Crystal Lake Mechanical Harvesting Plan

Relevant sections extracted from Crystal Lake Aquatic Plant Management Plan – Jan 2026

Mechanical Harvesting Primer

Photograph 3.3-6. Mechanical harvester.

Aquatic plant harvesting is frequently used in Wisconsin and involves the cutting and removal of plants, much like mowing and bagging a lawn. Harvesters are produced in many sizes that can cut to depths ranging from 3 to 6 feet with cutting widths of 4 to 10 feet. Plant harvesting speeds vary with the size of the harvester, density and types of plants, and the distance to the off-loading area. Equipment requirements do not end with the harvester. In addition to the harvester, a shore-conveyor would be required to transfer plant material from the harvester to a dump truck for transport to a landfill or compost site. Furthermore, if off-loading sites are limited and/or the lake is large, a transport barge may be needed to move the harvested plants from the harvester to the shore in order to cut back on the time that the harvester spends traveling to the shore conveyor. Some lake organizations contract to have nuisance plants harvested, while others choose to purchase their own equipment. If the latter route is chosen, it is especially important for the lake group to be very organized and realize that there is a great deal of work and expense involved with the purchase, operation, maintenance, and storage of an aquatic plant harvester. In either case, planning is very important to minimize environmental effects and maximize benefits.

A mechanical harvesting strategy on Crytal Lake would likely be designed with the intention of providing nuisance relief in the form of cutting navigation lanes through dense aquatic plants in high-use areas such as riparian piers or high traffic corridors. Multiple (usually 2-3) cutting events during the growing season may be required to maintain navigation lanes. A WDNR permit (NR 109) is required when conducting mechanical harvesting operations with permits often issued as either 1-year permit or a 5-year permit. Mechanical harvesting permits often have conditions limiting the depth at which the harvesting may occur which is typically three feet to avoid disturbing the bottom sediments or risking the harvester becoming grounded in shallow water.

4.0 AQUATIC PLANT IMPLEMENTATION PLAN SECTION

The CLAA intends to update their Aquatic Plant Management (APM) Plan at roughly 5-year intervals to allow the WDNR to issue multi-year mechanical harvesting permits under WI administrative code NR109.

Management Goal 5: Actively manage aquatic plants to ensure recreational use of the lake is maintained

Management Action:	Conduct Integrated Pest Management Program towards EWM
Timeframe:	Ongoing
Facilitator:	CLAA APM Steering Committee
Description:	The long-term objective of this action is to minimize the negative attributes that EWM causes on Crystal Lake by maintaining navigation, recreational use, and aesthetics. The CLAA has outlined an Integrated Pest Management (IPM) approach toward managing EWM in order to reach the intended goal. *Other aspects of the CLAA's IPM Plan are excluded here but can be found in the full version of the APM Plan.* **Mechanical Harvesting Plan** Mechanical harvesting as a tool for future EWM management in Crystal Lake was supported by 72% of the survey respondents with 15% opposed. Sites considered for mechanical harvesting include areas within high riparian footprint, areas of local importance for recreation, and sites dominated by Eurasian watermilfoil. This type of management technique has the potential to serve as a long-term aquatic plant management tool for lakes where impacts to recreational use are taking place, either through native and/or non-native aquatic plant species alike. The use of a mechanical harvester may involve cutting lanes from high-use areas of the lake such as from pierheads out to deeper waters, or in other high use areas of the lake. In some cases, larger blocks of harvesting may be permitted rather than simply lanes. Cutting operations on two or more occasions during the growing season would likely be sufficient in achieving the seasonal relief from nuisance level plant growth. This type of program may require annual implementation to meet management goals. CLAA conducted a limited mechanical harvesting program in 2024-2025. Harvested sites included areas where dense aquatic plants are present, primarily comprised of EWM although some native plants can contribute to nuisance conditions during the summer as well. To protect native aquatic plant populations, CLAA seeks to target primarily EWM with a mechanical harvesting strategy guided by the most recently available EWM mapping survey data. Map 5 displays the CLAA's mechanical harvesting plan

