



**MEMORANDUM**  
 Comfort Lake-Forest Lake Watershed District

**Date:** June 15, 2026  
**To:** CLFLWD Board of Managers  
**From:** Mike Kinney, District Administrator  
**Subject:** Eurasian Watermilfoil Policy



**Background/Discussion:**

The purpose of this memo is to evaluate the District’s role in Eurasian watermilfoil (EWM) management. At the [April 23rd regular board meeting](#) and [June 11 regular board meeting](#), there were discussions focused on the topic of funding EWM treatment. Currently, the District finances the annual aquatic invasive species (AIS) delineation & assessment surveys while lake associations obtain the necessary Department of Natural Resources (DNR) permits and pay for the cost of chemical treatment. The District’s role in EWM treatment costs have been considered several times in the last 10-15 years, specifically in 2015, 2017, 2022, and 2023. A number of these historical memos are attached to provide additional information and context to the discussion.

EWM is largely considered a recreational nuisance and not an impairment to water quality compared to, for example, Curly-leaf pondweed (CLP). EWM persists for most of the growing season and does not die back mid-summer like CLP that potentially results in phosphorus being released after the 4<sup>th</sup> of July. Impacts on native species are also often minimal, as EWM experiences an initial density boom after introduction, followed by a noticeable decline. This appears to correlate to depletion of sediment nitrogen/nutrient levels.

Currently, chemical treatment is considered the most effective management option for killing high density areas of the plant. However, long-term eradication is presently considered highly unlikely, and thus any treatment conducted should only be considered as seasonal control. Repetitive treatments using the same herbicide also increases the potential for the plant to become resistant to herbicides. In the case of terrestrial occurrences of herbicide resistance, once such a plant becomes resistant, there are no known alternatives to chemical treatments. Mechanical or hand removal would be highly impractical for EWM.

Staff have compiled estimated treatment costs using historical acreage averages and known 2026 chemical costs.

**Table 1: Estimated Treatment Costs Based on Historical Peak EWM Growth**

Lake Name	Forest Lake	Comfort Lake	Bone Lake
<b>Historical Average Peak EWM Treatment Acreages</b>	32.64 acres*	4.66 acres**	3.37 acres***



**MEMORANDUM**  
 Comfort Lake-Forest Lake Watershed District

<b>Diquat</b> (estimated \$220 per acre @2gal/acre, varies by rate applied)	\$7,180.80	\$1,025.20	\$741.40
<b>ProcellaCOR</b> (estimated \$3718 per acre @9ft average depth, varies depending on depth & rate applied; \$1500 - \$4000)	\$121,355.52	\$17,325.88	\$12,529.66
<b>Diquat-ProcellaCOR Mix</b> (estimated \$500 - \$900 per acre, varies depending on depth)	\$16,320 - \$29,376	\$2,330 - \$4,194	\$1,685 - \$3,033
<b>2-4-D</b> (estimated \$450 - \$556 per acre depending on depth)	\$14,688 - \$18,148	\$2,097 - \$2,591	\$1,516 - \$1,874
<b>Whole-Lake Fluridone Treatment</b> (cost per acre unknown)	Cost Unknown (2,220 acres)	Estimated \$60,000 per info from CLA (218 acres)	Cost Unknown (221 acres)

**\*Forest Lake EWM treatment history:** 2015 (30 acres), 2016 (19.9 acres), 2017 (33.4 acres), 2018 (40.7 acres), 2019 (49.3 acres), 2020 (53.8 acres), 2021 (8.4 acres), 2022 (22.3 acres), 2023 (8.41 ftacres), 2024 (47.94 acres), 2025 (47.37 acres)

**\*\*Comfort Lake EWM treatment history:** 2014 (0.8 acres), 2015 (0.5 acres), 2016 (7.5 acres), 2017 (3.2 acres), 2018 (1.5 acres), 2019 (3.2 acres), 2020 (7.5 acres), 2021 (15 acres), 2022 (Whole Lake Fluridone Treatment, 218 acres), 2023 (2.77 acres)

**\*\*\*Bone Lake EWM treatment history:** 2014 (6 acres), 2015 (3.4 acres), 2016 (0.7 acres)

Additional funds will need to be allocated in the 2027 budget if the board moves to financially contribute to EWM treatments. Variability in yearly growth and chemical prices makes budgeting for AIS treatment difficult. At a minimum, the 2027 budget would need to be adjusted to include the estimates in Table 1.

**Recommended Action:**

Staff recommends the Board give staff direction regarding the incorporation of EWM treatment costs in the 2027 budget.

**Attached:**

Eurasian Watermilfoil Policy Memos 2015-2023

## MEMORANDUM

### Comfort Lake-Forest Lake Watershed District

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**To:** Board of Managers  
**From:** Mike Kinney, Administrator  
**Subject:** Lake Vegetation Management Plans

**Date:** September 30, 2015

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#### Background / Discussion

The purpose of this agenda item is to discuss the benefits of drafting Lake Vegetation Management Plans (LVMPs) for Forest Lake, Comfort Lake, Bone Lake and Shields Lake.

To provide some background: a LVMP is a collaborative document that outlines management and potentially allows for variance to Minnesota aquatic plant management rules. In most cases, LVMP's are written for invasive aquatic plant management beyond the 15% littoral limit.

District staff discussed LVMPs with various professionals including Steve McComas, Blue Water Science; Keegan Lund, DNR Invasive Species Specialist for Washington County; and Christine Jurek, DNR Invasive Species Specialist for Chisago County. Findings from those discussions and components of LVMPs as they relate to CLFLWD lakes are described in more detail below.

