

Testimony on H.31

Senate Natural Resources Committee

- Current law was designed to address invasive species milfoil. Passed in 1978; modified in 2010.
- Current law does not allow for input on the impact of the use of chemicals on our fish & wildlife.
- The DEC is in total control of the permitting process
- The DEC may reach out to other agencies for input, but are under no obligation to accept their input.
- In December the DEC initiated the promulgation of new rules to address concerns that they now have with the statute.
- Rules cannot fix the law.
- For many years the Fish & Wildlife Department has raised concerns about the use of chemicals only to be overruled by the DEC.
- Current law allows for only one person to file an application and begin the permitting process. The public may be afforded an opportunity to weigh in, but the DEC is under no statutory obligation to address the public's and/or a municipality's concerns.
- The law needs to be changed to allow for a more formal role of other agencies in the permitting process and to provide more clarity.
- The only way to address the flaws in the law would be to pass H.31 and create a committee to review current law, receive public input and recommend changes to the legislature.
- A limited moratorium on issuing any new permits as of 1-1-2023 would be appropriate

- Tomorrow you'll be hearing from a member of the Lake Bomoseen Association board. The process that this board used in promoting its application to use a toxic chemical to kill milfoil was to ignore their membership, ignore the four municipalities that voted against their application and ignore the over 3,500 people who have signed petitions in opposition to their application. The board has been successful in alienating the Town of Hubbardton to the degree where in their Town Report the Hubbardton Selectboard declared that the Town will no longer financially support the Lake Bomoseen Association and/or the Lake Bomoseen Preservation Trust; a group of only five people.
- Below is a copy of the F&W department's response to the Lake Bomoseen Association board's application. The DEC is at liberty to not accept any of the comments below.

Respectfully submitted

Bob Stannard

April 26, 2023

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To: Misha Cetner, Lakes & Ponds Program, VTDEC From: Shawn Good, Fish Division
Cc: Eric Palmer, Maureen Lynch, Margaret Murphy Date: April 8, 2022
Re: 3642-ANC-C - Lake Bomoseen ProcellaCOR, VTFWD Fish Division Review and Re-Submitted Comments

Summary

The Fish Division of the Vermont Fish and Wildlife Department (VTFWD) has reviewed ANC Application 3642-ANC-C, with a focus on a technical assessment of the following criteria, as well as a general review of the technical merit of the application. Our brief findings are below, with detailed explanation and recommendations for mitigating actions in the full text.

10 V.S.A. §1455 (d)(1) there is no reasonable nonchemical alternative

The Fish Division finds that there are reasonable nonchemical alternatives that have not been sufficiently explored in application materials.

10 V.S.A. §1455 (d)(2) there is acceptable risk to the nontarget environment

The Fish Division finds that there is not an acceptable risk to the nontarget environment, given the scale of the proposed treatment, the lack of thorough analysis of the spatial distribution and density of Eurasian watermilfoil *Myriophyllum spicatum*, and the critical role that the existing diverse aquatic vegetation community serves in providing habitat for fish communities within Lake Bomoseen, which includes multiple popular sportfish fisheries.

10 V.S.A. §1455 (d)(4) a long-range management plan has been developed which incorporates a schedule of pesticide minimization

The Fish Division finds that there is insufficient evidence of strategy of pesticide minimization or a long-range management plan.

10 V.S.A. §1455 (d)(5) there is a public benefit to be achieved from the application of a pesticide or, in the case of a pond located entirely on a landowner's property, no undue adverse effect upon the public good.

Lake Bomoseen supports high quality sportfish fisheries that rely on a diverse healthy aquatic plant community which may be harmed by widescale application of pesticide,

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thus impacting these sportfish populations and the public benefits they support. The pesticide application at the scale proposed presents a risk to fishing as a public benefit.

We acknowledge that the Vermont Department of Environmental Conservation (VTDEC) has recently drafted an internal procedure that would specify how and when different programs within the Agency of Natural Resources provide comments on ANC applications. This document has not yet had enough time for appropriate review by VTFWD staff and has not yet been brought to VTFWD leadership for review. We look forward to continuing work to streamline processes between VTDEC and VTFWD and find the above sections consistent with comments previously submitted and appropriate to our mission of the conservation of all species of fish, wildlife, and plants and their habitats for the people of Vermont.

Background – Lake Bomoseen Fisheries

Aquatic vegetation plays a vital role in maintaining the overall integrity of aquatic ecosystems and in supporting diverse, healthy, and abundant fish populations (Crowder and Cooper 1979; Savino and Stein 1982; Durocher et al. 1984; Paukert and Willis 2002).

