Joe's Pond Association
A Proposal to Reduce and Minimize the Use of Herbicide
In VT Lakes With New Infestations of Eurasian Watermilfoil

Executive Summary

Eurasian Watermilfoil (EWM) is the most common aquatic invasive plant species (AIS) plaguing Vermont lakes. In recent years, the number of VT lakes and ponds with established EWM has increased an average of one lake per year

Although the state is ultimately responsible to protect and preserve VT lakes, lake associations are burdened with a growing share of the expense (often six figures) involved in preventing and managing the spread of this invasive. Many lake associations have turned to application of the herbicide ProcellaCor for EWM control because of the failure of nonchemical alternatives to contain or limit the proliferation of EWM, and the unsustainable cost of using these alternatives for effective control.

The existing Aquatic Nuisance Control General Permit (ANCGP) issued by VT ANR, pursuant to the authority of 10 V.S.A. Section1455(m), on 05/01/18, excludes herbicide treatment as an EWM management option available to lake associations as a Rapid Response Control activity. In addition, current ANR regulatory practice, through its interpretation and application of the statutory provisions contained in Section 1455(d), disallows any applicant for an Aquatic Nuisance Control (ANC) permit from using ProcellaCOR to contain and potentially eradicate a newly discovered infestation of EWM. Rather, the current regulatory practice restricts ANC permittees to utilizing only non-chemical methods until such methods fail to control the new EWM infestation and only then considering issuance of an ANC permit for treatment with ProcellaCOR. Once EWM infestation has become so

well-established and widespread, eradication is virtually impossible, and effective EWM control requires periodic herbicide treatments most likely in perpetuity.

With a single exception, case histories of VT lakes with EWM infestation show that attempts to eradicate new infestations, only with nonchemical methods, fail despite tremendous effort and expense by lake associations. Rather than minimizing the volume of herbicide discharged into VT lakes, the consequence of the current ANR regulatory approach, is to dramatically **increase** herbicide use in the long term compared to the amount required to potentially eradicate a newly established EWM infestation of limited areal extent.

The data and the documentation of experience of VT lake associations engaged in management of EWM, as presented in this paper, will show that the most effective strategy to achieve eradication of this invasive, and to minimize the long term use of herbicide will most effectively be accomplished by treating a newly discovered EWM infestation with ProcellaCOR before it has a chance to become so well established as to be beyond the capabilities of non-chemical management methods and the financial capacity of lake associations.

Intent of VT Legislature

State statute (10 V.S.A. Section 1451) makes it abundantly clear that ANR must act quickly and expeditiously to not only prevent the spread of an aquatic nuisance species, but also to **eradicate** any infestation that occurs:

> "(2) It is the policy of the State of Vermont to prevent the infestation and proliferation of invasive species in the State that result in negative environmental impacts, including habitat loss and a reduction in native biodiversity along with adverse social and economic impacts....."
>
> "(4) The ability to initiate quickly a response to contain and control a new aquatic species introduction before it can spread is critical to reduce future management costs and protect the integrity of Vermont's ecosystems."
>
> "(5) Infestations of new aquatic species must be detected early and acted upon swiftly to minimize economic, social, and ecological impacts as well as to increase the probability of a successful eradication effort."

That ANR's current regulatory approach conflicts with, fails to achieve, and **functionally subverts** the legislative intent and the objectives stated in Section 1451, and what can be done to address such conflicts is the subject of this paper.

By restricting use of the only herbicide, ProcellaCOR, approved by ANR for control of AIS, until after a lake association's multi-year efforts and expenditures on nonchemical means of control have distressingly and abjectly failed, the resulting proliferation of EWM throughout infested VT lakes, and ultimately, in desperation, the lake associations turning to large-scale herbicide treatments, provides irrefutable evidence that ANR's interpretation and application of the regulatory provisions under Section 1455 directly contravene the statutory objectives noted above.