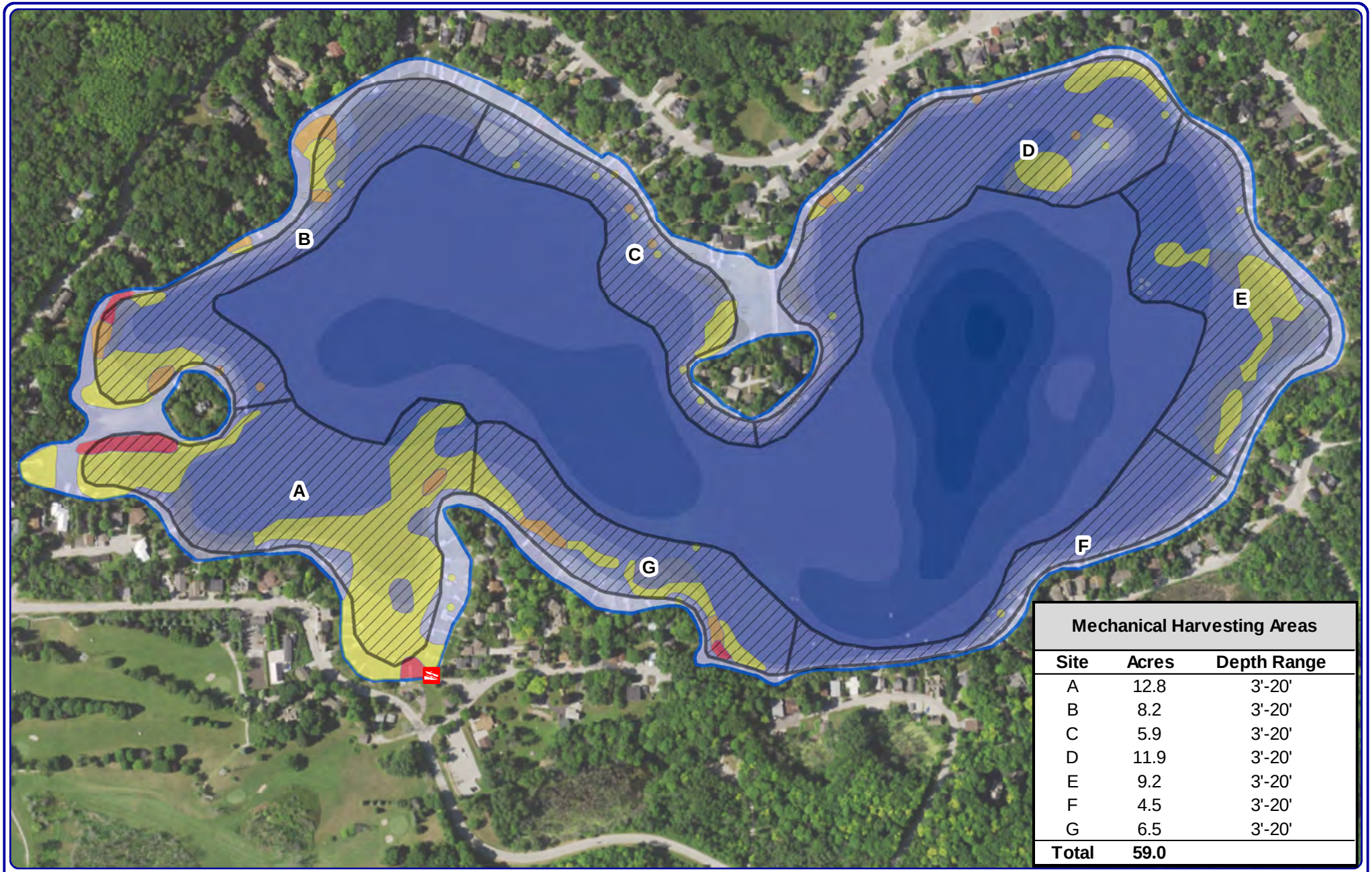
beginning in 2026. As recommended to CLAA by the local WDNR biologist, Craig Helker, all littoral areas of the lake spanning from 3' to approximately 20' are included in the permitted area. By including all littoral areas in the harvesting plan, the CLAA will have the ability if needed to target sites in the coming years that may not currently harbor dense aquatic plant growth but may develop into these conditions during the lifespan of the CLAA's multi-year mechanical harvesting permit. It is expected that not all sites will need harvesting in every given year and actual acreage harvested will be significantly lower than the maximum permitted amount. Annual budgetary constraints by CLAA also limit the harvesting activities each year, with CLAA striving for cost efficient use of this management technique. The harvesting sites are divided into seven sections to aid in CLAA's ability to dictate to the contracted harvesting firm which sites require cutting and which sites do not.

