

**From:** Chris Navitsky <cnavitsky@lakegeorgewaterkeeper.org>  
**Sent:** Thursday, May 7, 2026 2:31 PM  
**To:** APA Regulatory Programs Comments  
**Subject:** Project 2026-0074; Town of Minerva; Aaron Ziemann  
**Attachments:** APA\_Waterkeeper.LGA Comments\_FINAL\_050726.pdf; ProcellaCOR Paper (3).pdf

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Good afternoon Mr. Ziemann -

Please find attached public comments for the APA Board to consider during its deliberations for the above referenced project application.

Should you have any questions, please feel free to contact me.

Best regards -

Chris

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May 7, 2026

Mr. Aaron Ziemann, Associate Adirondack Park Project Analyst Forest Resources  
**Adirondack Park Agency**  
 1133 State Route 86  
 Ray Brook, NY 12977

**RE: Town of Minerva Application for ProcellaCOR  
 Science-Based Concerns & Recommendations  
 Minerva Lake, Essex County (APA Proj No. 2026-0074)**

Dear Mr. Ziemann:

As the Adirondack Park Agency (“APA”) is aware, the Lake George Association (“LGA”) and the Lake George Waterkeeper (“Waterkeeper”) submitted significant environmental and ecological concerns regarding the proposed application the aquatic herbicide ProcellaCOR™ EC (“ProcellaCOR”) to control the invasive plant Eurasian watermilfoil in Lake George. These comments were based on our scientific knowledge and experience of Lake George that has been gathered over the past 45 years of data collection and research with our partners. This data collection has continued since the application of ProcellaCOR to Lake George including a groundbreaking study on the persistence of the herbicide and its degradants in sediments more than one year after its application.

The LGA and Waterkeeper acknowledge that our knowledge is limited regarding Minerva Lake and that it is a much different water body than Lake George, although just as special and important. Our correspondence is to provide the APA with information to consider regarding the use of this herbicide in Adirondack lakes and recommendations to evaluate the use of the herbicide.

- 1. The Agency should consider potential long-term accumulation of florpyrauxifen-benzyl and its degradants in lake sediments.** There are numerous questions surrounding the environmental fate and transport of florpyrauxifen-benzyl; questions regarding persistence in the environment of both the parent compound and its degradants. It is widely reported that florpyrauxifen-benzyl will primarily degrade via aqueous photolysis with a reported half-life of 0.07-2 days. (USEPA 2017); though, EPA was unable to establish sediment half-lives in aquatic systems. However, based on a recent study of sediment persistence in Lake George, florpyrauxifen-benzyl and its degradants were found one year after treatment in two treated bays in Lake George (Wiltse 2025). In fact, the concentrations of these chemicals were greater than the stated application rate of 7.72 ppb and exceed the NOAEC (No Observable Adverse Effect Concentration) for

chironomids identified in the United States Environmental Protection Agency (USEPA) <sup>1[00]</sup>. These results raise important questions about long-term ecological risks, effects of repeated applications, and underestimation of sediment persistence. Copy of Wiltse paper attached for your reference.

- 2. The Agency should consider the potential for the development of resistivity of Eurasian Watermilfoil since the herbicide has been previously applied in Minerva Lake.** The first page of the ProcellaCOR EC label contains Product Information regarding Resistance Management: “ProcellaCOR EC is classified as a WSSA Group 4 Herbicide (HRAC Group O). Weed populations may contain or develop biotypes that are resistant to ProcellaCOR EC and other Group 4 herbicides. If herbicides with the same mode of action are used repeatedly at the same site, resistant biotypes may eventually dominate the weed population and may not be controlled by these products. Unless ProcellaCOR EC is used as part of an eradication program or in a plant management system where weed escapes are aggressively controlled, do not use ProcellaCOR alone in the same treatment area for submerged and emergent plant control unless used in combination or rotated with an herbicide with an alternate mode of action.”<sup>2</sup> This is cited by the Wisconsin DNR funded project whose findings stated “For example, after an herbicide treatment the higher herbicide tolerance of some genotypes may allow them to survive whereas more sensitive strains will be controlled. The plants that survive and then subsequently spread within the lake will be those genotypes that are more tolerant to the specific herbicide.”<sup>3</sup>
- 3. The Agency should amend the post-treatment monitoring plan to effectively sample where the herbicide could persist.** The proposed post-treatment monitoring by Ready Scout plans to sample near the water surface which is ineffective as this is not where the herbicide or its degradants will persist. As detailed in the USEPA Environmental Risk Assessment and in the recent paper discussed above, floryprauxifen-benzyl and its degradants do not persist at the surface of water bodies but will in sediments, where it will bind with organic matter and persist in the environment. Sampling sites should be selected at the lakebed where the chemicals will persist and not only at the water surface, which is not where the herbicide is applied or where it will likely be.
- 4. The Agency should require long term management plans for applications of aquatic herbicides to establish criteria for the use of herbicides in Adirondack waters.** The current plant survey states that milfoil is present in 34% of the site samples and is only at “Sparse” and “Trace” levels. The agency should consider at what level other management

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<sup>1</sup> Wiltse B., Mattes B., Navitsky C., Chakraborty S., Stager J.C., Buell E. & Rose K.C. Persistence of Florypraxifen-benzyl in Sediment Following Application to a Large Oligotrophic Lake to Control Eurasian Watermilfoil. Lake Geore Association. 2025.

<sup>2</sup> ProcellaCOR EC Specimen Label (EPA Reg No. 67690-80) Produced for SePRO Corporation, 11550 North Meridian Street, Suite 600, Carmel, IN 46032. 2018.

<sup>3</sup> Hybrid watermilfoils and herbicide resistance. Wisconsin DNR AIS Research & Demonstration Projects. EGAD #3200-2021-14. September 2021.

approaches could be utilized, such as DASH harvesting and not herbicide treatment, which could result in developing resistant strains or chemical persistence in the environment.

The Lake George Association and the Lake George Waterkeeper would like to thank the APA for this opportunity to provide information for your consideration of this application for the use of floryprauxifen-benzyl in Adirondack waters, which includes the studies of persistence in Lake George. The LGA would also like to inform the APA of our plans to expand the study of sediments to other Adirondack lakes where this herbicide has been applied.

The LGA and the Lake George Waterkeeper look forward to continuing to work with the New York State Adirondack Park Agency to defend the natural resources and waters of the Adirondack Park. Thank you for your consideration.

Sincerely,



Christopher Navitsky, PE  
Lake George Waterkeeper



Dr. Brendan Wiltse, President & CEO  
Lake George Association

Attachment



# Persistence of Florpyrauxifen-benzyl in Sediments Following Application to a Large Oligotrophic Lake to Control Eurasian Watermilfoil

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**Wiltse B.<sup>1</sup>, Mattes B.<sup>2</sup>, Navitsky C.<sup>1</sup>, Chakraborty S.<sup>5</sup>,  
Stager J.C.<sup>5</sup>, Buell E.<sup>1</sup> & Rose K.C.<sup>2,3,4</sup>**

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## ABSTRACT

Florpyrauxifen-benzyl (FPB) is a recently registered arylpicolinate herbicide used to control dicots including Eurasian watermilfoil (EWM). Laboratory studies indicate rapid degradation of FPB in water, but sediment persistence in aquatic systems remains poorly understood, creating uncertainty in ecological risk assessments. We evaluated the environmental fate and transport of FPB and its degradants in water, plants, and sediment following application of the herbicide to two bays of Lake George, NY. FPB was rapidly lost from the water column within 72 hours, consistent with prior studies, but persisted in sediments for at least one year. Sediment cores revealed vertical migration of FPB, which may contribute to frequent non-detects in surface sediments and potentially explain why US EPA was unable to establish sediment half-lives in aquatic systems. Measured concentrations exceeded the 28-day no observable adverse effect concentration (NOAEC) for chironomids for at least a year, highlighting the potential for long-term chronic exposure to benthic organisms. Modeled sorption and dilution scenarios aligned with field observations and indicated that circulation dynamics expanded the affected area beyond the direct treatment zones. These results demonstrate that FPB and its degradants persist longer in sediments than suggested by laboratory studies, raising important questions about long-term ecological risks, effects of repeated applications, and underestimation of sediment persistence. Long-term studies such as this are essential for understanding the fate of these compounds and for guiding informed decisions about future herbicide applications.