10 VSA Section 1455(d)(1)

Section 1455(d) states:

> "(d) The Secretary shall issue a permit for the use of pesticides in waters of the State for the control of nuisance aquatic plants..... when the applicant demonstrates and the Secretary finds:
> (1) there is no reasonable nonchemical alternative available;"

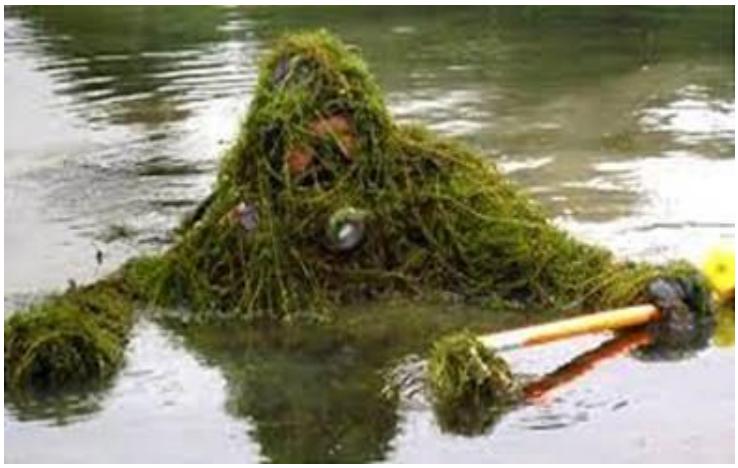
Clearly, the legislative intent in crafting this provision is to minimize the use of herbicides for control of AIS, including EWM, in waters of the State; an objective which the Joe's Pond Association fully supports.

However, failure to achieve the goal of herbicide minimization, through ANR's regulatory application of 1455(d)(1), appears to center on the interpretation of what constitutes a "reasonable nonchemical alternative". For an EWM control practice to be "reasonable", **it must be effective.** If the suite of available nonchemical alternatives fail to "prevent the proliferation of invasive species" (1451)(2), or "to contain and control a new aquatic species introduction before it can spread" (1451)(4), or to be "acted upon swiftly to minimize economic, social, and ecological impacts **as well as to increase the probability of a successful eradication effort**" (1451)(5) (emphasis ours), then the inescapable conclusion is that the current regulatory approach is critically broken and misguided, to such an extreme degree, that it profoundly exacerbates the problem it is intended to remedy

Thus clearly, nonchemical treatment and management alternatives, by themselves, have not and are not effective in achieving any of the statutory goals stated above in Section 1451(2), (4), and (5). As such, the nonchemical EWM management practices of hand pulling, suction harvesting, and bottom barriers cannot be considered "reasonable" as the term is used on Section 1455(d)(1).

Is it **reasonable** or even possible to expect these practices to completely remove or even sustainably contain a new infestation? Is it **reasonable** to expect that after 3 years under the regulatory constraints of a Rapid Response Permit (herbicide not allowed) that the infestation will not have proliferated far beyond the nonchemical management capability and oftentimes financial capacity of the lake association? The answer to both these questions, based on the history of VT lakes that have experienced EWM infestations, is unequivocally **No**.

In one example out of many, the Lake Eden Association (LEA) discovered a new EWM infestation in 2022, then applied for and received a Rapid Response Permit from ANR that allowed only non-chemical control methods. This small resource-limited lake association spent over $50,000 on hand harvesting, diver-assisted suction harvesting, benthic barriers, and related expenses, for 3 years only to see EWM explode in extent and increase in density throughout the littoral zone, despite their intensive nonchemical control efforts. EWM has now become established in moderate to dense populations over 25 acres of Lake Eden's 64 acre littoral zone with scattered plants throughout much of the remaining. The LEA anticipates continued proliferation throughout the lake under the current management regime. Like many lakes suffering EWM infestation, much of the Lake Eden littoral zone is characterized by shallow water depth and deep muck bottom sediments, which greatly handicap and constrain the effectiveness of hand harvesting, DASH, and placement of benthic barriers. The LEA projects EWM management costs over the next 5 years (including herbicide treatments) of over $215,000.



