



California Water and Environmental Modeling Forum

2012 ANNUAL MEETING PROGRAM

“From Headwaters to the Pacific: Modeling California’s Liquid Gold”



Lake Natoma Inn
702 Gold Lake Drive
Folsom, California

SUMMARY OF SESSIONS

Monday, April 16, 2012

Time	Session	Moderator	Location
8:00 – 8:30 a.m.	Registration		Sierra Hallway
8:30 – 10:15 a.m.	1. DSM2 Applications and Development – Part 1	Xiaochun Wang	Sierra 1
	2. Topics In Water Management and Supply	Marianne Guerin	Folsom
10:15 – 10:30 a.m.	Break		
10:30 a.m. – 12:15 p.m.	3. Salinity and Nutrient Management	Nigel Quinn	Sierra 1
	4. Technical Analysis in Support of California Water Plan Update 2013	Rich Juricich	Folsom
12:15 – 1:30 p.m.	Lunch at Lake Natoma Inn – included in registration fee		
1:30 – 3:15 p.m.	5. Central Valley Flood Protection	Bill Smith	Sierra 1
	6. 2012 HydroGeoSphere Enhancements and Applications	George Matanga	Folsom
3:15 – 3:30 p.m.	Break		
3:30 – 5:15 p.m.	7. Advances in Climate Change Assessment	Jamie Anderson & Michael Tansey	Sierra 1
	8. WRIMS 2 and its Applications	Sanjaya Seneviratne	Folsom
5:15 – 8:00 p.m.	9. Evening Program – Reception with Hors d'oeuvres	Paul Hutton	Sierra 1
6:00 – 7:30 p.m.	Award Presentations		

Tuesday, April 17, 2012

Time	Session	Moderator	Location
8:00 – 8:30 a.m.	Registration		Sierra Hallway
8:00 – 10:00 a.m.	Poster Set-up		Pavilion
8:30 – 10:15 a.m.	10. Multi-Dimensional Modeling	Ben Bray	Sierra 1
	11. Reservoir Reoperation, Hydrodynamics, and Economics, Oh My	Jay Lund	Folsom
10:15 – 10:30 a.m.	Break		
10:30 a.m. – 12:15 p.m.	12. DSM2 Applications and Development – Part 2	Tara Smith	Sierra 1
	13. IWFM & IDC 2011 Enhancements and Applications	Tariq Kadir	Folsom
12:15 - 1:30 p.m.	Lunch at Lake Natoma Inn – included in registration fee		
1:30 – 3:15 p.m.	14. Turbidity, Delta Smelt, and Suspended Sediment	Pete Smith	Sierra 1
	15. Modeling Needs and Challenges	Mike Deas	Folsom
3:15 – 3:30 p.m.	Break		
3:30 – 5:00 p.m.	16. Pop-up Talks: 5-Minute Overviews of Modeling Work	Stacy Tanaka & Nigel Quinn	Sierra 1
5:15 – 8:00 p.m.	17. Evening Program	Marianne Guerin	Sierra 1
5:15 – 6:15 p.m.	Business Meeting		
6:15 – 8:00 p.m.	Poster Session and Reception with Hors d'oeuvres		
			Pavilion

Wednesday, April 18, 2012

Time	Session	Moderator	Location
8:00 – 10:00 a.m.	Joint Session Poster Set-up		Pavilion
8:00 – 9:45 a.m.	18. San Joaquin River Restoration Program Modeling	Katrina Harrison & Peter Vorster	Sierra Ballroom
	19. Ecological and Water Quality Modeling	Marianne Guerin	Folsom
9:45 – 10:00 a.m.	Break		
10:00 – 10:40 a.m.	20. Joint CWEMF and IEP Introduction and Updates	Rich Breuer	Sierra Ballroom
10:40 a.m. – 12:20 p.m.	21. Joint CWEMF and IEP Smelt Life Cycle Models	Lenny Grimaldo	Sierra Ballroom
12:20 – 1:40 p.m.	Lunch at area restaurants		
1:40 – 2:40 p.m.	22. Joint CWEMF and IEP – Applied Hydrodynamic Modeling and Forecast Tools	Ben Bray	Sierra Ballroom
2:40 – 3:20 p.m.	23. Joint CWEMF and IEP – The Delta Science Program Welcomes New Lead Scientist, Peter Goodwin	Anke Mueller-Solger	Sierra Ballroom
3:30 – 6:00 p.m.	24. Joint CWEMF and IEP Poster Session and Reception		Pavilion

