
Methodology for Flow and Salinity Estimates in the Sacramento-San Joaquin Delta and Suisun Marsh

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Chapter 11: DSM2 Users Group Update

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11 DSM2 Users Group Update

11.1 Introduction

The DSM2 Users Group (Group) was formed in early 2004 to provide the users of the Delta Simulation Model II (DSM2) a platform to interact, communicate and exchange information about the use of the model and offer suggestions for model enhancement. Since the Group's initiation, a website and an online forum dedicated to the Group have been developed, and a total of ten quarterly meetings have been held. This chapter will review the activities and present some of the key topics covered the past two and half years.

11.2 Group Members

The Group first started with approximately 30 members, mostly subscribers of the previous DSM2-study mailing list. The members initially consisted of staff from DWR, participants from consulting firms including CH2M Hill and Jones & Stokes, and agencies including Contra Costa Water District, East Bay Municipal Utility District, Metropolitan Water District of Southern California, and the Bureau of Reclamation. Over the last two and half years, the Group has steadily grown and currently includes nearly 60 members. The additional members include consultants from Montgomery Watson Harza and Surface Water Resources, Inc., staff from agencies such as State Regional Water Quality Control Board, US Fish Wildlife Service, San Francisco Estuary Institute, and graduate students from UC Davis and Stanford University.

11.3 Meetings

The primary means of interaction of the Group is quarterly meetings which started in January 2004. At the date of this report, a total of 10 meetings have taken place and a variety of DSM2 applications and development related topics have been presented. These topics had a broad appeal to the Group members and the meetings provided the members many peer-to-peer direct learning and interaction opportunities.

11.3.1 Format

Meetings usually consist of updates of the Delta Modeling Section's ongoing project status, presentations of the model applications and/or development, and group discussions.

11.3.2 Update Items

The Delta Modeling Section has completed a number of projects and studies the past two years and several projects are still ongoing. The update on the background and status of these projects are the first part of the Group quarterly meetings. The key projects include Annual Reports 2004 & 2005, DSM2 development, standardization of DSM2 studies, 2005 historical hydrodynamics simulation for the Temporary Barriers project, the modeling support for the Pelagic Organism Decline (POD) workshop, and DSM2 82-year extension study for the Common Assumptions Long-term Update project. Detailed information on these updates is available online at:

<http://baydeltaoffice.water.ca.gov/modeling/deltamodeling/dsm2usersgroup.cfm>

11.3.3 Presentation Topics

A major element of the meetings is topical presentations given by the participants of the Group on DSM2 applications and development. These presentations are an integral component of the Group and the topics are directly related to each user's knowledge and experience concerning the use of the model. Each meeting usually has two or three speakers who are either DWR staff or outside model users from other agencies and consulting firms.

The topics presented by DWR staff during the past two years were:

- ❑ San Joaquin River Geometry Modification (Jim Wilde)
- ❑ Particle Tracking Model (PTM) Animations Illustrating the Flexibility of South Delta Permanent Barriers Operations (Bijaya Shrestha)
- ❑ Clifton Court Forebay & South Delta Gate Experiments Using DSM2-DB (DSM2 Version 7) (Eli Ateljevich)
- ❑ Model Steering and Operating Rules (Eli Ateljevich)
- ❑ Using DSM2 to Assess Impacts of Climate Change on the Delta (Jamie Anderson)

Presentations given by outside users included:

- ❑ California Aqueduct Extension Project (Kyle Winslow, CH2M Hill)

This work is part of the Department's Municipal Water Quality Investigation Program's Real Time Data and Forecasting (RTDF) project and is coordinated by CH2M Hill. The objective of this work is to develop a DSM2-based tool for monitoring, forecasting and disseminating data pertaining to water supply and quality. The scope of the work includes extending the DSM2 grid to cover the California Aqueduct, the Delta Mendota Canal, the South Bay Aqueduct, San Luis Reservoir, and O'Neil Forebay. The simulation period is from Jan 1, 2000 to Dec 31, 2003. More detailed information on this work is available online at:

<http://baydeltaoffice.water.ca.gov/modeling/deltamodeling/DSM2UsersGroup/July262005CaliforniaAqueductDSM2.pdf>

- Evaluation of Mountain House Creek and Wastewater Discharge Using DSM2 (Anne Huber and Russ Brown, Jones & Stokes)

