

**March 2024**

**Silver Lake Property Owner or Occupant  
Waushara County, WI**

Re: Proposed Management for Aquatic Invasive Species control on Silver Lake

Dear Silver Lake Property Owner or Occupant:

The Silver Lake Management District (SLMD) proposes to assess and manage approximately 86 acres on Silver Lake to control the excessive growth of the aquatic invasive plant Eurasian watermilfoil (EWM), its hybrid (HWM).

SLMD proposes to conduct applications of ProcellaCOR EC (florpyrauxifen-benzyl) to be performed sometime in June, 2024 by TIGRIS, proceeding only after the SLMD obtains a permit from the Wisconsin Department of Natural Resources. Notification of the exact dates of application and water use restrictions associated with the use of ProcellaCOR EC will be provided by the posting of shoreline in and adjacent to treatment areas, and public access points.

**There are no water use restrictions associated with use of ProcellaCOR EC aside from a 10-day irrigation restriction for non turf (ornamentals, crop gardens, etc.) watering. Turf can be irrigated immediately.**

Additional details regarding the proposed management, including a copy of the permit application and the Wisconsin Department of Natural Resources aquatic herbicide fact sheet on florpyrauxifen-benzyl, can be found at: [www.wautomasilverlake.com](http://www.wautomasilverlake.com).

**For questions about the proposed management or a hard copy of the permit application, please contact:**

Mark Magnusson  
Silver Lake Management District  
[mmagnusson@sbcglobal.net](mailto:mmagnusson@sbcglobal.net)  
847.828.0272

# Aquatic Plant Management

NOTE: Missing or incomplete fields are highlighted at the bottom of each page. You may save, close and return to your draft permit as often as necessary to complete your application. If there are no updates in 90 days, your draft is deleted

This Application has been Signed and Submitted by: i:0#.f|wamsmembership|amykay23 signed on 2024-03-26T12:48:25

Site or Project Name:

Silver Lake, Waushara County

The permit application will be saved automatically with this name

Activity:

Chemical Control Application-Lake, River, Pond

Eligibility:

(All questions must be no for it to be considered a private pond.)

Does the waterbody have:

- More than one property owner?  Yes  No
- Uncontrolled surface water discharge?  Yes  No
- Public access?  Yes  No

## 3200-004 Chemical Aquatic Control Application - Lake, River, Pond

NOTE: To be considered a private pond, a waterbody must meet all of the following requirements:

1. Confined to one property owner.
2. The pond has no uncontrolled surface water discharge.
3. No public access.

Upon submittal of your permit application, a **non-refundable \$20 permit processing fee will be charged**. Additional acreage fees will be refunded if the permit request is denied or if no treatment occurs.

## 3200-004 Chemical Aquatic Plant Control Application

- Annually complete all pages on Form 3200-004 for chemical plant management applications. Complete form 3200-004a for large scale treatments(exceeds 10.0 acres in size or 10% of the area of the water body that is 10 feet or less in depth) as required by NR107.04(3).
  - Form 3200-004 is completed electronically through this system.
  - Form 3200-004a must be completed outside the system and uploaded to the attachments section. Please refer to this link for a copy of this form: <http://dnr.wi.gov/files/pdf/forms/3200/3200-004A.pdf>
- Attach a map that shows the treatment location(s), treatment dimensions and riparian landowners. If requesting WPDES coverage, attach a water body map that shows surface outflow and receiving waters.
- For a large-scale treatment, attach evidence that a public notice has been published in a regional / local newspaper and if required that a public informational meeting has been conducted as defined in NR107.04(3).
- Pay fee online.
- Sign and Submit form.
- A signed permit application certifies to the Department that a copy of the application has been provided to any affected property owner's association/district and to landowners adjacent to treatment area.

