



**RMP
Technical Review Committee
Margins Sampling Conference Call
April 10th, 2014
San Francisco Estuary Institute
Meeting Summary**

Attendees

Bridgette DeShields, Arcadis/WSPA
Karen Taberski, SF RWQCB
Eric Dunlavey, City of San Jose
Tom Hall, EOA, Inc. (South Bay Dischargers)
Brian Anderson, UC Davis
Paul Salop, AMS
Chris Sommers, EOA, Inc. (BASMAA)

Naomi Feger, SFB RWQCB
Amy Chastain, AECOM/ SFPUC
Meg Sedlak, SFEI
Jay Davis, SFEI
Jim Kelly, SFEI
Don Yee, SFEI
Josh Collins, SFEI
Ellen Willis-Norton, SFEI

I. Meeting Goals [Meg Sedlak]

Meg Sedlak informed the TRC that with the proposed reductions in the S&T program, it is now possible to think of additions to the program such as monitoring in the margins.

II. Margins Ambient Sediment Data Needs [Don Yee]

Don Yee began the discussion on margins sampling by listing the three decisions that need to be made:

1. Do we need ambient margins monitoring?
2. Are there benefits to ambient margins data sooner/now?
3. What scope of effort should we start with?

The current S&T program does not sample margin areas, which are a significant portion of the Bay area for some subembayments (e.g., margin habitat is approximately 74% of Lower South Bay). Don indicated that margins ambient data are needed if the TRC considers margins as important habitat and if ambient margins data needs are higher than other priorities. Don stated that the RMP has collected a considerable amount of open Bay data and that margins represent a substantial data gap in our overall understanding of the Bay and Bay processes.

Don then reviewed the differences between ambient and targeted margins sampling. There are currently more data from margins hotspots than the ambient margins. Targeted sampling would be useful if there were planned control actions that had immediate data needs. However, ambient margin data would provide information on the status and trends of an important Bay habitat. Additionally, biota in the margin areas are spatial integrators; therefore, well-distributed ambient

data are needed to correlate water/sediment concentrations and tissue concentrations. Ambient margin data would also be useful for managing polluted sites because it could serve as a comparison to margin hotspots, it may reveal that a pollution source is more distributed than previously thought, or uncover new pollution sources. Finally, ambient margin data may reveal that the contaminant concentrations in dredged sediment may be higher than the ambient open Bay, but lower than the ambient margins; therefore, increased amounts of dredged sediment could be placed in the margins for re-use.

If the TRC agrees that the margins are important habitat, Don asked the members to consider the type of sediment data needed, the approach, location, and time frame for sampling. He noted that the costs per station would be higher than the open Bay because of logistics. Additionally, if the TRC agreed to substitute open Bay sampling sites for margin sites, the power to detect changes in the open Bay would decrease. A reduction of Bay sites to four per segment would result in a 5% power loss in all subembayments except for in Suisun; in Suisun the reduction in power would be greater because of the high variability in the subembayment.

III. Sampling Options [Don Yee]

Don then listed four possible options for margins sampling for the TRC to consider including 1) sampling all of the margins sites in one year as either a supplement or replacement to the Bay S&T program; 2) sampling all 40 sites within two to three events; 3) sampling the margins in five incremental efforts that would take five to 10 years to complete; and 4) sampling the same total number of S&T sites, but include margins sites based on the proportion of the area they cover in each subembayment. Don noted that an issue with the fourth option is Central Bay is only 4% margin habitat; therefore, approximately one margins site would be sampled every 10 years.

Sampling all 40 sites at once would cost on the order of \$420,000. The benefits are that some statistical power would be available quickly and there would be no confounding of temporal and spatial variability. The cons are that the high cost and the possibility of overwhelming the laboratories the RMP uses for their analyses. Sampling within two to three years (\$200,000 per year) would place a moderate load on the S&T laboratories and the confounding of temporal and spatial variability may be minimal if sampling occurs in a similar water year. Sampling 40 sites within 5 years (\$100,000 annually) would place a small load on S&T laboratories, but the chance of there being similar water years for all five events is unlikely. Additionally, there would low statistical power at the beginning of the effort. If option four, proportional sampling, is chosen there would be no additional costs; however, there would very low power in the beginning of the effort and even more conflating of spatial and temporal variations. Don stated that he does not support the fourth option, especially if the TRC agreed to reductions to the S&T program to accommodate additional margins sampling.

Discussion:

Chris Sommers stated that he is worried that even with 40 sites the variability will extremely high and the RMP will not be able to make any conclusions about individual subembayments. Don responded that high variance should not discourage margins sampling as long as the RMP realizes that there will most likely be very high and low numbers within one year.

Josh Collins stated that Don's definition of the margin area includes marshlands. Josh and Don agreed that the sample should exclude any emerging vegetation to minimize overlap with other monitoring efforts occurring in the marshlands. Therefore, the margin areas would mainly include intertidal channels and mudflats.

Chris asked what the cost savings were from reductions in the S&T program. Jay Davis replied that the reductions would be approximately \$150,000 for sediment, \$15,000 for bivalves, and \$30,000 for water annually. If ten margin sites were sampled every year over the next four years, the cost would be roughly equivalent to the cost savings from the new S&T design. Karen Taberski asked the cost savings if toxicity and benthos were excluded; Don replied that removing the two elements would cut costs by about 25%. Bridgette suggested initially only collecting chemistry data and adding toxicity and benthos sampling to the program if the need arose.

Naomi stated that the SFB RWQCB is supportive of collecting margins sediment data; Chris Sommers stated that he was also supportive of a margins sampling effort. However, Chris stated that it would be prudent to approach margins sampling as a pilot study. He recommended completing sampling within one to two years and the results may inform a new sampling design. Bridgette stated that the results may indicate that sampling the margins should become even more of a focus for the RMP. Don replied that Chris was suggesting option one, the more intensive sampling effort.

Tom Mumley stated that there was consensus among the TRC to conduct margins sampling. Naomi and Tom agreed that the SFB RWQCCB has an immediate need for margins data to make management decisions. He supported the collection of target and ambient margins data at the same time to resolve 303(d) listings, PCB listings, and restoration decisions in the margin areas. Tom stated that 10 years is too long to wait to obtain the data. He added that if the existing framework does not support a shorter time frame, then he is willing to reduce the number of open Bay samples to obtain the information. Chris wondered if the RMP could concentrate on certain Bay segments that were considered more important to reduce the sampling costs. Chris was concerned that 40 margin sites across the entire Bay would answer management questions. Chris added that some sites could be added to the design if the number of analytes sampled was reduced. Don replied that it was possible if the samples were archived, but that the RMP analyte list is already small and removing analytes will not result in considerable cost savings.

Meg Sedlak stated that it appeared the TRC was advocating for replacing the Bay S&T program for one year with an intensive margins sampling effort. Jay Davis replied that replacing the Bay S&T entirely may not be necessary, margins sampling could in addition to the Bay S&T effort. Josh Collins suggested connecting with the restoration community to determine their information needs. Josh added that the RMP completed a marsh and intertidal channel monitoring effort in North Bay a few years ago. He suggested examining the data to help inform the margins sampling effort. Naomi ended the discussion by proposing a margins sampling RMP workgroup to help develop the design.

Action Items:

1. Meg stated that based on the discussion today, the RMP will send the TRC a list of margins sampling design options with a more detailed description of costs.