

**Lake Champlain Basin Program
Technical Advisory Committee meeting
Held remotely over MS Teams
Wednesday, May 3, 2023, 9:00 AM – 12:30 PM**

Approved TAC meeting summary

TAC Members: Ryan Cunningham, Laura DiPietro, Bryan Dore, Laurie Earley, Michele Fafette, Curt Gervich, Peter Isles, Neil Kamman, Steve Kramer, Margaret Murphy, Bridget O'Brien, Oliver Pierson, Andrew Schroth, Jamie Shanley, Lauren Townley

LCBP Staff: Jim Brangan, Mae Kate Campbell, Kelsey Colbert, Katie Darr, Colleen Hickey, Ryan Mitchell, Meg Modley, Matthew Vaughan, Sarah Coleman, Erin Vennie-Vollrath, Ethan Swift

Guests: Jeff Lape, Glen McClure, Kay Breen, Clare Madden, Lauren Sopher, Mark Ferguson, Luke Myers

1. Updates, announcements, public comment

- Oliver: The Vermont Legislature has been busy with lots of water and lake related bills. Some of the ones we wanted to move forward aren't, others we didn't are, but there is increased funding for lake work. There is a bill that is likely to pass that would create a study committee looking at aquatic nuisance species rulemaking. Additional funding for aquatic invasive species grants to municipalities is in the works, funding for additional positions around shoreland restoration work and aquatic invasive species work is less certain. We just finalized a request for proposals for a consultant to do a feasibility study for alum treatment on Lake Carmi. That intervention may help mitigate cyanobacteria blooms by controlling internal loading of phosphorus. That work will be funded by the Clean Water Board funding.
 - Neil: Is that request for proposals out now?
 - Oliver: Yes. Funding becomes available July 1, so want to have things lined up to get a study going as soon as possible after that date.
- Oliver: The Vermont Department of Environmental Conservation (VTDEC) is hoping to initiate formal rulemaking on the proposed wake boat rule in June.
- Meg: We will be starting the boat launch steward field season on the Saturday of Memorial Day weekend. The stewards will receive a combination of online and in-person training. LCBP is working with partners to finalize the Phase 2 scope of work for the Champlain Canal barrier feasibility study. We have several committees working right now. One of which is looking at the types of recreational vessels using the canal. A stakeholder group is being convened, and there is an ongoing economic evaluation work group looking at the potential impact to communities in and around the system, the value of the fishery in Lake Champlain, and what other impacts from potential aquatic invasive species infestations could cause. The US Army Corps of Engineers (USACE) has to look at impacts 50 years out. We are hoping to have a signed agreement between LCBP, the

New York State Department of Environmental Conservation (NYSDEC), and the USACE soon. We are meeting monthly with the Canal Corps to keep groups aligned. Erik Reardon will be launching a baitfish awareness campaign against round goby and posting signage at boat launches and ponds along the Canal. The US Fish and Wildlife Service (USFWS) finished their eDNA metabarcoding project and found no round goby detections in Lake Champlain. The US Geological Survey (USGS) round goby monitoring contract was re-upped for this year. The Canal Corps is looking into how to optimize the double flushing technique. Both the Champlain and Chambly Canals are set to open on May 18th.

- Matt: We are planning to launch several water quality and weather station monitoring buoys in the next few weeks. We are having a planning meeting for the TAC buoy subcommittee to discuss plan to purchase a monitoring buoy for the Northeast Arm. The LCBP Steering Committee approved the full LCBP budget, including the research program and Clean Water/Healthy Ecosystems implementation grant programs. Award notices for research projects will be going out any day now. We will discuss TAC's upcoming research program in June. The June TAC meeting will be in-person, we'll be reviewing 2 final reports and going over the plan for TAC's review of next fiscal year's research projects. We need to start talking about research priorities for next year. I am working with Eric to have a conversation at the Executive Committee level to get feedback to help TAC begin that discussion on research priorities. Next year we will be working on *State of the Lake*, so we will be starting that discussion with the TAC in June. Contact me if you have other high-level topics for discussion before we head out on TAC's summer hiatus.
- Mae Kate: LCBP will be launching our second public comment period on a proposed definition of "disadvantaged community" to prioritize funding decisions. Look out for a press release and details on public meetings and other engagement opportunities in the coming weeks.
- Meg: At the Steering Committee meeting, we had presentations on the funding landscape for aquatic invasive species work. The Steering Committee voted to add funding for an additional aquatic invasive species staff person to be housed at VTDEC.
- Laurie: Andrew Milliken has accepted a new position. Currently our office has a rotating acting manager filling in.
 - Neil: Andrew was an active member of the Steering Committee for a long time, very knowledgeable.
- Andrew: Are there any updates on the USGS groundwater proposal?
 - Matt: We gathered feedback from the TAC; based on feedback the Steering Committee decided not to support that project for this funding cycle. We made it clear that we want to work with USGS to get a project together that would better match Steering Committee priorities and come in at a lower price point. I think the process could be improved by working with USGS to develop these proposals. I have a lot of hope for that collaboration.
 - Neil: I would like to discuss that with the Executive Committee as part of the priority development process.