## KEYWORDS

Florpyrauxifen-benzyl, aquatic invasive species, Eurasian watermilfoil, Lake George, Adirondack Park

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## INTRODUCTION

Aquatic herbicides are routinely used to manage and control invasive aquatic macrophytes. As a result, some broadleaf aquatic plants, such as Eurasian watermilfoil (EWM, *Myriophyllum spicatum*), have developed tolerance to herbicides such as 2,4-dichlorophenoxyacetic acid (2,4-D) and fluridone.<sup>1-3</sup> Additionally, there are growing challenges with EWM hybridizing with native milfoils, resulting in reduced efficacy of commonly used aquatic herbicides.<sup>4,5</sup> Increasingly, natural resource managers are seeking alternative methods to overcome this tolerance, including alternating the types of herbicides applied and in some cases using combinations of herbicides.<sup>6-8</sup>

Florpyrauxifen-benzyl (FPB), marketed under several trade names and commercial formulations, is a novel arylpicolinate aquatic herbicide that gained approval for use in aquatic environments by the United States Environmental Protection Agency (US EPA) in 2017.<sup>9</sup> FPB was developed in part to overcome issues of invasive aquatic macrophyte tolerance to other herbicides and to present a lower risk profile relative to other chemical treatments. Laboratory, field, and mesocosm studies on FPB highlight its efficacy in treating EWM with minimal impacts on non-target aquatic macrophytes.<sup>9-15</sup>

Laboratory studies indicate that FPB rapidly degrades in water through photodegradation, biodegradation, and hydrolysis.<sup>16,17</sup> US EPA's risk assessment for FPB determined half-lives in water and soils but was unable to determine half-lives in aquatic sediments due to variable and limited detection across the two field studies that were assessed. Soil half-lives in EPA's assessment ranged from 42-55 days. These studies were conducted in systems that are neutral to alkaline, which would result in shorter half-lives.<sup>9</sup> Thus, these studies may not be representative of the field conditions in lakes that are neutral to slightly acidic.

It is important to understand the long-term environmental fate, transport, and ecological impacts of both herbicides and their degradants, which are often overlooked in regulatory review processes.<sup>18</sup> A study of five lakes in Wisconsin that were treated with FPB found the herbicide in sediments as long as 50 days post-treatment.<sup>16</sup> The persistence of FPB degradants in the environment is expected to be much longer than the parent compound and these substances can also exhibit toxic properties.<sup>9</sup> In fact, the persistence of herbicide degradants and their potential ecological impacts are often under-evaluated.<sup>19-22</sup> Additionally, processes used to determine half-lives of herbicides in water-sediment systems often yield estimates that are not robust or are under estimated.<sup>23,24</sup>

The uncertainty of FPB and its degradants persistence in sediments implies a poorly characterized impact on benthic organisms and more work is needed to assess impacts on chironomids, mollusks, and other benthic organisms.<sup>9,25,26</sup> The potential for impacts to benthic organisms is particularly acute if FPB and its degradants persist and repeated applications of the herbicide occur. However, due to its relatively recent registration, there are limited data on the long-term environmental fate, transport, and ecological impacts of FPB, especially in

aquatic use cases.<sup>16</sup> Much of the peer-reviewed research on FPB relates to agricultural use. Additional information is available through government reports associated with regulatory registration, though aspects of some supporting studies are not publicly accessible for review. To our knowledge there are no publicly available studies tracking the environmental fate and transport of FPB in aquatic use longer than 180 days.<sup>16</sup>

In this study, we assess the fate and transport of FPB and its degradants in water, plants, and sediments following the application of the herbicide to two bays in Lake George, NY to control Eurasian watermilfoil. This study spans thirteen months post-application, making it the longest assessment of the fate and transport of the herbicide to date.

## **MATERIALS & METHODS**

Florpyrauxifen-benzyl was applied to Blairs Bay and Sheep Meadow Bay in Lake George, NY by contractors for the Lake George Park Commission on June 29th, 2024 to control EWM (*Figure 1*). The Blairs Bay treatment area was 1.6 hectares with a mean depth of 3.2 meters, resulting in 52,300 cubic meters of treated water. A 24.3-hectare dilution zone was identified beyond the treatment area. The Sheep Meadow Bay treatment area was 1.5 hectares with a mean depth of 4.1 meters, resulting in 59,503 cubic meters of treated water. A 16.2-hectare dilution zone was established beyond the Sheep Meadow Bay treatment area. In each treatment area, the target concentration of the herbicide was 7.72 ug/L. A total of 15.9 liters of the herbicide was applied to Blairs Bay and 18.1 liters to Sheep Meadow Bay.<sup>27-30</sup>

During and following the herbicide application, water, plant, and sediment samples were collected from each bay. Water samples were collected with a VanDorn sampler at various depths, plant samples were collected by Ponar sampler or hand grabs by divers, and sediments were sampled by Ponar sampler or hand grabs by divers. All samples were stored in glass containers and immediately frozen before transport to the analytical lab.

Samples were collected the day of application, one day later, two days later, one week later, two and a half months later, and five months later. Sampling in the first two days after treatment was most extensive to capture a broad understanding of the immediate fate and transport of the herbicide. Subsequent sampling was targeted to areas where FPB or its degradants had been previously detected to understand long-term fate.

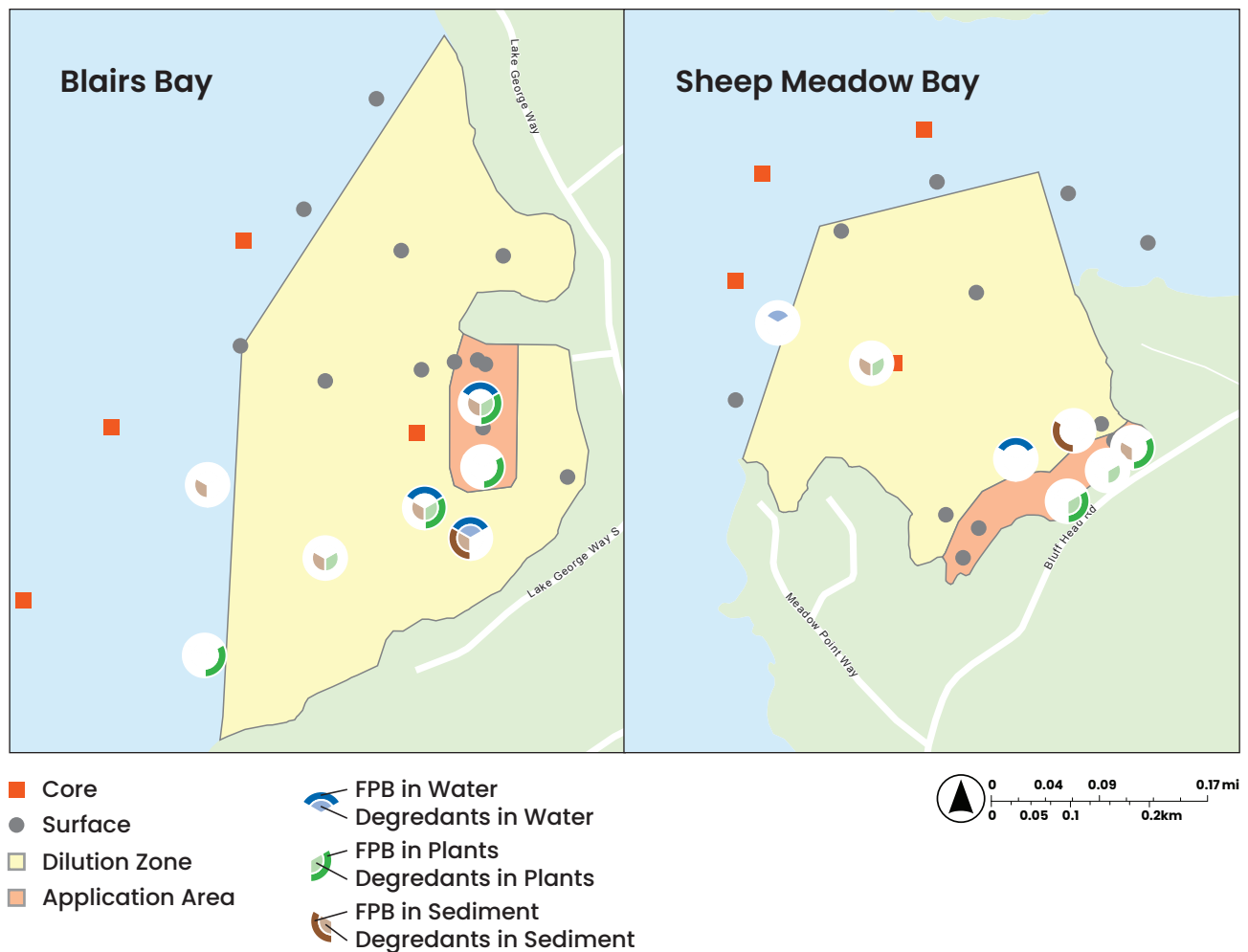
Five sediment cores were collected with a UWITECH gravity core with an internal diameter of 60mm from each bay to better understand the fate of FPB and its degradants in sediments. One core from each bay was collected ten months post-application, and another set of cores was collected twelve months post-application; these cores were taken at the same location within the dilution zones of each bay. Thirteen months post-application, three cores were taken from each bay just outside the dilution zones. Cores ranged from 15 to 20 cm in length

and were sectioned at 1 cm intervals into Whirl-Pak bags and immediately frozen before transport to the lab.