Stemming from WDNR regulator comments, CLAA volunteers will visually inspect harvest sites prior to cutting operations each year to ensure that EWM is a primary species present in the cutting site. Eurasian watermilfoil mapping surveys from 2024-2025 provide initial harvesting priority areas based on the recent known extents of the EWM population in the lake. CLAA would communicate with their contracted mechanical harvesting firm to ensure they work in sites populated with EWM and use proper GPS guidance to limit cutting to within the permitted sites.

The CLAA will work with WDNR regulators to seek a multi-year harvesting permit. Details of the haul route are displayed on Map 6 along with an indication of local identified wetlands and flood hazard areas. Harvested materials are off-loaded at the public access boat landing. The primary disposal location of harvested plant material is the James D Martin property located just to the east of the lake (Map 6).

Mechanical harvesting operations would have the following guidelines:

- Harvesting locations are limited to areas on the permit map.
- The harvester would not be permitted in waters less than 3-feet to minimize sediment disturbance.
- Cut no more than half the water depth.
- An attempt would be made to remove all gamefish, turtles, and other non-target organisms from the harvesting hopper immediately upon their capture, unless the action interferes with the safe operation of the equipment. In this instance, the organisms shall be unloaded when the equipment is docked for unloading. Precautions will be made to avoid bycatch.
- Aquatic plants that are cut must be removed from the water. Dislodged and floating plants not taken up by the harvester shall be removed as soon as possible.
- Reports summarizing harvesting activities shall be given to the WDNR each harvesting season. The report shall include a map showing the areas harvested, the total amount of plant material removed by weight (unit), volume (unit) and species – including by-catch, within 30 days of the last treatment to DNR APM Program.



Mechanical Harvesting Areas		
Site	**Acres**	**Depth Range**
A	12.8	3'-20'
B	8.2	3'-20'
C	5.9	3'-20'
D	11.9	3'-20'
E	9.2	3'-20'
F	4.5	3'-20'
G	6.5	3'-20'
Total	**59.0**	

N
W E
S

430
Feet

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

Sources:
Basemap: ESRI
Bathymetry: Digitized by Onterra
Aquatic Plant Survey: Onterra, 2025
Map Date: 1/12/2026 TWH