## Contact Information

### Applicant Information

**Organization** Silver Lake Management District

**Last Name:** Magnusson

**First Name:** Mark

**Mailing Address:** PO Box 302

**City:** Wautoma

**State:** WI

**Zip Code:** 54982

**Email:**

**Phone Number:**  
(xxx-xxx-xxxx)

**Alternative Phone Number:**  
(xxx-xxx-xxxx)

### Waterbody Address

**Last Name:**

**First Name:**

**Street Address:** N1889 N Silver Lake Road

**City:** Wautoma

**State:** WI

**Zip Code:** 54982

**Email:**

**Phone Number:**  
(xxx-xxx-xxxx)

**Alternative Phone Number:**  
(xxx-xxx-xxxx)

### Applicator

**Name of Applicator Firm:** TIGRIS Aquatic Services, LLC

**Applicator Certification #:** 516694

**Business Location License #:** 93-029481-025543

**Restricted Use Pesticide #:**

**Address:** 8046 Old Highway Road North

**City:** St. Cloud

**State:** MN

**Zip:** 56301

**Email:** akay@tigrisusa.com

**Phone Number:**  
(xxx-xxx-xxxx) 715-891-6798

## Adjacent Riparian Property Owners

**NOTE: Phone and email address will not be publicly viewable.**

Uploaded riparian owners to attachment tab  Riparian Owners Information is not applicable for this application

Name

Address

Phone

Email Address

## Site Information - Complete

### Waterbody Containing Control Area(s)

**Waterbody Property Owners Association  
or Waterbody District Representative :**

Mark Magnusson

None

**Water Body or Wetland Name:**

Silver Lake

**Primary County:**

Waushara

**Latitude:**

44.054754

**Longitude:**

-89.2338561

**Section:**

05

**Township:**

18

**Range:**

11

**Direction:**

E  W

**Waterbody Surface Area:**

348

acres

**Estimated Surface area that is 10ft or less**

80

acres

### Proposed Control Area(s)

Area(s) Proposed for Control:

Site Name (Optional)	Treatment Length	Treatment Width	Estimated Acreage	Average Depth	Calculated Volume
	0 ft. x	0 ft.	$\div 43,560 \text{ ft}^2 =$ 86.80 ac	8.40 ft =	729.12 ac-ft
			Estimated Acreage Grand Total		Calculated Volume Grand Total
			86.80 ac		729.12 ac-ft

Is the area with in or adjacent to a sensitive area designated by the Department of Natural Resources. [More Information](#)

Yes  No

If the estimated acreage is greater than 10 acres, or is greater than 10 percent of the estimated area 10 feet or less in depth in Section II, complete and attach Form 3200-004A, Large-Scale Treatment Worksheet.

**Chemical Aquatic Plant Control Information - Lake, River, Pond Form 3200-004 (R 2/17)**

**Notice:** Use of this form is required by the Department for any application filed pursuant to s. 281.17(2), Wis. Stats., and Chapters NR 107, 200 and 205, Wis. Adm. Code. This permit application is required to request coverage for pollutant discharge into waters of the state. Personally identifiable information on this form may be provided to requesters to the extent required by Wisconsin's Open Records Law [ss. 19.31-19.39, Wis. Stats.].

**Treatment Type:**

- Lake  Pond  Wetland  Marina  Other

Has a management plan been provided to the DNR? <input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Don't Know	If Yes, date approved of most current copy 11/1/2024	Link to Approved Plan:  <input checked="" type="checkbox"/> Uploaded Plan copy as an Attachment
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Does the proposed plant removal agree with the approved plan?  Yes  No  
If NO, explain, Attach additional sheets if necessary.

**Goal of Aquatic Plant Control:**

- Maintain navigation channel
- Maintain boat landing and carry in access
- Improve fish habitat
- Maintain swimming area
- Control of invasive exotics
- Other

**Nuisance Caused By:**

- Algae
- Emergent water plants (majority of leaves & stems growing above water surface, e.g. cattail, bulrushes)
- Floating water plants (majority of leaves floating on water surface, e.g., water lilies, duckweed)
- Submerged water plants (leaves & stems below surface, flowering parts may be exposed: milfoil, coontail)
- Other

**List Target Plants**

- |   |   |  |
|---|---|--|
| <input type="checkbox"/> Algae                            | <input type="checkbox"/> Flowering Rush                 | <input type="checkbox"/> Purple Loosestrife    |
| <input type="checkbox"/> Common/Glossy Buckthorn          | <input type="checkbox"/> Hybrid Cattail                 | <input type="checkbox"/> Reed Canary Grass     |
| <input type="checkbox"/> Coontail                         | <input checked="" type="checkbox"/> Hybrid Watermilfoil | <input type="checkbox"/> Reed Manna Grass      |
| <input type="checkbox"/> Curly-Leaf Pondweed              | <input type="checkbox"/> Japanese Knotweed              | <input type="checkbox"/> Starry Stonewort      |
| <input type="checkbox"/> Duckweed                         | <input type="checkbox"/> Naiad                          | <input type="checkbox"/> Yellow Floating Heart |
| <input type="checkbox"/> Elodea                           | <input type="checkbox"/> Narrow-Leaf Cattail            | <input type="checkbox"/> Yellow Iris           |
| <input checked="" type="checkbox"/> Eurasian Watermilfoil | <input type="checkbox"/> Phragmites                     | <input type="checkbox"/> Pondweed              |

**Other Target Plants:**

Note: Different plants require different chemicals for effective treatment. Do not purchase chemical before identifying plants.