Lake Bomoseen, the largest inland lake in Vermont, is no different with a diverse aquatic macrophyte community that supports several important sportfish populations, including largemouth bass, bluegill, pumpkinseed sunfish, black crappie, yellow perch, and northern pike. This popular fishery draws many anglers from all over the state and the region. It is considered one of the premier bass fisheries in the state and is second only to Lake Champlain in popularity and in the number of fishing tournaments permitted by VTFWD each year. Lake Bomoseen is also one of the few waters in the state that contains a population of redbfin pickerel *Esox americanus americanus* – a medium priority Species of Greatest Conservation Need. Redfin pickerel are dependent on dense stands of aquatic vegetation for concealment while foraging but is a generalist in terms of species composition used for cover. VTFWD surveys have found this species in all established fish survey index sites containing medium to dense vegetation, with the highest abundances found above the Float Bridge in the north Lake Bomoseen Wetland and in the Bomoseen Outlet.

The 2017 Vermont Statewide Bass Management Plan summarized largemouth and smallmouth bass population data for waters across the state, and Lake Bomoseen was consistently ranked as one of the top waters in Vermont for several metrics including catch rate, size, and age distribution. The mean age and size of bass in Lake Bomoseen is one of the highest in the state underscoring the quality angling opportunities it provides.

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Background - Control of Eurasian Watermilfoil (EWM)

In certain situations, dense stands of non-native plant species like EWM can negatively impact some recreational uses, such as boating and swimming, which can reduce enjoyment of a lakeshore or dock area. High densities of EWM can result in decreased plant and invertebrate diversity, light, and dissolved oxygen, thus reducing the quality and amount of available fish

habitat and disrupting predator-prey relationships (Engle 1995, Getsinger et al. 2005, Keast 1984).

Decreased habitat quality or availability has the potential to negatively impact the feeding efficiency, growth, and overall survival of littoral fish species leading to stunted populations and poor fishing conditions. However, these situations are rare and generally occur only in very shallow, hyper-eutrophic waterbodies that contain dense monocultures of EWM and lack suitable areas of open water. Large-scale ecosystem impacts are not typically documented in mesotrophic or oligotrophic waters. Lake Bomoseen is a mesotrophic lake with an average depth of 26.8 feet and a maximum depth of 65-feet. It does not fit the model under which fish impacts have been documented in the literature.

In contrast, when non-native aquatic plant species like EWM exist as part of a diverse plant community or grow in patches with areas of open water, they provide value as quality fish habitat (Engel 1995; Pratt and Smokorowski 2003) without negatively impacting fish populations (Weaver et al. 1997; Olson et al. 1998; Valley and Bremigan 2002b) and support high-quality recreational angling opportunities. As indicated above, Lake Bomoseen is highly sought after for angling opportunities.

The Fish Division of the VTFWD supports EWM control efforts that limit the scope of impact on fish habitat in the littoral zone and focus on areas with medium or dense EWM growth that impact other recreational uses of the lake.

Improving uses such as swimming, boating, water-skiing, and access to beaches and private dock areas that are dominated by EWM can be achieved through the selective and strategic implementation of non-chemical methods in small, localized areas, without using widespread chemical removal of milfoil across large areas of a lake, as has been implemented in some New York Adirondack Park lakes.

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Comments on ANC Permit Application #3642-ANC-C

A) General Comments on Technical Merit

ANC permit application #3642-ANC-C proposes to conduct an herbicide treatment in approximately 620 acres of littoral zone over three years to control EWM in Lake Bomoseen.

VTFWD Fish Division has reviewed the application and has provided the below comments and recommendations.

Based on the Division's review of the application, the applicant has not suitably demonstrated that current EWM density and distribution within the identified 620 acres proposed for treatment are "too great for management via non-chemical control efforts and warrant herbicide treatment" (Page 8, Executive Summary, 3624-ANC- C application).

The Lake Bomoseen Association (LBA) has stated in a PowerPoint presentation available on their website (<https://www.youtube.com/watch?v=-WClgeiX1V4&t=1817s>) that EWM has increased from 258 acres to 620 acres, or 30% of the lake, in the last 6 years.

