

Lake Champlain Basin Program

Technical Advisory Committee

Remote Zoom meeting due to COVID-19 social distancing

Wednesday, May 6th, 2020, 9:00 AM – 12:00 PM

TAC meeting summary

Attendance: Mark Malchoff, Bernie Pientka, Ryan Patch, Stéfanos Bitzakidis, Fred Dunlap, Bridget O'Brien, Dennis DeWeese, Leigh Walrath, Neil Kamman, Bryan Dore, Breck Bowden, Ryan Davies, Andrew Schroth, Eric Perkins, Jamie Shanley, Ryan Waldron, Jenn Callahan, Oliver Pierson for Angela Shambaugh, Steve Kramer, Bill Ardren, Ryan Cunningham, Curt Gervich

LCBP Staff: Matthew Vaughan, Mae Kate Campbell, Lauren Jenness, Meg Modley, Eric Howe, Heather Radcliffe (NEIWPC), Cynthia Norman, Myra Lawyer (NYDEC), Sarah Coleman (VTDEC)

Guests: Kim Jensen, Jason Scott, Carrie Pershyn, Margaret Murphey, Marli Rupe, Barbara Patterson, Mike Winchell

Updates, announcements, review and approval of the April TAC meeting summary

- Neil welcomed the new TAC member, Ryan Waldron, and members of the TAC introduced themselves.

Updates/Announcements

- Breck Bowden shared information on Lake Champlain Sea Grant opportunities, including an increase in the amount of base funding they have available for internships with a focus on diversity, equity, and inclusion for students. Sea Grant also has funding for COVID-19 response and recovery. A piece of the response and recovery funding needs to be directed towards aquaculture, and Sea Grant wants to grow a community garden here in Vermont. Additionally, UVM is currently planning to re-open in the fall.
- Bill Ardren stated that sea lamprey trapping did not occur this spring because of COVID, however USFWS is anticipating starting limited fieldwork in mid-May.
 - Neil asked if typical activities on salmon tracking are also on hold? Bill replied yes, however a USGS colleague has an exception to monitor the fixed receiver stations in Winooski.
 - Bill also noted that a meeting was held about salmon habitat restoration, linking to work with watershed restoration in NY and VT, and that the meeting had been really successful.
- Oliver announced that VT DEC recently received lampricide applications for Missisquoi and Lamoille. They are expecting opposition, and the plan is to review them over the next month or two, then have the permit out by mid-June for public review.
- Stéfanos announced that he is serving as regional interim director for next 2 months, so Jean-François Cloutier will be serving on TAC in his place during this time.
- Stéfanos also noted that the IJC final report on nutrient loading in Lake Memphremagog and Missisquoi Bay has been released. The report provides recommendations on

nutrient loading, strengthening government efforts, and supporting existing mechanisms. The next step will be seeing how the governments will respond.

- Eric Howe stated that he will circulate the report to group, and thanked the TAC members for their time and effort in informing that report. He noted that it would be beneficial for the TAC to review the report and consider ways the Basin Program can support moving those recommendations forward.
- Neil Kamman announced that Vermont has received an EPA letter concerning the Lamoille and Missisquoi interim report cards, which concluded satisfactory progress has been made! Lake Carmi clean water performance report shows 41% reduction in total phosphorus against goal of TMDL over past 4 years, which is good news.
 - Neil said that Vermont State is working hard to determine COVID impacts on revenue that will affect the clean water fund, which they expect will take a ~750K hit. The State has had to make decisions of work that won't go forward, fiscal year '21 will be interesting, Neil will continue to report.
 - The VT DEC thanks LCBP for providing emergency grants to watershed groups.
 - Neil added that the Carmi report is not posted yet, but is expected before the end of May.
- Matt Vaughan shared Basin Program updates: at the Steering Committee meeting in April, the technical projects that TAC reviewed were approved. The approved projects are similar to the list that TAC saw, LCBP will be sending out decision letters within the next week or so.
 - The cyanobacteria monitoring program will be delayed this year, it is scheduled to start June 23rd, and due to the hiring freeze, there will be no cell counts this year.
 - Bridget added that the public health lab is only lab that does cyanotoxin testing and all lab capacity is currently focused on COVID testing. Hopefully it will open back up for cyanobacteria testing later but it's unsure at this point.
 - The Steering Committee approved continued sampling for cyanotoxins in raw and finished drinking water.
 - Matt announced that 14 emergency support grants were issued, and the Steering Committee may consider a second round moving forward.
 - Neil added that State funding that watershed groups were waiting on are going to begin to receive grants.
 - Matt noted that all LCBP grants are continuing as planned, funding source is not a holdup.
 - Meg announced that the Executive Committee also approved funding for professional training for watershed groups as they shift their focus to online work. Many groups are working on creating videos and need instruction on how to do this effectively.