Lake Eden, 2024 Photo Credit Lake Eden Association

In another recent example, a small 50 ft. diameter patch of EWM was discovered in Salem Lake in 2017. Despite immediate and on-going intensive non-chemical EWM containment efforts, in less than 5 years, EWM had engulfed nearly all 155 acres of the Salem Lake

littoral zone; nearly half of which, by 2022, was described as densely infested and 75% as moderate or dense. According to the Salem Lake Preservation Association, the absence of an opportunity to eradicate the small, initially discovered patch with a limited application of ProcellaCOR set the stage in which intensive watercraft use on Salem Lake contributed to rapid proliferation of EWM through fragmentation. An abundant and robust native plant community also contributed to the ineffectiveness of non-chemical containment efforts due to the difficulty finding individual EWM plants growing in areas of dense native vegetation. The limited number and availability of AIS harvesting contractors, particularly in northern Vermont, is another impediment to effective non-chemical EWM control.

The efficacy of herbicide application does not suffer from the same limitations of having to visually find and locate each and every stem of milfoil. The current regulatory restriction on herbicide use as an allowable EWM treatment under a Rapid Response Permit, or to delay issuance of an ANC permit for herbicide treatment until the EWM infestation is widespread and uncontrollable, because of ANR's interpretation of what constitutes a "reasonable nonchemical alternative" forces lake associations to enter the battle for EWM containment with one arm tied behind their backs.

10 VSA[i] Section 1455(d)(2) (3) (4) & (5)

The remaining statutory criteria upon which the ANR Secretary must make affirmative findings prior to issuing an ANC permit authorizing use of herbicides are as follows; including a general evaluation based on experience gained by VT lake associations from 5 years (2019-2023 data) of ProcellaCOR use in VT lakes and ponds:

(d)(2) "there is acceptable risk to the nontarget environment"
VT ANR first began issuing ANC permits for EWM treatment with ProcellaCOR in 2019. According to data provided by VT ANR, from 2019 through 2023, 25 ProcellaCOR treatments were authorized by ANR to treat 683 acres. To date, there have been no post-treatment reports or observations of anything more than negligible damage to non-target aquatic species; and in all these cases, any native aquatic species suffering minor damage recovered quickly to populations that exceeded pre-treatment levels because the density and aggressiveness of EWM had depressed and inhibited the native plant species. There exists a more than adequate track record and the evidence is overwhelming that ProcellaCOR, if applied as permitted, represents an "acceptable risk to the nontarget environment". Through current application of its regulatory interpretation under 1455(d)(1) that increases, rather than minimizes, long-term herbicide use, ANR may very well be causing higher risk associated with the potential development of biological resistance in

the targeted species. A single herbicide treatment to a newly discovered EWM infestation with a high likelihood of achieving eradication would substantively contribute to avoidance of this potential and highly undesirable outcome.

(d)(3) “there is negligible risk to public health”
The VT Department of Health and the VT Department of Environmental Conservation Drinking Water & Groundwater Protection Division both, in October 2022, determined that ProcellaCOR, when applied to waters of the State at concentrations (5-9 ppb) sufficient to cause mortality to EWM and as permitted by ANR, represents a “negligible risk to public health”. ProcellaCOR is extremely hydrophobic, meaning it aggressively attaches to its targeted species (EWM) to escape the water column thereby dissipating to undetectable levels (<1 ppb) within 48 hours. To date, no public health hazards have been identified, observed or documented to have resulted from EWM treatment with ProcellaCOR in VT lakes, or any other lakes in North America so far as we have been able to determine.

(d)(4) “a long-range management plan has been developed which incorporates a schedule of pesticide minimization”
Based on all the evidence presented above, it becomes quite apparent and logical that the most effective plan of herbicide minimization is to treat a small, localized, newly discovered infestation during the Rapid Response phase, or as soon after discovery as is possible under the authorization of an Individual ANC permit, with a small amount of ProcellaCOR, when there is a very good chance of eradication, thereby avoiding the almost certain alternative, under current ANR regulatory practice, of uncontrolled spread, proliferation throughout the littoral zone, and subsequent long term herbicide treatments with virtually no chance of ever achieving eradication. This does not preclude, in fact, **must include**, on-going vigilance, monitoring, and nonchemical management efforts, as necessary, throughout the waterbody by lake associations and their members.