The referenced increase is based on an informal, visual survey of milfoil conducted in 2016 by William Wood, an LBA board member at the time, for the purpose of defining areas of the lake where EWM could be mechanically harvested based on EWM stands that reached the surface, thus underestimating the total acreage of the lake containing EWM at the time. This distinction between the 2016 methods and the methods used by Solitude Lake Management (SLM) in 2021 to identify all EWM in the lake means that the two estimates are not directly comparable, and cannot be used alone as evidence of an increase in EWM that would warrant a large-scale herbicide application.

Furthermore, in a 1997 response to a petition submitted by the LBA to amend the Lake Bomoseen Surface Level Rules, the Vermont Water Resources Board indicated in Finding #5 that EWM was present in approximately 600-acres, or 25% of the lake at the time (Vermont Water Resources Board, 1997).

This suggests that EWM levels in Lake Bomoseen have remained remarkably consistent for at least 25 years and that current efforts are successfully managing EWM.

To evaluate fish habitat complexity and potential impacts, the VTFWD Fish Division reviewed SLM's Comprehensive Aquatic Vegetation Survey report, conducted in August 2021, and have identified some shortcomings in their evaluation and analyses. While we agree that the point-intercept methodology used by SLM is a standard procedure for aquatic plant surveys, it is important to be clear on how the data are interpreted between grid points to calculate a total

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area for treatment as this encompasses a much larger area than the 6m x 6m survey point evaluated. In addition, SLM's analysis reported frequency of occurrence for EWM, but relative frequency of occurrence, which provides a more useful metric to understand EWM distribution by normalizing to the rest of the plant community, was not reported. Relative frequency was calculated based on the raw data provided in SLM report as:

Relative Frequency of Occurrence 100 ,

While the application states that EWM was the "most common plant found in the lake, being present at 88.8% of the survey data points" (page 9, ANC Permit Application 3642), EWM makes up only 15.4% of the overall plant community in the survey area based on relative frequency of occurrence. This low relative frequency of EWM is also highlighted by the overall diversity of plants with a mean species richness of 5.85 species per plot and a total of 34 plant species being identified; EWM was the only non-native species observed. This indicates there is a healthy and diverse aquatic macrophyte community in Lake Bomoseen that supports the current fish community.

While EWM is widely distributed, many locations were found to be at low densities (i.e., 'trace' or 'sparse'), with dense monocultures seemingly limited. Of the 355 plots sampled [Note: the raw data table contained 355 data points, not the reported 357], only 32 (9% of the total number of plots) rated EWM as 'dense', and 12 of those 32 plots had at least one other native plant species that was also rated as 'medium' or 'dense'. Only 8 of the 32 plots that were rated as 'dense' EWM contained just one or two other native species that were listed as 'trace' or 'sparse', which would indicate EWM dominance at those locations. The survey only classified 67 plots (19%) as having 'medium' EWM density. Thirty-eight (11%) of the plots had no EWM at all, while EWM was rated as 'sparse' or 'trace' at 218 (61%) of the plots. Based on this analysis of the raw data, EWM appears to not be limiting native aquatic plant species in most of the littoral zone and the overall plant community is supporting a diverse fish community and fishery.

B) Comments on §1455 Aquatic Nuisance Control Permit Criteria

As demonstrated in our calculations of relative frequency of occurrence, most survey plots (61%) had only 'trace' or 'sparse' amounts of milfoil, while 11% had no EWM. This assessment of the data indicates that conducting a blanket treatment of areas ranging from 187 to 224 acres per year is not prudent when milfoil densities are predominately low across those areas, understanding that EWM control is the goal, and not eradication as that is impossible to achieve. Considering the overall low densities of EWM across the 620 acres, conducting a chemical treatment of this scope would not be considered pesticide minimization (§1455 (d)(4))

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and may affect fishing as a public good (§1455 (d)(5)). As noted below, reducing the area of control to focus on specific problematic areas of EWM will provide the best mitigation for risk to fish habitat and fishing as a public benefit.

Also based on the low relative frequency of occurrence of EWM, it does not appear that a positive finding can be made on §1455 (d)(1) – that there is no reasonable non-chemical alternative available – without additional supporting evidence. The application does not provide evidence that previous non-chemical control efforts have been exhausted or proven ineffective. A brief mention of techniques employed in the past is provided in the application, and a broad statement that “undoubtedly, other areas of Lake Bomoseen would be significantly more infested with EWM growth if it were not for the LBA/LBPT/FUN's diligent and intensive non-chemical management programs” (p17) is made, but no documentation or details of the locations, scope, intensity, timing, or amount for each method is provided.

Based on our assessment of the data provided, EWM control could still be achieved with non-chemical methods by reducing the scope of control and focusing on specific problematic areas to improve uses such as swimming, boating, and shoreline access, thus providing the greatest public benefit while minimizing risk to fishing and fish habitat.