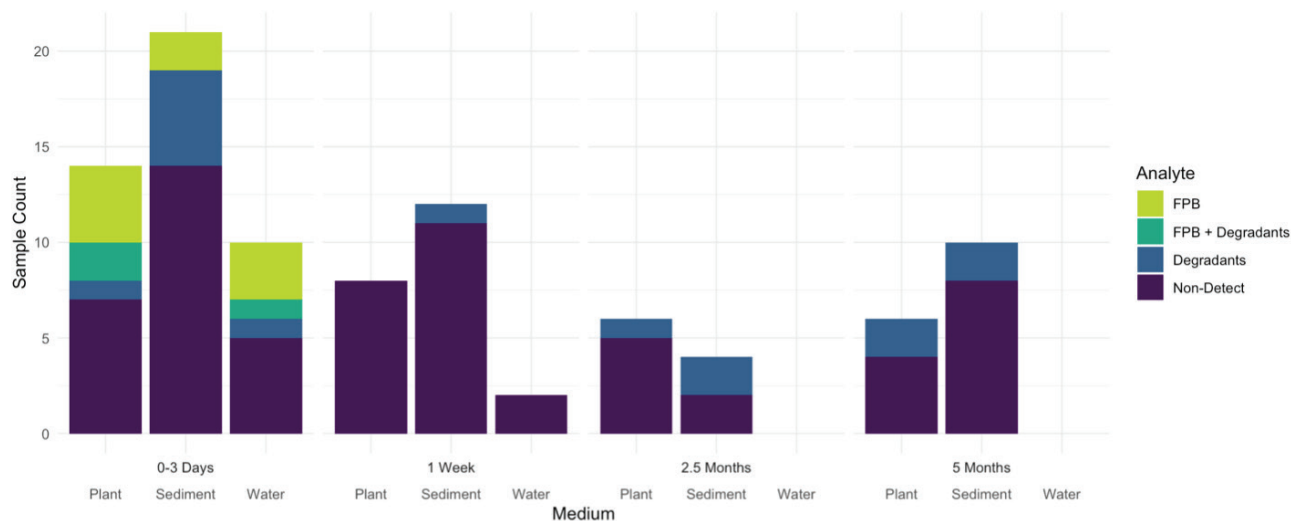
All FPB and degradant samples were analyzed at an independent laboratory at the University of Connecticut using ultra high-performance liquid chromatography coupled with a quadrupole time of flight mass spectrometer.

Sediment concentrations were modeled under different sorption (1%, 13%, 25%, 50%, and 100%) and dilution scenarios (treatment area to dilution zone area). We assumed sediment sorption into 1 cm of sediment to calculate theoretical concentrations under these various scenarios.

## RESULTS & DISCUSSION



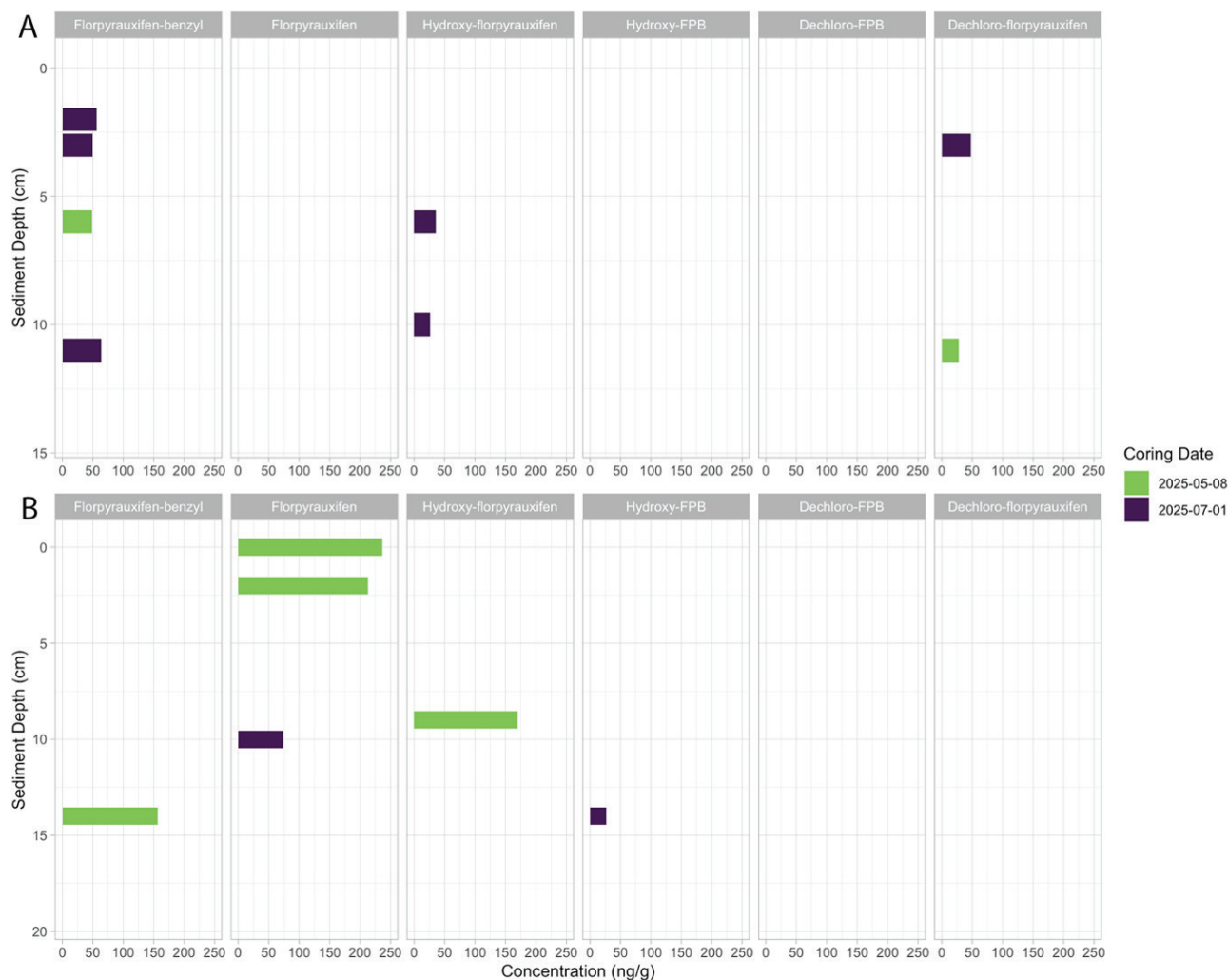
**Figure 1** Circles indicate locations where samples were collected over a five-month span in 2024, positive detections of FPB and its degradants from 2024 are shown in the large circles. Red squares indicate locations where sediment cores were collected in 2025, the results from the coring location in the dilution zone are represented in Figure 3.



**Figure 2** Summary of 2024 sampling for both bays showing detections and non-detects in plants, sediment, and water over a five-month span following the application of FPB.

The detection of FPB and its degradants across each bay was variable spatially, temporally and across different substrates, with most samples showing non-detects (Figure 1 and 2). These results are consistent with other studies assessing the fate of FPB in the environment<sup>9,16,17</sup> Positive detections for FPB were more common close to the treatment area and immediately after application. It was detected in all three media in both bays following application. Meanwhile, FPB degradants were found in water, plants, and sediments out to the edge of the dilution zones, with one detection of FPB in a plant sample just beyond the dilution zone of Blairs Bay (Figure 1). The spatial pattern of detection, particularly in Blairs Bay, was consistent with lake circulation modeling conducted for the day of treatment.<sup>31</sup>

The transport of FPB and its degradants across the dilution zone highlights the potential for aquatic herbicides, particularly in large lakes with complex circulation patterns, to have effects beyond the targeted treatment area. Our results demonstrate the importance of considering lake circulation when planning herbicide treatments in targeted areas.

