

## IEP Tidal Wetlands Monitoring Project Work Team

December 3, 2014

9:00 – 12:00

DWR – West Sacramento – Room 119

CDFW – Alice Low, Stacy Sherman, Rosemary Hartman, Dave Contreras, Trishelle Morris, Hildie Spautz

DWR – Pascale Goertler, Caitlin Roddy, Erik Loboschefskey, Gardner Jones, Gina Benigno, Brett Harvey, Krista Hoffman, Anitra Pawley

SWFCA – Val Connor, Kelsey Cowin

DSP/DSC – Daniel Huang, Maggie Christman, Martina Koller

ESA – Ramona Swenson

NOAA – Brycen Swart

USFWS – Katherine Sun

SFEI – April Robinson

Bruce Herbold

MWD - Shawn Acuna(phone)

WWD - Sheila Greene (phone)

1. Introductions/Housekeeping
  - Review of meeting notes – October 1
  - Agenda review
  
2. Update on Status of Conceptual Model Text
  - Conceptual model diagrams are at a finished stage
  - Draft texts are almost finished for most of the conceptual models (see below for more details)
  - The text will be critical to tie all conceptual models together
    - Method for outside review of the final conceptual model text is to be decided
  - The tidal wetland text is fairly complete but has some missing sections
    - Text from other models will help to complete this text

- The tidal wetland evolution text is about 80% draft done.
  - The text can especially use help for topics: baseline conditions, sediment accretion, vegetation colonization, and peat accumulation. It needs thorough review by someone who knows more about these processes than Rosemary.
    - Tara Morgan may be able to help
    - Michelle Orr may be able to review it
- The food web text draft is completed and the authors would like more feedback
  - Gardner Jones will review it
- The Chinook Salmon text is almost completed
  - Joe would like to add stranding to the Chinook Salmon conceptual model
- The text for the Delta Smelt conceptual model will use the MAST report
  - It was recommended to extract the sections only relating to wetlands from the MAST report
- The clams text is completed and has received good comments
- The contaminants text has a draft completed
- The text for vegetation may still be in outline form
  - Pascale will talk to Louise about the status and report back
- The transport (flux) model text has not been drafted and will likely not be written like the other models

### 3. Update on subteam progress

#### Hypotheses and Metrics Development

All the hypotheses were categorized into the general tidal wetland conceptual model tiers they were designed to support. The hypotheses and metrics that were drafted from the subteams were combined into one table (hypotheses from the contaminants and vegetation are still under development). A decision tree may be developed as part of the monitoring plan.

- Hypotheses should add what we are comparing to (pre-project, reference sites)
  - This was taken out of some of the hypotheses presented to help generalize the table
  - The FRP team recommended using existing wetlands and other restoration sites for multiple points of comparison
  - What comparisons can be made? (focus on processes)
    - Wetland processes should be studied to determine success
      - ❖ Important for fish condition and food production
    - The processes approach should be recommended to steer the metrics
    - Comparisons seem to be interspersed throughout the table provided
  - Since many metrics are repetitive, it may be helpful to note where the repetitive metrics are taken

- Crayfish should be addressed because they may disturb vegetation, which would affect the food web
  - More information will be needed
  - Perhaps fit into Premise 7
  - Rosie will talk to Louise on topic

#### Fish hypotheses comments

- For hypotheses 3.2.x.x - try to define where those habitat locations may be

#### Food web

- Question for the PWT group
  - How much level of taxonomic detail is needed for zooplankton or other sample processing (ID vs biomass or production)?
    - Seasonality may be important to consider and identifying all zooplankton will help characterize the community
    - When looking at fish diet, it is important to capture the food community
    - FlowCam can expedite sampling processing, but need a taxonomist to QC the computer's work
  - Can we use artificial structures to mimic vegetation to sample epiphytic organisms?
    - Talk to Mike Johnson at UC Davis and Ben Landis at USGS as they used an artificial sampling (fouling plate) device to sample invertebrates
    - In situ sampling devices could be used in conjunction with ambient sampling to get more bang for your buck

#### Transport (flux)

- 10.1.3 appears to be a huge effort and will probably be a special study

#### Physical Processes

- Methods for measuring tier 1 and 2 elevation metrics should include LIDAR
  - LIDAR may be able to determine whether the tidal wetland intertidal zone is increasing or washing away
  - Flyovers would need to be coordinated to occur at low tide.
  - LIDAR in the Delta occurs every 5-10 years
  - There may be better methods (hyperspectral imagery) to capture changes in depth and sediment load

- For hypotheses 4.1
  - The metrics can be collected from one sonde,
    - However, it's not financial feasible to set up 10 sondes in one location
  - Water quality transects may be taken to characterize diversity of water quality
    - Stratified random sampling (veg vs shallow vs deep)
    - This information is typically taken during food web/fish sampling
  - Ideally a combination of in-situ water quality stations (semi-permanent sondes) to capture temporal variability, along with occasional transect cruises to capture spatial variability.
- Is the proximity to other restoration sites captured in any of the hypotheses?
  - No, but it will be incorporated to Premise 1.1

#### Contaminants Team

An update was provided:

The contaminants team has met three times and developed if-then scenarios to narrow the focus of contaminants monitoring based on site history and surrounding land use. Methods discussions have included assessment of biological effects (biomarkers, toxicity testing) and chemical analysis if warranted.

#### Vegetation Team

An update was provided:

The vegetation team is refining their hypotheses. They plan to send them out and meet in January 2015. Vegetation is divided up by type and focusing on how vegetation relates to the evolution of a wetland and how it influences fish viability and growth via the structure provided. If you're interested in joining the vegetation subteam, please send Anitra Pawley an email.

- A current vegetation issue is how to deal with how the project design will affect the vegetation community
  - Treat project design as a driver to be accounted for in monitoring.

#### 4. Next Steps

For the entire PWT team:

- Please look over the hypotheses table to ensure everything is captured and send all comments to Alice Low
- Research and suggest any new sampling technologies not captured during the subteam meetings
- Alice will send out a Doodle poll for the next meeting date, most likely early February