#### Past or current LVMPs for District Lakes

When asked if any lakes within the CLFLWD have ever had a final DNR-approved LVMP, Mr. Lund responded:

*No DNR LVMP was signed within the past 4 years for any lake in the CLFLWD that I am aware of.*

This has also been confirmed by Ms. Jurek.

Draft LVMPs were started for Bone Lake, Comfort Lake and Forest Lake in the past. However, these LVMPs were not finalized due to the fact that exceeding the 15% littoral limit on treatment was not needed at the time.

#### Variance for management beyond 15% littoral limit

The DNR's limit on littoral area allowed for treatment with herbicide is 15%. District staff reviewed recent AIS treatments on District lakes with Mr. McComas and Mr. Lund, and determined that none are close to reaching the 15% limit. Based on future projections, a variance to the 15% limit will not be needed within the near future. If, in future years, a lake gets close to the 15% limit, a LVMP can be considered at that time.

#### Waiver for signatures from shoreline property owners

According to the DNR's Invasive Aquatic Plant Management Permit (IAPM) signatures must be obtained from the owners of all properties within 150 feet of the treatment area, unless a signature waiver is approved by the DNR.

According to Mr. Lund:

*Signature waivers can be written into LVMP's but an LVMP is not necessary for signature waivers. CLFLWD could request signature waivers for all the lakes in which they manage AIS and this only needs to be done once. Proof of landowner notification (such as newspaper posting or mailing) needs to be submitted to the DNR annually before treatment can occur.*

The District previously believed that a lake needed to have a LVMP in place in order to obtain a signature waiver. A misconception about which lakes had a LVMP in place added to the confusion.

### **Variance to 50-foot lily pad buffer rule**

According to the DNR, herbicide treatment under the IAPM may not occur within 50 feet of water lilies. When asked if the DNR would consider allowing any variances to the 50-foot lily pad buffer rule in a LVMP Mr. Lund responded:

*This would need to be a formal request in writing from the applicant and would not necessarily require a LVMP. The consideration of such a request would be made on a variety of factors such as reasoning, native plant monitoring and assessment, and precedence.*

Ms. Jurek confirmed that this response applies to lakes within Chisago County as well.

### **DNR approval of a proposed LVMP**

Another important factor in finalizing a LVMP is DNR approval. Criteria such as: extent of infestation (how far beyond 15% littoral area), existing native plant community (abundant/diverse or limited), water clarity and potential in-lake improvements are considered by the DNR when reviewing a proposed LVMP. Per an email from Mr. Lund:

*Bone Lake might be an example lake where a LVMP request would likely not be supported by the DNR due to limited water clarity and a restricted native plant community.*

If a lake's native plant community is already limited, the DNR would not want to allow large-scale herbicide treatment which could potentially further inhibit native plant growth.

### **Other benefits of LVMPs**

District staff inquired with Mr. Lund if there were any benefits to be had from a LVMP other than what was previously described. His response:

*Not really, DNR LVMP's are a vehicle which permits a variance to MN Rule regarding plant management. They also outline required annual monitoring by partners to document changes in the aquatic plant community from larger herbicide treatments. They are generally only needed when a variance is requested and approved. Many lake groups choose to write management plans for their own planning purposes, but these are not DNR LVMP's nor are they signed by the DNR.*

Without including requests for variances, LVMPs may still serve as useful lake management tools in the form of internal documents. However, a District-wide AIS management plan may prove to be a more holistic approach than drafting management plans for each individual lake.

## **MEMORANDUM**

### **Comfort Lake-Forest Lake Watershed District**

#### **Conclusions**

After much discussion between District, DNR, Blue Water Science and EOR staff, it seems that LVMPs may not be as imperative for District lakes as originally anticipated. Unless a lake is near the 15% littoral limit for herbicide treatment, a LVMP doesn't afford that lake many benefits. Signature waivers and variances to the 50-foot lily pad buffer rule may be requested without the presence of a LVMP. The use of LVMPs as internal management tools for individual lakes may not be as comprehensive as developing a District-wide AIS management plan. Furthermore, it is possible that some lakes within the District wouldn't gain DNR approval for a LVMP, so time spent drafting that plan would potentially be wasted.

Staff recommends the Board consider forgoing drafting LVMPs for individual lakes and use those budgeted hours and funds to focus on other projects/programs such as developing a District-wide AIS management plan.

# MEMORANDUM

## Comfort Lake-Forest Lake Watershed District

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**To:** Board of Managers  
**From:** Mike Kinney  
**Subject:** Eurasian Watermilfoil Management Considerations

**Date:** August 24, 2017

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### Introduction

The purpose of this memo is to assist the Board in discussing the benefits and drawbacks of the District managing Eurasian watermilfoil (EWM) on its lakes; specifically Bone, Forest, and Comfort lakes.

The new Watershed Management Plan activity, per the current amendment, for Aquatic Invasive Species (AIS) Management reads as follows:

*G. (District-Wide) Aquatic Invasive Species Management: Holistically manage aquatic invasive species in District lakes with a view toward the overall health of the water body. Policies and goals in the CLFLWD Watershed Management Plan are designed around the ecological integrity of water resources within the District. Accordingly, the District's involvement in the long-term management of AIS present will be based on the benefit to ecological systems. Specific procedures and priorities for implementing this complex and multi-faceted activity will be detailed under activity 3011-20A Comprehensive Plan and Policy Development.*

This language can be used as a starting point for which the board may prioritize objectives for invasive species management. Factors when considering the District's role in managing EWM:

1. Known life cycle of EWM
2. Benefit to the health of the waterbody via water quality improvement
3. Benefit to the health of the waterbody via native flora/fauna protection (i.e. benefit to ecological systems)
4. Prevention of spread to other waterbodies that do not currently have EWM
5. Benefit to public recreation users (and subsequently local economy via tourism)
6. Benefit to private recreation users (i.e. shoreline homeowners)
7. Precedence for watershed district management of EWM

District staff corresponded with Steve McComas, owner of Blue Water Science, regarding several of the above considerations. Quotes from Mr. McComas are provided below.

