

**Lake Champlain Basin Program**  
**Technical Advisory Committee meeting**  
**Held remotely over MS Teams**  
**Wednesday, December 1, 2021, 8:45 AM – 3:00 PM**  
**Approved TAC meeting summary**

**TAC Members:** Bill Ardren, Jennifer Callahan, Ryan Cunningham, Ryan Davies, Laura DiPietro, Bryan Dore, Neil Kamman, Steve Kramer, Margaret Murphy, Bridget O'Brien, Mario Paula, Oliver Pierson, Andrew Schroth, Jamie Shanley, Leigh Walrath, Lauren Townley, Ryan Waldron

**LCBP Staff:** Mae Kate Campbell, Eric Howe, Lauren Jenness, Elizabeth Lee, Meg Modley, Matthew Vaughan, Sarah Coleman, Erin Vennie-Vollrath, Peter Isles

**Guests:** Les Carver

**1. Updates, announcements**

- Margaret: This year's salmon run was pretty good; collection was slower than normal but the target for egg harvesting was met.
- Eric Howe: Ellen Marsden was named a fellow of the American Fisheries Society.
- Oliver: The comment period is open on the VT pretreatment permit. The Montpelier City Council submitted a comment indicating that as of July 1<sup>st</sup>, 2023, their water treatment facility will no longer accept leachate that contains PFAS chemicals. The long-term vision is to hopefully pre-treat leachate in Newport. There are some discussions around the VT Agency of Agriculture, Food, and Markets-led study to consider stream gauging in the Lake Carmi watershed. That would provide data for calculating loading into tributaries for the Lake Carmi TMDL. Vermont DEC participated in the study and is reviewing the report currently.
  - Neil: The report indicated gauging would cost \$45,000 per year per gauge, correct?
  - Oliver: It would cost \$45,000 per gauge to establish the monitoring, the annual cost would be a fraction of that initial establishment cost.
- Andrew: I was notified of a new grant that will establish a snow monitoring observatory. The focus will primarily be a transect from Mansfield to the Champlain shore. This work will involve remote sensing, in-situ monitoring and field work.
- Neil: The bipartisan infrastructure deal did pass which means there is significant funding that will be allocated to LCBP in the coming years. The States will also receive significant funding for their revolving loan funds.
- Matt: Thank you TAC members for reviewing the slate of pre-proposals. There will be one additional homework assignment which is to review the full proposals once received. LCBP will be hosting a meeting to think about the long-term goal of establishing an in-situ monitoring network for Lake Champlain and its tributaries. We have pilot buoys purchased and ready to deploy in the spring, but we want to think forward for what the end goal is to extend this network. If you'd like to join, let us know. Jim Jutras announced his retirement and resignation from TAC a few days ago. We appreciate his service, he's been an important part of this committee for past number of years. We will be holding a TAC meeting on January 5<sup>th</sup>.

- Meg: The Steering Committee will be reviewing a proposal for Phase 2 of the Champlain Canal barrier feasibility study at their December meeting. We received a proposal from USGS NY for conducting monitoring for the round goby in the southern end of the watershed. We hope to begin that program in early spring if possible.
- Eric: LCBP staff are making good progress on Opportunities for Action (OFA). Neil mentioned infrastructure funding; we are working with the Steering Committee on how to move those funds forward and incorporate them into our budget process. TAC has put a lot of effort into the budget process and reviewing preproposals, thank you for your time.

*Review and approve summary of previous TAC meeting*

Motion: To approve the meeting summary from the November 2021 meeting

By: Jenn Callahan

Second: Bill Ardren

Discussion: Neil: some little edits, but not able to online, read only but nothing as important that can't be changed.

