

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 26th, 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
*Past Peak EWM treatment acreages	*2020 = 53.8 acres	*2021 = 15 acres	2014 = 6 acres
Diquat (estimated \$200 per acre)	\$10,760	\$3,000	\$1,200
ProcellaCOR (estimated \$1,000 - \$2,000 per acre, depending on depth)	\$53,800 - \$107,600	\$15,000 - \$30,000	\$6,000 - \$12,000
Diquat-ProcellaCOR Mix (estimated \$600 - \$900 per acre, depending on depth)	\$32,280 - \$48,420	\$9,000 - \$13,500	\$3,600 - \$5,400
2-4-D (estimated \$450 - \$556 per acre depending on depth)	\$24,210 - \$29,913	\$6,750 - \$8,340	\$2,700 - \$3,336
Whole-Lake Fluridone Treatment (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

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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.clflwd.org/documents/2022-2031CLFLWDWatershedManagementPlan_Full.pdf#page=76

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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](#)