

Workgroup Activities – Third Quarter 2014

A. Sources Pathways and Loading Workgroup (SPLWG)/Small Tributaries Loading Strategy Team (STLST)

Meetings:

- The STLS group continues to hold monthly phone conferences to plan for Water Year 2015 POC monitoring. So far in 2014, meetings have been held on January 22, March 19, April 1, April 16, May 15, June 9, and July 2.

Milestones:

Continued preparations for developing a monitoring design and site list for water year 2015 POC monitoring. Began the QAQC process for water year 2014 POC data.

Activities for the Third Quarter of 2014:

- Continue preparation for water year 2015 POC monitoring
- Develop workplan for 2014 RWSM
- Begin reporting and analysis for water year 2014 POC monitoring
- Continue to meet with STLS on an as needed basis

For more information, see SPLWG minutes and agenda at <http://www.sfei.org/rmp/splwg> or contact the SPLWG lead, Lester McKee, at Lester@sfei.org.

B. Exposure and Effects Workgroup

Meetings:

- The EEWG held a conference call on May 12, 2014. During the meeting, special studies for 2015 were recommended.

Milestones:

- Completion of a draft of the Mesohaline Index Development San Francisco Bay Index Report Phase I. Comments from workgroup's science advisors are being addressed. The report will be finalized by the end of September 2014.
- Completion of the Bioanalytical Year 1 Progress report (sent to workgroups for review, comments requested by July 17th).

Activities for the Third Quarter of 2014:

- Continuation of work on Bioanalytical Tools study (Year 2).
- Copper and olfactory nerve project. The study originally planned on collecting olfactory data from juvenile Chinook salmon late summer 2013 (both before and after smolting in estuarine water). A shutdown of the salmon aquaculture facility at the Mukilteo Research Station earlier this year prevented the study from using Chinook salmon. Coho salmon reared at the Montlake facility in Seattle are available for the study. However, switching to coho salmon required that smolting occur in the Spring of 2014. Most of the experiment has been completed. The end date for the project has been extended to September 30, 2014. No additional funds are needed.
- UC Davis will conduct experiments to (a) establish a dose response relationship between *E. estuarius* survival and percent clay in sediment and (b) investigate whether clay particle shape is correlated with amphipod mortality. The contract with UC Davis has been prepared. The work will be completed by December 31, 2014.

For more information, see previous EEWG minutes and agenda at <http://www.sfei.org/rmp/eewg> or contact the EEWG lead, Phil Trowbridge, philt@sfei.org.

C. Emerging Contaminants WorkgroupMeetings:

- The ECWG met April 15th, 2014. During the meeting special studies for 2015 were recommended. Updates were given on the Bioanalytical Tool study, the PFOS precursor study results, alternative flame retardant work, and current use pesticide mapping exercise.

Milestones:

- Finished the draft PBDE manuscript. After final input from co-authors in July 2014, the manuscript will be distributed to the ECWG, TRC and SC for a two-week review period.
- Collected alternative flame retardant effluent and seal samples.
- Completed the current use mapping pesticide exercise; presentation to TRC and ECWG.
- Presented information to the workgroup on potential pharmaceuticals and personal care products monitoring priorities.
- Prepared a CEC table for the State Panel describing RMP activities in relation to State Panel's recommendation for monitoring estuaries, and attendance at May meeting to discuss pilot study.
- Prepared proposals for June TRC meeting.
- Prepared and presented poster on alternative flame retardants in San Francisco Bay for BFR 2014 conference in Indianapolis.

- Presented RMP body of work on PBDEs and alternative flame retardants at an awards luncheon for the California Section of the American Chemical Society (May), as well as the BACWA laboratory committee (June).
- Finalized 2012 PBDE tern and cormorant egg measurements.
- Meg Sedlak presented a talk titled "Monitoring Chemicals of Emerging Concern in San Francisco Bay" at the Canadian Chemistry Conference on June 3, 2014.