# Chemical Control

## Full Trade Name of Proposed Chemical(s)

- |  |  |  |   |
|--|--|--|---|
| <input type="checkbox"/> Agristar 2,4-D Amine    | <input type="checkbox"/> Clipper               | <input type="checkbox"/> K-Tea                     | <input type="checkbox"/> SCI-62           |
| <input type="checkbox"/> Algimycin PWF           | <input type="checkbox"/> Clipper SC            | <input type="checkbox"/> Littora                   | <input type="checkbox"/> Sculpin G        |
| <input type="checkbox"/> Alligare 2,4-D          | <input type="checkbox"/> Current               | <input type="checkbox"/> Milestone                 | <input type="checkbox"/> SeClear          |
| <input type="checkbox"/> Alligare Argos          | <input type="checkbox"/> Cutrine-Plus          | <input type="checkbox"/> Nautique                  | <input type="checkbox"/> SeClear G        |
| <input type="checkbox"/> Alligare Diquat         | <input type="checkbox"/> Cutrine-Plus Granular | <input type="checkbox"/> Navigate                  | <input type="checkbox"/> Shoreklear-Plus  |
| <input type="checkbox"/> Alligare Ecomazapyr     | <input type="checkbox"/> Cutrine-Ultra         | <input type="checkbox"/> Navitrol                  | <input type="checkbox"/> Shredder Amine   |
| <input type="checkbox"/> Alligare Glyphosate 5.4 | <input type="checkbox"/> DMA 4 IVM             | <input type="checkbox"/> Navitrol DPF              | <input type="checkbox"/> Sonar AS         |
| <input type="checkbox"/> Aqua Neat               | <input type="checkbox"/> Earthtec              | <input type="checkbox"/> Phycomycin SCP            | <input type="checkbox"/> Sonar Genesis    |
| <input type="checkbox"/> Aqua Star               | <input type="checkbox"/> Element 3A            | <input type="checkbox"/> Polaris                   | <input type="checkbox"/> Sonar H4C        |
| <input type="checkbox"/> AquaPro                 | <input type="checkbox"/> Flumioxazin 51% WDG   | <input type="checkbox"/> Polaris AC                | <input type="checkbox"/> Sonar PR         |
| <input type="checkbox"/> Aquashade               | <input type="checkbox"/> Formula F-30          | <input type="checkbox"/> Pond-Klear                | <input type="checkbox"/> Sonar Q          |
| <input type="checkbox"/> Aquashadow              | <input type="checkbox"/> Garlon 3A             | <input checked="" type="checkbox"/> ProcellaCOR EC | <input type="checkbox"/> Sonar RTU        |
| <input type="checkbox"/> Aquastrike              | <input type="checkbox"/> Green Clean           | <input type="checkbox"/> Refuge                    | <input type="checkbox"/> Sonar SRP        |
| <input type="checkbox"/> Aquathol K              | <input type="checkbox"/> Habitat               | <input type="checkbox"/> Renovate 3                | <input type="checkbox"/> SonarOne         |
| <input type="checkbox"/> Aquathol Super K        | <input type="checkbox"/> Harpoon               | <input type="checkbox"/> Renovate LZR              | <input type="checkbox"/> Stingray         |
| <input type="checkbox"/> Avast! SC               | <input type="checkbox"/> Harvester             | <input type="checkbox"/> Renovate LZR Max          | <input type="checkbox"/> Symmetry NXG     |
| <input type="checkbox"/> Captain                 | <input type="checkbox"/> Havoc Amine           | <input type="checkbox"/> Renovate Max G            | <input type="checkbox"/> Touchdown Pro    |
| <input type="checkbox"/> Captain XTR             | <input type="checkbox"/> Hydrothol 191         | <input type="checkbox"/> Renovate OTF              | <input type="checkbox"/> Tribune          |
| <input type="checkbox"/> Chinook                 | <input type="checkbox"/> Hydrothol Granular    | <input type="checkbox"/> Reward                    | <input type="checkbox"/> Trycera          |
| <input type="checkbox"/> Clearcast               | <input type="checkbox"/> Komeen                | <input type="checkbox"/> Rodeo                     | <input type="checkbox"/> Weedar 64        |
| <input type="checkbox"/> Clearigate              | <input type="checkbox"/> Komeen Crystal        | <input type="checkbox"/> Roundup Custom            | <input type="checkbox"/> Weedestroy AM-40 |

