

Attendance:

Jay Davis, SFEI	Eric von der Geest, MLML	Petra Lee, DWR
Jon Marshack, SWRCB	Michael Lyons, LA RWQCB	Amanda Palumbo, SWRCB
Jennifer Salisbury, SWRCB	Karen Worcester, Central Coast RWQCB	Brian Duke, CDFW
Autumn Bonnema, MLML	Stacey Swenson, SWAMP	Chris Stransky, AMEC
Cassandra Lamerdin, MLML	Rich Breuer, SWRCB	Rolf Schottle, AMEC
Thomas Jabusch, SFEI	Lilian Busse, SD RWQCB	Chris Foe, CVRWQCB
Terry Fleming, USEPA	Dylan Service, MLML	Robert Brodberg, OEHHA
Lori Lim, OEHHA	Carol DiGiorgio, DWR	Leland Tarnay, NPS
Ellen Willis-Norton, SFEI		

Item 1: Introductions, Agenda Review, Goals of the Meeting [Jay Davis]

Jay Davis opened the meeting by stating that it has been a productive year for the BOG.

Item 2: Brief Updates and Announcements [Group]

- *BOG Contracts [Jay Davis]*

Jay Davis stated that the master contract for 2013/2014 will soon be in place. With the contract prepared, the BOG is ready to begin 2014 work.
- *BOG Audit and Presentation to Council [Jay Davis]*

Jay informed the BOG that the California Water Monitoring Council recently held a triennial self-audit of all Council workgroups. Jay presented BOG accomplishments over the past three years to the Council and did not receive any major comments. Jon Marshack noted that the a report on the self-audit will be sent to the Cal/EPA and the California Natural Resources Agency that summarizes the current challenges that will be addressed in the future.
- *Other significant happenings related to bioaccumulation in California*
 - *Palos Verdes Shelf [Michael Lyons]:* Michael Lyons noted that the USEPA is conducting DDT and PCB sampling in white croaker off of the Palos Verdes Shelf (a Superfund site). The white croaker samples are skin off fillets and are being analyzed individually. USEPA is also sampling mercury in sand bass and lobster on the shelf.

The Port of Los Angeles and the Port of Long Beach are also sampling fish in the Harbor. Michael assumes that both the Port of LA and the Port of Long Beach will enter their data into CEDEN and he will ask the USEPA if the Palos Verdes Shelf data will also be entered.
 - *2015 National Coastal Assessment [Terry Fleming]:* Terry noted that the USEPA is completing the next National Coastal Assessment in 2015 and will be sampling at 51 sites. The NCA samples bottom fish.
 - *San Diego Region Bioaccumulation Study [Lilian Busse]:* In 2014, the SDRWQCB is completing cyanotoxin monitoring in fish from San Diego reservoirs. The study is a follow-up to a previous study that detected cyanotoxins ubiquitously in San Diego lakes, reservoirs, and the coast.

- *Bight '13 Program [Chris Stransky]:* The sampling for the Bight 13 program is completed. The program included bioaccumulation sampling at multiple trophic levels including benthic fish, invertebrates, and plankton. In the spring of 2014 there will be a follow-up study that examines bioaccumulation in shallow areas of San Diego Bay. Passive samplers will also be released into the water column as part of the study.
- *Sea Otter Study [Karen Worcester]:* The Central Coast RWQCB is examining sea otter liver tissue in high risk areas (e.g. Elkhorn Slough) to determine if they are accumulating pyrethroid pesticides.

Action Items:

- None

Item 3: Information: Monitoring Inventory Update [Jay Davis]

At the March BOG meeting, plans for performing an inventory of bioaccumulation monitoring in the state were presented, and the group agreed that this was a priority action. Due to the contract delay, this work is just now beginning.

Presentation and Discussion:

Jay Davis stated that the Bioaccumulation Monitoring Inventory goal is to enhance bioaccumulation monitoring coordination throughout the state. The BOG is interested in studies that have been completed in the past, that are currently happening, and especially studies that will continue in the future. Jay sent out an email in November to the BOG email list asking for bioaccumulation monitoring metadata and received a some good responses. However, he is interested in a more targeted approach for gathering the data. Ellen Willis-Norton from SFEI will lead the targeted approach by sending out individual emails and following-up with phone calls to obtain information from agencies that aren't involved with BOG efforts.

Terry Fleming asked how the data would be used. Jay responded that the metadata would be stored in a spreadsheet; but to make the information accessible, the current vision is to create an interactive map that displays water bodies where monitoring is occurring. The actual data would not be displayed, but the user would be able to use the information provided on the map to retrieve data they are interested. Jon Marshack asked if the database would be maintained over time. Jay replied that he hasn't considered how the database would be maintained in the future, but thinks the information would be valuable. Terry Fleming noted that the BOG should think about how the inventory can encourage people to enter their data into CEDEN.