Review of Summary from Previous TAC Meeting

- Eric Perkins noted a small change to the summary: in the section about tile drainage, at the very end just before bullet that Breck introduced a motion to approve, it should say "I was glad the project investigated the effects of innovative manure processing technologies" not manure injection.
- Leigh noted that he gave an edit to Matt by email, modifying language regarding the cost of dredging.
- Neil added that at very end under other notes "currently there is a VT state freeze on hiring" should be "we are on hold on hiring" but now there is a freeze, could stand as is.

Breck moved to approve the April meeting summary. Jenn seconded. All in favor, none opposed.

Presentation: Oil Spill Emergency Response Planning for Lake Champlain, Jason Scott (UVM-LCSG)

Presentation Notes:

- Jason Scott presented his research on oil spill emergency response planning. His Master's project was supported by Lake Champlain Sea Grant and paid for by the US Coast Guard. Jason provided an overview of the spill-related threats to the Lake and explained the three sections of his project:
 1. Strengthen the Lake Champlain Area Contingency Plan (updated in 2016, but was produced at the minimum requirements with little scientific details. Jason added a physical description of the lake as Appendix G.)
 2. Conduct Oil Spill Workshops for marina workers, fire departments, hazmat teams, etc.
 3. Create a Scientific Support Network which identifies important scientific academic resources to be used in the event of an oil spill. All people identified in this network were invited to participate in a training in two weeks.

Jason also suggested three ways to improve the plan outside the scope of his thesis:

1. Conduct Environmental Sensitivity Index Mapping for the lakeshore.
2. Create a model that takes a comprehensive look at surface currents, and
3. Add further contacts and descriptions to the plan.

Questions and Discussion:

- Neil Kamman expressed his appreciation of this project.
- Mark Malchoff asked if Jason had data on the use of unit trains in the area being used to transport oil. Jason answered that no unit trains are currently being used to transport oil, but one small geopolitical shift could change this. The pricing of oil is the factor that companies use to decide how to ship oil.
- Bill Ardren congratulated Jason on his degree and said this project was nicely done. He wonders about the survey app used to gain stakeholder feedback in this project. Jason responded that he used Qualtrics, a platform UVM has access to and is available on mobile devices. He had to go through the IRB process to get the survey approved through UVM because he was using human subjects and creating new information. The Qualtrics program is very easy to use and all of his survey information is stored with Kris Stepenuck in the cloud.
- Breck thanked Mark Malchoff who has been serving as Lake Champlain Sea Grant representative to the broader Sea Grant work on oil spill response planning. He thanked Jason for the terrific work he has done, as he has added substantially to the plan and improved our readiness. Jason has been a terrific member of the community and he wishes him the best as he moves on to DC. The LCBP Federal Partners Workgroup met last week and will begin to act on two out of the three recommendations. Environmental Sensitivity Index mapping will start to be planned. And, at the request of Tom Berry, partners will pull together what we know about hydrodynamic modeling in the lake.
- Neil stated that he is glad to see the ESI mapping move forward and requested to include key State folks in this process. He asked Jason if he has had the opportunity to present this to the VT and NY hazard planning teams. Jason answered that he is in contact with both to set a time for the presentations.

- Fred Dunlap wondered if Jason's work intersected with or if he has learned about the 2013 Lac-Mégantic incident which resulted in a lot of NY state-wide contingency planning with a governor's order, trainings to locals, and the purchase of response equipment. Jason responded that he had more contact with federal level rather than state-level partners. He did a lot of research and read the Governor's proclamation. The result of the proclamation was more focused on the area along the railroad while his thesis worked to fill the gaps and focused on Lake Champlain as a whole. NY created Geographic Response Plans (GRPs), which are different from the ESI mapping he is recommending to be developed. Vermont and New York have created specific area plans for emergency response to oil spills. Vermont's are located on the Spill Division's webpage while NY's have not been published yet.
- Neil requested that when Jason's final report is posted on the Sea Grant website, it be shared with TAC.