Other Proposed Chemical(s):

Have the proposed chemicals been permitted in a prior year on the proposed site?

- All  Some  None

What were the results of the treatment?

Long term control of EWM/HWM was achieved following a 2020 application of ProcellaCOR EC in Fox Tail Bay.

Method of Application: Injection

Other Method of Application

NOTE: Chemical fact sheets for aquatic pesticides used in Wisconsin are available from the Department of Natural Resources upon request.

Alternatives to Chemical Control:	Feasible?	If No, Why Not?
1. Mechanical harvesting	<input type="radio"/> Yes <input checked="" type="radio"/> No	EWM/HWM spreads by fragmentation, harvesting was used as a tool in b...
2. Manual removal	<input type="radio"/> Yes <input checked="" type="radio"/> No	Area too large, DASH management was used in between herbicide manag...
3. Sediment screens/covers	<input type="radio"/> Yes <input checked="" type="radio"/> No	Area too large and prevents beneficial plant growth.
4. Dredging	<input type="radio"/> Yes <input checked="" type="radio"/> No	Too expensive.
5. Waterbody drawdown	<input type="radio"/> Yes <input checked="" type="radio"/> No	Not site specific for long term management.
6. Nutrient controls in watershed	<input type="radio"/> Yes <input checked="" type="radio"/> No	Not site specific.
7. Other:	<input type="radio"/> Yes <input type="radio"/> No	<input type="text"/>

Note: If proposed treatment involves multiple properties, consider feasibility of EACH alternative for EACH property owner.

Will surface water outflow and/or overflow be controlled to prevent chemical loss?

- Yes  No

Is the treatment area greater than 5% of surface area?

Yes  No

### Waterbody concentration calculations (in ppm.)

Refer to DNR Waterbody pages <http://dnr.wi.gov/lakes> and <https://dnr.wisconsin.gov/topic/lakes/plants/forms> to answer the following:

Does the waterbody stratify?  Yes  No

- If yes, calculate whole waterbody concentration using volume above thermocline.
- If no, calculate whole waterbody concentration using total lake value

Herbicide Name	Other Herbicide	E PA Reg. No.	Whole Waterbody Concentration (mg/l = ppm)
<u>ProcellaCOR EC</u>		67690-80	0.001

### WPDES Permit Request

Is WPDES coverage being requested? Refer to

<http://dnr.wi.gov/topic/wastewater/aquaticpesticides.html> for more information

Yes - complete section VII with signature.

No

Already have WPDES

WPDES coverage not needed

### WPDES Detail

Select which permit you are requesting:

WI-0064556-1 Aquatic Plants, Algae & Bacteria

WI-0064564-1 Aquatic Animals

WI-0064581-1 Mosquitoes & other Flying Insects

Indicate WPDES permittee responsible for the pollutant discharge:

Applicator  Sponsor

Do you expect the pest control activity will result in a detectable pollutant discharge to waters of the state beyond the treatment area boundary or a pollutant residual in waters of the state after the treatment project is completed?

Yes  No

If yes, identify the pollutant(s):

Are you planning to incorporate integrated pest management principles, as specified in the WPDES permit, into your pest control activity to minimize any pollutant residual or pollutant discharge beyond the treatment area?

Yes  No

Type of WPDES coverage being requested:

One Treatment Site  Statewide Coverage

For informational purposes, select areas of WI for most of your aquatic treatments:

*NE*  *NW*  *SW*  *SE*

Is WPDES coverage being requested for more than 1 year?

*Yes*  *No*

If yes, the permittee will remain in “active” WPDES status until a Notice of Termination is submitted



## Required Attachments and Supplemental Information

### Upload Required Attachments ( 15 MB per file limit) - [Help reduce file size and trouble shoot file uploads](#)

\* indicates completion of this item is required

**Note:** To add additional attachments using the down arrow icon. To replace an existing file, use the 'Click here to attach file ' link. To remove additional items, select the item and press CNTRL Delete.