ORGANIZATIONAL MEMBERS

California Department of Water Resources

California State Water Resources Control Board

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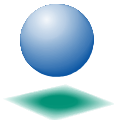
Metropolitan Water District of Southern California

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Evening Receptions



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Poster Session



Lunches



Refreshments



Systech Engineering, Inc.



California Water and Environmental Modeling Forum

Promoting Excellence and Consensus in Water and Environmental Modeling

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April 16 - 18, 2012

To the CWEMF Membership,

Here we are at another Annual Meeting – Water Year 2012. We have a superb lineup of sessions and abstracts this year, so I'm predicting another exceptional year for CWEMF's signature event.

A topic I'm sure many of you have questioned is our current location at the Lake Natoma Inn in Folsom – why not Asilomar? Although Elaine Archibald, CWEMF's Executive Director, worked hard to develop a proposal for holding our meeting at Asilomar in 2012, we found a road block at every turn. As our membership was increasingly choosing to lodge off-site, we found that Asilomar would not consider our proposals, and as an organization we could not accept the financial risks Asilomar required in order to consider us seriously. Elaine and I will be available at the Annual Business Meeting on Tuesday evening and throughout the 2012 Annual Meeting to answer any questions you may have.

However, this change has given CWEMF the opportunity to explore some new – and some familiar – options. We've joined forces with the Interagency Ecological Program (IEP) on the final day of our meeting (4/18/12) to present a joint program we believe will be interesting and informative for CWEMF members. In addition, we've worked to increase the visibility and impact of the poster session, as presenters have the option of also presenting their posters at the joint IEP/CWEMF session on Wednesday. Poster sessions are great opportunities for one-on-one conversations with everyone in the room, AND, we'll be having food and drinks for the Tuesday evening poster session on 4/17/12 (Read: free dinner) with lighter fare on Wednesday 4/18/12.

With this new venue, we have the ability to provide better options for food service – Monday and Tuesday lunches are included in the registration fee for everyone who registered by March 29, and we're providing heavy hors d'oeuvres and libations in the early evenings on Monday and Tuesday. We are also co-hosting an afternoon social with IEP on Wednesday. We've had positive reviews of the Lake Natoma Inn food service from the IEP, so we're hoping CWEMF reviews are as glowing (let us know!).

Please express your thanks to our sponsors for lunches and snacks, as well as for food and libations in the early evening social sessions - we'll have sponsorship signs to let you know whom to thank. Sponsors are also listed in the full agenda packet.

A lot has changed this year, and we are viewing CWEMF's WY2012 meeting as akin to an experiment, so we will be seeking your feedback on what you liked a lot and what you didn't like as much.

Thanks again for coming to CWEMF's Annual Meeting in WY2012 – see you there!

A handwritten signature in black ink that reads "Marianne Guerin". The signature is written in a cursive, flowing style.

Marianne Guerin, CWEMF Convener

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AGENDA

Monday, April 16

8:00 – 8:30 a.m. – Registration in Sierra Hallway

8:30 a.m. – 10:15 a.m.

Session 1. DSM2 Applications and Development – Part 1

Moderator: Xiaochun Wang (DWR)

Location: Sierra 1

DSM2 User Group Update – Min Yu (DWR)

Validation of DSM2 QUAL for Simulation of Various Cations and Anions: Prepared for Metropolitan Water District of Southern California – Shankar Parvathinathan (MWH)

Estimating Delta Bromide Based on DSM2-Simulated EC Fingerprints – Siqing Liu (DWR)

DSM2 Version 8.1 Bug Fix and Recalibration Status Update – Lianwu Liu (DWR)

Session 2. Topics in Water Management and Supply

Moderator: Marianne Guerin (RMA)

Location: Folsom

Estimates of Agricultural Water Demand in California using Cal-SIMETAW – Morteza Orang (DWR)

CalSim Modeling of San Joaquin River Interim Flow Objectives – Tom Fitzhugh (Reclamation)

San Joaquin Basin Development for CalSim3 – Ian Ferguson (Reclamation)

Theoretical Concepts for Sustainable Groundwater Management in Interconnected Stream-Aquifer Systems – Jeff Davids (Davids Engineering/H2o Tech)

10:30 a.m. – 12:15 p.m.