Review and approve summary of previous TAC meeting

Motion: To approve the minutes from the March 2023 TAC meeting

By: Margaret

Second: Laurie

Vote: All in favor

2. Presentation: Forest Load Allocation Project - Developing Assessment and Planning Tools for Implementation of the Lake Champlain TMDL (Ethan Swift, VTDEC)

- Ethan provided an overview of the forest phosphorus load allocation total maximum daily load (TMDL) implementation project. The goal of the phase 1 project was to track and account for sediment and P reductions from forestland areas as a result of best management practice (BMP) implementation. This involved developing forestland BMP accounting methods and developing a model. Phase 1 developed recommendations for additional work to inform Phase 2. Phase 2 will involve developing a quality assurance project plan (QAPP), conducting field verification, calibrating the model that aims to identify erosion features in critical source areas, refining the framework for prioritizing projects, and undertaking pilot restoration projects in high-priority areas. The QAPP for this phase was just approved.

- Neil: This is an impressive body of work coming together. Is it the same contractor for phases 1 and 2?
 - Ethan: Yes. Watershed Consulting Associates is involving forestry consultants to do the work, and the University of Vermont (UVM) Spatial Analysis Lab (SAL) remains involved.

- Jamie: I hear about maple sugaring operations being a disturbance in forestlands. Does that issue come up in this work?
 - Ethan: Part of the inventory may be to consider how much use these sugaring roads get. There are opportunities to do restoration work on forest roads being used for sugaring. Maple sugaring can also fall under the category of agriculture.
 - Dave: We consider sugaring roads very similar to logging or other forest management access roads. There is a different type of use on sugaring roads, often at an unideal time of year from an erosion perspective, so the management interventions have to be different. Management of sugaring roads often involves drainage intervention and hardening trails. Sugaring roads are used yearly, whereas timber harvesting roads are often only used every 10-15 years. Recreational trails for hiking, all terrain vehicles, and horses also need to be considered; management interventions for those types of roads likewise need different strategies aligned with the use. We have a new accepted management practice (AMP) manual that came out in 2018 and we have an app that provides additional tools. We work with several different logger trade groups to get that information out to folks on the ground. Understanding the on-the-ground conditions can be very challenging, but we are doing our best to find the hot spots.

- Matt: It's awesome to see how this project is moving forward. I am seeing a lot of parallels between this project and the Farm PREP project LCBP supported. It's similar in that we are taking TMDL allocations, zooming in with a more precise model, and modeling outputs of potential BMPs. One question we had as a result of that work is how you reconcile the results of the two types of models – how do we use those numbers and allocate different reductions. How have you approached that question?
 - Ethan: We hope that this model we are developing will provide more refined estimates of what we are seeing across the landscape. Perhaps it could be used to supplement the Soil & Water Assessment Tool (SWAT) analyses, given that was a fairly coarse analysis. If we do this assessment work, we should be able to refine our understanding of where we can get reductions and have a better system of tracking and accounting for those reductions. I am not sure how we will ultimately reconcile what we are getting from this model with the SWAT output but would love to have those conversations as this project moves forward.
 - Neil: Coarse BMPs were able to be plugged into the SWAT model, which includes some of the AMPs but not all of them. Other projects that DEC is undertaking are working to calibrate the values of what we really get implementing a project on the ground.
- Curt: I am curious if this is a novel approach or if similar work has been undertaken elsewhere in the country?
 - Ethan: I am unsure. This model that we've adapted to Vermont does have the adaptability to be able to refine it to Vermont, but I believe the model is widely used by the forest service in other parts of the country.
- Neil: Phase 1 of this project has been focused on the Missisquoi Bay and South Lake watersheds, but I'm assuming methodology is adaptable for the entire watershed? I am assuming that with the appropriate investment this could be conferred across the rest of the basin?
 - Ethan: Yes, no question. On the VT side we anticipate we could use it in other basins to offset reductions in other TMDL sectors. It could be brought to the NY side as well. That could be part of further research.
 - Neil: We could consider this when we discuss research priorities.

