Lake Champlain Basin Program
Technical Advisory Committee meeting
Wednesday, December 3, 2025, 9:30 AM – 3:00 PM
Held in person at the LCBP office with virtual participation option

Approved TAC meeting summary

TAC Members: Jennifer Callahan, Sarah Coleman, Bryan Dore, Brian Duffy, Laurie Earley, Michele Fafette, Karyn Hanson, Peter Isles, Neil Kamman, Steve Kramer, Margaret Murphy, Bridget O'Brien, Andrew Schroth, Jamie Shanley, Daniel Tremblay

LCBP + Lake Champlain Staff: Mae Kate Campbell, Emma Janson, Meg Modley, Matthew Vaughan, Sonya Vogel, Erin Vennie-Vollrath, Colette Ward, Sarah Coleman, Ali Jackson

Guests: Maggie Stoffer, Mark J Henderson

1. **Updates, announcements, public comments**
   - Jamie (USGS): The US Geological Services' Montpelier office has been unoccupied since the flood of 2023. The General Services Administration (GSA) could not find space for us in Montpelier, so we are moving to Waterbury. We can occupy the office now, but we will be required to be there beginning in January. Our office is expanding - we are all one big, connected unit as New England offices, and moving to Vermont is encouraged. There is a new report out on how to calculate return intervals on peak flows on ungauged streams, which could be useful for projects like culvert replacement designs. It's a USGS report and data release. We have a new stream gage in Cabot, VT, upstream on the Winooski. The new gage is supported by Green Mountain Power. Also, we just established continuous water temperature for gage on the La Platte River.
   - Laurie (USFWS): It's good to be back after the shutdown. We were able to call back the sea lamprey control team during that time to complete the treatment on the Bouquet, which occurred on November 4th. We were also able to do redd surveys for Atlantic salmon in the Winooski, Bouquet, and Saranac, and we observed redds in all three. Even with low flows early in the spawning season, some fish were able to get over the cascade in the Bouquet. We were able to install a weir near the cascade to improve our monitoring and are grateful that NYSDEC was able to operate it during the shutdown.
   - Margaret (VTFWD): Sturgeon sampling occurred this fall at the Winooski delta in late October. 55 fish total were collected - 53 were original captures. We observed little sea lamprey wounding. This is good news for the sea lamprey program and sturgeon. We confirmed we will be able to do a population survey.
     - Neil: I would appreciate an update on fish hatchery surveying at a future meeting.
   - Sarah (VTDEC): We have the draft performance report coming out in January - big push on our team. The Clean Water board recommended the state fiscal year 2027 (SFY27) budget with the clean water fund, which will now move to the legislature.
   - Peter (VTDEC): We have a new director of the Watershed Management Division - Kevin Burke.

- Sarah: We also have a new deputy division director in the Clean Water Initiative Program - Gianna Petitto.
- Matt (LCBP): Thank you to everyone for doing all this homework reviewing the research pre-proposals. It was a lot of reading. There will be another big round of homework for the full proposals. The Lake Champlain Research Conference is taking place January 26th-27th. The agenda is shaping up nicely. Please register by December 18th.
- Peter: Looking at data through the right lens, particulate load has almost no impact on lake internal loading. We should focus on the dissolved load. This has implications on how we monitor for the TMDL.

Review and approve summary of previous TAC meeting

Motion: To approve the summary from the November 2025 TAC meeting
By: Margaret
Second: Peter
Vote: All in favor
Abstentions: Laurie, Jamie

2. **Workplan review: *Distribution of Species of Greatest Conservation Need in Lake Champlain Tributaries*** (Dr. Mark Henderson, US Geological Survey/University of Vermont)
   - Meg introduced Dr. Mark Henderson and UVM graduate student Maggie Stoffer, the research team who have designed and will be working on this project. Maggie presented the plan of work.
   - Objectives: Develop models to identify habitats occupied by 10 species of greatest conservation need (SGCN) species in New York, Vermont, and Québec.
   - Approach:
     - Identify species: Target species groups include but are not limited to lampreys, darters, shiners, eels, dace, etc.
     - Surveys
     - Sampling (eDNA, electrofishing, habitat assessments) in 10 sites per subbasin in the Lake Champlain basin (3 repeat sites, 7 randomly selected) during the summer months
     - Lab analyses: extract DNA, quantitative qPCR
     - Fit occupancy models: proportion of sites that are occupied by a species and the probability of observing a species given it is there
     - Transport and decay models: eDNA can move from its original location and it can degrade, eDNA Integrating Transport and Hydrology (eDITH) estimates eDNA source location based on geomorphology, hydrology, and eDNA transport and decay
   - Management outcomes: Identify where multiple SGCN are likely to be found, identify habitats that should be targeted for restoration, improved understanding of transport and decay dynamics

Discussion

- Matt: I have a question about the detection probability slide. First, are you doing this to confirm the presence of a species each time?