Riparian Owners

 File Attachment

[SLMD\\_Owners\\_DNR.xlsx](#)

Public Notice

 File Attachment

[SilverLk\\_Waushara\\_PublicNotice\\_Argus032124.pdf](#)

Large Scale  
Worksheet

 File Attachment

[SilverLk\\_DNR3200\\_Worksheet.pdf](#)

Site Map

 File Attachment

[Silver\\_Wauashara\\_LgScaleAISControl\\_Nov23\\_Maps.pdf](#)

Lake  
Management  
Plan

 File Attachment

[2023\\_SilverLk\\_CLMP\\_Plan\\_Final\\_Nov28-2023.pdf](#)

## Fee Calculation

### Chemical Control Application

1. s. NR 107.11(1), Wis. Adm. Code, lists the conditions under which the permit fee is limited to the \$20 minimum charge.
2. s. NR 107.11(4), Wis. Adm. Code, lists the uses that are exempt from permit requirements.
3. s. NR 107.04(2), Wis. Adm. Code, provides for a refund of acreage fees if the permit is denied or if no treatment occurs.

If Proposed treatment is over 0.25, calculate acreage fee: (round up to nearest whole acre, to maximum of 50 acres) acres X \$25 per acre = \$	86.8
If proposed treatment is less than 0.25 acre, acreage fee is \$0	\$1,250.00
Basic Permit Fee (non-refundable)	\$20.00
Total Fee	\$1,270

## Payment Information

**Invoice Number:** WP-00046109

**Payment Confirmation Number:** WS2WT3011239181

**Amount Paid:** \$1,270



## Sign and Submit

### Applicant Responsibilities and Certification

1. The applicant has prepared a detailed map which shows the length, width and average depth of each area proposed for the control of rooted vegetation and the surface area in acres or square feet for each proposed algae treatment.
2. The applicant understands that the Department of Natural Resources may require supervision of any aquatic plant management project involving chemicals. Under s.NR 107.07 Wis. Adm. Code, supervision may include inspection of the proposed treatment area, chemicals and application equipment before, during or after treatment. The applicant is required to notify the regional office 4 working days in advance of each anticipated treatment with the date, time, location and size of treatment unless the Department waives this requirement. Do you request the Department to waive the advance notification requirement?  
 Yes  No
3. The applicant agrees to comply with all terms or conditions of this permit, if issued, as well as all provisions of Chapter NR 107, Wis. Adm. Code. The required application fee is attached.
4. The applicant will provide a copy of the current application to any affected property owners' association inland Lake District and, in the case of chemical applications for rooted aquatic plants, to all owners of property riparian or adjacent to the treatment area. The applicant has also provided a copy of the current chemical fact sheet for the chemicals proposed for use to any affected property owner's association or inland Lake District.
5. Conditions related to invasive species movement. The applicant and operator agree to the following methods required under s.NR 109.05(2), Wis. Adm. Code for controlling, transporting and disposing of aquatic plants and animals, and moving water:
  - Aquatic plants and animals shall be removed and water drained from all equipment as required by s.30.07, Wis. Stats., and ss. NR 19.055 and 40.07, Wis. Adm. Code.
  - Operator shall comply with the most recent Department-approved 'Boat, Gear, and Equipment Decontamination and Disinfection Protocol', Manual Code #9183.1, available at <http://dnr.wi.gov/topic/invasives/disinfection.html>

All portions of this permit, map and accompanying cover letter must be in possession of the chemical applicator at the time of treatment. During treatment all provisions of Chapter NR 107 107.07 and NR 107.08, Wis. Adm. Code, must be complied with, as well as the specific conditions contained in the permit cover letter.

I hereby certify that that the above information is true and correct and that copies of the application shall be provided to all affected property owners promptly and that the conditions of the permit will be adhered to. All portions of this permit, map and accompanying cover letter must be in possession of the applicant or their agent at time of plant removal. During plant removal activities, all provisions of applicable Wisconsin Administrative Rules must be complied with, as well as the specific conditions contained in the permit cover letter.