### Consideration #1: Known life cycle of EWM

EWM growth is mainly limited by lake sediment nitrogen availability. Long-term life cycles of EWM have been observed in other lakes suggesting a predictable initial stem density boom, but then a noticeable decline once sediment nitrogen has been used up. This eventual decline in density is something to consider when weighing long-term management options.

### Consideration #2: Benefit to waterbody health via water quality improvement

## MEMORANDUM

### Comfort Lake-Forest Lake Watershed District

It is widely known that, unlike curly-leaf pondweed, EWM does not experience mid-summer die back and subsequent phosphorus release, resulting in water quality degradation. In fact, Mr. McComas has indicated that with the additional leaflet surface from EWM growth, water column total phosphorus could be lowered.

#### **Consideration #3: Benefit to waterbody health via native flora/fauna protection**

According to Mr. McComas: “the biggest impact of untreated EWM is recreational and navigational impacts. There are few ecological impacts of not treating EWM. Any EWM treatment should be considered as a treatment for seasonal control. We do not have any good long term control options.” This is to say that EWM treatments do not result in long-term density reduction; they simply reduce density for the current year.

One option the Board may wish to consider is budgeting for annual delineation surveys by Blue Water Science in order to assess whether stem densities may have an ecological impact in any given year. Treatment could be funded from the District’s reserve if the delineation survey predicts significant ecological impacts.

#### **Consideration #4: Prevention of spread to other waterbodies that do not currently have EWM**

Theoretically, reducing the abundance of EWM may reduce the instance of boaters traveling through beds, picking up stems on their watercraft, and threatening to spread EWM to other waterbodies if not properly cleaned off before travel and re-launch.

According to Mr. McComas: “treating heavy EWM growth could reduce the potential for the spread of EWM to other lakes. However, there is a potential to spread EWM from boating activities whether EWM is treated or not. Typically not all the EWM is treated anyway. We still rely on boaters to inspect and remove plants from their boat trailers.”

#### **Consideration #5: Benefit to public recreation users (and subsequently local economy via tourism)**

Mr. McComas has advised that: “the EWM condition in the nearshore area is primarily a recreational issue along with aesthetic concerns.” While the District’s main focus is water quality improvement via capital improvement projects (as indicated by makeup of the WMP and agreement by multiple board members on a variety of occasions) secondary public benefits may be attained by the management of EWM. Some of these include public recreation benefits (all three lakes with EWM have public boat launches), and subsequently, promotion of local tourism. As we’ve seen through our watercraft inspection survey data, boaters come from all over the state to launch at Forest/Bone/Comfort lakes. Reducing abundance of EWM may improve recreational quality, especially for those boaters that prefer to boat in the shallows, such as carp fishermen. Improving these nearshore areas for public users could result in higher public use, and in theory more local economic stimulation from outside visitors.

#### **Consideration #6: Benefit to private recreation users (i.e. shoreline homeowners)**

Within this memo, shoreline homeowners are categorized separately from public users due to 1) their focus on the nearshore area (most boaters other than fishermen generally recreate in deeper waters where plants do not grow) and 2) their less-direct impact on local tourism since they tend to be local residents

## MEMORANDUM

### Comfort Lake-Forest Lake Watershed District

themselves. Due to shoreline owners' direct relationship to the nearshore (littoral) area, they tend to benefit most from aquatic plant management efforts.

Anecdotally, many shoreline residents seem to be in favor of the District treating EWM. At the same time, some residents seem to be dissatisfied with the District's methods/limitations for treating EWM. District staff has had significant correspondence with a variety of shoreline homeowners that have expressed frustration regarding treatment area delineation methods (e.g. some shoreline owners would prefer all EWM stems are treated, not just the nuisance growth areas as delineated by Blue Water Science), and treatment area limitations (e.g. the DNR permit limits on treating near water lilies). This year, the District did not treat EWM on Bone Lake due to observed low densities during the delineation survey. It appeared that treatment of EWM had already occurred; presumably by shoreline homeowners. Additionally, many shoreline homeowners seem to desire general control of aquatic plants, invasive or otherwise. This type of treatment is the focus of the DNR's Aquatic Plant Management permit, which is specifically targeted for private shoreline homeowners for recreational benefits/watercraft access to open water.

If benefiting shoreline homeowners is a goal for the District, the Board may want to consider whether the District's methods and governmental limitations make it a suitable candidate for meeting that goal. It might be possible that the lake associations are better suited for this goal. If the Board wanted the District to subsidize treatments by lake associations, they might consider the program that the Chisago Lake Improvement District (LID) currently has wherein the lake associations are in control of the treatments; they do the surveying and contracting. The LID reimburses the lake associations for most of the cost. More details on this program are available upon request.

#### **Consideration #7: Precedence for watershed district management of EWM**

Currently, neither District staff nor Mr. McComas are aware of any other watershed districts that treat EWM. This is largely due to the lack of water quality impact.

