

Perspectives on Monitoring for 2012 and Beyond

Karen Taberski

I support moving ahead with a strategy and portal development and I'm not opposed to collaborating with the EPA study and combining studies 1c and 1e. I feel though that we should start moving ahead in 12/13 with monitoring for wildlife and biotoxins. I think that the biotoxin issue is very important; the risk is very high and the problem seems to be growing. As you probably are aware, 21 sea otters have died in the past 2 years, it seems, from consuming shellfish that contained microcystins. The risk to humans, wildlife, as well as domestic animals, seems to be very high if exposed. There are some large scale projects currently being conducted (\$1 million in Delta this fall) but no systematic statewide study except for monitoring by DHS which is poorly funded and only in marine waters. We would need some time to meet with new stakeholders and work out a strategy but I think that this is a very important issue that would increase the usefulness of the BOG to managers, as well as to the public. Actually, after listening to Claire from MLML it scared the heck out of me. It seems many other countries are ahead of us in their knowledge and testing for biotoxins, but considering the risk, I think we need to catch up. We would have to consider whether we are evaluating the BU of swimming and how that fits in to our mandate. Claire said that there are devices similar to SPMDs that can be used for monitoring.

We might want to coordinate with the swimming WG on the biotoxin work. Yes, I have spend a lot of my regional SWAMP funds on getting enough information on lakes in my Region for advisories. We have collected extensive data for about 20 lakes. This is very expensive (>\$30,000/lake) and I think should be only done on lakes where you think advisories would be warranted. I wouldn't think that Tom has too many of those. I prefer using statewide money for statewide monitoring and if the Regions want to follow up with their own funding for advisories they can do that. We still have a lot to do in statewide screening if we're going to get into wildlife and biotoxins.

Karen Worcester

I really concur with Karen's email, Jay. Also, I'm sorry we weren't represented the other day either - I was in a meeting with Monterey Sanctuary folks. I think I sent you a related note a while back about the recent connections made to ALS and other neurological disorders. Melissa Miller (otter pathologist w/ CDFG) told me there have been a couple of other papers recently on that connection. It seems like at the very least it would be good to look at microcystin in fresh water lakes, next time that work comes around. We are working with Raphe Kudela at UCSC and have put his SPMD devices (they call them SPATT) at all of our coastal confluence sites so we should have some sense over the next few months of how widespread it is in our Region. I know Raphe has found it in the Carmel River, the Pajaro River, and several nearshore locations in our Region. Dave Crane has been doing a lot of the lab work for the sea otter group, so he's already looking for microcystin in tissue. I agree that it is pretty scary stuff. We

just found a gnarly BG bloom (species as yet unknown) in Lopez, one of our drinking water lakes.

I can't vouch for this source, but it appears to be a fairly extensive literature review related to cyanobacteria and toxicity, including info on the neurological connection.

http://www.blue-leaf.ca/main-en/files/Lit_review_cyanotox_subacute_exposure_water_fv.pdf

Bob Brodberg

I gather that an important consideration, especially for Terry, is attracting more monitoring partners to the BOG. This is a great idea, but a reality check suggests that it is not happening in the current economic climate. Frankly, it has not happened in the past, at least not for fish tissue sampling. The major sampling has been paid for by state or federal funds, sometimes funneled through grants etc. The exceptions have been SCCWRP and the RMP, where the dischargers and others have kicked in. When they put in money, it is because they are convinced it will be advantageous to them (cheaper, more efficient, less effective in pin-pointing individual polluters?). This is closer to the Chris Foe basin plan monitoring requirement than it is to a voluntary plan. But that is not statewide. It would be great if the Monitoring Council could assist in getting volunteers, but I don't think this has happened. In fact it seems that the Water Board is still footing the bill for the Council. Not a lot of volunteerism there. I really have not had time to digest all of the proposals. I think it is important that some monitoring be done this year to show program continuity. Here are a few thoughts on proposed projects.

1a) Mountain lakes. I am working with a group interested in monitoring in Sierra Parks and SFPUC is working up a study of some of the lakes they own in the Tuolumne Watershed. The Parks group is searching for federal money themselves. But these are potential partners. Don't forget Tahoe if you do high mountain lakes.

If you want to make statements about planted trout in mountain lakes, the Monitoring Council needs to twist DFGs arm to monitor adult catchable size fish once a year from each of the hatcheries they run. And they run some of these hatcheries for federal agencies. Hey, state and federal \$\$\$ again.

1b) EPA probability study. I would like to have a better idea how/whether the two probability studies (SWAMP & EPA) can be joined and how two probability studies are better than adding targeted lakes or more data for lakes previously sampled. How much more can be done with this? What is the product? I am not convinced that this is nice material for a report.

1c) Representative reservoirs. I would like to understand what a "representative reservoir" is and how it supports individual TMDL development. Unclear how "managers" will use this. Isn't this sort of a fish BAF study? How well do BAFs hold up between similar water bodies? I believe there is still wide variation. Is being close by a factor of 2-4 good enough for managers?

1d) Time series. I agree that we don't have a good idea of interannual variation. I think this has an impact on the variance and error bars around the data and

decision making, and TMDLs. But do managers care about how accurate numbers are? I am not convinced they are, so I am not sure how they would use this. This is good science; I would like to think it is useful.