### Steps to Complete the signature process

**IMPORTANT:** All email correspondence will be sent to the address associated with your WAMS ID).

1. Read and Accept the Responsibilities and Certification
2. Press the Initiate Signature Process button
3. Open the confirmation email for a one time confirmation code and instructions to complete the signature process.

You will receive a final acknowledgement email upon completing these steps .

Check if you are signing as Agent for Applicant.

i:0#.f|wamsmembership|amykay23 signed on 2024-

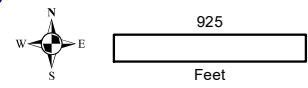
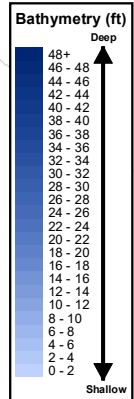
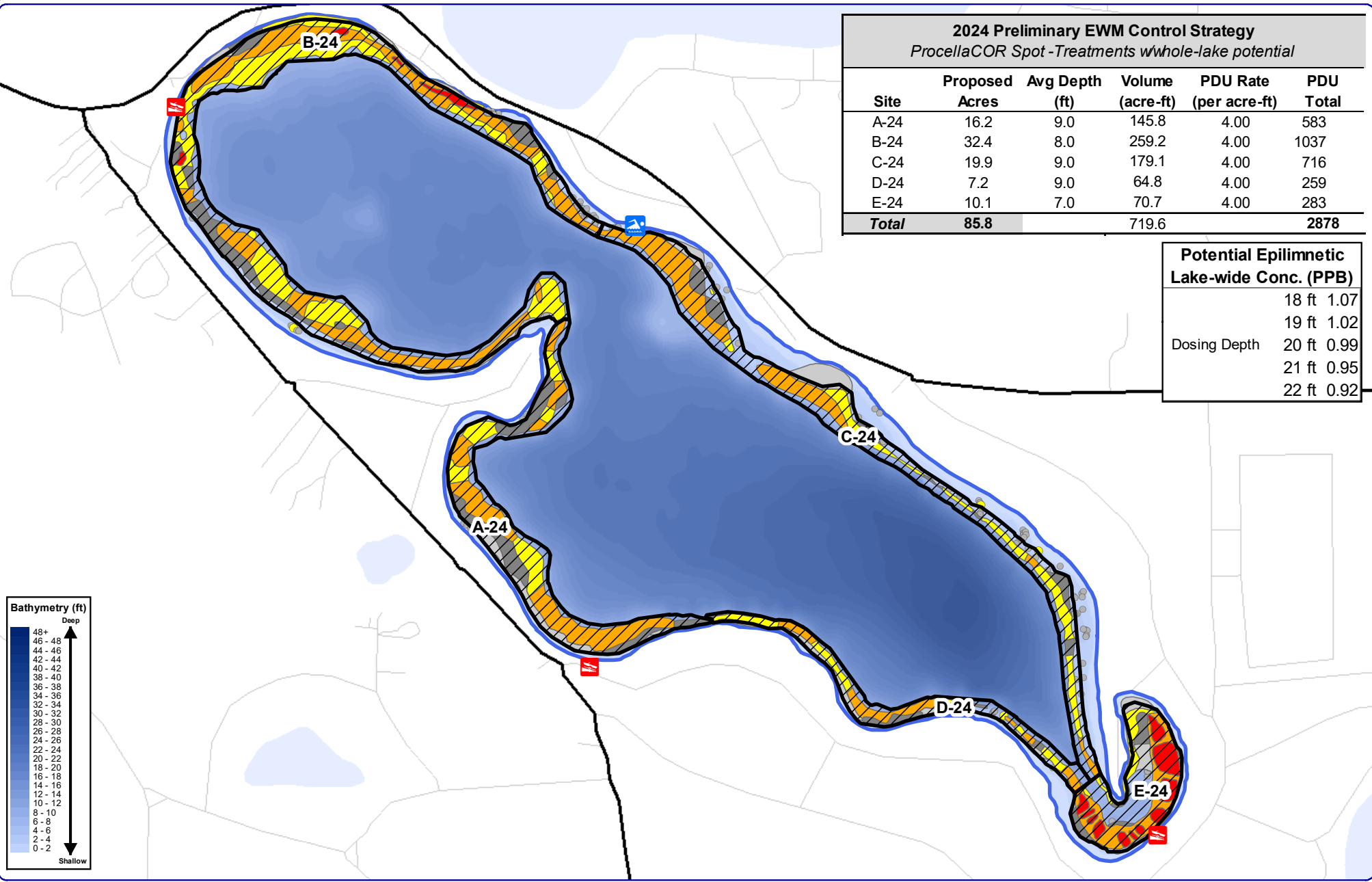
I hereby certify that the above information is true and correct and that copies of this submittal shall be provided to the appropriate parties named in the contact section and that the conditions of the permit and pesticide use will be adhered to.