    - Mark: eDNA will be paired with electrofishing at each site. We don't think eDNA is a standalone technique, it should be paired with other methods.
    - Matt: Are you trying to confirm species presence that way?
    - Mark: No, but eDNA is more sensitive.
    - Matt: Specifically for the species probability of detection piece of it.
    - Mark: No, that is the repeated sampling purpose. If you see it one time but not another time, that is how we estimate probability.
    - Matt: So, you are saying that if you detect a species 3 times in 4 site visits, then you assume that it is there the 4th time?
    - Mark: Yes. The detection probability or occupancy could change as function of the environmental characteristics. For example, at high flows, the eDNA detection is more likely to be diluted which would affect detection probability.
    - Matt: All of this detection probability work is to benefit future work?
    - Mark: Well, we can't estimate occupancy without doing detection probability.
    - Margaret: How do you constrain the timeframe to meet closure assumptions?
    - Mark: Sampling should take place over a couple of weeks or a month. We are going to try and meet that. We are trying to keep sampling within the summer.
- Margaret: Is pH being measured?
    - Mark: We are going to have a YSI probe, so we will record all of those parameters.
- Peter: You are going to use qPCR, will you be using any quantitative methods?
    - Mark: We will be working on presence and absence. I think quantitative work is more useful for species that are in high abundance. For rare species, presence/absence is the standard.
- Jamie: Your eDITH model, is that using real-time flow?
    - Mark: It has geomorphology information that it is taking in, you add flow to estimate velocity based on the shape and width of the channel. Yes, it is real-time.
- Jamie: Does any eDNA pass through the filter? Does it attach to particles or is it self-standing?
    - Mark: All of the above. It is possible it will pass through the filter since is if broken up pieces of DNA.
- Jamie: Do you assume that even though you are getting a fraction of the DNA, the species you are detecting still present?
    - Mark: Yes! These methods are best used in combination with each other. There are benefits to all. Using them together allows us to see how correlated they are, and we can suggest an optimal survey design may be for coverage while getting fish in hand.
- Laurie: What are you going to do about the 3 species that don't have assays?
    - Mark: American brook lamprey is one of them. There is a team in Illinois that has done it, but it is not published, so we've requested that. The other two have potential other sources. The short answer is: we are looking. If we can't find one we have talked about developing an assay, and decided that we wouldn't do that and would likely just find a different species.

    - Meg: I'm pretty sure there are folks sharing stonecat.
- Laurie: If possible with your permits, if you get tissue from fish in hand, we may be able to archive those for future use.

Motion: To approve the *Distribution of Species of Greatest Conservation Need in Lake Champlain Tributaries* workplan
By: Laurie Earley
Second: Margaret Murphy
Vote: All in favor

3. Executive session: Review and discuss recommendation for FY26 research pre-proposals for Clean Water and Healthy Ecosystems

- Matt: Before we discuss confidential materials, we review the overall review process in open session. Thanks again to TAC members for completing all this reading. I'd like to have a discussion, maybe at the end of today, to think about the length of pre-proposals and ways we could modify and streamline this process if TAC would like. In terms of overall LCBP budget development, we are a lot of the way in to this budget development cycle. The Lake Champlain Steering Committee and colleagues developed priorities for this request for pre-proposals (RFPP). Our goal for today is to discuss each pre-proposal and to summarize positives, negatives, or tweaks that will be provided as feedback, either in a decline letter for how to improve in a future year or items to address at the full proposal stage for those who are advancing. The Steering Committee will review TAC's recommendation to finalize which pre-proposals should move forward. One clarifying note - we have 7 tracks, and each track has priorities within it. If a pre-proposal does not address those specific priorities, it gets reclassified as general Opportunities for Action. Last year, we advanced 18 pre-proposals to the full proposal stage, totaling $5.4 million in request. 7 were awarded, for a total of $2.3 million in projects funded. The LCBP Program Director said we should aim for the same outcome for funding level for this cycle. I always recommend we consider the likelihood of a full proposal being successful as we make the decision of what to advance today.
- Neil: We want to be conscious of the work folks need to put in to develop these full proposals.
- Jamie: I noted there were a lot of projects that requested the maximum.
    - Matt: Not surprising.
    - Neil: And we recently increased that cap since it had not been increased in many years.
- Brian: Are we providing feedback going in to a full proposal as to how these projects might better serve management needs?
    - Matt: Yes, absolutely. If you'd like to see the scope adjusted, we can make that request. Applicants can take that recommendation into consideration. Similarly, if it's not recommended to move forward, the feedback as to why is helpful for our team.
- Erin: How much can we ask in terms of scope change and budget adjustment?

    - Matt: Usually, the way we word that is “reviewers questioned the cost relative to the outputs to be provided”. If they re-submit the same project with the same budget, they’d know it’s not likely to be successful.
- Colette: How do we consider the scale of the indirect costs? A number of projects had fairly low indirect, others had 40-50% of the budget. I wasn’t quite sure how to weigh that.
    - Matt: Indirect costs are real costs. Universities have federally negotiated rates, so these are allowable costs. Even though it is federally negotiated and a real cost, I think it’s fair to consider that in budget scoring. However, it’s out of the researchers’ control.
    - Neil: Universities have higher indirect rates, but other private firms “load” their personnel rates to include some of those costs. Use your best judgement when evaluating budgets.

Motion: to enter executive session
By: Laurie
Second: Margaret
Discussion: Andrew will need to sit out for a couple of proposals that he has a conflict on due to departmental affiliations. Steve has a conflict with one proposal that includes some work that will be completed at his institution.
Vote: All in favor