Session 3. 2011 Salinity and Nutrient Management

Moderator: Nigel Quinn (Berkeley National Laboratory/Reclamation)

Location: Sierra 1

Nutrient Management Planning and Tracking – John Dickey (PlanTierra)

Simulating Salinity and Nutrient Management: Data Streams and Simulation Capabilities
– Randy Hanson (USGS)

DWR Ag Drainage Program – Joseph Tapia (DWR)

Real-Time Wetland Salinity Management – Nigel Quinn (Berkeley National
Laboratory/Reclamation)

Session 4. Technical Analysis in Support of California Water Plan Update 2013

Moderator: Rich Juricich (DWR)

Location: Folsom

*Developing Agricultural Land Use for Multiple Future Scenarios for the California Water
Plan Update* – Tom Hawkins (DWR)

*Evaluating Resource Management Strategies for an Uncertain Future for the California
Water Plan Update 2013* – Rich Juricich (DWR)

*Working the White Space, Connecting the Dots between Models and the People that
Need to Use Their Results* – Lisa Beutler (MWH)

*Dialogue on Critical Long-Term Technical Improvements to Support Integrated Data &
Analysis* – Rich Juricich (DWR)

12:15 noon – 1:30 p.m. – Lunch

Box lunches provided by CDM Smith and CWEMF.

1:30 – 3:15 p.m.

Session 5. Central Valley Flood Protection

Moderator: Bill Smith (MWH)

Location: Sierra 1

Identifying Floodplain Restoration Opportunities in the Sacramento and San Joaquin Valleys – John Hunter (AECOM)

Flood Damage Evaluation for 2012 Central Valley Flood Protection Plan – Anna Fock (MWH)

CVFPP Life Risk Analysis – Steve Cowdin (David Ford Consulting)

Regional Economic Effects of Improving Flood Management in California's Central Valley – Vincent Barbara (MWH)

Session 6. 2012 HydroGeoSphere Enhancements and Applications

Moderator: George Matanga (USBR)

Location: Folsom

Linkage of HydroGeoSphere Simulation and Differential-Evolution Optimization Models: An Enhancement – Chin Man “Bill” Mok (AMEC)

San Joaquin Valley HydroGeoSphere Model (SJVHGSM): An Application – Kirk Nelson (Reclamation)

Application of a Fully-Integrated Surface-Subsurface Numerical Model in Conjunctive Analysis of Water Flow at a Large Scale – George Matanga (Reclamation)

3:30 – 5:15 p.m.

Session 7. Advances in Climate Change Assessment

Moderators: Jamie Anderson (DWR) and Michael Tansey (USBR)

Location: Sierra 1

Living on the Edge: Climate Change and Extremes in California – Michael Anderson (DWR)

Modeling the Effects of Climate Change on ET and Yield in California's Central Valley – Mike Tansey (Reclamation)

An Extended-Delta EFDC Hydrodynamic Model Framework for Sea Level Rise Analysis to Support Resource Management Planning for the Sacramento San Joaquin Delta – Andrew Stoddard (Dynamic Solutions)

Threshold Analysis Approach for Incorporating Climate Change into the Central Valley Flood Protection Plan – Mathew Young (MWH)

Session 8. WRIMS 2 and its Applications

Moderator: Sanjaya Seneviratne (DWR)

Location: Folsom

Overview of WRIMS 2 and Different LP Solvers – Sanjaya Seneviratne (DWR)

Evaluator and Run Time Debugger – Hao Xie (DWR)

GUI for WRIMS 2 – Nicky Sandhu (DWR)

Interactive GUI & Alternate Solvers – Kevin Kao (DWR)

WRIMS 2 in CalLite Applications – Nazrul Islam (DWR)

5:15 – 8:00 p.m.