(d)(5) "there is a public benefit to be achieved from the application of a pesticide”
It is well documented that EWM is detrimental to and degrades native flora and fauna and the ecosystems of which they are a vital component. Additionally, the tremendous economic and recreational benefits provided to and for Vermonters, and visitors, by VT lakes and ponds is inarguable. No detriments to the public interest resulting from control of EWM with ProcellaCor are apparent nor have been documented in VT; and, from an unbiased, rational standpoint, even conceivable.

The above findings echo the conclusions of the Lake George Park Commission (an agency of NY state government) after an exhaustive review of the ecological and public health effects of ProcellaCOR use for control of EWM.

ProcellaCOR Treatment of New EWM Infestations – Support for a Pilot Project

Extensive research and inquiries addressed to other New England State regulatory agencies has not revealed any cases wherein a new EWM infestation was treated with ProcellaCOR within three years of discovery; although AIS managers for the States of Maine and New Hampshire have both verbally expressed agreement that herbicide treatment of new infestations would likely reduce the use of herbicides long term.

Because of the potential to dramatically reduce the volume of herbicide discharged into VT lakes for long-term control of EWM, by permitting an early treatment soon after discovery, it makes sense, to permit one or more lake association(s), with recent EWM infestation(s), as a pilot or experimental project to test this approach. The anticipated project success creates the potential for significant reduction in future herbicide use (in lakes with new infestations), a greatly enhanced opportunity for eradication, a profound decrease in the financial cost borne by lake associations for nonchemical management towards a lost cause and substantially improved protection of the aquatic environment.

There are 220 lakes and ponds in VT greater than 20 acres in size. This means that well over half of these lakes remain free of EWM yet all are vulnerable to infestation; it's only a question of when it will happen. This also means that there are many potential future opportunities for ANR and any involved lake associations to get it right; i.e. to unlock the toolbox so that the most effective tool can be judiciously applied to a small new infestation resulting in a high likelihood of eradication, and a dramatic reduction in the volume of herbicide ultimately required for long-term control.

Proposal for a Pilot Project

Joe's Pond, a 400 acre waterbody in the towns of Danville and Cabot, represents the most recent VT lake to suffer the introduction of EWM. Since discovery of EWM establishment in August, 2024, the Joe's Pond Association (JPA) has:

- tirelessly and diligently devoted all available resources to Rapid Response management activities (in partnership with VT ANR) involving intensive hand harvesting and benthic barriers
- formed an EWM Management Committee

- contracted for comprehensive littoral zone surveys and a native plant inventory to be performed in Spring and Summer of 2025
- contracted for intensive hand harvesting operations in Spring 2025
- established a digital EWM mapping platform to temporally and spatially track:
    - all EWM related management actions
    - coverage of survey and monitoring activities, and locations
    - extent and density of EWM propagation
- created a Joe's Pond Stewardship Program wherein volunteers, starting in Spring, 2025, will be trained in:
    - EWM identification
    - geolocation techniques
    - placement of marker buoys
    - hand harvesting
    - monitoring and patrolling the littoral zone
- Designating Lakeshore Section Coordinators to:
    - support volunteer monitoring work and the Stewardship Program
    - confirm EWM identification
    - provide and place marker buoys
    - transmit monitoring data to the JPA Mapping Specialist for entry in the tracking system and EWM Management Map
- adopted a comprehensive EWM Management Plan https://www.joespondvermont.com/management-plan.html
- forming, equipping and training a dive team to:
    - perform hand harvesting operations
    - conduct benthic barrier placement
    - support contracted harvesting operations and DASH projects
    - quickly respond to reported new infestations for hand harvesting and benthic barrier placement
    - supplement Stewardship Program survey and monitoring activities
- performing educational activities within the JPA membership and the wider Joe's Pond Community in the surrounding towns using:
    - the JPA website https://www.joespondvermont.com/
    - email distribution,
    - Joes Pond Blog
    - local media outlets
    - direct engagement with selectboards and conservation commissions
    - educational displays at Town Meetings