Vote: all in favor

Abstentions: Leigh Walrath, Margaret Murphy

## **2. Discussion and feedback: 2022 Opportunities for Action**

- Meg: For Healthy Ecosystems (HE) at the Summit there were 16 priorities that were recommended. About 80% were included already in some way in existing OFA, but we have questions about updating.
- Matt: Quick reminder that the Steering Committee asked us to holistically include climate change. Last meeting, we heard TAC was supportive of having climate change as its own objective. Want to discuss further.
- Lauren reviewed the updated HE table.
- Lauren: Question of how to place healthy soils in the HE section. Could be in HE for climate change, soil carbon. Could be sprinkled if focus is on riparian buffers. Move to Clean Water (CW) if focus is nutrients.
  - Neil: Want to recognize healthy soils as a component of HE and CW. Hard to fit into task areas, though. Not sure if it fits here. It could fit in the climate change section in terms of carbon sequestration, reducing flooding. Fitting it in #3 doesn't feel right.
  - Laura: Agree with Neil, these are 2 areas (wetlands and riparian corridors). The whole thing with healthy soils is infiltration – it's not always specific to riparian zones or wetlands. Broadening it in this space could get to that coverage. I wouldn't make the strategy specific to riparian wetland areas, more like restoring soils to support infiltration, reduce flooding. Where would increased grass growth, projects to avoid development fit? Lots of things in the in-between areas.
  - Neil: Suggesting second strategy? Restore soils in a variety of Lake Champlain landscapes.
  - Meg: We could create a new objective and have a subtask under Climate Change focused on soil health throughout the landscape.
  - Neil: Could we fit a new objective under HE about healthy soils? We could draw CW benefits down there too.
  - Matt: I think that works. We have soil health in CW already, but a little overlap is fine.

- Lauren: We can explore healthy soils as a new overarching objective or strategy.
  - Neil: Sounds like an objective level thing to me.
  - Laura: Not sure what else is covered specifically. There is a statement around shifting agricultural strategies, but statements are not specific to agriculture. You have additional strategies that are applicable to healthy soils. Good for climate, but important to water quality and ecosystem function. This one strategy isn't covering those, but people might want to do projects for them.
  - Lauren: We could edit the title of the overarching objective.
  - Oliver: For projects related to restoring healthy soils, floodplain, riparian areas, shoreland, wetland restoration efforts could have secondary benefits that lead to healthier soils. Flipping that around, this comment talks about healthy soils through shifting agricultural practices. Are there specific projects that we can think of that would want to be part of OFA that restore healthy soils outside of shifting agricultural practices? Property owner stuff – composting, adding agricultural material. What are we missing that doesn't fall in restoration and is outside of agriculture, that would justify it standing alone as a strategy or objective?
  - Lauren: We will take that question back to the Tech Team and discuss.
  - Laura: We've got to take into consideration the in-between gaps that this program will fill. The agricultural community can access USDA funds, but private landowners is an example of a group that cannot, there's not really opportunities in those spaces for implementation. We want to be beyond riparian.
- Lauren: Terrestrial connectivity – should it be included as a task area or strategy within this objective? That would mean we'd support projects beyond protection for rare, threatened, or endangered species.
  - Neil: A good example is the new proposed 54-hundred-acre woodland block in Woodberry.
  - Bill: I'm thinking that we'd need to be careful that we don't expand this scope so much that we take away from stream connectivity and riparian areas. I haven't thought about it carefully enough to think about terrestrial wildlife that would benefit from this and flow into those habitats.
  - Margaret: Terrestrial is an important part of stream connectivity, especially if there are headland catchments. If it's connected back to the aquatic end, not just terrestrial systems, but where they are using both, it would fit well here.
  - Bill: Wood turtle would fit in there well.
  - Oliver: Is there a way to keep some bounds on this topic for the time being? I think about things like large solar farms that involve fencing off 100s of acres, how does that affect movement of megafauna? We need to define it if we are going to have it as a topic.
  - Lauren: It might fall into task areas we already have (rare, connecting headwaters).
  - Matt: Promote headwater connectivity, amphibian habitat by X, Y, Z. Flip this idea and plug it in where it makes sense rather than starting with terrestrial connectivity.

## Objective 2

- Lauren: Research on lake sturgeon. Felt like 5-year goal is split. We do think that this priority on supporting fish community research could be included as a new task area but weren't sure about calling out lake trout specifically.