# MEMORANDUM

## Comfort Lake-Forest Lake Watershed District

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**To:** Board of Managers  
**From:** Mike Kinney  
**Subject:** April AIS Update

**Date:** April 9, 2019

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### Background

The 2019 Aquatic Invasive Species (AIS) Prevention and Management Plan was distributed at the March 28, 2019 regular board meeting. Since that time, there haven't been any substantial updates within the program. The usual AIS Update will be provided at the May 23<sup>rd</sup> regular board meeting. For the April 18<sup>th</sup> meeting, instead of providing the usual update, staff proposes to provide some educational information regarding invasive plant treatments.

At the April 8<sup>th</sup> special board meeting, there was some discussion regarding AIS and invasive plant treatment regulations. This topic has been discussed several times in the past. However, the subject matter can be complex and oftentimes confusing. The purpose of this memo is to ensure the Board and staff all have a clear understanding of applicable regulations.

### Invasive Plant Treatment Regulations Summary

#### Types of Permits

The Department of Natural Resources (DNR) regulates many forms of aquatic plant management (e.g. both invasive and native plant management, chemical and some mechanical treatments). The DNR offers two types of permits for managing aquatic vegetation:

1. The **aquatic plant management (APM) permit** can be used to manage all aquatic plants, whether they are native or invasive. This permit is generally issued to lake homeowners or groups of lake homeowners who want to maintain a clear area near their property for recreation. This permit has an associated fee (typically \$35.00 per landowner) and no grant funds are available. According to the DNR's website: "The purpose of the DNR's aquatic plant management program is to balance native plant conservation with the desires of lakeshore residents to recreate and access their property," ([www.dnr.state.mn.us/apm/index.html](http://www.dnr.state.mn.us/apm/index.html), accessed 4/9/19). To staff's knowledge, the CLFLWD has never obtained an APM permit. The District does help the City of Forest Lake apply for its APM permit for the mechanical harvester.
2. The **invasive aquatic plant management (IAPM) permit** is designed for targeted treatment of invasive plants. Impacts to native plants are to be avoided when doing work under an IAPM permit. This is the permit that the District obtains for herbicide treatments (e.g. curly-leaf pondweed and flowering rush treatments). The DNR only issues one IAPM permit per lake, per species, per season. In the past the DNR offered a grant program for invasive plant treatments but has not had funding to offer the program in 2018 or 2019. According to the DNR's website: "The DNR's goal of invasive plant management is to minimize harmful effects caused by invasive plants while also protecting the natural resources and their use in the State. Once an invasive species is established in a waterbody, eradication is an unrealistic goal," ([www.dnr.state.mn.us/invasives/iapm.html](http://www.dnr.state.mn.us/invasives/iapm.html), accessed 4/9/19).

## MEMORANDUM

### Comfort Lake-Forest Lake Watershed District

#### 150-foot Shoreline Area

Under the IAPM permit, if treatment within 150 feet of the shoreline is proposed, the permittee must either:

1. Obtain signatures from all landowners within 150 feet of the treatment area, or
2. Obtain a signature waiver from the DNR.

In the earlier years of the AIS program, the District obtained signatures for several of its invasive plant treatments which was a time-consuming process that threatened to delay treating within the optimal time window. In more recent years, the District has obtained signature waivers on Forest Lake, Bone Lake, and Comfort Lake. In order to do this, staff submitted a written request to DNR which explained why obtaining signatures is an undue burden (i.e. timing delays lowering treatment efficacy). The request must be approved by DNR. Then the District was required to ensure an approved form of alternative notice was provided prior to treatment (e.g. news media release, public notices in a local newspaper, public meeting, or mailing to all affected landowners). The CLFLWD has provided a combination of all of these methods in the past. Note that landowners may still “opt out” of having treatment done within 150 feet of their shoreline if they submit a request to the District. Staff have not received many of these in the past, but there have been a couple opt out requests related to flowering rush treatment, which were relayed to the herbicide application contractor.

#### Mitigating Impacts (15% Littoral Area Limit and Water Lilies)

The DNR aims to preserve the natural ecology of waterbodies and avoid significant impacts to native plant species. As such, it enforces certain limitations on plant management. One of which is reserving the right to deny proposed treatments that are within approximately 50 feet of native plants such as water lilies. It is common for DNR staff members to perform a field survey of the proposed treatment area prior to issuing the permit. It is during this survey that they may identify the need for such limitations. Additionally, DNR sets limits on the cumulative acreage of management in a given waterbody in a given year. DNR’s website explains:

*The littoral area is the surface area of a body of water where the depth is 15 feet or less and where most aquatic plants will grow. The littoral area is used to calculate the cumulative area in which aquatic plant management may occur. The following permit restrictions are intended to reduce risk of damage to native plants and impacts to water quality. Additional information is available on the [value of aquatic plants and water quality](#).*

- **Mechanical Removal:** cannot exceed 50% of the littoral area
- **Herbicide:** cannot exceed 15% of the littoral area
- **Mechanical and Herbicide Combined:** cannot exceed 50% of the littoral area

*In some instances, the DNR may allow treatment of more than 15% of the littoral area with herbicides or more than 50% with mechanical removal under a variance and a permit.*

Note that the littoral area and 150-foot distance from the shoreline are not always one in the same, though there will always be some amount of overlap. In past years, the District began drafting lake vegetation management plans (LVMPs) for some lakes in preparation for applying for a variance, as described above. However, the draft LVMPs were never finalized due to the need for variances being low at that time.