Interim report and workplan review: Water Chestnut Management Program, *Kim Jensen (VTDEC)*

Presentation Notes:

- Kim Jensen presented on the Lake Champlain Water Chestnut Management Program, sharing the 2019 field season results and 2020 field season planning.
- The presentation covered the history of water chestnut management in Lake Champlain, operations managing water chestnut (hand pulling, mechanical harvesting, and strike force), the criteria for implementing those operations and where on the Lake they are being employed. 2019 water chestnut operations indicators were very similar to the 2018 season; however, water chestnut was discovered in a new location in Lake Champlain in 2019 at Sandbar State Park. 2019 was the second year of the drone project for monitoring water chestnut. Moving into 2020, workplan is similar to 2019.

Questions and Discussion:

- Bill Ardren asked if is there any chance that with harvesting through time can we get to sites that don't have viable seed banks, or is this something we are going to do every year? Kim replied there are inland water bodies that seed banks are not being observed in, now the focus there has turned to monitoring instead of harvesting. We are seeing reduced seeds in some areas in Lake Champlain as well.
- **Jenn moved to approve the workplan and interim report. Leigh seconded. All in favor, none opposed. Neil abstained.**

Interim report and workplan review: Lake Champlain Basin Program Boat Launch Steward Program, *Meg Modley (LCBP)*

- Meg provided quick highlights of the 2019 season and provided updates on the upcoming 2020 season. 2019 wrapped up well. Fishhook water flea was found in large quantities, especially coming up on anglers' downriggers and we also had an interception of hydrilla. For 2020, NYSDEC has a contract with Adirondack Watershed Institute (AWI) to do stewarding at NYSDEC launches which are moving forward as planned. LCBP and AWI will do virtual training with the NY partners and Meg is working with VTDEC and VTFWD for the virtual training focused in VT. We have hired stewards. Up to 3 stewards will be on the NY side, where launches are open and ready to operate. On the Vermont side- launches are open and docks are going in, however there is a question on whether bathrooms will be at the launches. We have ordered facemasks

and other personal protective equipment for when stewards begin at the launches, but we are unsure when they will go into the field. Funding has gone to QC for the OBVBM-hired steward, but they have delayed their hiring process. We have to see what that will look like for this season.

- Formal review and approval of the interim report and workplan was moved to the June TAC meeting due to this meeting being behind schedule.

Interim report and workplan review: NY Agronomy Program, *Myra Lawyer (LCBP, NYDEC)*

- Myra presented an interim report and workplan review on the NY Agronomy Program.

Questions and Discussion:

- Steve Kramer asked what Myra believes is the biggest hurdle to continuing and expanding the work. Myra explained that she works in a big area and reaching all of the farms in a timely manner is a hurdle, a helicopter would be helpful! Because farms are spread out, that also puts a limit on how effective each education and outreach event can be, though even reaching just one farmer is beneficial.
- Neil Kamman asked about whether she has heard of manure injection happening as this is one of the technologies being moved forward in certain watersheds in Vermont. Myra answered that manure injection is happening on larger farms, and is talked about in the area. She hasn't come across it in plans she has been putting together as she works with smaller farms. Farmers that she talks with are interested in learning more about manure injection's logistics, limitations, and benefits for example if its better in tiled fields or if it allows manure to get in the soil faster making it more available to plant roots. She knows it reduced the smell - in Clinton County a farmer spread all the manure in a week and their neighbors didn't even know.

Final report review: Implementation of a Farm Phosphorus Management Optimization Web-based Tool (Farm-PREP) in the Vermont Portion of the Lake Champlain Basin, *Mike Winchell (Stone Environmental)*

- Mike and Barb Patterson shared a final report presentation that detailed the overall project objectives, the expansion of the Farm-PREP tool across the Vermont portion of the Champlain Basin, stakeholder testing and feedback, updates to the Farm-PREP application, an evaluation of simulation results, and the creation of a knowledgeable user community through outreach training.

Questions and Discussion:

- Myra asked if a selection of a priority marked "exclude" keeps the program from allowing that field to have that priority planned for? Barb replied that that is correct.
- Marli asked what dates were considered early, mid or late for cover crop seeding? Mike replied that early is September 15th, mid is October 1st, late is October 15th.
- Breck asked if access to the model is public or controlled at the moment? Mike answered that it is controlled at the moment, users need to have a login and password in order to get access.
 - Matt added that part of the project is funding continued web support and hosting through 2022.