- Margaret: I think it's important to call out lake trout, they are a good indicator of climate change, water quality, temperature increases. It would be a huge success story to say we have a completely wild population of lake trout and eliminate stocking. That could happen in the next 10 years. It's critical to continue to monitor that. Funding was brought up as a key issue in recent meetings. Adding this here along with overall fish community health is valuable for understanding overall health. I support the statement as written.
  - Lauren: We will think about how to incorporate lake trout into climate change.
  - Bill: I agree, this is a great success story. In addition, I'm wondering about brook trout and salmon in terms of doing assessments of climate impacts on refugia and how water quality work to reduce fines improves habitat. It's important to show some of the immediate effects of those actions that may take longer from a phosphorus standpoint to show benefits. It seems like we should make sure we can continue that momentum. In-river work as well as in-lake work is important for the restoration of aquatic species. When you talk about fish community research, maybe including juvenile lake trout, you could put info about brook trout and landlocked Atlantic salmon as well. The sturgeon piece is important – they are undergoing review for listing under the endangered species act. Helping to get more data will help with that listing.
  - Lauren: Would you expand task list beyond lake sturgeon and lake trout?
  - Bill: I was thinking of one below it. Lake trout and salmon are not endangered species. Can we add language about the review in OFA?
  - Margaret: We can provide information.
- Lauren: Should we specifically be calling out this task area in terms of infrastructure, or should this be expanded? Should we be calling out the species that were brought up during the summit in the task area description, or should we leave it more general?
- Neil: What are some other landscape features that get beyond infrastructure? I like the strikeout of man-made structures. There's lots of focus on infrastructure right now, this can help draw focus to those funds.
  - Andrew: Is it worth taking another look at places where you could insert infrastructure in the rest of the document?
  - Matt: CW section has green stormwater infrastructure, wastewater treatment facilities for treating contaminants. Good point, we can think of ways to include that language more.
  - Eric: Regarding the infrastructure bill, that's something we're thinking about throughout this plan. There will be language that we can include in the background text for each of the goals.
- Bill: Fragmentation for lake trout, is that in the Lake specifically? I think about reducing fragmentation by roads, dams, and culverts, how does that impact lake trout? That would affect brook trout.
- Neil: I like the inclusion of brook trout. Stepping back to terrestrial connectivity, one thing we look at is whether there's water quality improvement opportunity in there. I'd like to see that specifically recognized.
  - Bill: Historically, we've funded maps to identify aquatic organism passage barriers. I recommend we remove lake trout from this section.
  - Margaret: I'm not sure that fragmentation is an issue for lake trout.

- Bill: Should we be calling out additional aquatic organisms? Mudpuppies, salamander species, others besides fish that could benefit?
  - Matt: Brook trout are a good umbrella species, but they are not everywhere.
  - Bill: Atlantic salmon use lower sections, brook trout higher. Covers lots of areas.
  - Leigh: List either needs to be incredibly precise, or general and able to incorporate a lot and allow for flexibility.
- Peter: It seems like the discussion we were having earlier about connectivity. We can talk about connectivity and fragmentation together to simplify this.
  - Margaret: The connectivity part of the strategy is preserving and connecting. There's nothing in this part about preserving. It's not just about restoration and removing infrastructure, preserving what's further upstream or downstream is what provides that connective pathway.
- Lauren: It sounds like there's support to pull in either a list of specific species or an umbrella term. We can workshop these ideas with staff.
  - Leigh: I agree and think Matt's suggestion of "such as" and covering other species could help refine proposals. There's more partner funding linked to salmon and brook trout than other species, which could allow for money to go further.