Session 9. Evening Program

Moderator: Paul Hutton (MWDSC)

Location: Sierra 1

5:15 – 8:00 p.m. Reception with Hors d'oeuvres

Reception sponsored by CH2M Hill, ICF International, and CWEMF.

6:00 – 7:30 p.m. Award presentations

Tuesday, April 17

8:00 – 8:30 a.m. – Registration in Sierra Hallway

8:30 – 10:15 a.m.

Session 10. Multi-Dimensional Modeling

Moderator: Ben Bray (EBMUD)

Location: Sierra 1

3-D Hydrodynamic and Sediment Transport Modeling in the San Francisco Estuary using the UnTRIM Bay-Delta Model – Michael MacWilliams (Delta Modeling)

Progress Towards a 3D Bay-Delta Model Using SELFE – Eli Ateljevich (DWR)

Simulating Mobile Community Ecosystem Dynamics in EFM Sim – Stephen Andrews (RMA)

Session 11. Reservoir Reoperation, Hydrodynamics, and Economics, Oh My

Moderator: Jay Lund (UC Davis)

Location: Folsom

Reservoir Reoperation of the Delta Tributaries: The Mokelumne River Case – Nathan Burley (UC Davis)

Folsom Dam Reoperations with Climate Information – Trade-offs for Flood and Water Supply - Jay Lund (UC Davis)

Historical Delta Hydrodynamics – Laura Doyle (UC Davis)

Transitions in the Delta Economy – Josué Medellín-Azuara (UC Davis)

Adaptive Management – What Could it Possibly Mean? – Jay Lund (UC Davis)

10:30 a.m. – 12:15 p.m.

Session 12. DSM2 Applications and Development – Part 2

Moderator: Tara Smith (DWR)

Location: Sierra 1

Modeling for Litigation – Jamie Anderson (DWR)

Effects of SWP and CVP Exports on Stage and Circulation in the South Delta – Ming-Yen Tu (DWR)

Modeling Delta Flow-Turbidity Relationships with Artificial Neural Networks – Paul Hutton (MWDSC)

DSM2-PTM Simulations in Support of National Marine Fishery Service's study on Particle Movement in the Sacramento-San Joaquin Delta – Joey Zhou (DWR)

Session 13. IWFM & IDC 2011 Enhancements and Applications

Moderator: Tariq Kadir (DWR)

Location: Folsom

Public Release of the California Central Valley Groundwater-Surface Water Simulation Model C2VSIM (Coarse Grid) – Charles Brush (DWR)

California Central Valley Simulation Model (C2VSIM) Enhancement: Phase I – Spatial Refinement – Ali Taghavi (RMC)

Applying IDC to the Sacramento Valley in Support of the Regional Groundwater Model SacFEM – Lee Bergfeld and Patrick Ho (MBK Engineers)

Yolo County Integrated Hydrologic Model: Experiences with IWFM v4.0 – Emin Dogrul (DWR)

12:15 – 1:30 p.m. – Lunch

Box lunches provided by Larry Walker Associates and CWEMF.

1:30 – 3:15 p.m.

Session 14. Turbidity, Delta Smelt, and Suspended Sediment

Moderator: Pete Smith (USGS, retired)

Location: Sierra 1

Effects of Turbidity and Hydrodynamics on Distributions of Delta Smelt – Pete Smith (USGS, retired)

*Identification of Factors Affecting Survival and Abundance of Delta Smelt (*Hypomesus transpacificus*) Using a Different Analytical Framework, the “Effects Hierarchy”* – BJ Miller (SLDMWA)

Sediment Transport Dynamics in the Sacramento-San Joaquin Delta – Scott Wright (USGS)

Web Based Data Visualizations for Real Time Sensor Networks and Forecast Data – David Osti (34 North)

Session 15. Modeling Needs and Challenges

Moderator: Mike Deas (Watercourse Engineering)

Location: Folsom

Water Temperature Modeling Needs and Challenges – Mike Deas (Watercourse Engineering)

Needs and Challenges of Modeling Mercury in the Delta – Stephen McCord (McCord Environmental)

A New Validation Strategy to Climate Change Impact Study Approaches – Jianzhong Wang (DWR)

3:30 – 5:00 p.m.

