



California Water and Environmental Modeling Forum

2008 Annual Meeting Agenda

“Modeling for Decision Support under Changing Conditions”



February 26-28, 2008

Asilomar Conference Grounds
800 Asilomar Boulevard
Pacific Grove, California



California Water and Environmental Modeling Forum 2008 Annual Meeting Summary of Sessions

Tuesday, February 26, 2008

| Time | Session | Moderator | Location |
|-------------------|---|------------------|---------------------------------|
| 10:15 am-12:00 pm | 1: Modeling for the California Water Plan Update 2009 | Rich Juricich | Heather |
| | 2: REALM: River, Estuary And Land Model | Eli Ateljevich | Acacia |
| 12:00-1:00 pm | Lunch | --- | Dining Hall |
| 1:15-3:00 pm | 3: Decision Support Approaches for Climate Change | Armin Munevar | Heather |
| | 4: Delta Hydrodynamics/Particle Tracking | Pete Smith | Acacia |
| 3:00-4:00 pm | Registration | --- | Social Hall |
| 4:15-6:00 pm | 5: To Panic or Not Panic: Adapting Management of Water Resources for Climate Change | Jamie Anderson | Heather |
| | 6: Overland and Underground Water Integrated Modeling | H. Morel-Seytoux | Acacia |
| 6:00-7:00 pm | Dinner | --- | Dining Hall |
| 7:00-10:00 pm | 7: Reception I and Poster Session | Mike Deas | Heather, Acacia and Toyon |
| 8:00-8:45 pm | Hugo B. Fischer Award/Presentation by Recipient | KT Shum | |
| 8:45-9:30 pm | Career Achievement Award/Presentation by Recipient | Rich Satkowski | |

Wednesday, February 27, 2008

| Time | Session | Moderator | Location |
|-------------------|--|---------------|-------------|
| 7:30-8:15 am | Breakfast | --- | Dining Hall |
| 8:15-9:00 am | 8: CWEMF Activities / Annual Business Meeting | Tara Smith | Heather |
| 9:00-10:00 am | 9: Pop-Up Talks I: 5-Minute Overviews of Modeling Work | Nigel Quinn | Heather |
| 10:15 am-12:00 pm | 10: Salmon Modeling, a Medley of Modern Methods | John Williams | Heather |
| | 11: CalLite: CVP-SWP System Screening Model | Sushil Arora | Acacia |
| | 12: 2007 DSM2 Developments and Applications | Tara Smith | Toyon |
| 12:00-1:00 pm | Lunch | --- | Dining Hall |
| 1:00-2:40 pm | 13: Status and Trends: Putting 2007 in Perspective | Randy Baxter | Chapel |
| 3:00-5:00 pm | 14: IEP/CWEMF Joint Session -- Conceptual or Quantitative: How Do You Prefer Your Modeling? | Kevin Reece | Chapel |
| 4:15-5:00 pm | Registration | --- | Social Hall |
| 4:15-6:00 pm | 15: DRERIP Conceptual Models | Darcy Jones | Heather |
| | 16: 2007 CalSim-III Developments | Hongbing Yin | Acacia |
| | 17: Remote Sensing Data to Estimate Land & Water Use | Rich Juricich | Toyon |
| 6:00-7:00 pm | Dinner | --- | Dining Hall |
| 7:00-9:00 pm | 18: Keynote Speaker: "Fish Health as a Tool" Tracy Collier, Director of NOAA Environmental Conservation Division | IEP Rep | Chapel |

