April 2024

Balsam Lake Property Owner or Occupant
Polk County, WI

Re: Proposed Management for Aquatic Invasive Species Control on Balsam Lake

Dear Balsam Lake Property Owner or Occupant:

The Balsam Lake Protection and Rehabilitation District (the District) proposes to assess and manage approximately 31 acres on Balsam Lake to control the excessive growth of the aquatic invasive plant, Curlyleaf pondweed (CLP).

The District proposes to conduct applications of Aquathol K(endothall) to be performed sometime in May, 2024 by TIGRIS Aquatic Services, LLC (TIGRIS), proceeding only after the District 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 Aquathol K 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 the use of Aquathol K.

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 endothall, can be found at: blprd.com.

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

Jack Weix, Commissioner
Balsam Lake Protection and Rehabilitation District
weixjack@gmail.com
612.325.8530

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 2024-04-29T19:16:53

Site or Project Name:	Balsam Lake 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 competed 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	Balsam Lake Protection and Rehabilitation District
Last Name:	Weix
First Name:	Jack
Mailing Address:	PO Box 202
City:	Balsam Lake
State:	WI
Zip Code:	54810
Email:	
Phone Number: (xxx-xxx-xxxx)	
Alternative Phone Number: (xxx-xxx-xxxx)	

Waterbody Address

Last Name:	
First Name:	
Street Address:	1819 110th Street
City:	Balsam Lake
State:	WI
Zip Code:	54810
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:	WI
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 : ☐ None

Water Body or Wetland Name: Balsam Lake

Primary County: Polk

Latitude: 45.4653956

Longitude: -92.4272995

Section: 02

Township: 35

Range: 17

Direction: ◉ E ○ W

Waterbody Surface Area: 1,901 acres

Estimated Surface area that is 10ft or less 190 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.	÷ 43,560 ft^2 =	31.30	ac	8.12	ft =	254.16	ac-ft

Estimated Acreage Grand Total 31.30 ac

Calculated Volume Grand Total 254.16 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?	If Yes, date approved of most current copy	Link to Approved Plan:
◉ Yes ○ No ○ Don't Know	8/1/2021	☑ Uploaded Plan copy as an Attachment

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

☐ Algae	☐ Flowering Rush	☐ Purple Loosestrife
☐ Common/Glossy Buckthorn	☐ Hybrid Cattail	☐ Reed Canary Grass
☐ Coontail	☐ Hybrid Watermilfoil	☐ Reed Manna Grass
☑ Curly-Leaf Pondweed	☐ Japanese Knotweed	☐ Starry Stonewort
☐ Duckweed	☐ Naiad	☐ Yellow Floating Heart
☐ Elodea	☐ Narrow-Leaf Cattail	☐ Yellow Iris
☐ Eurasian Watermilfoil	☐ Phragmites	☐ 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)

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

control goals were met

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	○ Yes ◉ No	active harvesting program in place, CLP is exceeding threshold in plan
2. Manual removal	○ Yes ◉ No	area too large
3. Sediment screens/covers	○ Yes ◉ No	area too large, prevents beneficial plant growth
4. Dredging	○ Yes ◉ No	too expensive
5. Waterbody drawdown	○ Yes ◉ No	not site specific
6. Nutrient controls in watershed	○ Yes ◉ No	not site specific
7. Other:	○ Yes ○ No	

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*

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*

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	East Balsam Only_BLPRD_mailing list_CLP_Txnotice.xls›
Public Notice	File Attachment	240429 Balsam Lake 2024 Proof of Publication.pdf
Large Scale Worksheet	File Attachment	
Site Map	File Attachment	Balsam Lake 2024 Proposed Management Area Map.pd
Lake Management Plan	File Attachment	2021 APM Plan.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)	31.3
acres X $25 per acre = $	$800.00
If proposed treatment is less than 0.25 acre, acreage fee is $0	
Basic Permit Fee (non-refundable)	$20.00
Total Fee	$820

Payment Information

Invoice Number:	WP-00046943
Payment Confirmation Number:	WS2WT3011338154
Amount Paid:	$820

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.