Activities for the Third Quarter of 2014:

- Continuation of NIST broadscan work. NIST has provided the RMP with a final report for harbor seal samples and a preliminary report for mussel samples. NIST plans to publish the results from the seal samples in a manuscript (no date set). The NIST report on mussel samples was sent to the ECWG and comments are due by July 21, 2014. The report will be shared with the TRC after the ECWG review.
- Preparing for the collection of sediment and bivalve samples for alternative flame retardants.
- Preparing for the collection of sediment samples for pro bono quaternary ammonium compounds analyses (with Bruce Brownawell, Stony Brook University), and water samples for hindered phenol analyses (with Derek Muir, Environment Canada).
- Preparing for the August American Chemical Society meeting in San Francisco (poster presentation).
- Conducting metabolomic analyses of 10 seal serum samples collected from the South Bay by AXYS Analytical Services (pro bono).

For more information, see previous EC workgroup minutes and agenda at <http://www.sfei.org/rmp/ecwg> or contact the ECWG lead, Rebecca Sutton, RebeccaS@sfei.org.

D. Nutrients

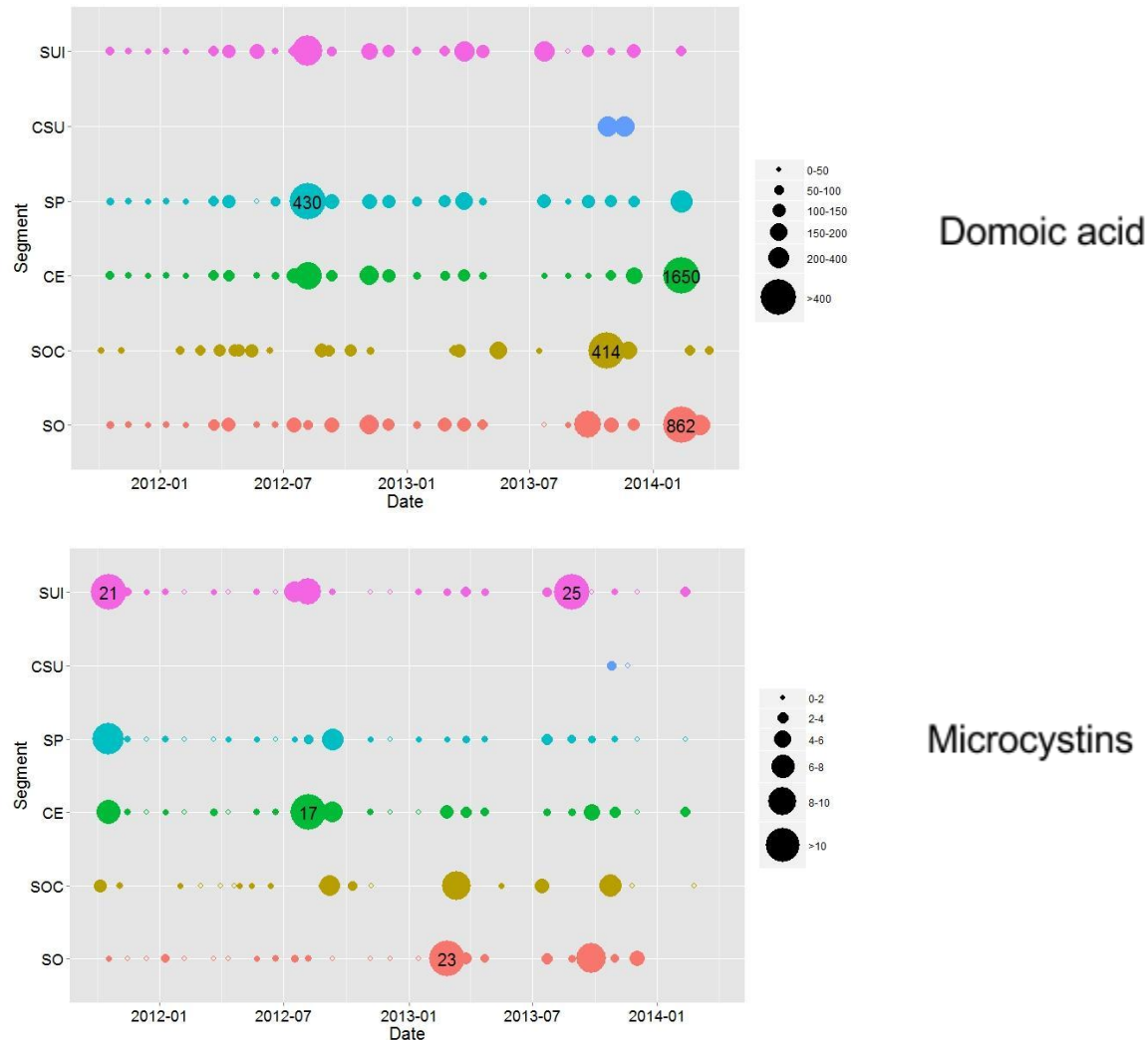
Meetings

In accordance with the newly-developed governance structure for the Nutrient Management Strategy, a Nutrient Technical Workgroup and a Steering Committee have been convened in Q2 2014. A project-specific technical team meeting also took place for the Assessment Framework Development (May 19th, 2014).

Milestones

- An interim report on the Solid Phase Absorption Toxin Tracking (SPATT) project for detecting algal toxins was recently completed (R. Kudela, UCSC). We anticipate a draft final and final project report in Q4 2014, so while this interim report will be distributed to the TRC/SC shortly, there is no need for formal review. SPATT samples have been deployed regularly in-situ and on transect cruises since 2011 (2013 samples funded by RMP) and preliminary analysis has begun (see figure below). 69% of samples were positive for microcystins and 99% were positive for domoic acid. A no-cost extension

has been requested in order to allow for sample collection and analysis to continue through September 2014.



