurth

Division of Environmental Services, CA Department of Water Resources,
Sacramento, CA

A Critique of Salmon Spawning Escapement Data: Sources of Bias and Potential Solutions

Brad Cavallo, Ryon Kurth, Jason Kindopp and Alicia Seesholtz

Division of Environmental Services, CA Department of Water Resources,
Sacramento, CA

Trends in Adult Fish Use on the Yolo Bypass Floodplain

Bill Harrell, Ted Sommer, Gavin O'Leary and Steve Zeug

Division of Environmental Services, CA Department of Water Resources,
Sacramento, CA

Will the Native Osmerid Please Stand Up? Distinguishing Delta Smelt and Wakasagi at the Early Larval Stages

Linda Rivard¹, Lenny Grimaldo¹, Lisa Lynch², Brent Bridges³ and Johnson Wang³

¹Division of Environmental Services, CA Department of Water Resources,
Sacramento, CA

²California Department of Fish and Game, Stockton, CA

³US Bureau of Reclamation, South-Central California Area Office, Byron, CA

(Fisheries Posters Continued)

Small Fish Identification Using Digital Imaging

Rene C. Reyes and Johnson Wang
U.S. Bureau of Reclamation, Byron, CA

Hydrodynamics

Suisun Bay & Delta Bathymetry: Production of a 10-meter Grid

Richard E. Smith¹, Amy Foxgrover² and Peter E. Smith³

¹US Geological Survey - WRD, Menlo Park, CA

² US Geological Survey - CMG, Santa Cruz, CA

³US Geological Survey - WRD, Sacramento, CA

Visualization of 3D Velocities and Particle Tracks

John M. Donovan and Peter E. Smith
US Geological Survey - WRD, Sacramento, CA

Computer Technology

The New Web Interface for Bay-Delta & Tributaries Database

Karl Jacobs and Chris Fox
Division of Environmental Services, CA Department of Water Resources,
Sacramento, CA

Water Quality Monitoring

Transparency Tube / Water Quality Relationships in the Central Valley Bay-Delta

Randy Dahlgren¹, Erwin Van Nieuwenhuyse,² and Zengshou Yu¹

¹University of California Davis, Davis, CA and

²US Bureau of Reclamation, Sacramento, CA

CALFED Conference: Map of CALFED Agencies Water Quality Sampling Sites in the Bay and Delta.

Marc Vayssières
Division of Environmental Services, CA Department of Water Resources,
Sacramento, CA

(Water Quality Monitoring Continued)

Flooding from Local Stream Discharges in the Northern Yolo Bypass

Larry Schemel¹, Steve Hager¹, Marisa Cox¹, Bill Harrell² and Ted Sommer²

¹Water Resources Division, U.S. Geological Survey, Menlo Park, CA

²Division of Environmental Services, CA Department of Water Resources, Sacramento, CA

Sources of Oxygen Demand in the Lower San Joaquin River

Peggy Lehman

Division of Environmental Services, CA Department of Water Resources, Sacramento, CA

Low Flow, High Flow: Which Way Will the D.O. Go? Fall Stockton Ship Channel D.O. : The Status Quo.

James Giulianotti and Steven P. Hayes

Division of Environmental Services, CA Department of Water Resources, Sacramento, CA

Restoration Planning for McCormack-Williamson Tract: Conceptual Models, Key Uncertainties and Adaptive Management

C.R. Zemitis¹, C. Schmutte, G. Knittweis¹, J. Mount,² and Keith Whitener³

¹CA Department of Water Resources, Sacramento, CA

²Center for Integrated Watershed Research and Management, University of California Davis, Davis, CA

³The Nature Conservancy, Galt, CA

Real-Time Monitoring of Organic Carbon in the Delta

Jim Sickman, David Gonzalez and Steve San Julian

Office of Water Quality, Division of Environmental Services, CA Department of Water Resources, Sacramento, CA

Lower Food Web

Westward Ho: Zebra Mussels on the Move

Cindy Messer and Tanya Veldhuizen
Division of Environmental Services, CA Department of Water Resources,
Sacramento, CA

IEP Workshop: Contrasts of Benthic Samples Taken on the Left, Right and Center of the Sacramento River Channel Above Point Sacramento from 1977 to 1995

Marc Vayssières
Division of Environmental Services, CA Department of Water Resources,
Sacramento, CA

Analysis of the EMP Benthos Data at Grizzly Bay (D7) and Suisun Bay (D6) for Water Years 1995-2001

Karen Gehrts, Cindy Messer¹ and Steven Slater²
¹Division of Environmental Services, CA Department of Water Resources,
Sacramento, CA
²Central Valley Bay-Delta Branch, CA Department of Fish and Game,
Stockton, CA

The Influence of Climate on Phytoplankton in the Northern San Francisco Bay Estuary

Peggy Lehman, DWR
Division of Environmental Services, CA Department of Water Resources,
Sacramento, CA