3. **Project update: Conservation of the Lamoille River mudpuppy population using translocation and monitoring** (Mark Ferguson, VT Fish and Wildlife Department)

- Meg introduced Mark. LCBP approved a project to support mudpuppy tagging and relocation. There were a few project delays initially related to securing seasonal staff. This project is in the end phases. We did a QAPP assessment and resulting photos were highlighted over social media.
- Mark provided an overview of the project. The goals were to enhance the resiliency and long-term viability of the Lamoille River mudpuppy population and increase our understanding of mudpuppy movement and migration. The project centered on establishing a novel population by relocating mudpuppies upstream of their current known habitat. Mark described the process of trapping, assessing, tagging, relocating, and tracking the mudpuppies.

- Neil: Super cool, without a question. So, are the transmitters unique? Do you know that that animal didn't just die, they are all moving?
 - Mark: Yes, they are unique. They all seem to be moving, at least a little bit and in some cases a lot. Some moved a quarter mile in a 1-week period. We are not tracking the animal; we are tracking the transmitter. These guys are under rocks, they like cover, so that can disrupt the signal. When I am looking for the animals, I am approaching it in different directions.
- Laurie: Very cool presentation, thanks Mark. Have you gone back and surveyed back at the collection point to confirm that animals haven't migrated far back downstream?
 - Mark: Yes, and I am doing that now. There are different things that can affect the strength of the signal, but I can detect from further away if the animal is in shallow water. I am continuing to look in areas upstream and downstream that I have not yet detected animals in. Some of the transmitters have been performing better this year, which was unexpected but useful!
- Matt: You talked about water temperature, but I don't think I heard you talk about river flow. You are co-located with the USGS gauge I believe? Looks like the flow has been variable this year. Has that been a factor you're thinking about, could that be related to their movement or tricking us into thinking they've been moving?
 - Mark: Flow is important. We seem to be most successful at tracking after a rain event; movement seems to be increased.
 - Matt: Movement with the flow or against the flow?
 - Mark: Not something I can address necessarily with the trapping work but could be with the tracking work. I am recording water temperature and will have that gauge info available when I complete my analysis.
- Margaret: Before the dam was there, I imagine the mudpuppy were able to use this area as habitat?
 - Mark: We didn't have any information about historic range before beginning this study. It would have been useful to do a pre-project survey trapping event to make sure there weren't mudpuppy in the relocation area in advance. We placed the relocated mudpuppies in a place that seemed like suitable habitat. The relocation area is very rocky but has a nice variety of potential habitats. In other parts of the country, they do use higher-flow areas.
- Meg: So, you captured 114 mudpuppies in 2022 and an additional 20 in 2023? That would mean approximately 134 animals have been moved upstream? What are the plans for maintaining this project after the funding/current study ends to verify if a population can be established upstream?
 - Mark: I will continue to track these animals beyond the life of the grant. It seems like they move a lot later in the year. Next spring, I won't be doing the trapping, so I will return to track them in the spring. To answer the population question, we'd have to do further trapping in the future. We could look at if the individuals survived and if reproduction is occurring. That would involve likely multiple years of trapping.
- Margaret: Tags that were put in definitely have a longer life than just the transmitters and could allow you to identify if there are untagged animals.

- Mark: My animals had to be large enough for the pit tags. There has been an effort in the past during lampricide treatments to take individuals that were recovered and add them to this relocation site; those did not receive tags since they were already stressed, so we do know there could be some untagged individuals there. Mudpuppies generally live 11 years, so within 10 years we could not see any tagged animals in the relocation area.
- Neil: This is really cool; I hope you have the ability to continue this work. I wonder if Kellie Merrell could help you out with the boat.
 - Mark: That would be awesome.