1e) FWS BAF study. Interesting because it gets SWAMP into wildlife. But once you have BAFs are there acceptable toxicity thresholds available for the range of species across trophic levels and habitats? Can one proceed without them? An alternative might be to give more monitoring to regions interested in working on high priority water bodies. But that isn't exactly a statewide plan. Perhaps you can rank the pros and cons of these proposals against strawman pros and cons of more regional information.

Tom Suk

I'm deep into moving my office, so haven't (and cannot) review all of the project proposals in detail. I read the summary of the last meeting, and the comments provided by others to date, and here are my thoughts:

1) Given that I'm tied up with moving, I'll leave it to the remaining members of the BOG to decide what to propose (to the full RT) for spending the approx \$300 available for actual monitoring. I trust your collective brain power to come up with something in my absence;

2) I'm fine with the notion of "combining" proposals 1(e) and 1(c), and using the \$300k on that. I concur strongly with Michael (and others) that wildlife risk should also be on our short list -- this shouldn't be just about risk to humans.

3) I acknowledge that the following may be a minority view, but I also believe there is value in 1(a). I see two important parts to the ideas embodied by proposal 1(a): First, getting enough fish to facilitate consumption advisories by OEHHA; and second, sampling other species besides rainbow trout. Re: the first, why should we have done a state-wide "screening" if we're not going to use all available funds to follow up and develop consumption advice where potential problems are identified? Can the regions afford to do it all? How many potential "hot" lakes (i.e., those shown by the state-wide screening to have concentrations that exceed OEHHA's "no consumption" criteria) have been re-sampled by the regions to facilitate consumption advice, and how many have not? How many ATL-2 or ATL-3 lakes (or FCG lakes) have seen follow up? The 2nd BIG question is that the screening study (2010 report) gives a rather false impression that many lakes are "clean" because only trout (many of them probably hatchery fish, not natives) were tested. We know that people are catching and eating (for example) bass at many of those lakes, and probably being subjected to higher exposure than the screening study suggests. We could (and in my view should) return to lakes for further sampling where we know people are catching and eating species that weren't tested. Some folks think this is a waste of money because nobody cares and it won't grow the program. I disagree. The people eating those fish care, and, consumption advisories make headlines and otherwise get people's attention, and eventually enough people will notice that the purse holders will respond.

4) The one thing that I adamantly do NOT want the \$300k spent on is further portal development for the M Council. That money should be used for MONITORING (plenty of suitable ideas discussed above) -- not paying further for the Council's wish list. With all due respect to the Council and its dedicated members, when the Council follows its MOU and goes to bat for us -- by compiling a list of the resources needed by all CA agencies for water monitoring, and suggesting (even gently) to the powers-that-be that a way should be found to provide those funds (i.e., doesn't need to be General Fund, could be WDPF, sewer fees, whatever) -- then I'll be more interested in sharing any more of our very limited monitoring resources on the Council's own wish list.

Michael Lyons

I favor addressing wildlife risk in some fashion, provided that we have or can develop meaningful thresholds for evaluation of data collected. Also, I don't recommend implementing a new monitoring program unless we have a decent level of funding from partners.

Of the projects proposed on the previously distributed list, only 1e looks interesting to me.

But even with that one, I would not support spending \$220,000 to look at 16 lakes. That won't go far enough to help much - this type of study should be done on a broader statewide scale (many more lakes and perhaps fewer indicators, if we can't afford all 4 proposed). We could wait a year and augment the program with a contribution from next year's SWAMP funds, but we probably should not undertake this type of study unless it is a collaborative effort with significant contributions from USFWS, USGS or others. Perhaps we could find an interest in wetlands monitoring with other partners (Santa Monica Bay Restoration Commission is interested in bird monitoring and wetland monitoring, the Southern California Wetlands Recovery Project has been pushing for standard monitoring of wetlands, and of course SFEI has an interest).

I would support biotoxin monitoring if it were done on a statewide basis, but I would not recommend doing a half-baked project with inadequate funding. Again, if something is important, we should find partners willing to help foot the bill.

Re lake follow-up, I was able to augment the original statewide study with @ \$200,000 from my regional allocation so that we were able to sample 32 lakes in Region 4 in 2008. Then I was able to add @ \$100,000 to do follow-up work in @ 25 lakes and sample a few more lakes that had come to my attention. I consulted with Bob Brodberg so that we would have sufficient coverage in terms of # of fish per species and a wider array of species per lake to do useful fish advisories/consumption guidelines for 30+ lakes. I'm not sure when Bob will be able to process all of this data, but we should have what he needs.

I agree with Tom that follow-up is useful. I believe that Karen Taberski has been able to do some of this for Region 2. Since I realize that some regions probably won't be able to afford the follow-up, it wouldn't be a bad idea to consider

spending this year's money on that. Perhaps target the hot spots to ensure that those lakes would have an advisory in the near future.

Mary Hamilton

(Regarding lake follow-up sampling)

One approach to keep it cheap, conduct your follow-up work in Rotation. This year, we used \$40K of our Region's SWAMP \$\$ to follow-up in three lakes. These are all in our current rotation area and the study design was developed with Margie at OEHAA to collect enough samples to develop advisories if needed. Next year, we are planning to spend about the same amount of our SWAMP \$\$ in the Salinas Watershed Lakes.