



"Providing Professional Resources for Management of Your Lake or Pond"

October 27, 2021

White River Flowage Lake Management District
Lynn Bockenhauer

Re: 2021 Invasive Species Survey and Report, White River Flowage, Waushara County, Wisconsin

Dear Ms. Bockenhauer and Board members:

In response to your request for aquatic plant management and surveying, Wisconsin Lake & Pond Resource, LLC (WLPR) visited the site 2021 to document populations of EWM growth and assess the need for future management.

Background Information

White River Flowage is a man-made 125-acre impoundment in the Town of Dakota, Waushara County. Three aquatic invasive species (AIS) are confirmed in the Lake: Eurasian water-milfoil (EWM), curly-leaf pondweed (CLP), and flowering rush. Eurasian water-milfoil has grown to nuisance levels and required periodic past management. Control of EWM has focused on the use of aquatic herbicides and was most recently in 2019 to 7.0 acres.

2021 Aquatic Plant Survey

WLPR conducted the September 2, 2021 survey using a meander method around the entire lake with rake throws and visual observations to verify the presence of AIS. All locations of AIS, primarily EWM, were recorded on a GPS. Observations of native aquatic plant species were recorded to create a list of those present within the lake. Results of the mapping survey are found on Figure 1.

Composition of the aquatic plant community remained steady and of good diversity for similar lakes within the same region. Overall, 14 different native aquatic plant species were noted along with two AIS; Eurasian water-milfoil and curly-leaf pondweed (Table 1). Similar to past surveys, dense vegetation was noted in various portions of the lake. It was primarily water stargrass, coontail, and common waterweed with many floating-leaf plants present on the edges. Two large beds of wild rice were noted in the northern portion of the flowage.

One AIS is identified within the White River Flowage and has been managed for control. Most recent management includes a targeted herbicide application as outlined above. The 2021 survey identified EWM growing sporadically throughout much of the lake with denser populations in the central portion. EWM in the central portion formed true beds, sometimes monotypic, and increasingly dense towards the mid-portion of the lake. Density reduced on the edges and both up and downstream. The densest portion is in a similar location to past surveys. In areas where EWM was dense enough to map it covered 9.34 acres as follow: 4.91 acres of low density, 0.73 acres of moderate density, and 3.7 acres of high density (Figure 1).

An aquatic plant community is dynamic and changes year to year based on growing conditions and many other factors. Some species identified in 2021 were not directly sampled in the past and vice versa, but this should not be a cause for concern. The aquatic plant community of the White River Flowage remains healthy and vital to protecting the lake's health.



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NEXT STEPS

After successful EWM management in the past, this invasive species was temporarily reduced and has now regrown to increased density and coverage (Figure 1). Past surveys and management for the lake have shown that EWM can occupy large colonies and require management up to whole-lake dosing. All past large-scale management of EWM on the White River Flowage has used varying active ingredients, but primarily 2,4-D. Diminished longevity of results from the treatments prior to 2019 indicates that continued use of 2,4-D may not be a feasible treatment option for the Lake.

Current DNR recommendations for control of AIS include the use of an integrated pest management approach, or IPM. The use of IPM includes changing methods of control, including but not limited to: varying herbicide active ingredients, mechanical harvesting, hand or suction harvesting, and no-action. The spread of EWM in White River Flowage recorded in 2021 is found primarily in the central portion and up to high densities. Individual plants were commonly found outside mapped areas, but are too small and spread out to be feasibly controlled.

It is our recommendation to continue to conduct management in select areas for control of denser areas of EWM with continued monitoring for populations of EWM in 2022. A recommended timeline is as follows:

1. February/March – 2022: Apply for WDNR aquatic herbicide permit for up to 4.43 acres for control of EWM in areas of moderate and high density (Figure 1).
2. May/June – 2021: Herbicide application for EWM control and nuisance relief. Use of ProcellaCOR EC at 4-6 PDU/ac-ft is recommended.
3. August – 2022: Follow up AIS survey to document aquatic plant community and plan for 2023 and beyond
4. October/November – 2022: Prepare management report for 2023

If you have any questions, require any additional information, or would like a formal proposal on any of the above management options please contact us directly as follows:

Jim Scharl: (920) 872-2032 or jim@wisconsinlpr.com

Respectfully,

A handwritten signature in black ink, appearing to read 'Jim Scharl', is written over a light blue horizontal line.