- A draft “Development Plan for the San Francisco Bay Nutrient Monitoring Program” was completed in Q2 2014 and sent to the TRC/SC and the Nutrient Technical Workgroup for comment in early June. Thus far, no comments have been received. This report makes initial recommendations for future monitoring program structure and identifies highest priority data investigations/pilot studies to address remaining questions, and the report will be revised/updated as the results become available. [Funded in part by the RMP].

Activities for the Third Quarter of 2014

- “Scientific Foundation for a San Francisco Bay Nutrient Strategy” (formerly known as “Nutrient Conceptual Model”) will be completed in July 2014 [Funded by the RMP]
- A draft technical memo on the results of WY2012/WY2013 nutrient stormwater sampling is nearly complete and is expected in July 2014, at which point it will be sent to the TRC/SC for review [Funded by the RMP]

- Two draft deliverables for the moored sensor pilot program are expected in July 2014, which will be sent to the TRC/SC and Nutrient Technical Workgroup for review. One is a technical report that summarizes lessons learned about sensor operation, scientific analysis of pilot year data and recommendations for year 2 of the moored sensor program. The second is a manual that will provide guidance on sensor servicing and maintenance [Funded by the RMP and Nutrient Strategy]
- The detailed modeling workplan is currently being developed and is expected to be completed in July 2014. After this workplan is reviewed and approved by the TRC/SC, model development will begin [Funded by the RMP]
- A draft report that synthesizes seasonal, spatial and temporal trends in ecosystem drivers (nutrients, sediments) and responses (chlorophyll, dissolved oxygen) in Lower South Bay is currently in development and is expected to be completed in July 2014. This report is not RMP funded, but will be reviewed by the Nutrient Technical Workgroup.
- A beta web-tool for visualizing real-time moored sensor data from SFEI and USGS instruments is expected to be completed in July 2014.

For more information, please contact David Senn at davids@sfei.org or Emily Novick emilyn@sfei.org.

E. Sport Fish

Meetings

The Sport Fish Workgroup met on December 20th, 2013 to discuss the RMP's 2014 sport fish sampling effort, including the contaminants, species, and regions that will be sampled. Sampling is currently under way.

Activities for the Third Quarter of 2014:

- We are coordinating field activities, lab analysis, and data management for sport fish monitoring.