4. **Lake Champlain Long-term Monitoring Project interim report and workplan** (Kelsey Colbert, LCBP/VTDEC, Dr. Pete Isles, VTDEC, Luke Myers, SUNY Plattsburgh, Erin Vennie-Vollrath, LCBP/NYSDEC)

- Peter, Kelsey, and Luke presented. Notable trends and patterns from the 2022 field season included seasonal hypoxia and anoxia in the NE arm and Malletts Bay, however these sites had contrasting patterns in hypolimnetic total and dissolved phosphorus levels. Total phosphorus concentrations in Missisquoi Bay continued to decline, however total nitrogen levels were higher than relative over the last few years. Chloride levels are still increasing both in terms of in-lake concentrations and tributary concentrations. Chl-A has been increasing the South Lake, and secchi depths have been declining. 2019 appeared to be a major diatom bloom year. In 2023, Kelsey is now leading the VT field team. We will undertake a phosphorus instrument comparison to help with correction procedures for the new instrumentation in the Vermont Agriculture and Environmental Laboratory (VAEL) lab. The Long-Term Monitoring Project (LTMP) team is taking over the maintenance of monitoring buoys in Missisquoi Bay and St. Albans Bay. We have been attempting to collect more winter samples (focusing on total phosphorus, dissolved phosphorus, and chloride).
- Neil: Going back to Inland Sea inland loading. Is the area under the curve of what you would characterize as hypoxic condition increasing with time?
 - Peter: I did that analysis as part of my PhD work but not over the last few years. We were seeing a trend in minimum dissolved oxygen.
 - Neil: Nominally, if you have good data that allows you to do a 3-D model, you could calculate what the internal load is estimated to be relative to inland sea load itself relative to gauging.
 - Peter: That type of analysis is something I've been working on and I've also been talking to Matt about pulling together a paper on that topic, which would be nice to do before the next TMDL revision. That would be useful background information for us all to have. We don't have that many gauged tributaries in the Inland Sea basin, which does present a difficulty.
 - Matt: And we'll have higher resolution data when we get the buoy in.
- Andrew: Have you looked at if a season is driving the trend in Missisquoi Bay? There's been a couple drought years.
 - Peter: I haven't had a chance to look at that yet but I would like to.

- Andrew: Do we get nitrate time series from the new buoys?
 - Peter: We weren't getting good data on N until the end of the field season due to setup difficulties. This year we've put an update to the QAPP to validate N sensor data and hope to get a handle on that measurement.
- Matt: In Andrew's question about Missisquoi Bay, it's been an apparent trend and it's good to see it's been continuing, but I will ask— is this something we should point out in the *State of the Lake* report, or is it too early to say? Either way, it's an encouraging trend.
 - Peter: We also have to consider the effects of COVID impact on some of the data. Fewer samples were collected in some of those years.

5. Lake Champlain Cyanobacteria Monitoring Project interim report and workplan (Dr. Peter Isles, VTDEC)

- Peter provided an overview of the cyanobacteria monitoring program in Lake Champlain and VT inland lakes. Notable items from the 2022 season including a return to normal monitoring following the pandemic, relatively frequent blooms in St. Albans Bay, Lake Carmi, and Lake Morey, and notable blooms of benthic cyanobacteria. There were positive detections of cyanotoxins in Lake Champlain and Lake Carmi water samples, and Lake Carmi has the highest level of microcystin recorded. There were no microcystin or anatoxin detected in raw or finished drinking water in any Lake Champlain facility this year. The volunteer monitoring season for 2023 will begin on June 20th, and trainings are already underway.
- Neil: I have a colleague at the Environmental Protection Agency (EPA) who used a FlowCam for cyanobacteria monitoring, he'd be a great partner in this work.
 - Bryan: I'd be happy to make that connection.
 - Peter: It seems super promising, but some labs find that it can be more time consuming than promised. By using an automated classifier (deep learning), you can dramatically reduce processing time and get more consistent taxonomy.
- Matt: Can you remind me what the timeframe is on starting a program like this, even a pilot? We'd want to run it past the TAC before it gets to that point.
 - Peter: This was just a side-project for the intern team when we didn't have a lot of samples to process. I'd be happy to work with the TAC to think about this further.
- Andrew: Is there a way you could work with Mindy to get the training library developed more quickly?
 - Peter: I haven't worked with her yet but would like to.
- Matt: For *State of the Lake 2021* we included for the first time information beyond general public safety messaging on cyanotoxins. We will discuss that topic further in June.