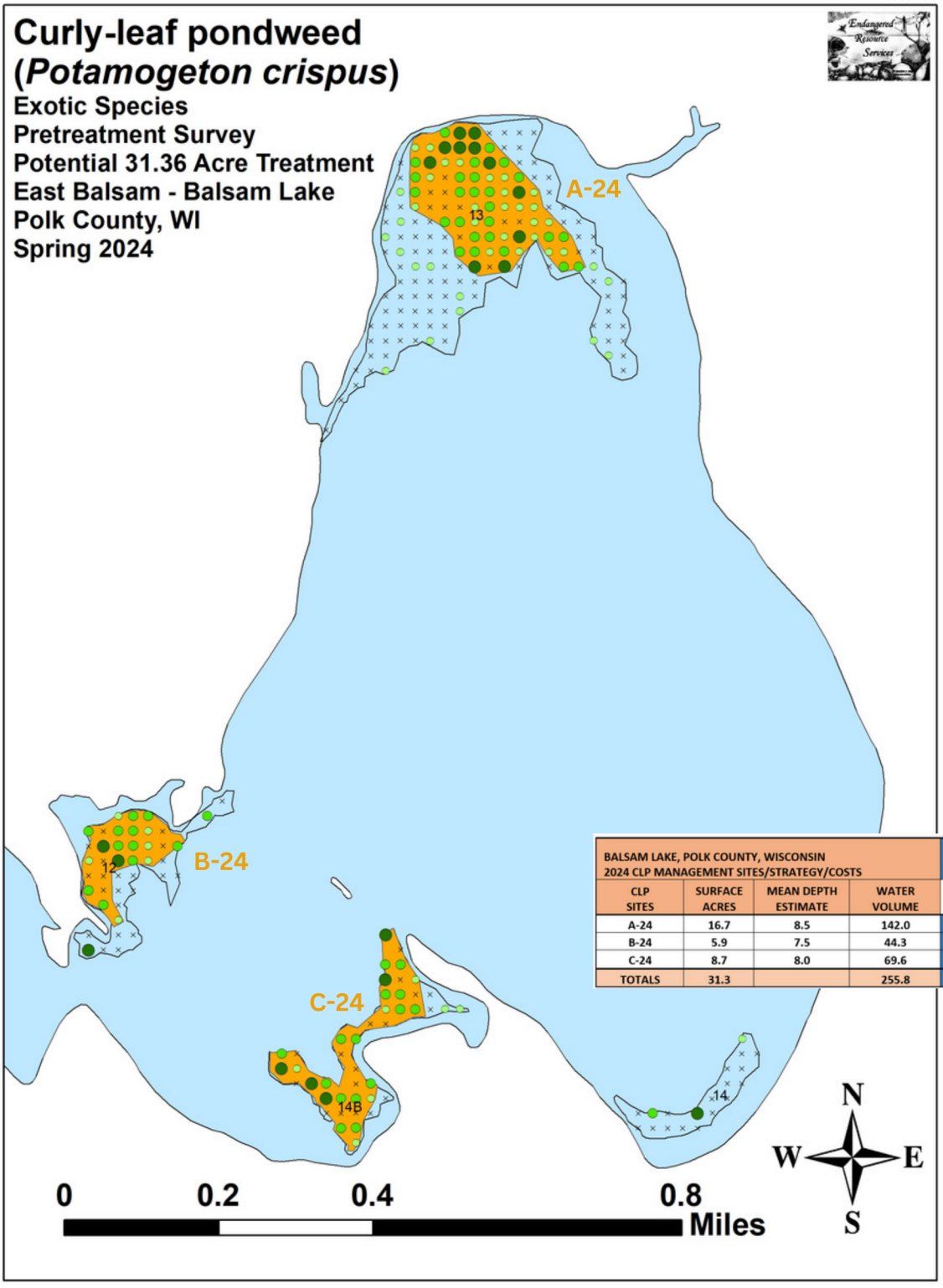
i:0#.f|wamsmembership|amykay23 signed on 2024·

☑ 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 PROPOSED MANAGEMENT AREA MAP

Balsam Lake, Polk County, Wisconsin

Provided by Matt Berg (Endangered Resource Services)



BALSAM LAKE, POLK COUNTY, WISCONSIN 2024 CLP MANAGEMENT SITES/STRATEGY/COSTS				AQUATHOL K (ENDOTHALL)		
CLP SITES	SURFACE ACRES	MEAN DEPTH ESTIMATE	WATER VOLUME	RATE PPM	GALLONS PER ACRE	TOTAL GALLONS
A-24	16.7	8.5	142.0	1.0	5.4	90.6
B-24	5.9	7.5	44.3	1.5	7.2	42.3
C-24	8.7	8.0	69.6	1.5	7.7	66.6
TOTALS	31.3		255.8			90.6

TIGRIS
WHERE WATERS THRIVE.

ENDOTHALL CHEMICAL FACT SHEET

Formulations

Endothall was registered with the U.S. EPA for aquatic use in 1960, reregistered in 2005, and is currently under registration review. An interim registration review decision was released in 2021. Endothall is the common name of the active ingredient endothall acid (7-oxabicyclo[2,2,1] heptane-2,3-dicarboxylic acid). Endothall products are labeled for control of submersed aquatic plants using surface or subsurface application. Granular and liquid formulations are currently registered by the U.S. EPA and DATCP. Two types of endothall are available: dipotassium salt and dimethylalkylamine salt ("mono-N,N-dimethylalkylamine salt" or "monoamine salt"). Commercial formulations approved for aquatic use in Wisconsin include Aquathol® K and Hydrothol® 191.*

Aquatic Use and Considerations

Endothall is a contact herbicide (i.e., it affects plant cells on contact and does not move throughout the plant tissue) that inhibits respiration, prevents the production of proteins and lipids, and disrupts the cellular membrane in plants. It is a WSSA Group 31 herbicide, meaning the mechanism of action is by inhibiting serine-threonine protein phosphatase 1 (PP1). Although typical endothall application rates inhibit plant respiration, higher concentrations have been shown to increase respiration. Factors such as density and size of the plants present, water movement, and water temperature determine how quickly endothall works. For effective control, endothall should be applied when plants are actively growing. Under favorable conditions, plants begin to decompose within a few days after application. Uptake of endothall is increased at higher water temperatures and higher light levels.

