

**Lake Champlain Basin Program
Technical Advisory Committee meeting
54 West Shore Rd, Grand Isle, VT
Wednesday, May 1, 2019, 10:00 AM – 3:00 PM**

TAC meeting summary

Attendees: Neil Kamman, Andrew Schroth, Bryan Dore, Leigh Walrath, Curt Gervich, Bernie Pientka, Stéfanos Bitzakidis, Mindy Morales-Williams, Jamie Shanley, Jennifer Callahan, Angela Shambaugh, Bill Ardren, Steve Kramer, Bridget O'Brien (phone), Ryan Cunningham (phone)

Staff: Matthew Vaughan, Lauren Jenness, Meg Modley, Ellen Kujawa, Bethany Sargent, Pete Stangel

Guests: Kim Jensen (VTDEC), Lori Fisher (LCC)

Updates, announcements, and public comments

- Jamie Shanley: The IJC had arranged for a two-year gage on the Otter Creek in Vergennes; this will be discontinued at the end of the year.
- Neil Kamman: The Vermont Ag Environmental Lab is looking for a new lab director. The lab is running but currently understaffed.
- Bridget O'Brien: USFWS has commissioned a study of lampricide effects on health. Vermont Department of Health will release these results soon.

Review and approve summary of previous TAC meeting

- Jenn Callahan moves to accept the minutes as written; Angela Shambaugh seconds. Neil suggested some minor edits and clarifications, which the staff will incorporate. All in favor; motion is carried.

LCBP updates, *LCBP staff*

- Ryan Patch has been appointed as a new TAC member from VAAFM; he plans to join the TAC in-person in June. Welcome Ryan!
- The Lake Champlain Steering Committee appointed Neil Kamman as TAC Chair for a three-year appointment. Congratulations Neil!
- The IJC LCRR project is about two years underway, the Study Board met several weeks ago, and the next series of public meetings will likely be held in the fall. An outreach coordinator has been hired and will begin working with various stakeholder groups in the watershed. The Missisquoi Bay water quality project will hold a science and policy forum on May 8th and any TAC members who are interested and did not receive an invitation should contact Ellen.
- Two Boat Launch stewards will be working in QC, along with 10-12 LCBP stewards in Vermont and New York. Two Education and Outreach stewards have been hired for the first time this year, and will be working in schools, camps, and farmers' markets.
- USACE Section 542 programs – an interim report on the Champlain Canal Barrier has been completed and several projects are possibilities for the future. The NY State Federation of Lake Associations meeting is this week, and the Vermont Federation of Lakes and Ponds meeting will be held on June 7th.
- The New York Lake Champlain Basin Dam Removal Task Force will hold its first meeting on May 13th; any TAC members interested in joining this group should contact Matt.

- TAC will meet in June and reconvene in September.

FY19 Technical program as adopted by the LC Steering Committee, LCBP staff

- Matt presented the results of the LC Steering Committee's FY19 budget approval.
 - Neil suggests a TAC subcommittee to discuss the two TMDL-funded projects the TAC will be reviewing. Matt notes that LCBP staff will likely develop the RFPs, which could be reviewed by a subcommittee before TAC. Bethany requests involvement in this potential subcommittee. TAC requests that Matt send out the two-page descriptions of the projects.
 - Andrew Schroth notes that he will be discussing internal loading in Missisquoi Bay at the BREE PTAC/IJC WQ Science and Policy Forum next week.