#### **Resources** (hyperlinks)

##### CLFLWD Materials

- [September 30, 2015 memo – Lake Vegetation Management Plans](#)
- [Shoreline Homeowner Tools and Rules Handbook](#) (invasive species summary on pg. 3)

## MEMORANDUM

### Comfort Lake-Forest Lake Watershed District

#### DNR Materials

- [Invasive Aquatic Plant Management webpage](#)
- [Aquatic Plant Management webpage](#)
- [References on management of aquatic plants](#)
- [Wisconsin DNR and USACE - Small-scale herbicide treatments](#)
- [Herbicide treatments in Wisconsin lakes](#)
- DNR Best Management Practices
  - [Eurasian watermilfoil](#)
- [Invasive Species Specialist Contacts](#)

#### Blue Water Science

- [Curly-leaf pondweed growth characteristics fact sheet](#)

**MEMORANDUM**  
**Comfort Lake-Forest Lake Watershed District**

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**To:** Board of Managers

**Date:** May 15, 2019

**From:** Mike Kinney

**Subject:** Forest Lake Plant Harvester

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**Introduction**

This topic was last discussed at the May 9<sup>th</sup> regular board meeting. At that time, it was noted that the Minnesota Boating Guide indicates that: “Vegetation that is cut or pulled must be immediately and permanently removed from the water and disposed of on high ground where it will not re-enter the lake,” (MN Boating Guide, page 53). Staff was directed to look into this regulation and determine the extent to which the Forest Lake plant harvester is required to collect cut plant fragments.

**Plant Fragment Collection Requirements**

Staff spoke with the MN Department of Natural Resources (DNR) Aquatic Plant Management (APM) permit contact, Shane McBride, about this topic. Mr. McBride confirmed that the DNR does in fact require removal of cut plant fragments. The intent of this requirement is to prevent operators (e.g. plant harvesters, homeowners cutting plants by hand, etc.) from simply leaving all the material out in the lake and creating a nuisance for others around the lake. The DNR understands that it is not possible to collect 100% of plant fragments, as some will inevitably float away before getting picked up or will be caught below the surface and may resurface later on. The DNR expects harvesters to do their due diligence in operating the machinery in a responsible way and picking up as much plant material as practicable (e.g. make sure they are paying attention and not letting the conveyer get overloaded). Furthermore, plant fragments tend to appear in lakes due to natural causes and/or causes outside the harvesters’ control, which may make it difficult to determine exactly which fragments were caused by the harvester and which were pre-existing. The DNR does not require harvesters to circle back, or follow along with a separate boat, in order to pick up 100% of plant fragments. Neither the District nor the City of Forest Lake have been reported to be in violation of statutes in past years of harvester operation due to leaving behind plant material.

While the rules indicate cut plant material must be collected, the DNR is cognizant of the fact that it is impossible to collect 100% of plant fragments.

**Impacts of Plant Fragments**

In recent years, the District has worked with the City of Forest Lake to revise its harvester map to avoid known patches of aquatic invasive species (AIS) which would be present in the timeframe that the harvester operates (July-August). Such species include Eurasian watermilfoil and flowering rush (note that curly-leaf pondweed typically dies back and isn’t at the water surface by July). Through its involvement in developing the harvester map and helping provide oversight to ensure the operator is in fact following the map, the District aims to prevent fragmentation and spread of invasive plant species.

The topic of zebra mussels has also been brought up at past board meetings. Both Forest Lake and Comfort Lake are listed as infested with zebra mussels. The District performed assessment surveys for each lake immediately after zebra mussels were initially observed. Both assessments found the populations to be too abundant to feasibly attempt eradication methods. Little Comfort Lake is also listed as infested with zebra mussels due to its close connection with Comfort Lake through the culvert running under Highway 8. Forest

## **MEMORANDUM**

### **Comfort Lake-Forest Lake Watershed District**

Lake drains to Comfort Lake via the Sunrise River, which flows out of Forest Lake, through a series of wetlands, and into Comfort Lake. The water leaving Forest Lake presumably contains millions of zebra mussel larvae, called veligers. A female zebra mussel can produce 100,000 to 500,000 eggs per year (MN DNR). Fertilized eggs become veligers which float freely in the water column until they find a suitable surface on which to attach and develop a shell. While adult mussels may attach to plant fragments and float downstream, many more microscopic veligers are constantly floating downstream in the water column.

#### **Feasibility of Fragment Collection**

There does not appear to be a harvester on the market that guarantees 100% plant fragment pickup. Staff called around to a few different vendors and service providers in the area. While some salespeople may insist that their machine's design has superior plant pickup capacity, all agreed that it is impossible to get every single fragment.

While it is not required to follow the harvester and pick up remaining plant fragments, the District may opt to do so if it feels it is necessary. The District does not currently own a boat, so rental or purchase would be necessary. The District will work with PLM Lake and Land Management this year to use their boat to collect the flowers off flowering rush in Forest Lake (this helps prevent the plant from spreading via seeds). For reference, PLM charges \$200/hour to do this. PLM indicated that the same rate would apply if it worked with the District to collect plant fragments from the harvester. City records indicate that the harvester ran on 28 separate occasions in 2018, collecting 36 loads of material. Assuming that each harvesting session is approximately an hour in length, this would equal approximately \$5,600 to hire PLM to assist with the collection effort. These are just general ballpark figures to help get a sense of the level of financial commitment this effort would take. Further research and field reconnaissance with the harvester would be necessary to obtain a clearer cost estimate.