**2024 Preliminary EWM Control Strategy**  
*ProcellaCOR Spot -Treatments w/whole-lake potential*

Site	Proposed Acres	Avg Depth (ft)	Volume (acre-ft)	PDU Rate (per acre-ft)	PDU Total
A-24	16.2	9.0	145.8	4.00	583
B-24	32.4	8.0	259.2	4.00	1037
C-24	19.9	9.0	179.1	4.00	716
D-24	7.2	9.0	64.8	4.00	259
E-24	10.1	7.0	70.7	4.00	283
<b>Total</b>	<b>85.8</b>		<b>719.6</b>		<b>2878</b>

**Potential Epilimnetic Lake-wide Conc. (PPB)**

	18 ft	1.07
	19 ft	1.02
Dosing Depth	20 ft	0.99
	21 ft	0.95
	22 ft	0.92



**Onterra LLC**  
Lake Management Planning  
815 Prosper Road  
De Pere, WI 54115  
920.338.8860  
www.onterra-eco.com

Sources:  
Roads and Hydro: WDNR  
Bathymetry: Onterra, 2015  
Aquatic Plants: Onterra, 2023

Map Date: 10-17-2023 - TWH



Project Location in Wisconsin

- Legend**
- HWM Survey: September 25, 2023**
- Highly Scattered
  - Scattered
  - Dominant
  - Highly Dominant
  - Surface Matting
  - Single or Few Plants
  - Clump of Plants
  - Small Plant Colony

2024 Herbicide Application Areas

**Silver Lake**  
Waushara County, Wisconsin  
**Preliminary 2024**  
**Hybrid watermilfoil**  
**Control Strategy**

# FLORPYRAUXIFEN-BENZYL CHEMICAL FACT SHEET

## Formulations

Florpyrauxifen-benzyl is a relatively new herbicide that was first registered with the U.S. EPA in 2017. The active ingredient is 4-amino-3-chloro-6-(4-chloro-2-fluoro-3-methoxyphenyl)-5-fluoro-pyridine-2-benzyl ester, also identified as florpyrauxifen-benzyl.

Florpyrauxifen-benzyl is labeled for control of submerged, floating and emergent aquatic plants using surface, subsurface or foliar application in slow-moving and quiescent waters. Commercial formulations approved for aquatic use in Wisconsin include ProcellaCOR™ EC\*.

## Aquatic Use and Considerations

Florpyrauxifen-benzyl is a systemic herbicide (i.e., it moves throughout the plant tissue). It is a WSSA Group 4 herbicide, meaning that the mechanism of action is by mimicking the plant growth hormone auxin and causing excessive elongation of plant cells, ultimately killing the plant. Affected plants may show atypical growth patterns (e.g., large and/or twisted leaves, stem elongation), and leaf and shoot tissue may become fragile. While initial effects will become apparent within a few days after treatment, it will take two to three weeks for the full plant decomposition process to occur. Florpyrauxifen-benzyl should be applied to plants that are actively growing; mature plants may require a higher concentration of herbicide and a longer contact time compared to smaller, less established plants.

It is important to note that repeated use of herbicides in the same WSSA group (i.e., with the same mechanism of action) can lead to herbicide-resistant plants, even in aquatic

environments. In order to reduce the risk of developing resistant genotypes, avoid using the same type of herbicides year after year, and utilize effective integrated pest management strategies as part of any long-term control program.

Florpyrauxifen-benzyl has relatively short contact exposure time (CET) requirements (typically 12 to 24 hours). The short CET may be advantageous for localized treatments of submerged aquatic plants, however, the target species efficacy compared to the size of the treatment area is not yet known. In some Wisconsin lakes impacts to target and non-target plants have been observed in areas beyond the targeted treatment areas, and research is ongoing to better understand the herbicide's dissipation and degradation patterns across various lake types.