Final report and workplan review: Lake Champlain long-term monitoring program, Fred Dunlap (NYDEC), Angela Shambaugh (VTDEC), and Pete Stangel (LCBP/NEIWPC)

- Pete Stangel presented the results of the 2018 long-term monitoring season. The NY and VT sampling teams did a combined day of sampling for quality control purposes. This exercise is now built into the QAPP.
- Fred Dunlap presented the 2019 long term monitoring workplan and QAPP.
 - Mindy notes that DOC sampling filtration should be done in the field. Microbial activity will change the final sample results. Mindy has more information and will send this to Angela, Fred, and Pete. The project team will correspond with Mindy Morales-Williams and Jamie Shanley.
- Angela Shambaugh presented the results of the 2019 cyanobacteria monitoring project.
 - Bethany: Does VDH track the traffic that the CyanoTracker gets? Angela responds that these data have been tracked and will be presented shortly.
 - Neil: The report does not indicate the "duration" of blooms on Lake Champlain, just the number of occurrences. This is useful, but I suggest tasking a group of researchers with answering this question. Angela notes that Lauren Prinzing at VDH is working with a research group on this question; Matt clarifies that an accurate depiction of bloom duration is unlikely from the data we have. Angela mentions the new NASA/NOAA efforts, which may allow for more data availability.
 - Jamie: Do you foresee that the new remote sensing efforts by NASA and NOAA might be the future of this monitoring? Angela: Cyanobacteria blooms are so transient that these remote sensing projects might allow for better tracking of bloom formation, but probably not bloom monitoring. Lake Champlain has cloudier sky cover than other parts of the country, which may add a hurdle to tracking. I see the new remote sensing projects as a potential long-term monitoring opportunity. Leigh Walrath wonders whether the volunteer monitoring data can be used to verify satellite data; Angela clarifies that these data have been used as verification already. Matt notes that there is a sampling regime difference between these projects – volunteering monitoring is shoreline, while satellite monitoring looks at open water.
- Motion to accept the long-term monitoring workplan and QAPP, and VTDEC cyanobacteria report with minor revisions by Bernie Pientka; second by Jenn Callahan. Bernie Pientka has minor feedback on the cyanobacteria report and will share with Matt and Angela. Motion is carried; Angela Shambaugh, Neil Kamman, and Fred Dunlap abstain.

Final report: 2018 Cyanobacteria monitoring, Lori Fisher (LCC)

- Lori Fisher presented the 2018 cyanobacteria monitoring final report.
- Jamie Shanley: What's an example of a teachable moment in your data collection work? Lori explains that LCC's newsletter includes photos of cyanobacteria, and of things that could be confused with cyanobacteria blooms (such as pollen during the early summer). When consistent data collection mistakes take place (such as not including photos with data reports), the weekly newsletter typically highlights these issues.
- Motion to approve the final report as written by Jenn Callahan; Curt Gervich seconds. Motion is carried; abstentions from Angela Shambaugh and Neil Kamman.

Presentation: Atlantic salmon restoration in Lake Champlain, *Bill Arden (USFWS)*

- Bill Arden presented on the Atlantic Salmon restoration in Lake Champlain and talked about upcoming education and outreach events related to the international year of the salmon.
- Jamie asked about landlocked lake salmon populations in the Great Lakes. Bill explained that Lake Ontario used to have a landlocked salmon population that had been extirpated (1890s).
- Neil asked if there were more redds (nests) when people were helping the salmon move upstream vs the salmon moving themselves. Bill said there was about the same number.
- Leigh asked if the Willsboro Dam area was still effective in managing sea lamprey movement after the dam was removed. Bill said it still was and because of that they are hesitant about changing other aspects of the river. We want salmon to be able to move upstream but not Sea Lamprey.
- Lori mentioned the rotating salmon exhibits and that they are available and making the rounds throughout the Basin.