#### **Purpose and Goal of Fragment Collection**

Understanding the goal for collecting plant fragments would be helpful in identifying the need to engage in such an activity. Staff has determined that there isn't presently a regulatory concern with how the harvester currently operates. Steps have been taken to prevent invasive plant fragmentation and spread through the use of strategic mapping, and zebra mussel spread via attachment to plant fragments does not appear to be a concern due to veligers in the water column and current infestation of Comfort Lake. To staff's knowledge, there have been no complaints from Forest Lake homeowners/boaters regarding excess plant fragments from the harvester being a nuisance. Neither the City of Forest Lake nor the Forest Lake Lake Association President, Jerry Grundtner, have received any formal complaints. Mr. Grundtner suggested that most people seem to understand that in order to get rid of the bulk of plant growth that inhibits boating, some residual plant fragments are going to occur.

If recreational nuisance conditions are in fact the concern, the District may evaluate whether addressing such a concern is in its mission/watershed management plan, and if so, what its priority ranking would be compared to other District initiatives.

#### **Aquatic Plant Management Permitting**

In recent years, the CLFLWD became more involved in the planning and oversight of Forest Lake's harvester operation. The goal of this was to enact more control over the harvester's path and avoid known patches of invasive plants (as noted above). The City of Forest Lake owns the harvester, and in past years was working with local resident volunteers to operate it. Since the District's involvement, the City now hires an operator to run the harvester and uses a mounted GPS unit to track the harvester's location and compare to the permitted areas. As part of this shift, the District provided the new harvester map and went

## MEMORANDUM

### Comfort Lake-Forest Lake Watershed District

through the DNR permitting on the City's behalf, as a courtesy. City staff is willing to take over the permitting process themselves and apply for the Aquatic Plant Management (APM) permit in the City's name. The District could still be involved through informal coordination with City staff, but it would no longer be named on the permit. Now that the mapping has been updated to avoid invasive plants, and the GPS unit has been taken care of, there isn't as much need for the District to be as closely involved. If the Board wishes to give staff direction on this matter, staff recommends it coordinate with the City to have the City apply for its own APM permit from now on and to stay informally involved with the mapping and tracking.

#### References

- MN Boating Guide, 2019. <https://files.dnr.state.mn.us/rlp/regulations/boatwater/boatingguide.pdf>. (Accessed May 14, 2019)
- MN DNR Zebra Mussel fact page. <https://www.dnr.state.mn.us/invasives/aquaticanimals/zebramussel/index.html>. (Accessed May 14, 2019).

**MEMORANDUM**  
**Comfort Lake-Forest Lake Watershed District**

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**To:** Board of Managers

**Date:** June 20, 2019

**From:** Mike Kinney

**Subject:** Eurasian Watermilfoil Treatment Methodology

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**Background/Discussion**

During the 2019 budgeting process, it was decided that the District would not budget for Eurasian watermilfoil (EWM) treatments in 2019. There was discussion among the managers that the District could provide guidance to local lake associations and residents regarding best practices for treating EWM. Staff researched this topic and recommends the following points.

First, the District staff are always available to assist lake associations, their members and citizens in general in understanding the ecology and regulations regarding EWM in any District lake. As a part of that service, District staff rely in general on the MN Department of Natural Resources (DNR) for most guidance on aquatic plant management (invasive or otherwise). As such, staff readily shares that same information with residents and helps in explaining various elements as needed. The DNR has regulated such activities for many years and utilizes full time professional staff to review proposed treatments (oftentimes performing field reviews) and issue permits. As such, the District may want to continue to reach out to local lake residents and lake associations to increase knowledge and awareness of the various regulations associated with managing aquatic plants. For example, any time chemicals are used to treat aquatic plants (invasive or otherwise), a permit is required.

Staff recommends that the first step in properly treating EWM is to ensure the necessary permits are obtained if appropriate. By working with the DNR's regulatory program, staff predict that many improper treatment techniques will be avoided, because the DNR will review and decide whether they are appropriate. For example, if a group or organization is proposing something that would cause too much damage to native plants, DNR would make the call to stop that activity. DNR has our lakes' ecological integrity and native plant populations' best interests in mind.

Beyond conforming to regulations, homeowners may wish to use some other best practices to ensure optimal long-term management of EWM. One such best practice is alternating the type of herbicide being used every 3-4 years in order to prevent developing resistant strains. There are many types of herbicide available to treat EWM. Two common types, as identified by their active ingredient, include 2,4-D and triclopyr. There are a variety of brand names that utilize each active ingredient. Some, such as Navigate and Alligare for example, only use 2,4-D. Some, such as Renovate for example, only use triclopyr. If treated for many years in a row with the same active ingredient, EWM may develop a resistance to the herbicide. Many herbicide applicators recommend alternating between 2,3-D and triclopyr roughly every 3-4 years to prevent developing resistance. For more details on this, residents are encouraged to reach out to the DNR and herbicide application professionals.

If organizations are considering mechanical removal methods, as opposed to chemical control, staff recommends that they make certain to carefully collect as many EWM fragments as possible. EWM in particular tends to propagate from fragments and spread throughout the lake. If using mechanical control methods, such as hand pulling or using a harvesting machine, extra care should be taken to collect and dispose of any severed EWM fragments.

## MEMORANDUM

### Comfort Lake-Forest Lake Watershed District

Finally, staff recommends that, in cases of large-scale management strategies, homeowners are encouraged to work with licensed professionals. Some herbicide applicator professionals recommend that homeowners are perfectly capable of performing do-it-yourself treatments for small-scale situations (e.g. treating aquatic plants along 50% of their own shoreline area). In these cases, homeowners still need to get a permit and follow the herbicide product label instructions. As treatments start to increase in size and scope, utilizing a trained and licensed professional may become more and more necessary. For larger treatments, licensed applicators may be better equipped to properly identify the target plant and use proper dosing methods.