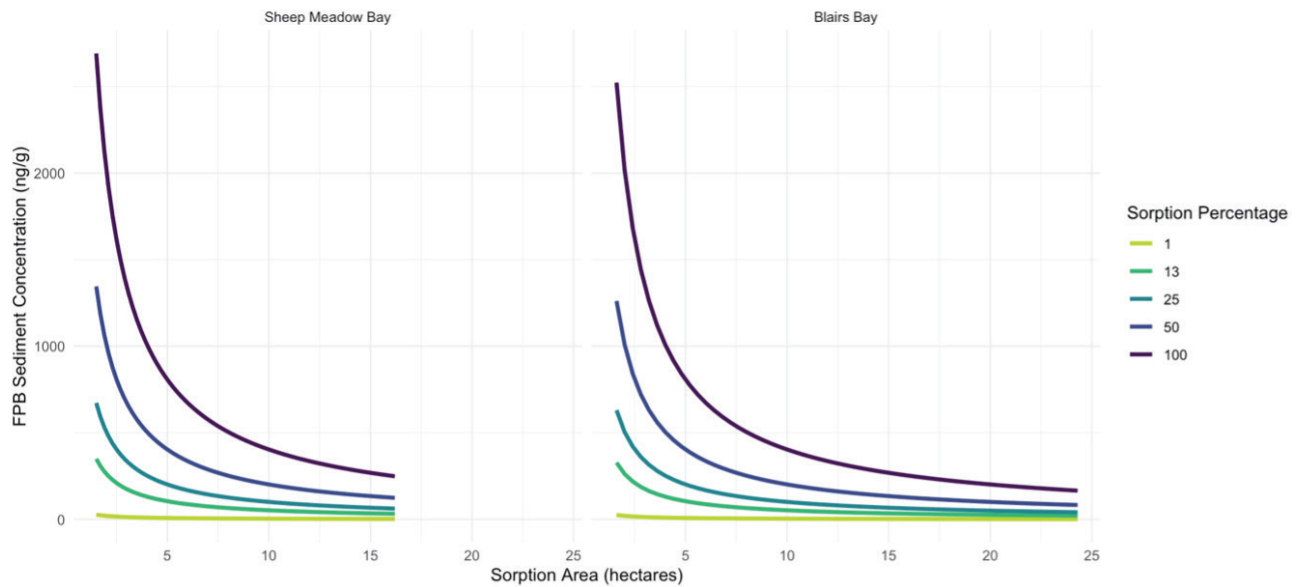


**Figure 3** Detection of FPB and its degradants from sediment cores collected from the dilution zone of Blair's Bay (A) and Sheep Meadow Bay (B). Sediment cores were collected at the same location within each bay on the different sampling dates. Results from cores collected from outside the dilution zone are not displayed due to detection of only Hydroxy-FPB at 13cm in one core outside the dilution zone of Blair's Bay.

We observed FPB and its degradant concentrations drop below the detection limit in water within 72 hours of application, consistent with the literature and manufacturer claims.<sup>9</sup> However, FPB degradants were also detected in plants and surface sediments five months post-application (Figure 2). Sediment core measurements ten months and one year post application revealed positive FPB and degradant detections in sediments at depths deeper than what would be typically captured by surface sediment sampling (Figure 3). This persistence, which is much longer than previously reported, highlights the limitations of laboratory studies and regulatory review processes that consider limited field studies. In fact, the tendency to underestimate herbicide persistence in sediments in such manner has been routinely documented.<sup>23,24</sup> The slightly acidic waters of Lake George could also potentially contribute to greater persistence of FPB and its degradants. Further studies are necessary to assess photodegradation, biodegradation, and hydrolysis of FPB under neutral to slightly acidic conditions.

Sediment core results indicate that FPB moved deeper into sediments than was previously supposed, which may explain the large number of non-detects observed in surface sediment samples. The persistence of FPB at depth in sediments may also explain why the US EPA was unable to determine sediment half-lives for FPB in aquatic use cases.<sup>9</sup> The US EPA fate and risk assessment indicated low concentrations and variable detection as the reasons for being unable to determine a sediment half-life. EPA relied on two short-term studies of FPB in sediments that may not have looked at sediment profiles. Our findings underscore the importance of comprehensive long-term assessment of the fate and transport of chemical herbicides, points which have been raised elsewhere in the literature.<sup>18,23,24</sup> Our results also demonstrate that degradation rates in the environment may be far slower than predicted by laboratory studies.

Observed concentrations of FPB and its degradants in surface sediments and sediment cores were above the no observable adverse effect concentration (NOAEC, 25 ng/g FPB) for chironomids identified in the US EPA’s risk assessment.<sup>9</sup> It is worth noting that the NOAEC identified in the risk assessment was for a 28-day exposure period, whereas our studies indicate persistence at or above these concentrations for at least a year. The impact of long-term exposure of benthic macroinvertebrates to FPB and its degradants is poorly understood.<sup>9,25</sup> Given the potential for chronic exposure on the order of months to years, as opposed to days to weeks, further research on the impact of FPB and its degradants on these ecologically important organisms is warranted.



**Figure 4** Sediment sorption models showing the potential concentration of FPB in sediments under different sorption rates and across different sediment surface areas. The range of areas for each bay extend from the size of the treatment area to dilution area for each respective bay.

To better understand the potential area of persistent exposure to FPB and its degradants in sediments we modelled sediment concentrations under different sorption and dilution scenarios (*Figure 4*). Broadly, our modeling results are consistent with observed concentrations in the sediment cores, where Sheep Meadow Bay exhibited higher concentrations than Blairs Bay (*Figure 3*). If we assume sediment sorption rates of 13%, based on previous field studies, we would expect sediment concentrations ranging from 22 to 328 ng/g in Blairs Bay and 32 to 350 ng/g in Sheep Meadow Bay, which are consistent with our observations. Lower observed concentrations in Blairs Bay are consistent with lake circulation modeling that suggested greater circulation in Blairs Bay at the time of treatment and highlights that an herbicide treatment may impact an area several times larger than the direct treatment area.<sup>31</sup> Notably, our modeling indicates that absent of significant water circulation or dilution, sediment concentrations would be greater than one order of magnitude higher than the 28-day NOAEC for chironomids.<sup>9,16</sup>

The persistence of FPB and its degradants in the sediments of both bays for much longer than previous studies have reported raises important questions about the potential for long-term chronic exposure to benthic organisms and aquatic macrophytes. Previous studies have shown limited acute effects to mussels but highlight the need to assess sublethal and chronic effects.<sup>25</sup> The studies that have looked at FPB toxicity often don't consider long-term chronic effects, the complex interactive effects of exposure to multiple toxic degradants, and the potential for accumulation of these substances in the environment.<sup>9,16,23,24</sup> Moreover, the root systems of aquatic macrophytes could come into contact with FPB in the sediments, which may explain the slow return of EWM to treatment areas that has been documented in other lakes.<sup>11</sup> This chronic exposure may eventually contribute to the development of herbicide-resistant strains of EWM.<sup>1,3,5,6</sup> Other studies have documented hormesis in some species because of low-dose exposure to aquatic herbicides, which could result in increased aquatic macrophyte growth in the areas of treatment.<sup>12,32-37</sup>

Given that our results show FPB persisting in the sediments of both bays at concentrations greater than 50 ng/g and that our study did not attempt to determine sediment half-lives, it is unclear how long FPB could persist in both bays of Lake George. The potential for persistence much longer than anticipated needs to be further studied and has substantial implications for areas that may receive repeated treatments of the herbicide. If FPB persists long enough to last until the next treatment occurs, there is the potential for long-term sediment accumulation. Furthermore, current literature suggests that the degradants of FPB, which also exhibit toxic properties, can persist for years to decades and therefore are likely to exhibit long-term accumulation in the sediments.<sup>9</sup> The potential impacts of increasing long-term chronic exposure to these substances because of repeated herbicide application warrants further investigation.

Our findings highlight the importance of evaluating the environmental fate and transport of herbicides in the field over time periods that are typically not captured in regulatory review studies. We have documented FPB persisting in the sediments of Lake George longer than

anticipated and shown that it can migrate within the sediment profile. In addition, we have detected FPB and its degradants in water, plants, and sediment across the dilution zones of each treatment area, indicating that the affected area is much larger than the immediate treatment zone. Further research is needed to contextualize these findings, especially in relation to the ecological impacts of long-term chronic exposure to FPB and its degradants. Long-term studies like this are important in determining the fate of these compounds and hence make informed decisions about future applications of the said herbicide.

## **ABBREVIATIONS**

EWM – Eurasian watermilfoil

FPB – Florpyrauxifen-benzyl

NOAEC – No Observable Adverse Effect Concentration

US EPA – United States Environmental Protection Agency

## **ACKNOWLEDGMENT**

We would like to acknowledge the field staff and scientists at RPI and LGA for their tireless work to sample both bays over arduous and long field days following the application of FPB. We also thank the LGA board of directors for their commitment to the ongoing monitoring and research conducted on Lake George through the Jefferson Project.