Thursday, February 28, 2008

| Time | Session | Moderator | Location |
|-------------------|--|----------------|-------------|
| 7:30-8:15 am | Breakfast | --- | Dining Hall |
| 8:15-10:00 am | 19. Post-PPIC Technical Insights for Long-Term Management of the Delta | Jay Lund | Heather |
| | 20. Integrated Watershed Modeling | George Matanga | Acacia |
| 10:15 am-12:00 pm | 21: Wanger Delta Smelt Decision I | Paul Hutton | Heather |
| | 22: Quantifying Uncertainties and Sensitivity Analyses in Simulation and Optimization Models | Tariq Kadir | Acacia |
| 12:00-1:00 pm | Lunch / Check-Out | --- | Dining Hall |
| 1:15-2:00 pm | 23: Pop-Up Talks II: 5-Minute Overviews of Modeling Work | Nigel Quinn | Heather |
| 1:15-3:00 pm | 24: Dealing with Modeling Uncertainty: Producing Reasonable Results for Decision Makers | Walter Bourez | Acacia |
| 2:15-4:30 pm | 25: Wanger Delta Smelt Decision II | Paul Hutton | Toyon |

Note: Please see page 14 for a summary of the Interagency Ecological Program's February 27-28, 2008 sessions.



2008 Annual Meeting Agenda

Version Date:
February 22, 2008

10:15 a.m.-12:00 p.m.

Session One: Modeling for the California Water Plan Update 2009

Moderator: Rich Juricich (CA DWR)

Location: Heather

Water Plan Stories - Scenario Narratives for the California Water Plan,
David Groves (RAND Corporation) and Rich Juricich (CA DWR)

Cry Me a River – Using the WEAP Model for High Level Scenario Analysis,
David Purkey (Stockholm Environment Institute) and Mohammad Rayej (CA DWR)

New Investments in Water Portfolios, Todd Hillaire (CA DWR)

Evaluating Variable ETAW on the South Coast with SIMETAW,
Morteza Orang (CA DWR)

Session Two: REALM: River, Estuary And Land Model

Moderator: Eli Atelevich (CA DWR)

Location: Acacia

Overview of the REALM Development Project, Eli Atelevich (CA DWR)

Numerical Methods Used for REALM, Phillip Colella (LBNL)

Geometry Processing, Qiang Shu (CA DWR) and Peter Schwartz (LBNL)

Discussion

12:00-1:00 p.m. — Lunch

Note: Tuesday lunch is not included in the lodging or registration fees. A limited number of complimentary lunch tickets are available from CWEMF representatives. Alternatively, tickets may be purchased separately in the Social Hall at the registration counter.



1:15-3:00 p.m.

Session Three: Decision Support Approaches for Climate Change Assessments

Moderator: Armin Munévar (CH2M Hill)
Location: Heather

Hydrologic Variability and the Role of Modeling under Climate Change, KT Shum (EBMUD)

Scenario Methods for Climate Change Impact Evaluations, Jamie Anderson (CA DWR)

Ensemble-Based Methods for Relating Climate Information to Water Resources Planning, Levi Brekke (USBR)

Paleoclimate Perspectives of System Vulnerability, Resiliency, and Reliability, Armin Munévar (CH2M Hill)



Session Four: Delta Hydrodynamics/Particle Tracking

Moderator: Pete Smith (USGS)
Location: Acacia

Tracking of Smart Particles: Individual Based Modeling of Stripped Bass Population Dynamics in San Francisco Bay, Arash Massoudieh (UC Davis)

Strategies for Optimizing Computationally Intensive 3D Particle Tracking within the Delta, John Donovan (USGS)

Three-Dimensional Particle Tracking Simulations Driven by the Bay-Delta UnTRIM Model, Edward Gross (Bay Modeling) and Michael MacWilliams (River Modeling)

Particle Tracking in the Combined 1D and 2D Finite Element Network Utilized by the RMA Bay-Delta Model, John DeGeorge (RMA)

3:00-4:00 p.m. — Registration (Social Hall)



4:15-6:00 p.m.

Session Five: To Panic or Not to Panic, Adapting Management of Water Resources for Climate Change

Moderator: Jamie Anderson (CA DWR)

Location: Heather

Agencies in Action: How Some California Water Agencies are Dealing with Climate Change, Michael Anderson (CA DWR)

Don't Panic, Cooperate: The Potential and Limits of Optimization, Jay Lund (UC Davis)

Indemnifying Hydropower Generation Against Climate Change, Kaveh Madani (UC Davis)

Statistically-Downscaled WCRP CMIP3 Climate Projections, Levi Brekke (USBR)

Session Six: Overland and Underground Water Integrated Modeling

Moderator: Hubert Morel-Seytoux (Hydroprose International Consulting)

Location: Acacia

Linking Groundwater to Cropping Patterns in a Model of the Klamath Project, Brian Joyce (SEI-USA)

Estimating Regional Impacts of Conjunctive Use with an Integrated Hydrologic Model of California's Central Valley, Charlie Brush (CA DWR)

The Integrated Hydrologic Model: Concepts and Applications, Alaa Aly and Patrick Tara (INTERA Inc.)