A BOG member noted that Region 5 and SFEI already created an online inventory map (Central Valley Monitoring Directory) where users could enter their monitoring information. Instead of starting from scratch, the BOG monitoring inventory could be a continuation of the SFEI's inventory effort.

Action Items:

- *Ellen Willis-Norton will send the BOG Monitoring Inventory google form to the BOG (Completed)*

Item 4: Action: Bioaccumulation Symposium [Jay Davis]

Decide whether to hold a second symposium this winter or spring. Possible themes include: the coast (mammals, birds, bivalves, fish); tribal monitoring, assessment, and communication; reservoir monitoring.

Presentation and Discussion:

Jay Davis began the discussion on hosting a bioaccumulation symposium in 2014 by stating that the December 2012 Symposium was successful because it helped build a distribution list and increased participation in the BOG. Jay listed potential themes for a 2014 symposium including:

1. *The Coast*: Jay noted that there are a considerable amount of bioaccumulation information needs on the coast. The BOG has focused on lake monitoring for the past three years and it may be worthwhile to return to the coast. Additionally, there is the potential for partnership with ocean groups and agencies.
2. *Tribal Focus*: Various tribes in California have expressed interest in bioaccumulation issues, especially related to fish consumption. Thus far, tribal groups have not participated in the BOG. Jay stated that a symposium focused on learning about ongoing studies and potential partnership opportunities with the tribes may be useful.
3. *Reservoir Monitoring*: Similarly, there are many groups that conduct reservoir monitoring that have not been active in the BOG. A symposium that brings reservoir operators and owners together may be useful for the Hg Reservoir TMDL team.

Terry Fleming stated that he was not very excited by any of the ideas and asked if the first symposium generated additional BOG workgroup members. Jay replied that participation at BOG meetings did not increase significantly, but the symposium did result in a functioning mailing list. Bob Brodberg stated that a symposium is useful to increase interest if the symposium is centered on a program or a study is just beginning or coming to a close. Jay stated that the cost of symposiums increase if they are focused on promoting consensus or wrapping up an issue rather than focusing simply on increasing participation. Jon Marshack noted that the Water Quality Monitoring Council has considered holding a symposium, but the symposium would be focused on workgroup activities rather than on a theme.

Jon noted that the Ocean Protection Council and California Ocean Science Trust are in the process of putting together an Ocean Workgroup under the Water Quality Monitoring Council; therefore, it may be useful to wait to host a symposium focused on the coast until the workgroup is formed. Terry asked if there was a role for the BOG in the Ocean Workgroup. Jon replied that once the roadmap for the workgroup is in place, Jay should become a member. Jennifer Salisbury and Jon wondered if the information for the second two topics (Tribal Focus and Reservoir Monitoring) will be obtained through the monitoring inventory effort. Chris Foe stated that there are over 1,000 lakes and reservoirs in California, so there will most likely be data gaps even after the inventory effort. Jon suggested completing the inventory and using the information to help inform the theme for the symposium. Chris and Terry agreed that they are more interested in the interpretation of monitoring data (e.g., trends over time and how we can drive down concentrations) rather than who is monitoring what and where.

Action Items:

- BOG members will wait to decide on a symposium theme until the monitoring inventory is complete.

Item 5: Decision: SWAMP Business - 2014 Monitoring and Workplan, Long-Term Monitoring Plan [Jay Davis]

Based on discussions at the last BOG meeting and the November Roundtable meeting, a workplan for 2014 is taking shape. The BOG needs to confirm the outline of the plan, discuss some of the details, and agree on a process for working out remaining details.

Presentation and Discussion:

Jay Davis stated that at the SWAMP Roundtable Meeting there was a decision to cut funding across all SWAMP programs by 18%. Instead of \$650,000, the BOG's budget for 2014 is \$528,000. The goal for today is to decide what elements of the BOG 2014 workplan are the most essential and figure out where cuts can be made. Jay noted that the highest priority is generating a summer sampling plan.

Jay reviewed the general 2014 workplan that was approved by the SWAMP Roundtable:

1. SFEI - Project management, administration - convening BOG, SWAMP coordination, integration with other programs (e.g., TMDL), peer review, developing protocols - \$60,000
2. SFEI - Strategy development and implementation – statewide coordination, workplan development, long-term monitoring plan - \$40,000
3. CDFW - BOG coordination, contracting and financial management, QAPP, administration, monitoring design, protocols, data validation - \$81,000
4. 5 Year Sport Fish Summary Report - \$30,000
5. CyanoHAB white paper (long term plan for monitoring cyanotoxins)- \$50,000
6. Clean Lake Study - ~25 lakes, 3 species, Hg only, technical report and fact sheet - \$223,000
7. Monitoring integration with statewide TMDL and other programs - monitoring assistance, sampling - \$65,000
8. Portal upload, maintenance, development - \$15,000

Jay informed the group that he talked with Carrie Austin and Patrick Morris, who are leading the Hg reservoir TMDL effort, and asked how the BOG could support the TMDL. Carrie and Patrick listed their monitoring priorities, which are

1. A clean lake study (number six on the BOG's 2014 workplan) that includes sampling for Hg in biota and collecting water quality parameters.
2. Monitoring biota in lakes where models predict a decline in Hg atmospheric deposition.
3. Supplemental sampling of lakes where there is limited data to help inform 303(d) listings.
4. A reference lake study to help determine if management actions in lakes and reservoirs are affecting Hg concentrations or if they are observing a regional trend.

