

Workgroup Activities – Second Quarter 2009

A. Contaminant Fate Workgroup

Meetings:

The Contaminant Fate Workgroup meeting was held June 10th, 2009. There were presentations and discussion on an RMP modeling strategy and its potential components. Brief updates on the RMP mercury and PCB strategies were presented. Coring study results and lessons learned for future studies were discussed. Proposed pilot and special studies for 2010 were discussed and ranked. Minutes from this meeting can be reviewed on the SFEI website. Presentations (as permitted by presenters) are also posted at our web site.

The date for the next CFWG meeting will be Winter 2009.

Milestones:

- Development of a Draft Modeling Strategy
- Sediment coring project
 - Completion of organics contaminant analysis. All laboratory analyses are complete, although some samples may be reanalyzed to address QA issues.
- Completion of methylmercury simple mass balance manuscript

Activities for the third quarter of 2009:

- Incorporating PCB homologues into the existing multi-box model
- Continued refinement of the Modeling Strategy.
 - Expanded discussion of the justification/ questions to be answered by modeling strategy
- Integrating and coordinating various elements (mercury, PCB, modeling strategies) into an update of the CFWG 5-year plan.
- Produce technical report/manuscripts for coring study

For more information, see previous CFWG minutes and agenda at our website http://www.sfei.org/rmp/rmp_minutes_agendas.html or contact the CFWG leader, Don Yee, at don@sfei.org.

B. Sources Pathways and Loading Workgroup (SPLWG)

Meetings:

Next workgroup meeting is scheduled for October/November, 2009. Previous meeting in the 2nd quarter was held on May 27th. Presentations from the meeting are posted to the SFEI website.

Milestones during the 2nd quarter:

- Major focus of the workgroup was the development of a small tributary strategy. A draft (version 3) was prepared in preparation for the May workgroup meeting based on the outcomes from a meeting in the first quarter (March 17th 2009) between Water Board staff (Mumley, Looker), BASMAA staff (Feng and Sommers) and SFEI staff (McKee and Davis) where alignment of the MRP with the RMP STLS was discussed and agreed upon. Based on review comments received at the May workgroup meeting, a new draft has been prepared (version 4) and after internal review, will go out to the strategy team for review and input in July.
- On April 30th we completed WY2009 wet weather sampling in Zone 4 Line A year 3.
- Completed addressing reviewer comments for the Guadalupe model year 1 report, Zone 4 Line A year 1 report, Small Tributaries Regional Sediment Loads report and resubmitted these three reports to SPLWG for endorsement. Further comments were received from several workgroup members. These will be addressed and the reports will be sent to the TRC for approval in the 3rd quarter.
- The Mallard Island mercury loads journal article is now in press.

Activities for third quarter 2009

- Complete the small tributary strategy and begin work on the strategy elements presently funded (3a Develop Criteria and Rank Watersheds; 3b Optimize Sampling Methods Including Trends Analysis; 3c Develop Multi-year Watershed Loading Sampling Plan)
- Complete a draft report for review of Z4LA small tributaries loading study - year 3 and send out for review
- Prepare for wet weather sampling (Assuming TRC approval: Mallard Island, Z4LA, and Guadalupe)
- Complete and submit manuscripts for PCBs and OC pesticides and trace metals in Guadalupe River

For more information, see previous SPLWG minutes and agenda at our website http://www.sfei.org/rmp/rmp_minutes_agendas.html or contact the SPLWG lead, Lester McKee, at Lester@sfei.org.

C. Exposure and Effects Pilot Study (EEPS) Workgroup

Meetings:

A workgroup meeting was held on November 13th to review progress on the Causes of Toxicity study (SFEI), Mercury in Terns (USGS), and PAHs in juvenile flatfish (NOAA). The next meeting is scheduled for July 6th.

Milestones:

- Josh Ackerman and Collin Eagles-Smith (USGS) completed their report on mercury in terns: *A Dual Life-Stage Approach to Monitoring the Effects of Mercury Concentrations on the Reproductive Success of Forster's Terns in San Francisco Bay*.

- The Small Fish intensive sampling for 2008 has been completed and the lab is in the process of analyzing the samples. The majority of the mercury isotope samples for Dr. Joel Blum have been collected and sent to his lab. DGT mercury films were deployed at a subset of the Small Fish sites and have been shipped to Dr. Holger Hintlemann's lab for analysis.
- The NOAA study on PAHs in zebra fish found that fluoranthene and pyrene both affect development and loss of Kupffer's Vesicle, a temporary signaling structure that is important in the development of embryos.
- The NOAA group successfully raised a batch of California halibut, the flatfish that will be used in the next stage of the study.
- Kevin Kelley completed a draft report of the endocrine disrupting compounds in fish and will be sent to the workgroup for review.
- Cormorant and terns egg collection has been successful.
- Sportfish sampling is currently on-going.

Activities for the third quarter 2009:

- Continuation of USGS and USFWS study on terns and hatchability success and mercury egg concentrations.
- Continuation of the Small Fish study. Temporal collection is continuing at arrowhead marsh. An additional deployment of DGTs from Dr. Holger Hintlemann will be conducted at Zone 4 Line A during the wet season. Precipitation collection for the mercury isotope study by Dr. Joel Blum is being coordinated by SFEI staff.
- Continuation of NOAA study on juvenile flatfish. The first year of the study is focused on zebra fish as a model fish and exposure of the fish to four and five ringed PAHs that are common in SF Bay sediments. The next year will focus on juvenile California halibut.
- Completion of the EEPS five-year plan.