Discussion: FY20 technical budget priorities

- Matt reviewed TAC feedback for the FY19 technical budget development process and directed the TAC to discuss potential priorities for FY20.
- Leigh Walrath asked Matt to review LCBP's other implementation-oriented projects. Matt noted the Enhanced BMP, Pollution Prevention, and AIS grant categories, which fund implementation work but typically have lower award limits.
- Neil suggested that automated monitoring, PFAS, and road salting monitoring may be valuable projects to fund.
- Steve asked whether education and outreach can be an aspect of funded project. Matt clarifies that there is an LCBP education and outreach team, and that technical projects with education and outreach typically do very well in the TAC review process. Meg suggests that E&O could be an identified prioritized aspect of next year's pre-proposal process. Meg also suggests that at the next TAC meeting, LCBP could provide an overview of projects E&O has funded this year. Matt suggests that this be considered as a scoring criterion, though not a priority; TAC agrees.
- Andrew Schroth asked whether priorities are intended to build on previous years' priorities and investments. Matt clarified that while this is an option, it is the TAC's decision as to whether this is necessary.
- Fred suggested including phosphorus reduction as a priority. Bernie acknowledged the importance of nutrient reduction but reminded the TAC that nearly all technical proposals are nutrient-related.
- What does the TAC want to see?
 - Bill: economics, climate change, aquatic invasive species
 - Angela: Nanoparticles
 - Jamie: PFAS

- Leigh: Microplastics
- Neil: PDBEs.
- Bernie: Threshold harmful consumption limits for emerging toxics and contaminants in fish (to inform consumption advisories).
- Angela asked whether a large-scale study of contaminants in fish might be in the works. Matt stated that while this is a possibility for the future, funds will likely not be available until around 2022. Technical pre-proposal work could provide a basis for this future study.
- Matt suggested that the recent mercury uptick in fish tissue might be a reasonable study addition to a toxics and contaminants priority.
- Angela noted that adding chloride to dirt roads as a dust reduction effort is becoming more common. This means that road salt is being applied with greater frequency higher in the watershed. It would be interesting to know how prevalent this issue is. Also, what are the water quality implications of alternative de-icing substances (brewery waste, beet juice, etc.)?
- Stéfanos suggested focusing priorities on contaminants that we know are a current problem. Neil answered that with the exception of nanoparticles, all substances on the list have been detected in Lake Champlain and some are known to have negative health impacts.
- Andrew suggested identifying source, transport, and distribution of toxics and contaminants of interest.
- The TAC agreed to continue this discussion at their June 5 meeting.

Final report and workplan review: Water Chestnut management program, *Kim Jensen (VTDEC)*

- Kim Jensen presented the VTDEC Water Chestnut Management Program final report and workplan. In 2019, VTDEC will be partnering with TNC, VYCC, several private contracts, and other partners in the basin to develop a surveying taskforce for 4,000 acres, developing a map of population concentrations, improving location access, and implementing a new monitoring program for sites with no sighted water chestnut for more than five years.
- Leigh asked for more information on the water chestnut residuals from the hand pulling vs mechanical harvesters. Kim said that this year she is making sure the two different methods are being done in tandem.
- Leigh asked whether the multi-spectral drone imagery for water chestnut changes over the season. Kim notes that it does, which is an ongoing investigation for VTDEC and the UVM Spatial Analysis Lab.
- Leigh asked what the criteria for using the mechanical harvester are. Meg clarified that this is mainly dependent on water depth (typically three feet or less necessitates hand harvesting). Leigh also requested more information on fragmentation of non-target invasive species. Kim noted that typically, no other species grow in the dense water chestnut monocultures, so fragmentation is generally not a problem.
- Neil asked whether the funds are worth it to pay for hand harvesting at or near sites that have been mechanically harvested. Kim clarified that typically the hand-harvesting is in areas that are inaccessible to mechanical harvesters, and reduces the seedbank dramatically and subsequently reduces the need for mechanical harvesting in future years.
- Motion to approve the workplan by Jenn Callahan; second by Leigh Walrath. Motion is carried; abstentions by Neil Kamman and Angela Shambaugh.

- Motion to approve the final report by Jenn Callahan; second by Leigh Walrath. Neil Kamman requested explicit clarification of funding sources in the final report; Meg clarified that this is identified well enough for VTDEC and LCBP. Motion is carried; abstentions by Neil Kamman and Angela Shambaugh.