For more information, please contact April Robinson at april@sfei.org.

F. Selenium Strategy Team

Meetings

- The Selenium Strategy Team held its first meeting on April 22. The meeting was devoted to orientation for the members and preliminary discussion of a Strategy and workplan for 2015.
- A second meeting was held on June 3 that yielded proposals submitted to the TRC for their June meeting.

- The next meeting will occur in Q1 or Q2 of 2015 to review results from the proposed 2014 study of sturgeon muscle plugs and develop a plan for 2016 work.

Activities for the Third Quarter of 2014:

- Finalize written summary of the Selenium Strategy (via email).

G. PCB Strategy Team

Meetings

- The PCB Strategy Team met on June 6 to discuss proposals for work in 2015 and a multi-year workplan. The meeting and subsequent discussion led to the proposal to submitted for TRC consideration.
- The next meeting has not been scheduled yet, but the group will meet again once or twice this year to discuss criteria for prioritizing margin units, set the stage for work to be conducted in 2015, and further flesh out the multi-year workplan for PCBs.

Activities for the Third Quarter of 2014:

- Finalize updated PCB Strategy and possibly hold another meeting.

For more information, please contact Jay Davis at jay@sfei.org.

H. Items of Interest

Delta RMP

The Technical Advisory Committee (TAC) and its four ad-hoc subgroups are in the process of developing and consolidating various components of the initial monitoring design for the initial priorities of the program: current use pesticides, methylmercury, nutrients, and pathogens (*Cryptosporidium* and *Giardia lamblia*). POTWs have identified a station network of proposed key locations for reasonable potential analysis. The plan is to integrate these various elements into a unifying design by September, with the intent to start collecting samples in 2015. SFEI staff currently engaged in these planning efforts include: Thomas Jabusch, Jay Davis, David Senn, and April Robinson.

For more information, contact the Delta RMP Project Lead, Thomas Jabusch, at thomas@sfei.org.

Resilient Landscapes

Head of Tide Report Completed

Within the tributaries that drain to San Francisco Bay, there exists a transition between fluvial and tidal processes and conditions. The upstream boundary of this transition, called the head of tide (HoT) zone, can be defined as the inland limit of the effects of average high tides on tributary flows and water surface elevation. This zone is characterized by unique and diverse assemblages of plants and animals, cultural resources, as well as a vulnerability to out-of-channel flooding during high river flow and high tide conditions. As many Bay Area municipalities are built near the HoT zone, there is a growing concern about managing the flooding risk as well as the aquatic resources in the HoT zone for current conditions and future conditions when rapid sea level rise causes the HoT zone to migrate inland. The first step in developing effective management strategies needs to be creating a process, or protocol, for determining where the HoT zone is now and where it will likely be in the future.

SFEI recently completed a pilot study focused on creating a framework for a rapid protocol that can be used to delineate the current and future HoT zone for San Francisco Bay tributaries using both “desktop” and field investigations. The protocol was developed by examining data collected at six tributaries that represented a broad range in watershed size and channel gradient. The desktop investigation used publically available spatial tools as a “first cut,” coarse estimate of the current HoT zone location. The field investigation involved examining multiple physical and biological indicators of both the current and future HoT zones and is intended to refine the estimate given by the desktop investigation. The data were then analyzed to determine the indicators that are most effective at rapidly identifying the HoT zone location and extent.

The study found that a combination of desktop and field investigations can be used to develop rapid yet reasonable estimates of the current and future HoT zones for the San Francisco Bay tributary sites examined. These findings are encouraging and suggest that a robust, validated protocol appropriate for Baywide application can be developed with data from more representative Bay tributaries. SFEI plans to continue protocol development in close coordination with regional management agency partners.

Forum on Science to Support Management of Methylmercury in Restored Tidal Marshes

The RMP sponsored a forum on December 17, 2013 to review information and information needs relating to managing methylmercury in restored tidal marshes in San Francisco Bay. A summary of the meeting will be distributed with the SC agenda package. Meeting materials are available at http://www.sfei.org/calendar_events/4326