    - signage at the public boat access
- supporting, sustaining and enhancing the Greeter Program at the public boat access

The Joe's Pond Association stands ready to apply for and, if approved by ANR, conduct such a pilot project as described above. The JPA absolutely does not want to see Joe's Pond follow the path that all but one of all VT lakes previously infested with EWM have followed. While further public outreach is planned, the JPA anticipates full support from its membership and the surrounding communities for implementation of a pilot project involving the treatment of its small, concentrated, new infestation of EWM with ProcellaCOR, meanwhile continuing to conduct all nonchemical, organizational, infrastructural, and educational activities listed above.

In order to make the decision and take the step to engage a professional consultant and commit the substantial funding required to prepare and submit an ANC permit application for herbicide treatment of a new EWM infestation, as a pilot project or otherwise, the JPA must be assured by the ANR that such application for ProcellaCOR treatment of a new EWM infestation will be reviewed on its merits and its consistency with the legislative intent to minimize the use of herbicides for aquatic nuisance control in VT lakes, and not necessarily on the precedence established by prior regulatory decisions under the pertinent regulatory statutes; particularly where such precedence has failed to minimize the long-term application of herbicides into VT lakes.

A successful outcome of this proposed pilot project provides great potential to benefit not just Joe's Pond but all VT lakes that experience future EWM introduction, and to enhance the effectiveness of ANR's protection of the economic, ecological and social values of VT lakes.

Conclusion

It seems important, possibly even necessary, to emphasize to ANR that VT lake associations, being the entities most directly affected by, interested in, engaged with, and responsible for the economic, social, and ecological health of the lakes and ponds to which they are connected, that the important, even vital function that lake associations serve as thoughtful, devoted, steadfast and resolute **Stewards** of these inestimably valuable waterbodies for the people and the ecology of Vermont should not and cannot be undervalued.

A thoughtful, sincere and open-minded re-evaluation of ANR's regulatory restriction on the use of ProcellaCOR to treat an early EWM infestation such that long term herbicide use may be dramatically reduced, if not eliminated, that also recognizes, embraces and facilitates the shared and mutual objectives of ANR and VT lake associations is not only a hopeful, but expressly desired outcome of this conversation.

The Joe's Pond Association is committed to and prepared for engagement with the Office of the ANR Secretary in response to this proposal. The window is closing fast on this opportunity to conduct the pilot project proposed above. A permit application process must commence soon in order for there to be any chance for a ProcellaCOR treatment to be applied in 2025. The longer this is delayed, the less chance there is for success. We respectfully request your timely response.

Thank you.
For the Joe's Pond Association

Albert Hebert, President

Barry Cahoon, Water Quality Director
Eurasian Watermilfoil Response Coordinator

Sources

Federation of Vermont Lakes and Ponds; The Case for an Accessible Path for Vermont Lake Associations to Use ProcellaCOR to Control Invasive Milfoil; November, 2023

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https://lgpc.ny.gov/procellacor

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Colleen Brennan, Lake Eden Association, Personal Communications, 2025

Lake Eden Association Eurasian Watermilfoil Long Term Management Plan, Arrowwood Environmental, 2024

Chrissie Cano, Shadow Lake Association, Personal Communications, 2024

Marc Bellaud, SOLitude Lake Management, Personal Communications, 2025

Amy Smagula, NH DES, Personal Communications, 2025

John McPhedran, Maine DEP, Personal Communications, 2025

Enclosures

Senator Beck Support Letter Joes

FOVLAP Letter of Support Joes Pond.p

SOLitude letter of support for Joes Poı

LSCA Letter of Support Joes Pond.p

BPA Letter of support for Joes Poı

SLPA Letter of Support Joe's Pond.

ELA support letter Joes Pond.pdf

LBA Letter of Support Joes Pond.ı

LBPT Letter of Support Joes Pond.ı

LMC Support Letter Joes Pond.pdf