Decision Support Tools for Integrated Regional Water Management Planning, Ali Taghavi (WRIME)

6:00-7:00 p.m. — Dinner

7:00-10:00 p.m.

Session Seven: Evening Program

Moderator: KT Shum (CWEMF Past-Convener/EBMUD)

Location: Heather, Acacia and Toyon

7:00-10:00 p.m. Reception I and Poster Session

Poster session sponsored by Watercourse Engineering.

Reception sponsored by CWEMF and CH2M Hill.

8:00-8:45 p.m. Presentation of the Hugo B. Fischer Award and Remarks by the Award Recipient

8:45-9:30 p.m. Presentation of the Career Achievement Award and Remarks by the Award Recipient



7:30-8:15 a.m. — Breakfast

8:15-9:00 a.m.

Session Eight: CWEMF Activities / Annual Business Meeting

Moderator: Tara Smith (CWEMF Convener / CA DWR)

Location: Heather

- 8:15 Introduction — Tara Smith (CWEMF Convener, CA DWR)
- 8:25 Report on CWEMF Model User Groups — Nigel Quinn (LBNL/USBR)
- 8:30 Report on CWEMF Workshops — Paul Hutton (Vice-Convener/MWDSC)
- 8:35 Executive Director's Report — Rich Satkowski (CWEMF)
- 8:45 Annual Business Meeting — Tara Smith
 - Declaration of a Quorum
 - Business Reports
 - Officer Elections
 - 2008 CWEMF Activities
 - Other Business



9:00-10:00 a.m.

Session Nine: Pop-Up Talks

Moderator: Nigel Quinn (LBNL/USBR)

Location: Heather

- 9:00 Pop-Up Talks

Five-minute overviews summarizing California water and environmental modeling work. A maximum of three PowerPoint slides per speaker. To sign up for a talk, please contact a CWEMF representative.

10:15 a.m.-12:00 p.m.

Session Ten: Salmon Modeling: A Medley of Modern Methods

Moderator: John Williams (Consultant)

Location: Heather

Hierarchical Modeling of Juvenile Chinook Salmon Survival in the Lower Portions of the San Joaquin River System using Paired Coded-Wire-Tag Release-Recovery Data, Ken Newman (USFWS)

A Generic Robust Design for Monitoring Steelhead Runs using PIT Tags: Relationship between Effort and Precision, David Boughton (NMFS)

Investigating the Role of Environmental Drivers and Density-Dependent Mechanisms on Recovery of Central Valley Chinook, Noble Hendix (R2 Consultants)

The Sacramento Ecological Flows Tool (SacEFT): Expanding and Communicating Ecological Considerations Used to Evaluate Water Management Alternatives on the Sacramento River, Clint Alexander (ESSA Technologies Ltd) and Ryan Luster (TNC)

10:15 a.m.-12:00 p.m. (Continued)

Session Eleven: Development of CalLite: CVP-SWP System Screening Model

Moderator: Sushil Arora (CA DWR)

Location: Acacia



Introduction to CalLite Screening Model Development,
Francis Chung (CA DWR)

Innovative Features of CalLite Screening Model and a Live Demo,
Nazrul Islam and Sushil Arora (CA DWR)

Example Implementations of Water Management Actions using CalLite,
Erik Reyes (CA DWR)

CalLite Forecast Allocation Module,
Randi Field (USBR)

Explorations in Hydroclimate, Demand, and Delta Uncertainty,
Armin Munevar (CH2M Hill)

Session Twelve: 2007 DSM2 Developments and Applications

Moderator: Tara Smith (CA DWR)