Project Location in Wisconsin

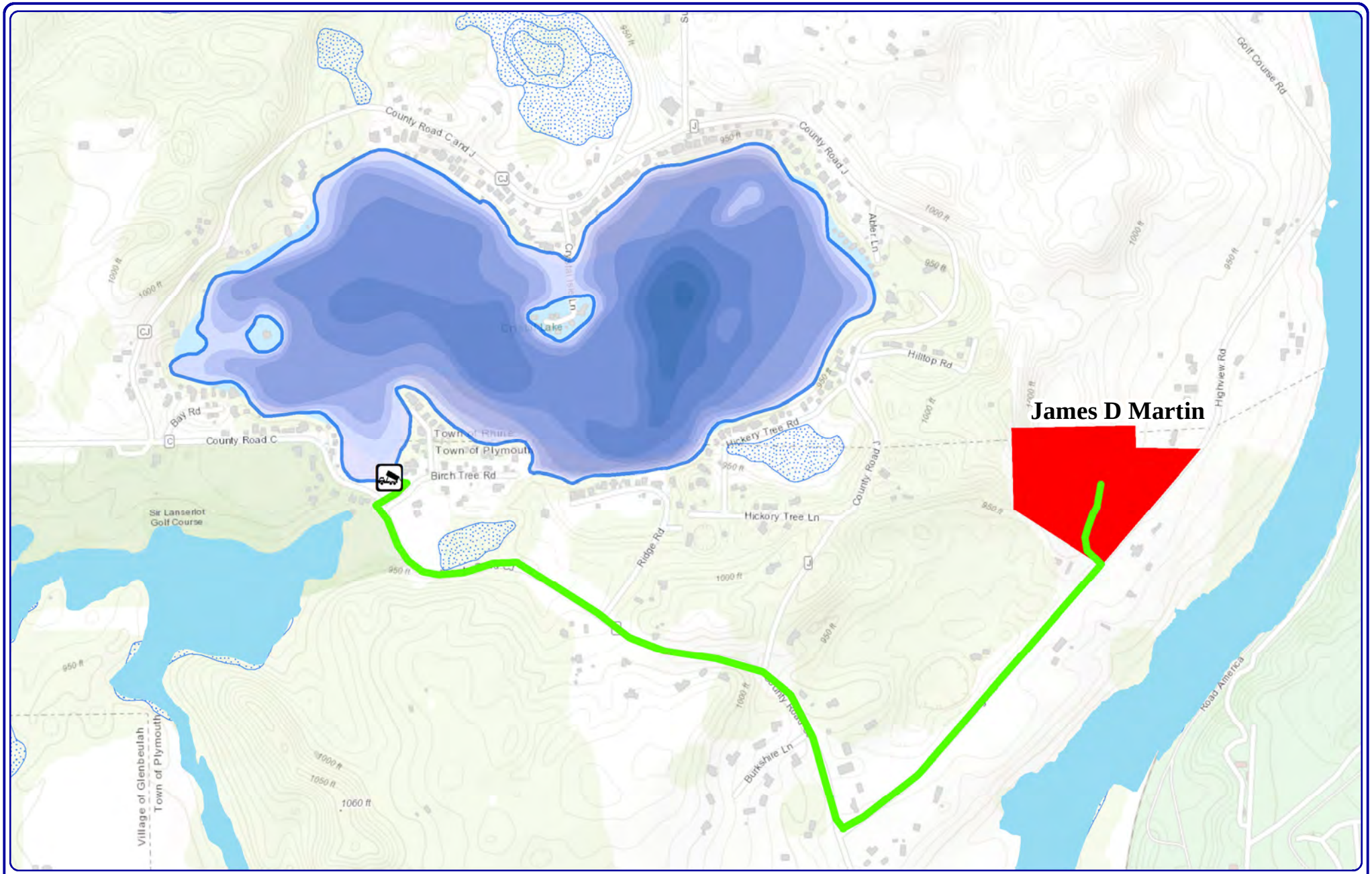
Legend

EWM Survey Results (September 19, 2025)

- Highly Scattered
- Scattered
- Dominant
- Highly Dominant
- Surface Matting
- Single or Few Plants
- Clumps of Plants
- Small Plant Colony
- Mechanical Harvesting Sites

Map 5
Crystal Lake
Sheboygan County, Wisconsin

Mechanical Harvesting Plan



820
Feet

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

Sources:
Basemap: ESRI AGOL
Parcel: WI Parcel Initiative v11, 2025
Wetlands: WI Wetland Inventory Polygon Layer, 2024
Flood Hazard: FEMA USA FLood Hazard Layer, 2025
Map Date: 10/16/2025 TWH

Project Location in Wisconsin

Legend

- 1% Annual Chance Flood Hazard & Regulatory Floodway *(FEMA)*
- Identified Wetlands *(WI Wetland Inventory)*
- Haul Route
- Mechancial Harvsting Off-Load Location

Map 6

Crystal Lake
Sheboygan County, Wisconsin

Mechanical Harvesting Disposal Plan