Florpyrauxifen-benzyl is labeled for control of invasive Eurasian watermilfoil (*Myriophyllum spicatum*), hybrid watermilfoil (*M. spicatum x sibiricum*) and yellow floating heart (*Nymphoides peltata*)<sup>†</sup>. Native species listed on the product label as susceptible to florpyrauxifen-benzyl include coontail (*Ceratophyllum demersum*), variable-leaf watermilfoil (*Myriophyllum heterophyllum*), watershield (*Brasenia schreberi*), and American lotus (*Nelumbo lutea*)<sup>†</sup>.

Preliminary results from pre- and post-treatment monitoring conducted on a subset of Wisconsin lakes observed negative impacts to dicot species such as northern watermilfoil (*Myriophyllum sibiricum*), white water crowfoot (*Ranunculus aquatilis*), water marigold (*Bidens beckii*), & coontail following treatment.

<sup>†</sup> May vary by formulation, application rate, and/or product. Every product label must be carefully reviewed and followed by the user.

\* Product names are provided solely for your reference and should not be considered exhaustive nor endorsements.

## Post-Treatment Water Use Restrictions

There are no drinking water or recreational use restrictions, including swimming and fishing, and no restrictions on irrigating turf. There is a short waiting period (dependent on application rate) for other non-agricultural irrigation purposes. Treated water should not be used for livestock drinking water or for agricultural irrigation†.

## Herbicide Degradation, Persistence and Trace Contaminants

Florpyrauxifen-benzyl is short-lived, with a half-life (the time it takes for half of the active ingredient to degrade) of four to six days in aerobic aquatic environments and two days in anaerobic aquatic environments.

Florpyrauxifen-benzyl in water is subject to rapid breakdown by light (photolysis), with a reported photolytic half-life of approximately two hours in surface water when exposed to sunlight. In addition, the herbicide can convert partially to an acid form via breakdown by water (hydrolysis) at high pH (greater than 9) and higher water temperatures (greater than 25°C). Microbial activity in the water and sediment can also enhance degradation.

Florpyrauxifen-benzyl breaks down into five major degradation products. These materials are generally more persistent in water than the active herbicide (with a half-life of up to three weeks), but four of the five products are minor metabolites detected at less than 5% of applied active ingredient.

Florpyrauxifen-benzyl has a high soil adsorption coefficient (KOC) and low volatility, which allows for rapid plant uptake resulting in short exposure time requirements.

Florpyrauxifen-benzyl degrades quickly (two to 15 days) in sediment. Few studies have yet been completed for groundwater, but based on known environmental properties, florpyrauxifen-benzyl is not expected to be associated with potential environmental impacts in groundwater.

## Impacts on Fish and Other Aquatic Organisms

Florpyrauxifen-benzyl is practically nontoxic to freshwater fish and invertebrates, birds, bees, reptiles, amphibians and mammals.

Florpyrauxifen-benzyl will temporarily bioaccumulate (the process by which chemicals in the environment or in a food source are taken up by plants or animals) in freshwater organisms but is expelled and/or metabolized within one to three days after exposure to high (greater than 150 parts per billion) concentrations.

## Human Health

There are no risks of concern to human health since no adverse short- or long-term effects, including a lack of carcinogenicity or mutagenicity, were observed in the submitted toxicological studies for florpyrauxifen-benzyl regardless of the route of exposure. Drinking water exposures to florpyrauxifen-benzyl also do not pose a significant human health risk. Additionally, there is no hazard concern for metabolites and/or degradants of florpyrauxifen-benzyl that may be found in drinking water, plants and livestock.

## For Additional Information

U.S. Environmental Protection Agency (EPA)  
Office of Pesticide Programs  
[epa.gov/pesticides](http://epa.gov/pesticides)

Wisconsin Department of Agriculture, Trade,  
and Consumer Protection  
[datcp.wi.gov/Pages/Programs\\_Services/ACMOv  
erview.aspx](http://datcp.wi.gov/Pages/Programs_Services/ACMOverview.aspx)

Wisconsin Department of Natural Resources  
608-266-2621  
[dnr.wi.gov/lakes/plants](http://dnr.wi.gov/lakes/plants)

National Pesticide Information Center  
1-800-858-7378  
[npic.orst.edu](http://npic.orst.edu)

Washington State Department of Ecology. 2017.  
[fortress.wa.gov/ecy/publications/documents/  
1710020.pdf](http://fortress.wa.gov/ecy/publications/documents/1710020.pdf)