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## FORMULA & EQUATIONS

$$S_c = \frac{W_c \times V}{A \times D \times d} \times a$$

Where:

$S_c$  = sediment concentration in ng/g

$W_c$  = water concentration in ng/L

V = volume of water treated in L

A = area of sediment exposure in cm<sup>2</sup>

D = depth of sediment sorption

d = density of sediment in g/cm<sup>3</sup>

a = proportion of herbicide sorbed

**From:** Chris Navitsky <cnavitsky@lakegeorgewaterkeeper.org>  
**Sent:** Thursday, May 7, 2026 3:46 PM  
**To:** APA Regulatory Programs Comments  
**Subject:** Project 2026-0074; Town of Minerva; Aaron Ziemann  
**Attachments:** ProcellaCOR label\_resistance management.pdf; Wisconsin DNR\_hybrid milfoil & resistance.pdf

**ATTENTION: This email came from an external source. Do not open attachments or click on links from unknown senders or unexpected emails.**

Good afternoon Mr. Ziemann -

Please find two attachments that were not included with the original comment letter submitted for the above referenced public comment period. Please include these in the record.

Thank you for your attention.

Best regards -

Chris

Chris Navitsky, P.E.  
Lake George Waterkeeper  
P.O. Box 408  
Lake George, NY 12845  
518-920-3880

[www.lakegeorgewaterkeeper.org](http://www.lakegeorgewaterkeeper.org)



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**WATERKEEPER®**

Member of Waterkeeper Alliance

**SPECIMEN LABEL****ProcellaCOR™ EC**

A selective systemic herbicide for management of freshwater aquatic vegetation in slow-moving/quiescent waters with little or no continuous outflow: ponds, lakes, reservoirs, freshwater marshes, wetlands, bayous, drainage ditches, and non-irrigation canals, including shoreline and riparian areas in or adjacent to these sites. Also for management of invasive freshwater aquatic vegetation in slow-moving/quiescent areas of rivers (coves, oxbows or similar sites).

FLORPYRAUXIFEN-BENZYL	GROUP	4	HERBICIDE
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Produced for:  
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EPA Reg. No. 67693-80  
FPL20160226

**Active Ingredient:**

Florpyrauxifen-benzyl: 2-pyridinecarboxylic acid, 4-amino-3-chloro-6-(4-chloro-2-fluoro-3-methoxyphenyl)-5-fluoro-, phenyl methyl ester ..... 2.7%

**Other Ingredients:**..... 97.3%

**TOTAL:**..... 100.0%

Contains 0.0052 lb florpyrauxifen-benzyl per Prescription Dose Unit™ (PDU™) or 0.21 lb florpyrauxifen-benzyl/gallon. 1 PDU is equal to 3.2 fl. oz. of product.

**Keep Out of Reach of Children****CAUTION**

Refer to the inside of label booklet for additional precautionary information including directions for use.

**Notice:** Read the entire label before using. Use only according to label directions. Before buying or using this product, read *Warranty Disclaimer* and *Misuse* statements inside label booklet. If terms are not acceptable, return at once unopened.

**Agricultural Chemical:** Do not ship or store with food, feeds, drugs or clothing.

**PRECAUTIONARY STATEMENTS****HAZARDS TO HUMANS AND DOMESTIC ANIMALS**

**CAUTION.** Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

**PERSONAL PROTECTIVE EQUIPMENT (PPE)****Applicators and other handlers must wear:**

- Long-sleeved shirt and long pants;
- Shoes plus socks;
- Protective eyewear; and
- Waterproof gloves.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

**Engineering Controls:** When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(5)], the handler PPE requirements may be reduced or modified as specified in the WPS.

**User Safety Recommendations****Users should:**

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

**FIRST AID**

<b>If in eyes</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15 to 20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes; then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
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**HOTLINE NUMBER**

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. In case of emergency endangering health or the environment involving this product, call **INFOTRAC at 1-800-535-5053**.

**Environmental Hazards**

Under certain conditions, treatment of aquatic weeds can result in oxygen depletion or loss due to decomposition of dead plants, which may cause fish suffocation. Water bodies containing very high plant density should be treated in sections to prevent the potential suffocation of fish. Consult with the State agency for fish and game before applying to public waters to determine if a permit is needed.

**DIRECTIONS FOR USE**

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. Read all Directions for Use carefully before applying.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

**Shake well before using.**

**PRODUCT INFORMATION**

ProcellaCOR EC is a selective systemic herbicide for management of freshwater aquatic vegetation in slow-moving/quiescent waters with little or no continuous outflow: ponds, lakes, reservoirs, freshwater marshes, wetlands, bayous, drainage ditches, and non-irrigation canals, including shoreline and riparian areas in or adjacent to these sites. Also for management of invasive freshwater aquatic vegetation in slow-moving/quiescent areas of rivers (coves, oxbows or similar sites).

Apply ProcellaCOR EC directly into water or spray onto emergent foliage of aquatic plants. Depending upon method of application and target plant, ProcellaCOR EC is absorbed by aquatic vascular plants through emergent or floating leaves and from water through submersed plant shoots and leaves. In-water treatments are effective in spot and partial treatment designs with relatively short exposure times (hours to several days). Species susceptibility to ProcellaCOR EC may vary depending upon time of year, stage of growth, and water movement. For best results, apply to actively growing plants. However, effective control can be achieved over a broad range of growth stages and environmental conditions. Application to mature target plants may require higher application rates and longer exposure periods to achieve control.

**Resistance Management**

ProcellaCOR EC is classified as a WSSA Group 4 Herbicide (HRAC Group O). Weed populations may contain or develop biotypes that are resistant to ProcellaCOR EC and other Group 4 herbicides. If herbicides with the same mode of action are used repeatedly at the same site, resistant biotypes may eventually dominate the weed population and may not be controlled by these products. Unless ProcellaCOR EC is used as part of an eradication program or in a plant management system where weed escapes are aggressively controlled, do not use ProcellaCOR EC alone in the same treatment area for submersed and emergent plant control for more than 2 consecutive years, unless used in combination or rotated with an herbicide with an alternate mode of action.

# Wisconsin DNR AIS Research & Demonstration Grant Projects

Sep. 2021  
EGAD # 3200-2021-14

## Hybrid watermilfoil and herbicide resistance

The Wisconsin Department of Natural Resources conducts and supports a variety of projects that improve our understanding of aquatic invasive species (AIS) and the ways we manage them.

### Background

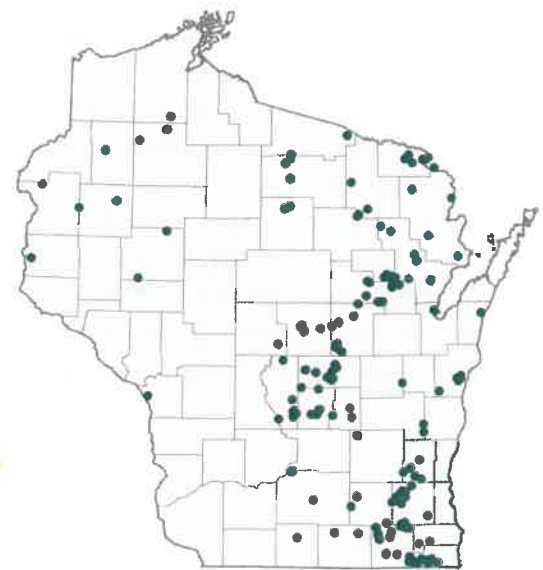
Occasionally, two distinct species can reproduce with each other to produce a new genetically distinct hybrid species. Hybrid crosses between native and non-native species can result in additional management challenges. While many hybrid species are sterile and cannot continue to reproduce, some hybrid crosses, such as those created between watermilfoil species, are viable and can reproduce with parent species or other hybrids. Hybrid species tend to have greater genetic diversity which may make them more resilient to management techniques.

### Hybrid watermilfoil

Hybridization among watermilfoils—particularly between non-native Eurasian watermilfoil (*Myriophyllum spicatum*, EWM) and native northern watermilfoil (*M. sibiricum*, NWM)—has garnered much attention recently. There is not one single hybrid watermilfoil, but rather multiple, genetically distinct strains (genotypes) that reflects reoccurring hybridization events. Hybrid watermilfoil oftentimes have identifying characteristics which overlap with EWM and NWM, and genetic DNA analysis is required to confirm hybridity. Some hybrid watermilfoil genotypes have thicker stems, more prolific flowers, and grow faster than pure-strain EWM. These characteristics may contribute to certain hybrids being particularly less susceptible to chemical control strategies.