As an example, lakes within the New York Adirondack Park have used hand pulling and DASH methods on multiple lakes larger than Lake Bomoseen and have successfully reduced recreational impacts from EWM. (See Upper Saranac Foundation, <https://usfoundation.net/programs/milfoil-control/>, Lake George (https://lgpc.ny.gov/system/files/documents/2022/01/2021-milfoil-control-annual-report-lake-george-rfs_0.pdf), and Fulton Chain of Lakes Association (<https://fultonchainoflakesassociation.org/pdf/2019newsletter.pdf>).

Finally, the application as proposed may put native aquatic plant species and fish species that depend on them as habitat at risk by chemically treating 620 acres over three years, when only a small portion of those areas have been documented to contain 'medium' or 'dense' areas of EWM. A 2019 study conducted in Massachusetts (MDAR and MDEP, 2019) describes the mode of action of floryprauxifen-benzyl (the active ingredient in ProcellaCOR) as being specific to plant growth. As such, the authors state that many types of non-target plants can be sensitive to this compound. This raises the question as to whether the application as proposed can meet §1455 (d)(2) acceptable risk to the nontarget environment. The MDAR and MEDP (2019) study specifically recommends that any application of floryprauxifen-benzyl should be targeted as much as possible to avoid impacts to non-target organisms. As noted above, treating 620 acres of the Lake Bomoseen littoral zone, despite there being zero, trace, or sparse amounts of EWM in 72% of the proposed area, is not a targeted application strategy, and presents an

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unacceptable risk to the non-target environment (§1455 (d)(2)), and may affect fishing as a public good §1455 (d)(5).

Findings

10 V.S.A. §1455 (d)(1) there is no reasonable nonchemical alternative

VTFWD Fish Division finds that there are reasonable nonchemical alternatives that have not been sufficiently explored in application materials.

10 V.S.A. §1455 (d)(2) there is acceptable risk to the nontarget environment

VTFWD Fish Division finds that there is not an acceptable risk to the nontarget environment, given the scale of the proposed treatment, the lack of thorough analysis of the spatial distribution of Eurasian watermilfoil *Myriophyllum spicatum*, and the critical role that the existing diverse aquatic vegetation community serves in providing habitat for fish communities within Lake Bomoseen, which includes multiple popular sportfish fisheries and a fish Species of Greatest Conservation Need.

10 V.S.A. §1455 (d)(4) a long-range management plan has been developed which incorporates a schedule of pesticide minimization

VTFWD Fish Division finds that there is insufficient evidence of strategy of pesticide minimization or a long-range management plan.

10 V.S.A. §1455 (d)(5) there is a public benefit to be achieved from the application of a pesticide or, in the case of a pond located entirely on a landowner's property, no undue adverse effect upon the public good.

Lake Bomoseen supports high quality sportfish fisheries that rely on a diverse healthy aquatic plant community which may be harmed by widescale application of pesticide, thus impacting these sportfish populations. The pesticide application presents a risk to fishing as a public benefit.

Recommendations and Strategies for Mitigation

1. VTFWD Fish Division recommends that the applicant reduce the scope of EWM control efforts significantly by conducting a more quantitative aquatic plant survey and analysis to more clearly identify specific areas of the lake where EWM is at 'medium' or 'dense' levels and is in direct conflict with other recreational uses, such as swimming and boating, or is

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negatively impacting lakeshore property owners' ability to access or utilize their waterfront.

Better delineation of these areas may allow for a more rigorous assessment of the most appropriate aquatic vegetation management options relevant to §1455 (d)(1) reasonable nonchemical alternatives, §1455 (d)(2) risk to nontarget environment, and §1455 (d)(4) long range pesticide minimization schedule.

2. To this end, VTFWD Fish Division suggests that the applicant may benefit from hiring an independent lake manager as a strategy for mitigation. A lake manager could provide an objective assessment of EWM control options for the Lake Bomoseen ecosystem and be able to balance the desires of different recreational lake users. This model has been successful in other popular waterbodies in the northeast such as Lake George and Upper Saranac Lake, NY.

3. VTFWD Fish Division believes that because each lake ecosystem is different, each ANC application should be reviewed and assessed independently on its own merits in relation to conditions in that specific ecosystem. We appreciate VTDEC's full consideration of our review of ANC Application 3642-ANC-C for its technical merit and compliance with the criteria of 10 V.S.A. §1455.

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