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Table 1 – White River Flowage Aquatic Plants

Species	2021
Aquatic Invasive Species	
Curly-leaf pondweed	X
Eurasian water-milfoil	X
Submersed Species	
Common watermeal	X
Common waterweed	X
Coontail	X
Flat-stem pondweed	X
Floating-leaf pondweed	X
Long-leaf pondweed	X
Sago pondweed	X
Small duckweed	X
Southern naiad	X
Water stargrass	X
White-stem pondweed	X
Wild celery	X
Emergent Species	
Wild rice	X
Floating-Leaf Species	
White water lily	X
Total	16



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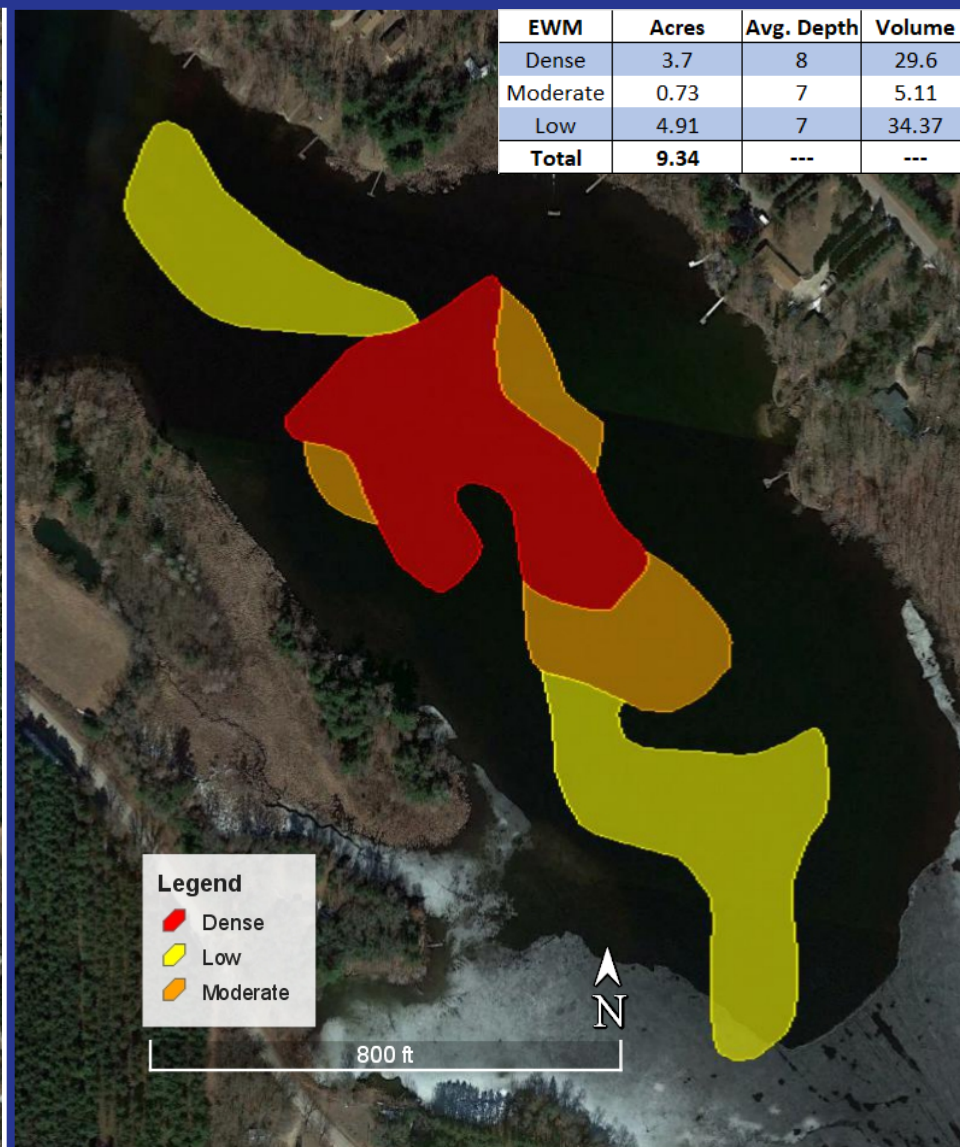
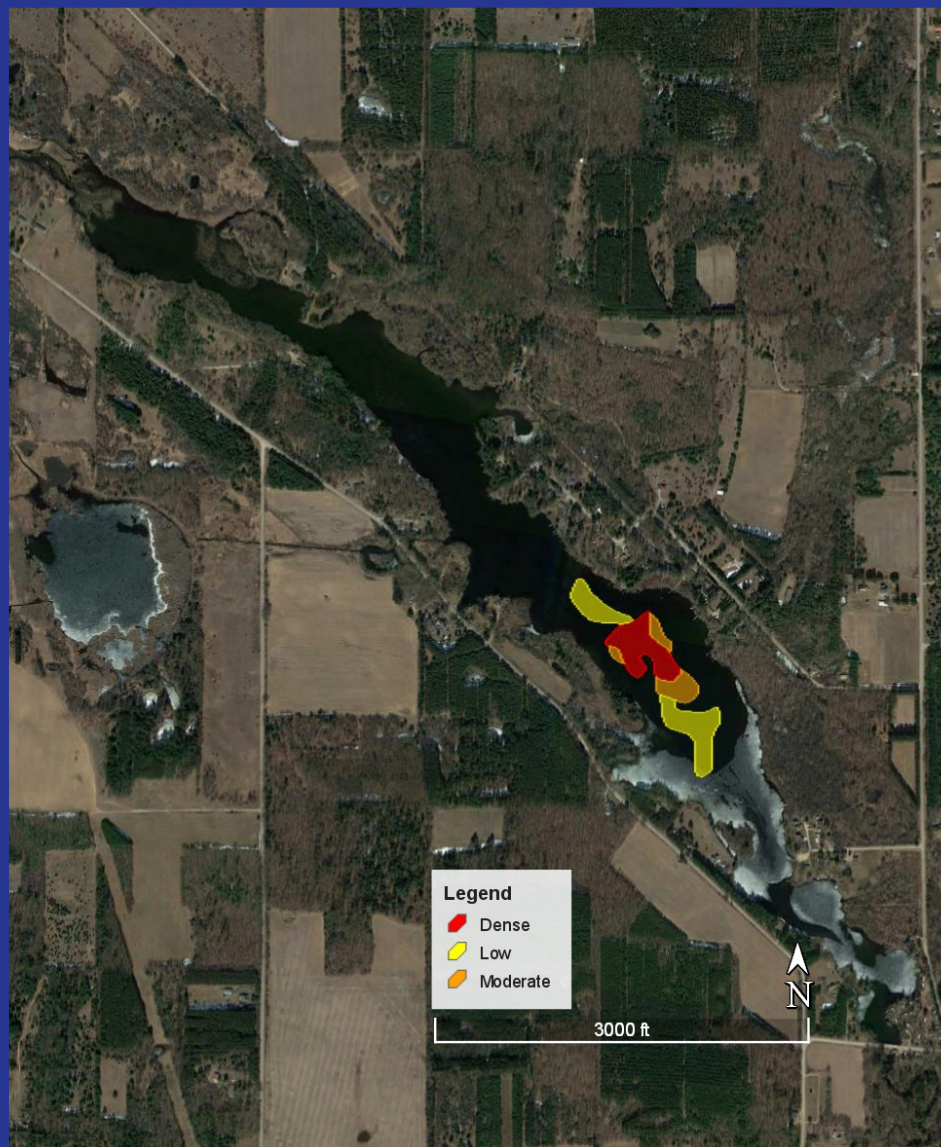
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Figures

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Toll Free: 866-208-0724
www.wisconsinlpr.com

N7828 Town Hall Rd.
Eldorado, WI 54932
Phone: (920) 872-2032
Fax: (920) 872-2036



EWM	Acres	Avg. Depth	Volume
Dense	3.7	8	29.6
Moderate	0.73	7	5.11
Low	4.91	7	34.37
Total	9.34	---	---