### Summary of Findings

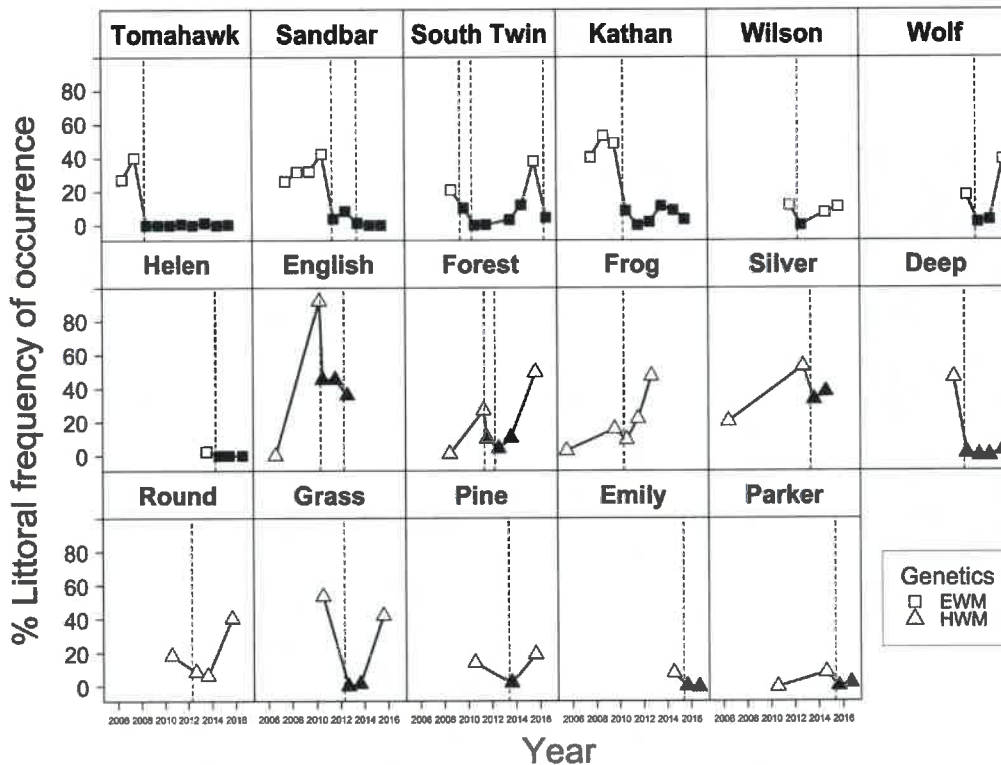
- Hybrid watermilfoil populations have been confirmed in ~170 lakes in Wisconsin, primarily those located in the southern and central portions of the state.
- An individual lake may have one or more unique genotypes of watermilfoil. Certain non-native genotypes have been found to be shared amongst multiple lakes, which suggests that some genotypes are being spread to new waterbodies via fragments on boats and trailers.
- A recent study of whole-lake 2,4-D treatments in Wisconsin found smaller population reductions and shorter longevity of control in lakes that contained hybrid watermilfoil populations compared to lakes with only pure-strain Eurasian watermilfoil.
- Laboratory and field studies have shown that many strains of hybrid watermilfoil have reduced sensitivity to several commonly used aquatic herbicides compared to pure-strain Eurasian watermilfoil.
- A study conducted in Michigan found that hybrid genotypes were more abundant in lakes with a history of 2,4-D use.
- Genetic variation in hybrid watermilfoil may allow for selection pressure to occur following management. For example, after an herbicide treatment the higher herbicide tolerance of some genotypes may allow them to survive whereas more sensitive strains will be controlled. The plants that survive and then subsequently spread within the lake will be those genotypes that are more tolerant to the specific herbicide.
- In some cases, herbicide resistant populations are still susceptible to the herbicide but may require a higher use rate to produce the desired level of control.



**Figure 1.** Map of verified hybrid watermilfoil locations in Wisconsin. For location information, visit: [dnr.wi.gov/lakes/invasives/AISLists.aspx?species=MILFOIL\\_HYBRID](https://dnr.wi.gov/lakes/invasives/AISLists.aspx?species=MILFOIL_HYBRID)

Projects and outreach like these are funded in part by our AIS Research Fund. To learn more or donate, visit [dnr.wisconsin.gov/topic/Lakes/SayYesToLakes](https://dnr.wisconsin.gov/topic/Lakes/SayYesToLakes)





**Figure 2.** Milfoil littoral frequency of occurrence over time for lakes with multiple years of posttreatment surveys. Large-scale 2,4-D treatment dates displayed as vertical dashed lines and statistically significant decreases from pretreatment year indicated by solid fill symbols.

## Potential Applications

Results from these studies have informed the department's approach to managing non-native watermilfoil in the state. The genetic diversity of watermilfoil populations within Wisconsin lakes suggests that a 'one size fits all' approach to managing non-native milfoil may not be appropriate. The overreliance and repeated use of a single management technique and the potential development of herbicide resistance threatens the effectiveness of current aquatic plant management practices. Increasing the diversity of plant control strategies (such as through the rotation of herbicide products and/or utilization of non-chemical management techniques), and incorporation of integrated pest management (IPM) is needed to maintain management efficacy in the long-term.

## Related publications and resources:

- Nault, M., M. Barton, J. Hauxwell, E. Heath, T. Hoyman, A. Mikulyuk, S. Provost, J. Skogerboe, S. Van Egeren. 2018. Evaluation of large-scale low-concentration 2,4-D treatments for Eurasian and hybrid watermilfoil control across multiple Wisconsin lakes. *Lake and Reservoir Management* 34(2):115-129.
- Glisson W.J. and D.J. Larkin. 2021. Hybrid watermilfoil (*Myriophyllum spicatum* x *Myriophyllum sibiricum*) exhibits traits associated with greater invasiveness than its introduced and native paternal taxa. *Biological Invasions* 23(8):2417-2433.
- LaRue, E.A. 2012. Hybridization facilitates the rapid evolution of reduced herbicide sensitivity in the widely-managed invasive aquatic plant, Eurasian watermilfoil. Master's Thesis. Grand Valley State University. Allendale, MI.
- Moody, M.L. and D.H. Les. 2007. Geographic distribution and genotypic composition of invasive hybrid watermilfoil (*Myriophyllum spicatum* x *M. sibiricum*) populations in North America. *Biological Invasions* 9:559-570.
- Zuelling, M.P. and R.A. Thum. 2012. Multiple introductions of invasive Eurasian watermilfoil and recurrent hybridization with native northern watermilfoil in North America. *Journal of Aquatic Plant Management* 20:1-19.





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May 7, 2026

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Aaron Ziemann  
Adirondack Park Agency  
PO Box 99  
Ray Brook NY 12977

Re: Use of ProcellaCor in Minerva Lake (APA Project ID: 2026-0074)

Dear Mr. Ziemann:

Protect the Adirondacks (“PROTECT”) offers these comments for your consideration regarding the application submitted on behalf of the Town of Minerva for the use of ProcellaCOR EC (“ProcellaCor”) to treat Eurasian watermilfoil (“EWM”) in Minerva Lake.

PROTECT believes that much more comprehensive and objective recognition and public presentation of the known and unknown risks are necessary before APA approves continued use of ProcellaCor in Adirondack waters, including in Minerva Lake.

The use of ProcellaCor in Minerva Lake was approved by the Adirondack Park Agency (“APA”) in 2020 (see Exhibit A). After that treatment, APA acknowledged that EWM was eliminated from the entire 79 acre lake clearly suggesting that ProcellaCor spread beyond the 41 acres approved for treatment. This situation may have constituted a Pesticide Label Violation. The label with the registration of the parent compound in ProcellaCOR, under “Environmental Hazards” on the Product Label, indicates that no more than “1/3 to 1/2 of the water area” of the lake should be treated in a single operation because “treatment of aquatic weeds can result in oxygen loss from the decomposition of dead weeds”, which may cause fish suffocation.”<sup>1</sup> The current label states that “Water bodies containing very high plant density should be treated in sections to prevent the potential suffocation of fish”.<sup>2</sup> As

<sup>1</sup> U.S. Environmental Protection Agency, Notice of Pesticide Registration and Product Label for EPA Registration No. 62719-699, This is available at <https://www.regulations.gov/document/EPA-HQ-OPP-2016-0560-0067>.

<sup>2</sup> [https://sepro.com/Documents/ProcellaCOR\\_SC--Label.pdf](https://sepro.com/Documents/ProcellaCOR_SC--Label.pdf)

**Protect the Adirondacks**

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such, for this application, APA should take steps to mitigate this risk and assume that ProcellaCor will spread beyond the 31 acres requested for treatment in Minerva Lake in 2026.