Location: Toyon

Magnitude of Dispersion Factors in DSM2 - What Values are Appropriate?,
Qiang Shu (CA DWR)

Real-Time DSM2 Simulation: An Update,
Abdul Khan, Amrit Sandhu, and Tracy Hinojosa (CA DWR)

Estimation of Carriage Water for Summer of 2007 Using DSM2,
Abdul Khan, Andy Chu, and Tracy Hinojosa (CA DWR)

Status and Update on DSM2 Version 7, Eli Atelevich and Qiang Shu (CA DWR)

12:00-1:00 p.m. — Lunch



1:00-2:40 p.m.

Session Thirteen: Status and Trends: Putting 2007 in Perspective

Moderator: Randy Baxter (CA DFG)

Location: Chapel

Introduction to the Workshop, Chuck Armor (CA DFG)

Happy as a Clam: The Environmental Monitoring Program's Benthic Element,
Karen Gehrts (CA DWR)

Phytoplankton Community Composition: The Rise of the Flagellates,
Tiffany Brown (CA DWR)

Zooplankton Distribution and Abundance Trends in the
Upper San Francisco Estuary, April Hennessy (CA DFG)

Abundance and Distribution Trends of Demersal Species in
the Upper San Francisco Estuary, Max Fish (CA DFG)

Distribution, Trends, and Abundance of POD Species in the
Upper San Francisco Bay Estuary, Dave Contreras (CA DFG)



3:00-5:00 p.m.

**Session Fourteen: IEP / CWEMF Joint Modeling Session –
Conceptual or Quantitative: How Do You Prefer Your Model?**

Moderator: Kevin Reece (CA DWR)

Location: Chapel

From Concept to Utility: The Use of Conceptual Models in Ecosystem
Restoration Planning, Bruce Herbold (US EPA)

What's Driving Spring-Run Chinook Populations?, Jody Lando (Cramer Fish Science)

The IOS Salmon Model: An Interactive "Blackboard" for Managers Evaluating Alternative
Facilities, Operations and Enhancement Actions, Brad Cavallo (Cramer Fish Science)

A Fishy Tale: Splittail Population Dynamics and Delta Water Management,
Ted Foin (UC Davis)

California and Environmental Water Modeling Forum, Tara Smith (CA DWR)

Coastal Margin Observatories: What Role in Sacramento-San Joaquin Delta Issues?
Antonio M. Baptista (Oregon Health and Science University)

4:15-5:00 p.m. — Registration (Social Hall)

4:15-6:00 p.m.

Session Fifteen: Delta Regional Ecosystem Restoration Implementation Plan (DRERIP) Conceptual Models: Processes, Habitats, Stressors, and Species

Moderator: Darcy Jones (CALFED)

Location: Heather

DRERIP Transport Conceptual Model: Delta Hydrodynamics,
Jon Burau (USGS)

A Conceptual Model for Central Valley Floodplains,
Jeff Opperman (U.C. Davis and The Nature Conservancy)

Chemical Stressors in the Sacramento-San Joaquin Delta – Conceptual Model,
Inge Werner (UC Davis).

Conceptual Models for Central Valley Salmonids,
Jon Rosenfield (Aquatic Restoration Consulting)

Session Sixteen: 2007 CalSim-III Developments

Moderator: Hongbing Yin (CA DWR)

Location: Acacia

Where We Are on CalSim-III Development,
Sushil Arora (CA DWR)

CalSim-III Sacramento Valley Hydrology Updates
And Extension to San Joaquin Valley Hydrology,
Andy Draper (MWH Inc.) and Temoc Rios (USBR)

Simulating Rice Operations for Use in CalSim-III Hydrology Development,
Dustin Jones (CA DWR)

Direct Linkage Between CalSim-III and C2VSIM through IWFEM Groundwater Module,
Can Dogrul (CA DWR)

Preliminary Comparison of CalSim-III and CalSim-II Model Results,
Erik Reyes (CA DWR)



4:15-6:00 p.m. (Continued)

