

STATE BOARD COMPREHENSIVE OPERATIONS PLAN AND MONITORING SPECIAL STUDY

Technical Workgroup Meeting #4 – SCHISM Deep Dive

Meeting Notes

January 13, 2022

1:00 p.m. – 2:30 p.m.

Attendees

- Erin Andrews/DWR
- Eli Ateljevich/DWR
- Erika Britney/ICF
- Thomas Burke/Hydrologic Systems for SDWA
- Chandra Chilmakuri/SWC
- Janis Cooke/SWRCB
- Daniel Deeds/USBR
- Scott Flory/DWR
- Erin Foresman/State Water Resources Control Board (SWRCB)
- Jared Frantzich/DWR North Central Region Office
- Bryant Giorgi/DWR
- Jose Gutierrez/Westlands Water District
- Thomas Handley/DWR
- Jelena Hartman/Water board
- John Herrick/South Delta Water Agency (SDWA)
- Lindsay Kammeier/SWRCB
- Stephen Louie/SWRCB
- Maureen Martin/Contra Costa Water District (CCWD)
- Shawn Mayr/DWR
- Bill McLaughlin/DWR
- Jacob McQuirk/DWR O&M
- Lee Murai/DWR
- Jenna O’Neill/ICF
- Prabhjot (Nicky) Sandhu/DWR
- Karen Tolentino/DWR
- Grace Windler/USBR
- Zhenlin Zhang/DWR

Action Items

- DWR will share final meeting notes and meeting slides.
- DWR/John Herrick/Tom Burke to meet separately for a follow up discussion on SCHISM and SDWA/DWR bathymetry.
- Eli Ateljevich/Shawn Mayr/Tom Burke to meet about bathymetry.
- Contact Eli Ateljevich if you have further questions about today’s slides.

Meeting Notes

The goal of this meeting was a deeper understanding of the SCHISM model, including:

- How are SCHISM & DSM2 different?
- Ongoing refinements
- Applications

Key Discussion Points

- SCHISM highlights:
 - Covers the Bay-Delta from Farallon to Vernalis/Knights Landing (beyond the South Delta)
 - 3D
 - Slow: ½ year per day to run model
 - Uses a well-estimated atmospheric field
 - More info at: <https://water.ca.gov/Library/Modeling-and-Analysis/Bay-Delta-Region-models-and-tools/SCHISM>
- DSM2 highlights:
 - Stands for “Delta Simulation Model 2”
 - 1D
 - Fast: Covers years in minutes
 - Contains key physics for the South Delta
 - More info at: <https://water.ca.gov/Library/Modeling-and-Analysis/Bay-Delta-Region-models-and-tools/Delta-Simulation-Model-II>
- SAV = Submerged Aquatic Vegetation
- Best Science so Far: If we want to get up and running, we will have to make “good guesses” to help us progress, with the understanding that those will be refined as we go as more details arise (such as higher resolution runs, barrier and structure recalibration, bathymetry, and filling in knowledge gaps on sources and flows).

Shawn Mayr/DWR

Would like to discuss model input (bathymetry). A follow-up meeting would be best for this.

Shawn must get input now to plan/schedule work this spring.

South Delta also has some bathymetry data - be sure to include Tom Burke.

Tom Burke, SDWA/Hydrologic Systems

We are putting together well data to see if we can correlate short-term/long-term data. This can hopefully give us all a more complete picture when complete.

SDWA has a contractor in the field that has been collecting data for the past couple of weeks.

Tom would like to get together with Shawn Mayr, Eli Ateljevich, and Jacob McQuirk to

coordinate this data collection. Eli is requesting that the data be dense enough so that it can be used in SCHISM. The meeting should occur sometime next week.

John Herrick/SDWA

Would like to sit down with Eli Ateljevich to go over his questions about these slides (measurements, inputs, etc.). We have to make sure we are analyzing the entirety of the problem – all of the parameters, not just the inputs.

Janis Cooke/SWRCB

What are the inputs for SAV? Is SAV modeled uniformly or with multiple estimates through the project area? Eli Ateljevich said there are two methods for estimating SAV density currently used. One is remote sensing (Normalized Vegetation Density Index) images, which is used in Clifton Court, Franks Tract and Cache Complex areas where the resolution of the images is sufficient. The other is a heuristic based on depth, assuming that presence and density of vegetation is highest in shallow water and that vegetation grows to the low-low water mark. This latter method is used in tight channels of the south Delta where the resolution of the remote sensing images is too coarse to resolve shoal-channel differences. Both methods are better at describing the relative likelihood of vegetation than they are at estimating absolute density, which is difficult to measure even at a point and which is not terribly consistent between NDVI images. Other environmental cues such as the relative dissipation of tides in winter and summer are used to tune the magnitude of the estimates. There is considerable uncertainty in characterizing SAV, and will be in the foreseeable future, but SAV is very efficient at reproducing drag within the canopy that have been observed in field campaigns. A result cited in our paper is the difference between above-canopy and below-canopy shear in Franks Tract.

Closing & Next Steps

Meeting notes and presentation will be distributed. Follow up with Eli if you have any further questions. Technical study plans are continuing to be developed.