We commend the Town for its ongoing focus on tackling the EWM infestation and for its many years of plant surveys and reports. However, we do not see in the application materials to APA a lake management plan that sets out the Town's goals and plans for using a variety of tools to address the multitude of threats facing Minerva Lake.

We urge APA to require that the applicant have and follow a robust lake management plan to explicitly reduce EWM with non-chemical treatments. It is well within APA's existing statutory and regulatory authority to require the applicant to monitor results and follow a management plan into the future. As set forth in the Freshwater Wetlands Act, APA may "impose conditions or limitations" to "preserve, protect and conserve freshwater wetlands and the benefits derived therefrom, to prevent the despoliation and destruction of freshwater wetlands, and to regulate use and development of such wetlands to secure the natural benefits of freshwater wetlands". ECL §§ 24-0103; 24-0705(4).

While we support robust lake management plans to address EWM, and other lake problems, PROTECT does not support ongoing, multiyear applications of ProcellaCor in the same waterbody. Our position is due in part to the paucity of data about the potential long-term impacts of this herbicide on Adirondack waters, plants and animals. This chemical herbicide has only been used for a few years (its first use in New York was in 2019 and its first use in the Adirondack Park was in 2020), and studies are currently ongoing to understand its immediate impacts and its long-term impacts on lake ecology.<sup>3</sup>

The application materials state an often-repeated claim that ProcellaCor "breaks down and disappears rapidly". This is a highly misleading statement and is perhaps an example of the proponents for use of ProcellaCOR have not accurately and completely represented the underlying science on the registration of the active ingredient, florpyrauxifen-benzyl. The U.S. Environmental Protection Agency's ("EPA") Environmental Fate and Ecological Risk Assessment clearly states that while the active ingredient may undergo rapid transformation in ideal conditions (e.g. sunlight driven photolysis), it transforms into degradants that are persistent and can pose long term ecological concerns.<sup>4</sup> Following are selected example excerpts that demonstrate the concerns and limitations on what is known about the long-term impacts:

- *"In aqueous systems, the octanol/water partition coefficient suggests that the chemical has the potential to sorb onto benthic detritus as well as bioconcentrate in aquatic organisms such as fish".*
- *"In the laboratory studies conducted with florpyrauxifen-benzyl, a number of degradates were observed in variable amounts, depending on the study."*

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<sup>3</sup> <https://lakegeorgeassociation.org/news-events/news/lga-releases-initial-effects-procellacor-plants-lake-george>

<sup>4</sup> U.S. Environmental Protection Agency, Florpyrauxifen-benzyl Environmental Fate and Ecological Risk Assessment, available at <https://www.regulations.gov/document/EPA-HQ-OPP-2016-0560-0011>.

- *Florpyrauxifen-benzyl is an ester compound and as such degrades to an acid, especially in high pH environments and/or by metabolism mediated hydrolysis.*
- *Two other degradates of florpyrauxifen-benzyl are ester compounds that also hydrolyze: In aquatic and soil systems, the parent compound hydrolyzes to XDE-848 acid, which is a major degradate and is phytotoxic.*
- *Three of these degradates were considered stressors of concern for ecological exposure to aquatic plants, along with the parent compound, and were included in the expression of the total toxic residues (TTRs, see the next **Section 2.2.4**). The aquatic plants TTRs are much more persistent than the parent alone, especially in aquatic environments and under anaerobic conditions.*

To the last example excerpt above, EPA reported the Benthic Metabolism Half-life of the parent compound as 2.65 days and 33,118 days for the degradant Total Toxic Residues (page 66 of 133).

So, it should come to no surprise to anyone who had reviewed the underlying science analysis by EPA that the research by a team of scientists on the use of ProcellaCor in Lake George in 2024 shows that ProcellaCor persists in the sediment at the bottom of the lake. Additionally, the research found that water circulation spread ProcellaCor beyond the targeted treatment areas (as happened in Minerva Lake in 2020). Dr. Brendan Wiltse has stated that these “findings should be taken into consideration when planning herbicide treatments and in state permitting processes, especially in cases where there are repeat applications because of the potential for long-term accumulation of the herbicide and its degradants, and the unknown ecological impacts from this accumulation.”<sup>5</sup> According to Dr. Curt Stager, Professor of Natural Science at Paul Smith’s College, “There seems to be plenty of research showing that florpyrauxifen-benzyl does what it’s supposed to do in terms of killing invasive plants in lakes. But we need more information about situations in which florpyrauxifen-benzyl does what it’s not supposed to do. This is why our research is crucial.” APA should not approve the repeated use of ProcellaCor in Minerva Lake until additional research is undertaken to understand the impacts of ProcellaCor in lake sediment and its risks to the benthic invertebrate community and the species that rely on these invertebrates for food.<sup>6</sup>

Given that the 2020 Minerva Lake ProcellaCor treatment resulted in a whole-lake application of the pesticide, according to APA representations, the potential for persistence, and the excerpt from EPA below, we urge APA to require a scientifically valid study to assess the parent compound and degradants in the plant material, sediments and fish prior to granting of this new permit request. The Town of Minerva and its residents deserve to know the extent of the persistence of this pesticide in their lake, its sediments and fish, before APA approves another treatment of the lake with ProcellaCor.

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<sup>5</sup> <https://lakegeorgeassociation.org/news-events/news/lake-george-association-releases-new-study-herbicide-persistence-lake-sediments>

<sup>6</sup> The U.S. Environmental Protection Agency registration information states that “For freshwater benthic-dwelling invertebrates, chronic effects were observed in sediment toxicity studies . . . “. This is available at <https://www.regulations.gov/document/EPA-HQ-OPP-2016-0560-0011>.

The statement in EPA's Environmental Fate and Ecological Risk Assessment supports the need for fish tissue analyses from Minerva Lake follows:

*Based solely on its octanol/water partition coefficient (at pH 7,  $\log_{10} P_{OW} = 5.5$ ), floryrauxifen-benzyl would be predicted to bioconcentrate in fish tissue, although the Fish BCF study shows that the chemical residues do not bioconcentrate as much as would be expected, suggesting possible degradation and/or metabolism in fish tissue (see more below). (Page 38 of 133)*

Additionally, the Product Label warns that repeated use of this herbicide has the potential to create resistance to ProcellaCor in EWM populations. Eventually, ProcellaCor may no longer work to control EWM where it is used repeatedly. APA and the Town should seriously consider the long-term implications of this possibility and whether it wants to use ProcellaCor now or wait a longer period of time before introducing ProcellaCor again. Hand/diver-assisted suction harvesting should be used to achieve the targeted, selective removal of EWM that is in Minerva Lake while that is still a viable option because the number of EWM plants is relatively low. Notably, for the last few years, the Town has not spent the amount that it has budgeted for control of EWM (\$20,000 per year was budgeted for years 2022 through 2025, but less than the budgeted amount, between \$6,100 and \$11,980 per year, was spent in each of those years); we recognize the significant expenditures that the Town made prior to and including 2020.

Minerva Lake has several native plant species that are susceptible to, and will be negatively impacted by, the application of ProcellaCor, including, among others, Watershield, White Water Lily, Spatterdock, Water Stargrass and potentially Pickerelweed. Minerva Lake's plant survey in 2023 noted that there are several native species that were absent after the 2020 treatment, some species returning one or two years later and others apparently not returning at all (e.g., several pondweeds, Water Stargrass, duckweed and spikerush, bur-reed, and quillwort).

The materials prepared by the Town's contractor indicate that a 100-gallon tank is used to mix the ProcellaCor concentrate with water from the lake and then the mixture is added to the lake through hoses into the lake. That process would be repeated three times to complete treatment of the lake. It is important to understand the proposed depth of introduction to the lake as the chemical properties of the pesticide will result in rapid sinking of the solution to the plants and sediment. We suspect the depth of introduction is between 2' and 4'. Therefore, ambient water sampling at elbow depth is both misleading and meaningless.

The application materials do not state the concentration of ProcellaCor as it enters the lake from the 100-gallon tank. That information should be provided so that APA can accurately represent the introduced (discharged) concentration of the active ingredient to the lake. This is essential information for residents, for example, if they have water intakes that extend into the treatment area or dilution zone.