Motion: To approve the interim final report for the LTMP and Cyanobacteria Monitoring

By: Margaret

Second: Curt

Discussion: The fishhook waterflea data are scary

Vote: All in favor

Abstentions: Peter, Oliver

6. **Discussion: History of the Clean Water Act book chapter and next generation of water quality challenges** (Jeffrey Lape, EPA; Dr. Curt Gervich, SUNY Plattsburgh)

- Curt introduced the project. Curt, Jeff and Kay are examining the last 50 years of the Clean Water Act in Lake Champlain, Lake George, and a bit of work in the Chesapeake Bay. Curt shared a number of discussion questions and thoughts on desired feedback to frame their work.
- Curt: What are some success stories you think we should definitely highlight?
 - Jim: Polychlorinated biphenyls (PCBs) removal from Cumberland Bay – a big success. The sludge issue near Ticonderoga is another success story.
 - Neil: I loved the retroactive 1972 *State of the Lake* report.
 - Jim: That draft was produced through a project with UVM students.
 - Neil: Point-source control has worked tremendously well.
 - Matt: What we have clear data for is decreases in nutrient loading from wastewater treatment facilities. In the context of 50 years, we don't have great data going back that far, but we know anecdotally and from historical datasets that things have been improving. What we are left with is non-point pollution, that's what we spend almost all of our time working on around this table.
 - Neil: There are lots of individual, geographically concise success stories on non-point interventions, but we don't have at the aggregate scale a success story yet. We are tracking a lot of steady work that has been successful.
 - Oliver: I agree with what's been said. Where we could do more is on high-quality water protection. Many states have a decreasing number of water bodies that are eligible for that designation. It seems prudent to work now to identify and protect those waters before they could become ineligible. We should use that piece of the Clean Water Act more effectively.
- Matt: MaryJo gave a keynote presentation on 50 years of the Clean Water Act in Lake Champlain. She noted it was difficult to get a record of all the funding that has gone into that implementation.
 - Neil: We have that information on spending on the VT side.
- Neil: Are you interested in the entire arc of the Clean Water Act, or just certain pieces and parts?
 - Jeff: There has been lots written on this subject already, and we don't want to repeat what's already been said. We want to look at major elements of the act and emphasize points that may not have been highlighted as much. For example, the average age of existing effluent guidelines is 30 years; that's not a high bar in 2023. We will be direct about the major positives that have been achieved. 80,000 TMDLs have been put into effect nationally; have we seen results? We need to think about fine-tuning or rethinking our approach.

- Andrew: To what extent is the LTMP a result of the Clean Water Act? Would we point to all the remarkable things we've learned from that dataset in the context of the TMDL and emerging threats?
 - Matt: LCBP was authorized through the Clean Water Act, so the LTMP is a direct result of that legislation. Research, better understanding our system, and being able to adaptively manage.
 - Curt: We could write about the Clean Water Act from the perspective of any waterbody in the country, but Lake Champlain is interesting from the perspective of long-term data collection and management.
- Margaret: My interest in the Clean Water Act is in making sure we acknowledge its restoration and protection of chemical, physical, and biological condition of the lake. Incorporating that biology is important and would really round out the conversation. However, I am not sure how to frame that story considering impacts from aquatic invasive species.
- Curt: What are your thoughts on emerging challenges that the Clean Water Act does or doesn't address, and how are you working to address those?
 - Neil: The Act ignores the cost of achieving its mandate. That's not necessarily a bad thing, but something that should be considered. There's not an out-valve in TMDL implementation in the way there is for a wastewater treatment facility or something like that. Additionally, emerging contaminants and the new generation of soon-likely-to-need-to-be-regulated contaminants out there that are going to tremendously increase the costs of implementation. There are provisions for those classes of contaminants in the Safe Drinking Water Act, and I expect it will soon be reflected in the Clean Water Act as well. The current infrastructure is not set up to manage for those contaminants. Thinking back to TAC's purview, to what ecological or public health endpoints are we trying to reach when trying to achieve those limits, and is that substantially less than the risk the general public faced a while ago?
 - Jeff: And at what level do you manage that risk? At the watershed scale? Community scale?
 - Neil: Is that a policy question or a technical question? We appear to be getting less tolerant of risks.
 - Margaret: This group is an example of the amount of collaboration and coordination on this lake, which is a huge win for Lake Champlain. 2 states, another country. Working well together is an important story to tell.
 - Meg: Funding going into 319 and addressing impaired waters, but we need to think about the 314 and keeping waters classified as doing well doing well!
 - Neil: Congress de-funding that program cut tools out for lake managers across the country. It caused the demise of some of the programs we were able to maintain in VT in other states.
 - Oliver: Our anti-degradation policy intended to prevent degradation below water quality standards. It needs a re-boot. We are developing a new rule that we hope will be more effective. Is it a well understood concept, is it effectively applied, how could we use anti-degradation more effectively?