Session Seventeen: Use of Remote Sensing Data to Estimate Land and Water Use

Moderator: Rich Juricich (CA DWR)

Location: Toyon

Application of LandSat Data to the Lower Colorado –Pacific Regions,
Jeff Miliken (USBR)

Determination of Crop Types using LandSat and MODIS,
Peng Gong (UC Berkeley)

Measuring Soil Moisture Using Active and Passive Radiometers,
Eni Njoku (Jet Propulsion Laboratory)

Application of SEBAL to Estimate Water Use,
Bryan P. Thoreson (SEBAL North America)

6:00-7:00 p.m. — Dinner

7:00-9:00 p.m.

Session Eighteen: Keynote Speaker and Reception II

Moderator: IEP Representative

Location: Chapel

7:00-10:00 p.m. Reception II

Keynote Speaker: Tracy Collier, Director of NOAA's Environmental Conservation Division, Northwest Fisheries Science Center

Fish Health, from Mechanistic Studies to Population Models, as a Tool for Assessing Effects of Chemical Contaminants



7:30-8:15 a.m. — Breakfast

8:15-10:00 a.m.

Session Nineteen Post-PPIC Technical Insights for Long-Term Management of the Delta

Moderator: Jay Lund (UC Davis)

Location: Heather

Impact of Land Use Development and SWP/CVP Project Operations on Delta,
Yiguo Liang (CA DWR)

Modeling Economic Costs to Agriculture of Increased Delta Export Salinities,
Josue Medellin (UC Davis)

Previews of PPIC Delta II: Interesting Results on the Way to a Second PPIC Report
on the Future of the Delta, Jay Lund (UC Davis)

Session Twenty: Integrated Watershed Modeling

Moderator: George Matanga (USBR)

Location: Acacia

HydroGeoSphere: Reclamation Ongoing Model Enhancements and Applications,
George Matanga (USBR)

Testing of Subgridding and Subtiming Schemes in San Joaquin Valley, California,
Jeffrey Randall, Mary Kang and Don DeMarco (HydroGeoLogic, Inc.)

HydroGeoSphere-CalSim: A Coupled Model for Evaluation of Climate Change Impacts,
Mary Kang and Varut Guvanasean (HydroGeoLogic, Inc.)

Geospatial Technology Integration with HydroGeoSphere,
Lorri Peltz-Lewis and Lisa Rainger (USBR)



10:15 a.m.-12:00 p.m.

Session Twenty-One: Wanger Delta Smelt Decision I

Moderator: Paul Hutton (MWDSC)

Location: Heather

Background and Summary of the Interim Remedy Decision in the Delta Smelt Case, NRDC v. Kempthorne, Linus Masouredis (MWDSC)

Estimating Combined Old and Middle River Flow, Paul Hutton (MWDSC)

CALSIM Estimates of Potential CVP-SWP Water Supply Impacts of the Wanger Decision, Armin Munevar (CH2M Hill)

IRPSIM Estimates of Potential MWD Water Supply Impacts of the Wanger Decision, Brandon Goshi (MWDSC)

Session Twenty-Two: Uncertainty and Sensitivity Analysis in Simulation and Optimization Models

Moderator: Tariq Kadir (CA DWR)

Location: Acacia

Do More with Sensitivity and Uncertainty Analysis with Less Effort: Introduction to Automated Inverse Modeling Tools with Practical Examples, Stephen Mehl (CSU Chico / USGS) and Laura Foglia (UC Davis / Larry Walker & Assoc.)

Sensitivity and Uncertainty Analysis in Optimization-Driven Models, David Rheinheimer and Jay Lund (UC Davis)

Uncertain about Uncertainty? Understanding Uncertainty and its Role in Water Resource Decisions, Alaa Aly and Marsh Lavenue (INTERA Inc.)

12:00-1:00 p.m. — Lunch / Check-Out

1:15-2:00 p.m.

Session Twenty-Three: Pop-Up Talks II

Moderator: Nigel Quinn (LBNL/USBR)

Location: Heather

1:15 Pop-Up Talks

Five-minute overviews summarizing California water and environmental modeling work. A maximum of three PowerPoint slides per speaker. To sign up for a talk, please contact a CWEMF representative.