In summary, staff recommends that the following best practices when it comes to EWM management:

1. **Know the rules and get a permit.** DNR's professional staff are charged with protecting our lakes, while keeping in mind that there is a reasonable level of plant management that can occur.
2. **Consider methods to prevent developing herbicide-resistant strains when using chemical control techniques.** Alternative type of herbicide every 3-4 years or so and consult with DNR and herbicide applicator professionals on the matter.
3. **Take care to prevent spread of fragments when using mechanical control techniques.**
4. **Consider hiring a professional to implement your treatment.** Small-scale applications, such as single shorelines, may oftentimes be appropriate for a do-it-yourself treatment, but larger scale operations may be better suited for a licensed professional.

Aquatic plant management is a complex topic with many details to consider. The District can be a resource for local residents and homeowner organizations to turn to. While District staff may not be able to answer every question there is on the matter, we can usually direct people to the right sources of information. District staff will continue to maintain relationships with local lake associations and provide resources to help residents protect and improve their lakes.

No action is recommended for this agenda item, unless the Board wishes to give staff some specific direction on this matter.

**MEMORANDUM**  
**Comfort Lake-Forest Lake Watershed District**

**To:** Board of Managers

**Date:** June 2, 2022

**From:** Mike Kinney

**Subject:** EWM Cost Analysis and Management/Funding Considerations

**Background/Discussion**

At the May 26<sup>th</sup>, 2022, regular board meeting, the Board directed staff to prepare a cost impact analysis of bringing Eurasian watermilfoil (EWM) management in-house again. Given time constraints, District staff reached out to only a couple applicators it commonly works with to get rough estimates. As the Board considers this topic, it should be noted that these prices can fluctuate greatly year to year. In both conversations, staff was told the prices of diquat, 2-4-D, and other common herbicides are rising due to supply issues. Lastly, these estimated prices will vary depending on depth of water at each treatment location, hence the range of prices for each listed treatment.

In addition to the cost analysis, information on EWM management/funding was included for the Board’s consideration as they discuss potentially bringing this activity in-house or providing funding to the lake associations to continue performing such treatments.

**Estimated Treatment Costs Based on Historical Peak EWM Growth**

Lake Name	Forest Lake	Comfort Lake	Bone Lake
<b>*Past Peak EWM treatment acreages</b>	*2020 = 53.8 acres	*2021 = 15 acres	2014 = 6 acres
<b>Diquat</b> (estimated \$200 per acre)	\$10,760	\$3,000	\$1,200
<b>ProcellaCOR</b> (estimated \$1,000 - \$2,000 per acre, depending on depth)	\$53,800 - \$107,600	\$15,000 - \$30,000	\$6,000 - \$12,000
<b>Diquat-ProcellaCOR Mix</b> (estimated \$600 - \$900 per acre, depending on depth)	\$32,280 - \$48,420	\$9,000 - \$13,500	\$3,600 - \$5,400
<b>2-4-D</b> (estimated \$450 - \$556 per acre depending on depth)	\$24,210 - \$29,913	\$6,750 - \$8,340	\$2,700 - \$3,336
<b>Whole-Lake Fluridone Treatment</b> (cost per acre unknown)	Cost unknown (2,220 acres)	Estimated \$60,000 per info from CLA (218 acres)	Cost unknown (221 acres)

**History of EWM Management on District Lakes (Any treatment listed after 2017 was performed by the lake associations)**

Forest Lake EWM treatment history: 2015 (30 acres), 2016 (13.9 acres), 2017 (33.4 acres), 2018 (40.7 acres), 2019 (49.3 acres), 2020 (53.8 acres), 2021 (8.4 acres)

Comfort Lake EWM treatment history: 2014 (0.8 acres), 2015 (0.5 acres), 2016 (7.5 acres), 2017 (3.2 acres), 2018 (1.5 acres), 2019 (3.2 acres), 2020 (7.5 acres), 2021 (15 acres)

Bone Lake EWM treatment history: 2014 (6 acres), 2015 (3.4 acres), 2016 (0.7 acres)

**EWM Management and Funding Considerations**

Management Considerations – Eurasian watermilfoil is largely considered a recreational nuisance and not an impairment to water quality like curly-leaf pondweed (CLP). It persists for most of the growing season

# MEMORANDUM

## Comfort Lake-Forest Lake Watershed District

and does not die back mid-summer resulting in water quality degrading phosphorus releases like CLP. Impact on native species is also often minimal, as EWM experiences an initial density boom after introduction, followed by a noticeable decline as sediment nitrogen levels are depleted. Currently, chemical treatment is considered the most effective management option for knocking the plant down. However, long-term eradication is highly unlikely, and any treatment conducted should be considered for seasonal control resulting in, at best, 1 to 3 seasons of relief.

Another consideration for taking EWM management in-house again is the District’s prior history with this activity. One of the contributing factors for the District dropping this management activity after 2017 was the large influx of messages received by staff from dissatisfied lakeshore property owners. These messages often expressed their frustrations with delineation methods (designating which areas are treated and which aren’t – based on the size of an EWM patch) and treatment area limitations (e.g., the DNR permit limits treatment near water lilies). In the absence of the District’s involvement with management, the local lake associations and lakeshore property owners have continued treatments on their respective lakes. While initially management approaches resembled the District’s efforts, in recent years activities have become more aggressive and experimental to attempt to meet the desired outcomes of lake residents. The professional judgement of District staff would likely not have led to pursuing such approaches, which could lead to dissatisfaction again with the Districts EWM management if taken in-house. (View [Attachment #1](#) for memos referenced in this section). Aggressive treatments may be successful in knocking back EWM, but will almost certainly come with harmful impacts to existing native plant populations as well.