If endothall is applied to a pond or enclosed bay with abundant vegetation, no more than one-third to one-half of the surface should be treated at one time because excessive decaying vegetation may deplete the oxygen content of the water and kill fish. Untreated areas should not be treated until the vegetation exposed to the initial application decomposes.

Endothall products vary somewhat in the target species they control, so it is important to always check the product label for the list of affected species. Endothall products are labeled to control the invasive species curly-leaf pondweed (*Potamogeton crispus*)† and Eurasian watermilfoil (*Myriophyllum spicatum*). Native species that are labeled as susceptible to endothall include coontail (*Ceratophyllum demersum*), naiads (*Najas* spp.), milfoils (*Myriophyllum* spp.), pondweeds (*Potamogeton* spp.), sago pondweed (*Stuckenia pectinata*), water stargrass (*Heteranthera dubia*) and horned pondweed *(Zannichellia palustris*).‡

Post-Treatment Water Use Restrictions

Due to the many formulations of this chemical the post-treatment water use restrictions vary. All endothall products have a drinking water standard of 0.1 parts per million (ppm) endothall acid and cannot be applied within 600 feet of a potable water intake. Use restrictions for dimethylalkylamine salt

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

† The chemical manufacturers of endothall recommend that targeted treatment areas be greater than 5 acres for effective curly-leaf pondweed control.

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

The Wisconsin Department of Natural Resources (DNR) is committed to promoting diversity, fairness, equity and the principles of environmental justice. We ensure that we do not discriminate in employment, programs, decisions, actions or delivery of services. If you have questions or to request information in an alternative format (large print, Braille, audio tape, etc.), please contact us at 888-936-7463 or https://dnr.wisconsin.gov/About/Nondiscrimination.

formulations have additional irrigation and aquatic life restrictions.‡

Herbicide Degradation, Persistence and Trace Contaminants

Endothall disperses with water movement and is broken down by microorganisms into carbon, hydrogen and oxygen. Field studies show that low concentrations of endothall persist in water for several days to several weeks depending on environmental conditions. Degradation of endothall is primarily microbial and the half-life (the time it takes for half of the active ingredient to degrade) of the dipotassium salt formulations averages four to ten days, although dissipation due to water movement may significantly shorten the effective half-life in some treatment scenarios. Complete degradation by microbial action is 30 to 60 days. The initial breakdown product of endothall is an amino acid, glutamic acid, which is rapidly consumed by bacteria.

Endothall is highly water soluble and does not readily adsorb to sediments or lipids. The degradation rate of endothall increases with increasing water temperature and decreases under anaerobic conditions. Relative to other herbicides, endothall is unique in that is comprised of carbon, hydrogen and oxygen with the addition of potassium and nitrogen in the dipotassium and dimethylalkylamine formulations, respectively. This allows for complete breakdown of the herbicide without additional intermediate breakdown products.

Impacts on Fish and Other Aquatic Organisms

The dipotassium salt formulations are considered slightly to moderately toxic to freshwater fish and slightly toxic to freshwater invertebrates. However, certain species may be more sensitive than others. At recommended rates, the dipotassium salt formulations appear to have few short-term behavioral or reproductive effects on bluegill (*Lepomis macrochirus*) or largemouth bass (*Micropterus salmoides*). Bioaccumulation (the process by which chemicals in the environment or in a food source are taken up by plants or animals) of dipotassium salt formulations by fish from water treated with the herbicide is unlikely.

The dimethylalkylamine formulations are more active on aquatic plants than the dipotassium formulations but are also more toxic to non-target aquatic organisms. They are highly toxic to both freshwater fish and invertebrates at concentrations above 0.3 ppm. In recognition of the extreme toxicity of the dimethylalkylamine salt, product labels do not recommend treatment where fish are an important resource.

Tadpoles and freshwater scuds are sensitive to dimethylalkylamine salt at levels ranging from 0.5 to 1.8 ppm.

Human Health

Most concerns about adverse health effects revolve around applicator exposure. Endothall may be harmful or fatal if inhaled, swallowed, or absorbed through skin. It can also cause irreversible eye damage. Wear proper personal protective equipment and follow label instructions while handling.

Endothall poses no risk to water users if water use restrictions are followed. Endothall is not a neurotoxicant or mutagen, nor is it likely to be a human carcinogen.

For Additional Information

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

Wisconsin Department of Agriculture, Trade, and Consumer Protection
datcp.wi.gov/Pages/Programs_Services/ACMOverview.aspx

Wisconsin Department of Natural Resources
608-266-2621
dnr.wi.gov/lakes/plants

Wisconsin Department of Health Services
dhs.wisconsin.gov

National Pesticide Information Center
1-800-858-7378
npic.orst.edu