Carrie and Patrick were excited about the clean lake study because it addresses the need to reduce human exposure. Additionally, the TMDL team has been focusing on problem water bodies and it would be interesting to know what makes certain lakes clean. Jay noted that the study would also be a good role for SWAMP because other agencies are unlikely to monitor in "clean" lakes. Jon Marshack stated that another benefit would be to determine if lakes that were designated as "clean" in the original BOG lakes survey are actually safe. Jay stated that the focus of the study needs to be discussed; in the Sierra the focus would most likely be on finding other species that are harder to catch than trout and may have higher concentrations, while in areas with largemouth bass the focus would be on confirming that the concentrations are low in the species. Jay added that the group also needs to discuss the definition of "clean."

Jay then asked the group how to reduce the budget from \$563,000 to \$528,000. He noted that there has been waning support for completing the five year sport fish summary report (\$30,000). A benefit of completing the summary report is that since the initial monitoring effort, there have been follow-up studies that can be integrated into the synthesis. Another way to reduce the budget is by combining items 6 and 7, the clean lake study and monitoring integration with TMDL team, and reducing the total funding by \$30,000 (currently combined budget is \$290,000). Terry Fleming asked if there was a way for the TMDL team to contribute \$30,000 to the study; Jay replied that he would ask Carrie and Patrick. Jay noted that Carrie and Patrick want to convene a workgroup with the BOG and TMDL team to generate a more detailed study plan with a cost estimate.

Karen Worcester was in support of cutting the five year summary instead of reducing the funding for items six and seven. Bog Brodberg agreed, stating that the RWQCBs can summarize the data if they are interested in certain statistical analyses. Karen stated that the summary report could be turned into a factsheet. Jennifer Salisbury stated that the follow-up studies should be added to the portal; Jay replied that he would make sure the portal was updated.

Karen noted that she was interested in the atmospheric deposition study and wondered if the clean lakes study could also answer the question of if there was reduced atmospheric deposition in certain lakes. Jay replied that the lakes where there was reduced atmospheric deposition may not be clean lakes. Karen responded that a reference lakes study could then be tied to the atmospheric deposition study since reference lakes are not necessarily clean. Leland Tarnay stated that he was also interested in understanding if atmospheric deposition rates are changing and said he would be willing to help with logistics.

Karen noted that she was also more interested in the reference lake study or a time-series trend study than the clean lakes study and asked why identifying clean lakes was a priority. Jay replied that the clean lakes study is more compelling than the reference lakes study because it generates high public interest. Bob added that identifying low concentrations is important for reducing human exposure because you can point to lakes where it is safe to fish. Additionally, it would be interesting to determine why certain lakes are clean, whether it is because of a lack of local sources, low atmospheric deposition, or ecological factors. Bob expressed his support for the study and agreed with Carrie and Patrick that monitoring water quality parameters (e.g., chlorophyll a) in the lakes would also be useful.

Jay stated that the next step for the clean lakes study is creating a workgroup. Jay ended the discussion of the 2014 workplan by stating that the CyanoHAB white paper (item 5) is not as urgent as the clean lakes study, but work needs to move forward. Lilian Busse stated that the small group working on cyanotoxins will discuss the white paper and report any updates to the BOG. Lilian, Jay, and Thomas will also let the Blue-Green Algae Steering Committee know that the BOG is working on developing a CyanoHAB white paper.

Action Items:

- Jay Davis will add to the Clean Lakes Study Benefits slide that another benefit of the study is determining if lakes that were designated as “clean” in the original BOG lakes survey are actually clean.
- Leland Tarnay will send paper about atmospheric deposition monitoring in California to the BOG (Completed)
- Jay Davis will look into updating the Portal with follow-up bioaccumulation studies from OEHHA and the RWQCBs.
- Lilian, Jay, and Thomas will let the Blue-Green Algae Steering Committee know that the BOG is working on developing a CyanoHAB white paper.

Item 6: Review action items; discuss agenda for next meeting [Jay Davis]

Jay Davis ended the meeting by asking the group to start thinking about the long-term vision for BOG and how the BOG fulfills monitoring needs that are not being performed by other agencies. Monitoring needs on the coast differ from monitoring in lakes and wetlands and the BOG should identify how it can be useful in different habitats.