- Neil asked that if you're a user that doesn't have access to create shapefiles through ESRI, is there an ability to load a KML? Barb replied not right now, KML is actually challenging to use, there are options for other ways to get spatial data in.
 - Matt noted there are free tools to convert KMZ to Shapefiles.
- Marli asked: in your surveying, did you ask respondents about the time constraints on adding a farm? Mike replied that he wasn't sure if they asked that question directly. Barb added that people felt that it was easy to get the info in, but people would like it to be even easier. She thinks it has something to do with familiarity of the tools as well. Marli added that it would be lovely to find ways to have NMPs drop into this tool directly, but definitely a future goal.
- Mike demonstrated the online tool for the TAC.
- Breck remarked: you have BMP priority 1 2 and 3 and it appears that some of those have sub-priorities, are those correct? Mike answered that within a priority group there are no sub-priorities, they just happen to be ordered this way by chance.
- Leigh asked: how is the buffer is defined? Is it a measurement to the edge of a wetland, stream, or other feature? Is the feature you're buffering to mapped? Mike answered that buffers are defined as a vegetated filter along the downslope edge of the field. At this point Farm-PREP is not aware of the presence of stream, what we are evaluating is if taking an area out of production and maintaining a grass buffer strip would be beneficial or not.
- Myra asked: do you ever see this program being linked to the data that come out of the tractor cabs currently? Mike answered that that would be awesome, we'd get good info on timing of the operation and rates applied, great to go there but we have not explored that yet.
- Neil asked if running the program requires being hooked up to a server? Mike answered that this is all run in the cloud on a website-based interface.
- Breck offered a suggestion for the sake of completeness, noting that an appendix or addition of how the APEX model works and a second of how the APEX model fits into the workflow of Farm PREP would assist the report. Mike answered that he agrees that would be helpful. Matt added that the model was described pretty thoroughly in the first phase of this project, we could refer back to that.
- Jenn moved to approve the final report. Ryan seconded. All in favor, none opposed.

Long term monitoring program upgrades

- Matt provided an update on plans for updates to the Long-Term Monitoring Program. The Steering Committee approved funding for this project. The upgrades would include a buoy stationed in the Lake and a tributary monitoring station. LCBP would like a better picture of where these stations could be located to best fill knowledge gaps and monitoring needs. Matt stated that he would like TAC input on this decision. He noted that the team came to an informal consensus that Mallets Bay and the Lamoille River would be a good location. Mallets Bay is sheltered, and the Lamoille is the 3rd largest tributary, but is not as well characterized as some others. The buoy and tributary monitoring station don't have to be co-located but might be better leveraged that way.
- Neil added that the upgrades will complement sensors on the Lake now and expand our ability to run the LTMP in the future. He stated that the idea for Mallets Bay goes back a ways, and that USGS gauge is located there.
- Breck asked if is there an ability to telemeter that data to a public website? Mallets Bay is heavily trafficked for boating, would be a good opportunity for public feedback. Matt

answered that posting the data is planned, but he is not sure if we would do it for all parameters due to quality control concerns (e.g. phycocyanin), but we would have that ability.

- Bernie noted navigational traffic presents a challenge, boaters don't necessarily follow rules, need to make sure buoy doesn't get run over. Breck added that the buoy needs a big light. Matt answered that it will have a light.
- Andrew noted the need to register the buoy with the Coast Guard as well. He stated that he thinks Mallets is a good spot to start, Pete Isles' work suggested that stratification was increasing in Mallets Bay, possibly in response to climate change. Neil added that Pete Isles' work was definitely on his mind, especially because it's a different system than St. Albans or Missisquoi Bays. Andrew said it definitely would be an interesting comparison.
- Bill asked who was on the subcommittee that's been working on this? Matt stated that it was Eric Leibensperger, Tim Mihuc, Luke Meyers, Angela Shambaugh, Pete Stangel, and Fred Dunlap. Bill thanked these participants and said he is in favor of the committee recommendations.
- Matt asked if the team would like to get together to further discuss plans to equipment or should we move forward with Mallets Bay?
 - Jamie asked what the experience has been with Missisquoi Bay? Andrew said the buoy there is still going.
- Andrew, Breck, Jamie, and Bernie stated they were interested in being on the subcommittee.
- Matt will be in touch with the group, let him know if you have follow up questions or comments.

Other Notes

- Matt stated that the June meeting might have a longer agenda with a break for lunch, assuming the TAC will be meeting remotely again.