Session 16. Pop-up Talks

Moderators: Stacy Tanaka (Watercourse Engineering) and Nigel Quinn (Berkeley National Laboratory/Reclamation)

Location: Sierra 1

Five-minute overviews summarizing California water and environmental modeling work using a maximum of five PowerPoint slides per speaker. To sign up for a talk, please contact Stacy Tanaka, Nigel Quinn, or Elaine Archibald.

5:15 – 8:00 p.m.

Session 17. Evening Program and Poster Session

Moderator: Marianne Guerin (CWEMF/RMA)

Location: Sierra 1 and Pavilion

5:15 – 6:15 p.m. CWEMF Business Meeting and Annual Meeting Update

6:15 – 8:00 p.m. Poster Session and Reception with Hors d'oeuvres

Reception sponsored by MBK Engineers, RMC Water & Environment, and CWEMF.
Poster session sponsored by Watercourse Engineering.

Wednesday, April 18

8:00 – 10:00 a.m. – IEP Poster Set-up in Pavilion

8:00 – 9:45 a.m.

Session 18. San Joaquin River Restoration Program Modeling

Moderator: Katrina Harrison (Reclamation) and Peter Vorster (The Bay Institute)
Location: Sierra Ballroom

Daily Friant and San Joaquin River Model (SJRRW) – Todd Vandegrift (Reclamation)

Groundwater Flow Model for Evaluation of Hydrologic Effects of the San Joaquin River Restoration – Jonathan Traum (USGS)

2D Habitat Modeling – Daniel Dombroski (Reclamation) and Blair Greimann (Reclamation)

The Emigrating Salmonid Habitat Estimation (ESHE 1.0) Model: Estimating Habitat Area Requirements for Emigrating Central Valley Chinook Salmon – Joe Merz (Cramer Fish Sciences)

Session 19. Ecological and Water Quality Modeling

Moderator: Marianne Guerin (RMA)
Location: Folsom

3-Dimensional Hydrodynamic, Sediment Transport, and Water Quality Model Framework to Support Resource Management Planning for the Sacramento San Joaquin Delta – Andrew Stoddard (Dynamic Solutions)

Development, Calibration, and Application of a Lower Trophic Level Food Web Model for the Low Salinity Zone (LSZ) of the San Francisco Estuary – Shaye Sable (Dynamic Solutions)

Keno Reservoir Water Quality Modeling: CE-QUAL-W2 – Mike Deas (Watercourse Engineering)

Integrated Water Operations and Multi-species, Multi-performance Indicator Ecosystem Effects Analysis: The Ecological Flows Tool (EFT) – Clint Alexander (ESSA Technologies Ltd.)

10:00 – 10:40 a.m.

Session 20. Joint CWEMF and IEP – Introduction and Updates

Moderator: Rich Breuer (DWR)

Location: Sierra Ballroom

CWEMF: Highlights 2011 to 2012 – Marianne Guerin (CWEMF/RMA)

IEP Program Highlights – Kelly Souza (DFG)

IEP Science Highlights – Anke Mueller-Solger (DSC)

10:40 a.m – 12:30 p.m.

Session 21. Joint CWEMF and IEP – Smelt Life Cycle Models

Moderator: Lenny Grimaldo (Reclamation)

Location: Sierra Ballroom

Understanding Life Cycle Models and their Applications – Wim Kimmerer (SFSU, RTC)

Individual-Based Population Dynamics Model of Delta Smelt: Comparing the Effects of Food Versus Entrainment – Kenny Rose (LSU)

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)

A Hierarchical Spatio-Temporal Model for Delta Smelt – Ken Newman (USFWS)

Statistical Modeling of Unnatural Selection, and the Dialectics of Causation in the Decline of Delta Smelt – William Bennett (UC Davis)

Development and Application of an Individual Based Model for Longfin Smelt in the San Francisco Estuary – Erik Lobochevsky (UC Davis)

12:30 – 1:40 p.m. – Lunch at area restaurants

1:40 – 2:40 p.m.