Lastly, the Board should consider how bringing EWM management in-house again will align with the Aquatic Invasive Species Program goals listed in the 10-year Watershed Management Plan (image and weblink to AIS Program goals page listed below).

### 3011 Program Goals

- » **Goal 1:** Continue use and refinement of the District’s prevention and early detection & rapid response initiatives to reduce the risk of new invasive species introductions to District waterbodies and prevent the spread of existing infestations to other waterbodies.

Priority Ranking by Lake Management District (LMD)	Bone LMD: High	Little Comfort LMD: High	Forest LMD: High	Comfort LMD: High
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- » **Goal 2:** Manage existing populations of AIS to reduce phosphorus loading.

Priority Ranking by Lake Management District (LMD)	Bone LMD: High	Little Comfort LMD: High	Forest LMD: High	Comfort LMD: High
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- » **Goal 3:** Manage existing populations of AIS to improve native plant diversity by managing AIS populations that pose a risk to native plant health.

Priority Ranking by Lake Management District (LMD)	Bone LMD: High	Little Comfort LMD: High	Forest LMD: High	Comfort LMD: High
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- » **Goal 4:** Ensure ecological integrity is protected by providing guidance and technical support to other organizations and residents who manage AIS for recreational benefits.

Priority Ranking by Lake Management District (LMD)	Bone LMD: High	Little Comfort LMD: High	Forest LMD: High	Comfort LMD: High
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**Link to 3011 Program Goals shown above:**

[https://www.cflwd.org/documents/2022-2031CLFLWDWatershedManagementPlan\\_Full.pdf#page=76](https://www.cflwd.org/documents/2022-2031CLFLWDWatershedManagementPlan_Full.pdf#page=76)

## MEMORANDUM

### Comfort Lake-Forest Lake Watershed District

#### Funding Considerations -

If the Board decides not to bring EWM management in-house again but would like to fund the lake association's management efforts, again it should be considered how this would align with the 10-year Watershed Management Plan. Additionally, consideration should also be given to what types of EWM management activities would be eligible if funding is to be provided. As mentioned previously, in recent years management approaches have become more aggressive and experimental. A relevant example, as it is being planned for this summer, is the Comfort Lake whole-lake fluridone treatment. While all necessary permits have been issued for this treatment by the DNR, District staff have some concerns which have been shared with the Comfort Lakes Association.

In a paper published in 2009 on the effects of whole-lake fluridone treatments ([attachment #4](#)), negative impacts to native plants and decrease in water clarity were observed as results of this treatment method. Even at fluridone concentration levels similar to those planned by the CLA, impacts to native plants were observed. One of several native species that was found to be susceptible was coontail. This is especially concerning given that in the [2019 Comfort Lake point intercept survey](#) coontail was found to be the most abundant submerged native aquatic plant in Comfort Lake. The researchers of this study expect lakes with more susceptible aquatic vegetation to see the greatest decrease in water clarity and increase in sediment resuspension. Given the observed water clarity decreases observed in this study, the District should expect to see one to several seasons of reduced water clarity in Comfort Lake.

The 10-year Watershed Management Plan's description for the [3004.D Commercial/Community Grant](#) is the following: "The CLFLWD Community Grant program offers grants for projects on commercial, multi-family residential, and non-profit properties that improve water quality and/or decrease stormwater runoff and/or preserve native plant and wildlife communities affected by lakes, rivers and wetlands" As the literature has shown whole-lake fluridone treatments have the potential to negatively impact native species and water clarity, staff's professional stance is such activities do not align with the 10-year WMP and should not be eligible for funding.

#### **Attachments**

1. [Past memos on AIS and EWM management considerations](#)
2. [Minnesota Aquatic Invasive Species Research Center's \(MAISRC\) Eurasian watermilfoil control options](#)
3. [Minnesota Department of Natural Resources EWM webpage](#)
4. [Whole-Lake Herbicide Treatments for Eurasian Watermilfoil in Four Wisconsin Lakes: Effects on Vegetation and Water Clarity](#)



## MEMORANDUM

Comfort Lake-Forest Lake Watershed District

**Date:** 1/6/2023  
**To:** CLFLWD Board of Managers  
**From:** Mike Kinney, District Administrator  
**Subject:** Eurasian Watermilfoil Management



**District Wide**

### Background/Discussion:

The purpose of this memo is to prime the Board's discussion on the District's role in Eurasian watermilfoil (EWM) management. The Board last discussed this topic at the June 9<sup>th</sup>, 2022, regular board meeting (memo linked below). The memo describes financial, EWM management, and 10-year WMP considerations. In addition to the memo, Steve McComas (owner of Blue Water Science) was invited to the meeting to take EWM questions from the Board (meeting minutes linked below). Ultimately, no decision was made on whether the District would take EWM management in-house or allow grant funds to be used for EWM management by local lake associations. With this topic being discussed again, Board managers are encouraged to weigh the considerations presented in the June 9<sup>th</sup> memo on EWM management.

### Attached

- June 9<sup>th</sup>, 2022 Regular Board Meeting – [Memo: EWM Cost Analysis and Management/Funding Considerations](#)
- June 9<sup>th</sup>, 2022 Regular Board Meeting- [Minutes: Eurasian Watermilfoil](#)