### Objective 3

- Oliver: Comment on support expansion of decontamination stations. There's a link between the use of infrastructure bill funds and eligible projects under the clean water state revolving fund. The state fund has capital expenses and equipment as a priority. Seeing this point, thinking about those links, I'm wondering if there's a connection? This document might not be the place to get into that, but I wanted to throw out the idea.
  - Neil: We can take it offline – I applaud the creativity. We need to examine the 319 plan to see what it says about aquatic invasive species. If it's there, we can make the claim that it's state revolving loan fund eligible. It might not have the infrastructure bill hook, we don't know the eligibilities there yet.
  - Bryan: Aquatic invasive species are included in the 319 plan.
- Lauren: Work with US Fish and Wildlife Service (USFWS), Quebec, other partners to research impacts of sea lamprey. We thought this work could be incorporated into this task area by adding language around nuisance species. Should we incorporate into this task or create a new task?
  - Leigh: I wouldn't say "and nuisance species" if you have a few species you want to include. I would call out those species. You might have lakes with a problem species for them, getting roped into that, instead of trying to focus on sea lamprey. I would be specific about individual species you want to include.
  - Oliver: How much discussion with USFWS has there been about this point? In regulatory permitting we encouraged increasing research on non-targeted impacts, and there was pushback from USFWS. That language was removed. We didn't want to create a precedent that wouldn't be able to be upheld in other sea lamprey control areas.
  - Margaret: I agree with Oliver. I'd want to vet it internally here before we commit to add more research opportunities for non-target impacts of sea lamprey control.

- Bill: Sea lamprey control has a long history in the basin. It would be great to involve Brad Young in this review to make sure we have the full history, and what's planned, how this type of effort could complement what's going on.
- Eric: Meg and I were on the alternatives committee. It hasn't been active for 15 years.
- Meg: 1-2 people proposed continued sea lamprey control with target of using less chemical, which is already a goal of the program. It depends on if you're defining sea lamprey as an invasive or as a nuisance. We can workshop the language so it's continuing to support the program with the goal of reducing the amount of chemical used.
- Bill: The barrier that was built in Charlotte is an example. It was funded through another source, but it could be funded through this kind of source. Involve Brad for more context then come back to that one.

## Climate Change

- Matt: I made notes on how we could flesh out the climate change objective in the Clean Water goal. I drafted 2 strategies. The summit input was 'support research to understand the impacts of climate change'. I also added adapt to current and future impacts of climate change, as that could be an additional topic. For research to understand impacts, things like impacts on nutrient cycling in the lake, phytoplankton communities and how that related to cyanobacteria blooms, and nutrient loading (from watershed and internal sources).
  - Andrew: Sounds good.
- Matt: Adapting could include green stormwater infrastructure, floodplain reconnection, water temp restoration through buffer plantings, water use impacts due to droughts, adaptation to that?
  - Neil: Specifically mention natural infrastructure in this place as well, including protecting upland streams and headwaters.
  - Andrew: Emerging contaminants?
    - Matt: Salt's a good one to add here. Other ideas?
    - Andrew: Contaminant transport in general.
  - Neil: As you build out the language, acknowledge the substantial work that's gone on in the last 10 years. Particularly so we don't end up having proposals to re-do work that's already been done. Nutrient cycling, hydrodynamics, benthic interactions. We've learned a lot; we want research activities to be looking forward from that.
    - Matt: We can include that background in the text. If we think we have an understanding on one of these things, maybe we can be specific about what's next to do or what's left to do. We understand impacts on nutrient cycling to an extent, could investigate what comes next.
    - Andrew: We want to have a balance, there could be new methods that arise and could be applied to improve what we learned previously.
  - Leigh: Change of land use with proliferation of green energy, could that fit here?
- Lauren: Land use changes, lake trout, healthy soils could be under HE climate change section.
  - Oliver: Lake levels? Can partially be traced back to climate change.
  - Meg: We may want to explore species refugia. There could be other ideas.
  - Bill: 'Adapt in place or move in space' – that's an important point for climate change and aquatic organisms, changing temperatures.

**3. Conflict of interest review for FY22 technical pre-proposals (Lauren)**

- Andrew Schroth is recusing himself, preproposal applicant.
- Neil has a conflict for 1 preproposal, so he did not rank and will not participate in the discussion of that proposal.
- Vermont DEC employee Peter Isles, who is not a TAC member, listened in to the pre-proposal review but did not provide comments or contribute to the decision-making process.

Motion: To enter executive session

By: Margaret Murphy

Second: Jenn Callahan