1:15-3:00 p.m.

Session Twenty-Four: Dealing with Modeling Uncertainty: Producing Reasonable Results for Decision Makers

Moderator: Walter Bourez (MBK Engineers)

Location: Acacia

Dealing with Uncertainty in Water Operations Modeling, Walter Bourez (MBK Engineers)

Uncertainty with CalSim Operation for the San Joaquin River Basin, CVP/SWP System South of the Delta and Sacramento River Basin, Lee Bergfeld and Walter Bourez (MBK Engineers)

Uncertainty in Ground Water and Surface Water Models for Sacramento Valley, Peter Lawson (CH2M Hill) and Lee Bergfeld (MBK Engineers)

Uncertainty with Delta Salinity Modeling with DSM2, Russ Brown (JSA)

2:15-4:30 p.m.

Session Twenty-Five: Wanger Delta Smelt Decision II

Moderator: Paul Hutton (MWDSC)

Location: Toyon

Estimating Delta Smelt Salvage, Bryan Manly (Western EcoSystems Tech. Inc.)

Operation of the Suisun Marsh Salinity Control Gate, Chris Enright (CA DWR)

Modeling Delta Smelt Entrainment with PTM, Yiguo Liang (CA DWR)

Modeling Delta Smelt Population Dynamics, Rick Sitts (MWDSC)





2008 Annual Meeting Poster Session Titles

Sponsored by Watercourse Engineering

How to Get 3-D Accuracy with a 2-D Stream-Aquifer Interaction Model,
 Hubert Morel-Seytoux (Hydroprose International Consulting)

Wetland Response to Adaptive Salinity Drainage Management, Ric Ortega (U.C. Davis)

Use of Watershed Modeling, George Nichol (SWRCB)

SEBAL Applications and Studies: Worldwide and Western United States,
 Bryan Thoreson (SEBAL North America)

Modeling the Hydrological Impacts of Climate Change: Western Slope of the
 Sierra Nevada, Chuck Young (Stockholm Environment Institute)

A Library of Downscaled Climate Simulations for Societal-Impacts Assessments, Phil Duffy (LLNL)

Calculating the Volume of Jones Tract using LiDAR Data, Jane Schafer-Kramer (CA DWR)

Land Atmosphere Water Simulator, Michael Tansey (USBR)

Come Play the DSM2 Evaluation and Calibration Game with Us,
 Jamie Anderson and Kevin Kao (CA DWR)

Multi-dimensional Surfacewater Modeling for Restoration and Impact Analysis,
 Kyle Winslow, Don Kingery and Chandra Chilmakuri (CH2M Hill)

Water Quality in Sacramento-San Joaquin Delta - A Case Study at Barker Slough, Seungjin Baek (PWA)

Sierra Nevada Watershed Conservation Plan, Michael Deas (Watercourse Eng. Inc, et al.)

Interagency Ecological Program, February 27-28, 2008 Sessions

| Date | Time | Session | Moderator | Location |
|--------------------------|-------------------|--|--------------------|-----------|
| Thursday Feb 27, 2008 | 8:05-9:35 am | Delta Smelt & Pelagic Organism Decline Session I | Ted Summer | Chapel |
| | 9:55 am-11:35 am | Delta Smelt & Pelagic Organism Decline Session II | Kelly Souza | Chapel |
| | 1:00-2:00 pm | Delta Smelt & Pelagic Organism Decline Session III | Fred Feyrer | Chapel |
| | 2:15-3:15 pm | Poster Introductions | Fred Feyrer | Chapel |
| | 7:00-9:00 pm | Poster Session | IEP Representative | Fred Farr |
| Friday Feb 28, 2008 | 8:15-9:55 am | SF Estuary in a Changing Climate: Beyond Failing Levees & Reduced Snowpack | Kathy Hieb | Chapel |
| | 10:15 am-12:00 pm | Contributed Papers and Concluding Remarks | Darcy Jones | Chapel |