For these reasons, APA should not permit the proposed use of ProcellaCor at this time. Treatment of Minerva Lake, with a dilution zone area covering the entire lake, will produce unacceptable short-term adverse impacts on nontarget species of aquatic plants and organisms, and has the potential to cause long-term negative impacts. The long-term impacts are relatively

unknown, particularly for Minerva Lakes where the herbicide is being used repeatedly. We suggest APA compel a study of the sediments, aquatic plants and fish tissue to assess the persistence of ProcellaCOR and its degradants following the 2020 treatment of Minerva Lake before issuance of any new permit.

Lastly, it is our understanding that the best time to apply ProcellaCor is early in the growing season (in the spring; prior to mid-June) when the EWM plants are just beginning to grow and the native plants may not be as susceptible to the chemical because they have not yet begun to grow.<sup>7</sup> Having treatment take place when the EWM plants are smaller (10-20% of total biomass potential) means that the biomass die off is less and less nutrients are released into the lake. ProcellaCor treatment should not be permitted to take place past mid-June. Moreover, APA should make it clear to the Town (and other applicants) that any plant material harvested from the lake after the treatment cannot be composted as that would be a violation of the Product Label.<sup>8</sup> The application materials do not state where harvested materials are taken.

On behalf of the Board of Directors of Protect the Adirondacks, we thank you for considering our comments and concerns regarding the use of this herbicide in Minerva Lake.

Sincerely,



Claudia K. Braymer,  
Executive Director

cc: Hon. Stephen McNally, Town of Minerva Supervisor

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<sup>7</sup> “Eurasian water-milfoil . . . elongates from shoots initiated in the fall, beginning spring growth earlier than other aquatic plants.” <https://nas.er.usgs.gov/queries/factsheet.aspx?SpeciesID=237>

<sup>8</sup> [https://sepro.com/Documents/ProcellaCOR\\_SC--Label.pdf](https://sepro.com/Documents/ProcellaCOR_SC--Label.pdf)



# ADIRONDACK COUNCIL

PRESERVING WATER,  
AIR AND WILDLANDS

May 7, 2026

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Raul J. Aguirre



Aaron Ziemann  
Adirondack Park Agency  
P.O. Box 99  
Ray Brook, NY 12977

RE: Project 2026-0074

Dear Aaron Ziemann,

Thank you for the opportunity to comment on Project 2026-0074, and the proposed use of ProcettaCOREC on five treatment areas in Minerva Lake to manage Eurasian watermilfoil. We appreciate the Adirondack Park Agency's careful review of aquatic invasive species management proposals and its responsibility to balance ecological protection with effective control measures.

We also applaud the Town of Minerva in its efforts to protect the health of Minerva Lake.

Based on our review of the application materials, we do not believe that the current extent and density of Eurasian watermilfoil (EWM) in Minerva Lake warrants follow-up herbicide treatment at this time. Instead, we encourage a management approach focused on targeted diver-assisted suction harvesting (DASH), continued monitoring, and a more clearly articulated long-term management strategy.

The uncertainties raised by this application underscore the need for the Adirondack Park Agency (Agency) to continue its thorough, case-by-case review of all ProcettaCOR proposals. Given that chemical treatment remains a relatively new management approach for Adirondack lakes, with many unknowns, each application should be reviewed by the full Agency. In addition, the emergence of new scientific data may meaningfully inform future permitting decisions, which will warrant board discussion and engagement as it relates to permits.

### 1. Current conditions do not justify proposed treatment scope

When comparing the 2025 EWM density map with the proposed treatment area, it appears that many of the areas slated for treatment contain either no EWM or only "trace" to "sparse" densities. This raises concerns that the proposed treatment area is disproportionate to the actual infestation level. Treating large areas with low or negligible infestation may expose non-target species and lake sediments to unnecessary chemical inputs.

The review of this project should therefore ask: Does the current extent of re-invasion rise to a level that justifies herbicide application over this large footprint area?

A more precautionary approach would prioritize localized, DASH management in these low-density areas.

## **2. Lack of long-term vegetation data and trends**

The project documents note that annual aquatic macrophyte surveys have been conducted since the initial treatment in 2020. However, no clear comparison of plant community composition over time is provided. This is a critical omission.

We ask that the Agency's review addresses the following questions:

- How have native plant communities responded since the initial treatment?
- Has biodiversity increased, decreased, or shifted?
- Are there signs of unintended ecological consequences?

Without this longitudinal analysis, it is difficult to evaluate whether previous treatments have supported or undermined long-term lake health.

## **3. Insufficient detail on treatment chemistry and dosing**

The project documents lack clarity regarding the proposed treatment rate and actual mass of ProcettaCOR/florpyrauxifen-benzyl (FPB) to be applied.

Experience in other systems, such as Lake George, suggests that hydrodynamics (e.g., currents within bays) can significantly affect herbicide distribution and efficacy, potentially leading to both under-treatment and unintended exposure elsewhere.

Application review should therefore ask:

- What is the actual quantity of product to be applied?
- How does the application account for incomplete mixing, stratification, or water movement, especially in proposed areas of application where water is flowing into or out of the main lake?
- Are peak environmental concentrations in danger of exceeding the functional solubility limit (~40 ppb), and if so, what are the implications?

## **4. Sediment and degradant monitoring**

It is important to note that the product does not “disappear” within 24-48 hours. Rather, it either remains intact or breaks down into degradants that may be toxic depending on the degradant and its concentration. FBP and its degradants may persist in sediments where sunlight and oxygen are low, and where ecological exposure pathways, particularly for benthic invertebrates, remain poorly understood.

Therefore, we strongly recommend a robust sampling protocol for FPB and its degradants in both the water column and sediments. Monitoring should:

- include sediment sampling to a depth of at least 20 cm;
- occur prior to application, shortly after application, and at least one year post-treatment;

- follow established methodologies such as those used by the Lake George Association and partners (Wiltse et al. 2025. *Persistence of florpyrauxifen-benzyl in sediments following application to a large oligotrophic lake to control Eurasian watermilfoil*. [Manuscript submitted for publication].)

## 5. Biological and ecological uncertainty

Several important ecological considerations are not addressed in sufficient detail. Given that this is the first request for a second application of ProcellaCOR in the Park, we ask that the Agency take the following into consideration in their review and support development of data that will support informed decision-making:

- **Plant response:** Prior to and following application, EWM populations should be tested for hybridization, mutation, or resistance that could reduce treatment efficacy.
- **Non-target impacts:** There is no discussion of potential risks to benthic invertebrates (e.g., chironomids) and early life stages of fish, including juvenile salmonids. Toxicological data in low dissolved oxygen conditions (in and near sediments) would be particularly valuable.
- **Bioaccumulation:** Bottom-dwelling species may be especially vulnerable to sediment-associated contaminants. We suggest data collection that will build understanding in long-term contaminant dynamics in fisheries.
- **Uncertainty must be addressed through scientific research:** There is a distinction between short-term, measurable uncertainty and longer-term, multi-generational ecological risk. Bridging the gap between scientific and public understanding of these risks is essential for the long-term protection of Adirondack lakes.

## 6. Evaluation of alternatives

In some lake ecosystems, untreated sites have plateaued at manageable sizes without intervention. This raises the question of whether all observed EWM presence requires active chemical treatment. Therefore, the Agency should require a clearer evaluation of alternatives in the proposed project scope, including:

- Continued or expanded DASH harvesting.
- Strategic “no treatment” scenarios in low density areas or areas where EWM seems to have plateaued.
- An explanation of why regrowth likely occurred in previously treated areas and how to prevent recurrence.

## 7. Operational and reporting gaps

Additional details are needed to ensure transparency and accountability:

- How will treated plant biomass be managed or disposed of, if at all?
- Does treated plant biomass increase the concentration of FPB and its degradants remaining in the sediment?
- Are the proposed treatment areas hydrologically “quiet and quiescent” or subject to mixing and flow?
- Reporting should include standardized metrics from 2020 to present, of acres treated by density class to enable meaningful trend analysis over time.

## 8. Need for a long-term Lake Management Plan

Finally, this application highlights the broader need for long-term, community-led lake management and watershed plans. Repeated herbicide applications are unlikely to be a

sustainable strategy and may contribute to herbicide resistance, as noted on the pesticide label. This is not an indictment of the stewards of Minerva Lake, who are working hard with limited resources, but a call for stronger state support for local governments and lake associations that are on the frontlines of managing growing threats to water quality. Given the currently low densities of EWM in Minerva Lake, we respectfully urge the Agency to take a precautionary approach, require additional information before approval, and prioritize targeted DASH control, enhanced monitoring, and comprehensive long-term planning to better inform future ProcettaCOR use in Adirondack lakes.

Sincerely,

A handwritten signature in cursive script that reads "Sunita Halasz". The signature is written in black ink and is positioned below the word "Sincerely,".

Sunita Halasz  
Clean Water Community Advocate  
Adirondack Council