This presentation includes two investigations of high and low tidal flows in Old River near Mountain House Creek. The presentation is based on work completed in early 2004 by Russ Brown and Anne Huber from Jones & Stokes for Pacific Advanced Civil Engineering, Inc. The first part of the presentation focuses on a study of the high tides and flows for a storm event that occurred in January of 1997. DSM2 estimated the actual Vernalis flow at the time of upstream levee breaks. The second part of the presentation shows the dilution of future effluent discharges and the matching of DSM2-QUAL to two dye studies performed in Old River during the summer Temporary Barrier operation period. The presentation is available online at:

http://baydeltaoffice.water.ca.gov/modeling/deltamodeling/DSM2UsersGroup/Mt_House.pdf

- PTM Evaluation Results for SDIP (Russ Brown, Jones & Stokes)

The SDIP Draft EIR/EIS report was released in October 2005. This presentation provides an overview on the method of using the DSM2 Particle Tracking Model to simulate the effect of SWP and CVP export pumping on Delta channel hydraulics and assesses fish entrainment as “virtual” particles released from various locations within the Delta. The URL for this presentation is:

http://baydeltaoffice.water.ca.gov/modeling/deltamodeling/DSM2UsersGroup/PTMResults_Russ_Brown.pdf

- Tracking Wastewater Effluents to Drinking Water Intakes within the Delta (Russ Brown, Jones & Stokes)

This presentation is a follow-up on the “Evaluation of Mountain House Creek and Wastewater Discharge Using DSM2” presentation. In addition to the Mountain House Tidal Dilution Study results, this presentation includes an assessment of future treated wastewater discharge data from the Iron House Sanitation District to various locations within the Delta based on DSM2.

- A New Version of the G-model, Using Historical DSM2 Output in the Calibration (Richard Denton, Contra Costa Water District)

This topic is an overview of the revised salinity-outflow relationship model, commonly referred to as the G-model. The improvement of this new version of the G-model is that EC is now a function of QWEST in addition to the antecedent Delta outflow. The presentation covers the background, the need for improvement of the original G-model, the revised calibration values of the equation factors, the comparisons of the daily EC predictions at Jersey Point between the old and the new version, and future directions. DSM2 planning study output was used for the development of the revised model. For more information on this presentation, please visit the website at:

<http://baydeltaoffice.water.ca.gov/modeling/deltamodeling/DSM2UsersGroup/DSM2UserGroupGQ-Modelpresentation4-25-06rad.pdf>

11.4 Website and Bulletin Board

During the initiation of the Group, in addition to the quarterly meetings, a website (i.e., <http://baydeltaoffice.water.ca.gov/modeling/deltamodeling/dsm2usersgroup.cfm>), an FTP site, and an online bulletin board were also developed to provide users easy access to the information. In the past two and half years, the online bulletin board has been actively used by members to post their questions and answers and share their experience and knowledge with one another on a variety of subjects concerning the use of DSM2.

11.5 Survey Results

To ensure the members are satisfied with the DSM2 Users Group, we have conducted two annual surveys in the past to collect participants' feedback. We understand that critical to the long-term success of a users group is its ability to meet participants' needs and expectations. It is important to encourage and support an infrastructure and processes that can enable the Group to accomplish these goals. Surveys help us improve our approach to organizing meetings, determining contents of the meetings, and effectively interacting with members.

According to the latest survey conducted at the end of 2005, 90% of participants had an overall positive evaluation for the Group, and 96% of survey participants are satisfied with the meeting format including meeting schedule and contents. Presentations on DSM2 applications were preferred by 60% of the members, and over half of the group would like to see more tutorials on DSM2 tools and applications as themed meeting format in the future. The survey also found that interest in utilizing DSM2 for different applications continues to grow and studies conducted by outside users will be preferred topics at future meetings.

11.6 Future Directions

The Group has gone through a period of clarification and maturing since its start in the beginning of 2004. This process has been successful due to the strong support from its members. To continue this growth of the Group, we will continuously search for ways to improve. We will

continue to share and exchange DSM2-related information through various channels, implement the findings in the survey results, and look for possible partnership opportunities with other users groups, such as the CALSIM Users Group. We remain committed to meeting the DSM2 users' needs and making the Group a valuable experience for all.