The next workgroup meeting will be held in the Fall of 2009.

For more information, see previous EEWG minutes and agenda at our website http://www.sfei.org/rmp/rmp_minutes_agendas.html or contact the EEWG lead, Meg Sedlak, at meg@sfei.org.

D. Emerging Contaminants Workgroup

Meetings:

The workgroup met on April 17th to review the proposed pilot and special studies for 2010 including: using time of flight spectrometry to evaluate chemicals of emerging concern in seal and mussel tissues; evaluation of fipronil, and stormwater loads of pentachlorophenol (PCP). Updates on projects from 2008 (alternatives to flame retardants) and 2009 (white paper) were given.

Milestones:

- Preparation of a report on the presence of pharmaceuticals in influent, effluent and Bay water samples.
- Sample collection and analyses for alternative flame retardants. Preliminary reporting of some of the data sets.

Activities for the second quarter 2009:

- Evaluation and synthesis of alternative flame retardant data and preparation of a manuscript.
- Planning for the 2009 sampling of water and biota for perfluorinated compounds.
- Begin drafting the 2009 White Paper on Chemicals of Concern.

Next meeting will be scheduled for Spring of 2010.

For more information, see previous EC workgroup minutes and agenda at our website http://www.sfei.org/rmp/rmp_minutes_agendas.html or contact the ECWG lead, Meg Sedlak, at meg@sfei.org.

E. Causes of Toxicity

In 2008, the RMP completed a study evaluating causes of toxicity to amphipods at 12 sites identified as being toxic (e.g., sites with known contamination). The goal of the study was to develop better methods for determining the causes of the toxicity. The Toxicity Workgroup, a subcommittee of the Exposure and Effects Workgroup, reviewed the results of this study and recommended that the RMP conduct the following:

- Evaluate the use of freshwater test organisms in areas such as the river stations where the salinity is low for the RMP Status and Trends program;
- Focus on developing LC50 thresholds of effects for estuarine test species to aid in comparisons; and
- Develop a collaborative state-wide workgroup and research effort to address causes of persistent moderate toxicity. This effort should begin by convening one or more workgroups in 2009, in collaboration with SCCWRP and the State Water Board, to investigate and consider methods such as genomics and other sub-lethal markers of contaminant exposure that may be useful in identifying causes of moderate toxicity.
- Further research solid phase toxicity identification and evaluation (TIE) methods.

This element will be further developed and brought to the workgroup and TRC for approval.

For more information, please contact Sarah Lowe at Sarahl@sfei.org.

F. Benthic Workshops

Meetings:

Sediment Quality Objectives for Enclosed Bays and Estuaries (SQO Phase I) was promulgated in February 2008. Benthic indicators form one line-of-evidence in the SQO assessment procedure. However, in mesohaline areas of San Francisco Estuary, such as San Pablo and South bays, current benthic indices require revision. In oligohaline areas, such as Suisun Bay, benthic indices have yet to be developed. Therefore, a benthic workshop was held on June 3rd to work through these topics. The goals of the first workshop were to agree upon the spatial and temporal extent of benthic assemblages in the Estuary and decide upon suitable assessment methods for development of a mesohaline benthic index.

Milestones:

- A standardized dataset of benthic macrofauna data from the San Francisco Estuary was compiled and used for cluster analysis
- After reviewing cluster results, the workgroup agreed upon initial benthic assemblage classification in the Estuary. The initial classification contained nine groups:
 - Grps 1-3 are tidal fresh stations in the Delta with very different species
 - Grp 4 are mostly located in Suisun Bay
 - Grp 5 are from mostly sandy habitats with several unique taxa
 - Grps 6 - 9 represent a gradient of taxa along the estuary salinity gradient
- Mesohaline index methods were discussed. The workgroup agreed that a Best Professional Judgment (BPJ) exercise (as was done in SQO Phase I) would provide the best opportunity to identify benthic response gradients in the assemblages, to support mesohaline index development and validation

Activities for the third quarter 2009:

- Re-run cluster analyses with additional DWR data and assess the following: 1) if species cluster groups are robust in both space and time; 2) if dominant taxa in each group are different enough to justify assemblage designations; and 3) if the habitat factors for each group are different enough to justify assemblage designations
- SCCWRP-SFEI team to evaluate samples for use in BPJ exercise
- Bruce Thompson and Steve Weisberg to identify and recruit BPJ experts

The next benthic workgroup meeting will be held on August 24th, 2009

For more information, please contact the benthic workgroup leads, Bruce Thompson, at brucet@sfei.org, Aroon Melwani, at aroon@sfei.org, or Sarah Lowe, at Sarahl@sfei.org

G. Status and Trends Sport Fish

Sportfish planning meeting for the 2009 sampling was held on November 5th. A sampling plan has been prepared and approved by the committee. Moss Landing Marine Labs is currently collecting sportfish. Contracts for the analyses of the fish are currently being prepared. The cost of this sampling exercise will be shared with SWAMP.

For more information, please contact Jennifer Hunt at jhunt@sfei.org.