Session 22. Joint CWEMF and IEP – Applied Hydrodynamic Modeling and Forecast Tools

Moderator: Ben Bray (CWEMF/EBMUD)

Location: Sierra Ballroom

Forecasting Turbidity in the Sacramento-San Joaquin Delta – John DeGeorge (RMA)

Investigating the Retention of Planktonic Organisms in the Low-Salinity Zone using a Particle Tracking Model – Edward Gross (RMA)

Climate Change Information for Ecological Modeling – Jamie Anderson (DWR)

2:40 – 3:20 p.m.

Session 23. Joint CWEMF and IEP – The Delta Science Program Welcomes New Lead Scientist, Peter Goodwin

Moderator: Anke Mueller-Solger (DSC)

Location: Sierra Ballroom

Accelerating Knowledge Discovery through Science Communities and Emerging Technologies – Peter Goodwin (DSP)

3:30 – 6:00 p.m.

Session 24. Joint CWEMF and IEP Poster Session and Reception

Location: Pavilion

Reception sponsored by IEP and CWEMF.

CWEMF POSTER SESSION TITLES

Sponsored by Watercourse Engineering

Use of Two Dimensional Hydraulic and Sediment Transport Modeling in Design of Salmonid Rearing Habitat in the Sacramento River Floodplain – Paul Frank and Mark Tompkins (Newfields)

Development of a Modeling Framework for Assessing Flood Management Performance and Floodplain Habitat Creation in the South Delta – Paul Frank, Mark Tompkins, and Jeremy Thomas (Newfields)

Using Nitrate Stable Isotopes to Identify Dominant Nitrate Sources and Processes Impacting Groundwater and Surface Water in the Central Valley, California – Megan Young (USGS), Thomas Harter (UC Davis), Carol Kendall (USGS), and William Stringfellow (University of the Pacific)

CALVIN Groundwater Update – Heidi Chou, Prudentia Zinkalala, Christina Buck, Jay R. Lund, Josué Medellín-Azuara (UC Davis)

Enhancement of the Sacramento-San Joaquin Delta Island Consumptive Use Estimates and Water Quality Redetections – Lucas Siegfried and William E. Fleener (UC Davis)

Towards a Systems Analysis of Yolo Bypass Uses and Opportunities – Robyn Suddeth (UC Davis)

San Joaquin River Restoration Daily Flow Model – Todd Vandegrift (USBR, TSC)

2D Hydrodynamic Modeling in the Yolo Bypass to Support Habitat Evaluation – Chris Campbell, April Sawyer, and Chris Bowles (cbec, inc.)

Adventures in Multibeam Bathymetry in the Sacramento-San Joaquin Delta – Shawn Mayr, Scott Flory, and Wyatt Pearsall (DWR)

Changes in Flows and Water Levels in Delta due to Climate Change – Phillip Mineart (URS)

Suspended Sediment Predictions in California – George Nichol

The Effect of Using Yearly-Changing Historical Land Use on DSM2 Simulation of Historical Delta Conditions – Lan Liang (DWR)

Statewide Water Analysis Network (SWAN) – Rich Juricich (DWR)

Water Sustainability Indicators Framework – Rich Juricich (DWR)

Integrated Water Management Economic Assessments – Rich Juricich (DWR)

Water Planning Information Exchange – Rich Juricich (DWR)

California Statewide Data Program – Rich Juricich (DWR)

Water Plan Update 2013 – Rich Juricich (DWR)

Impact of Groundwater Banking and Extraction Program on Stream-Aquifer Interaction in North American GW Subbasin – Ali Taghavi (RMC), Robert Swartz (Sacramento Groundwater Authority), and Mesut Cayar (RMC)

Integrated Regional Water Management Tool: HydroDMS – Jeanna Long, Saquib Najmus, Ali Taghavi, Yamin Noor, and Mesut Cayar (RMC)

State Water Project Chloride Modeling Analysis – Sevim Onsoy (Kennedy/Jenks), Les Chau (Kennedy/Jenks), Matt Baillie (Kennedy/Jenks), Lynn Takaichi (Kennedy/Jenks), and Dirk Marks (Castaic Lake Water Agency)

Smart Particle Tracking Using DSM2-PTM – Kijin Nam (DWR)