We haven't done a good job at studying how water coming out of a wastewater treatment facility interacts with downstream waters and how that interacts with our classifications.

- Neil: There are fundamental differences in this space between NY and VT. VT holds waters to an extremely high bar, very stringent, so much so that it's been difficult to wield.
- Curt: Attitudes about water quality, do you think they are changing?
 - Neil: Yes! Read the retro *State of the Lake*. I think VT folks would have said water quality was fine 50 years ago, now fewer folks would. I think we are more effective at finding, documenting, and testing for contamination even in cases where we don't know what it means.
 - Eric: And communicating.
- Curt: Others we should talk to?
 - Neil: NYSDEC and VTDEC folks are key from a policy perspective.
 - Eric: If you want to go back many decades, you need to go back to talk to retirees.
 - Jeff: Is anyone still in contact with Monty Fisher? People like that who set the expectation of 72 and where we are today would be great to talk to.

7. **Lake Champlain Basin data sharing and musical interpretation** (Glen McClure, Paul Smith's College)

- Jim introduced Glen and provided an overview of the Artist In Residence program.
- Glen gave an overview of the project – to write music based on datasets. The project will create at least 5 musical pieces that will be performed by partner organizations in NY and QC (and possibly VT). There is a composing technique called sonification that takes a list of numbers and transforms it into a melody or harmony.
- Neil: Mod 11, why not Mod 13? That would give you every increment we have in our current scale?
 - Jeff: That's Mod 11.
- Matt: This project sounds awesome, thanks for sharing. I'm curious about how you're choosing your datasets and how you're thinking about making this accessible – did you mean it'll be accessible in the sense that anyone can listen to it, or in the sense that it's enjoyable/sounds like music people listen to?
 - Glenn: It will be good to listen to and will take with it the stories behind the data.
- Matt: Are the choices on the structure of the piece driven by data?
 - Glenn: It depends on what comes out of the data. In previous projects, I used different combinations of sections of the same dataset to create functional harmony. In that case, both melodic and harmonic aspects came out of the sonification process. So, it depends on what the data yield.
- Curt: I have a project called Late Night for Lake Champlain that could use a theme song!
 - Glenn: Let's talk. All joking aside, yes, we should use this process in as many ways as we can. Another thing about the different datasets that you mentioned –

please send them to me! Datasets that tell stories are what I'm in the market for currently.

- Neil: We just had a presentation on over 30 years of monitoring data.
- Glenn: I welcome any guidance or curation. If anyone wants to advocate for a particular dataset and help walk me through it, I'm interested in whatever input you all have.
- Matt: One more thing that comes to mind is thinking about different timescales. You could have one looking at 30 years of data on Lake Champlain, then 24 hours of high-frequency monitoring data.
- Jamie: When you were speaking about the European Space Agency (ESA) dataset, you found harmony among 2 datasets and seemed surprised? That was my reaction, wouldn't there be a lot of cacophony between datasets? Do you do some stylization to make harmony? Do you fudge the data a bit?
 - Glenn: Colleagues have told me that when they collect datasets, there are outliers. Occasionally I will pick and choose some of that in the same way that scientists do. Sonification is good at trend analysis, seeking out trends and sharing them.
- Curt: I think it's cool that there's going to be the creation of music from this data, as well as the connections between music and science, as those topics are often made up of different groups of folks who aren't always connected. It would be cool to use musical production to generate conversation about both the music and the data.
 - Glenn: I would like to have the opportunity to see how folks respond to the sonification throughout the process.
 - Curt: I'm interested in how this process changes our understanding of the data and how we communicate it.
- Matt: Talking about how visual scales dominate data communication. A log scale can be difficult for folks to understand, but maybe musically it would be easier.
 - Jim: I think Matt is right on. There's an opportunity for us to make an audio linkage: someone could take a picture with their cell phone of a QR code on one of the monitoring buoys and get an understanding of the data that way instead of having to read a report.
 - Glenn: Let's all find some time to flesh these ideas out in a detailed way since that may affect what we do on the project website and how we present the data for users to interact with it.