

**Town of Schleswig
Sanitary District 1
Cedar Lake
18107 Klemme Road
Kiel, WI 53042**

October 10, 2025

Claire Hetzel
WDNR Water Resource Specialist
2894 Shawano Ave.
Green Bay, WI 54307-0448
claire.hetzel@wisconsin.gov

Re; Weed Cutting Report – 2025
Permit; Cedar Lake - NE-2023-36-17797M
Town of Schleswig Sanitary District No. 1
Cedar Lake, Manitowoc County

Dear Claire,

This is the 2025 Weed Cutting Report for the Town of Schleswig Sanitary District No.1; Cedar Lake located in Manitowoc County.

This report presents the aquatic plant harvesting activities along with related issues and accomplishments. These issues and accomplishments have a direct effect on future aquatic plant management activities in Cedar Lake. Attachments to this report will identify specific plant, plant cutting dates, hours of cutting, and location of cutting.

Significant increase in the quantity of Eurasian Water Milfoil (EWM) required a reassessment of the success of spot herbicide treatment, Diver Aided Suction Harvesting (DASH), hand pulling and mechanical harvesting. The lake appears to be beyond initial stages of EWM establishment but still at a stage where combined control efforts can be effective.

The Sanitary District has been working with guidance from the WDNR in selecting management efforts and specific herbicides since the first detection of EWM in 2009. During 2025, our Grant application for a whole lake treatment with Procellacore PC was approved and implemented during June with a herbicide application.

Aquatic Plant Management Plan:

In accordance with the requirement of the Aquatic Plant Harvesting Permit, The Town of Schleswig Sanitary District Number 1 contracted Northern Environmental, Inc. in 2005 to develop an Aquatic Plant Management Plan (APMP) to help identify Cedar Lake's aquatic plant status. The Plan was completed and identified plant species and sensitive areas to maintain a balanced lake system. The Aquatic Plant Management Plan allowed the Sanitary District to apply for a WDNR grant for assistance in the funding of a replacement weed harvester which was purchased in 2006. In conjunction with the APMP update, a Grant Application for a replacement Aquatic Plant Harvester was submitted and a 35% grant was received from the DNR. The new harvester was in operation in 2017.

The Sanitary District prepared and received a Grant Application to develop an updated Aquatic Management Plan. The field work for the APMP update was completed in 2017 with results indicating no substantial change in the plant community. An Aquatic Plant Harvesting Permit was renewed for 2018 and expired December 31, 2022. A Harvesting Permit was renewed in early June 2023 prior to the need of harvesting. An updated Aquatic Plant Management Plan was submitted January 12, 2024 and approved by the DNR.

Weed Cutting Conditions, Observations and Operations:

Lake Conditions and Observations

The lake froze over on December 6, 2025 and ice left the lake on March 15, 2025. The lake's level was 1.75 inches above the outlet invert in May and was 2.25 inches below the culvert invert on September 25, 2025. Lake levels have often been above the invert of the outlet culverts which were installed at the Ordinary High Water Mark. There has been no need for the 500 gallon per minute high capacity well to be turned on since 2014. The District is currently studying past reports and data to properly manage the lake level to maintain necessary normal fluctuations.

Mild algae growth with no major blooms was noted in the spring and later in the summer. The secchi disk water clarity readings were typically around 10 feet for most of the summer.

Wild Celery plant growth appeared in several areas of the lake where it had not been previously seen. An increased number of Wild Celery weed bogs compared to last year were harvested. While minimal harvesting was performed due to the effective EWM herbicide treatment, increased harvesting of Wild Celery bogs in the late summer.

Increased wave enhancing boat traffic seems to dislodge the buoyant Wild Celery plants during late summer. Muskrat activity may be another cause of the dislodged plants.

Prior to the increase of the Eurasian water Milfoil (EWM) and Wild Celery, Native Northern Water Milfoil was the predominant species harvested.

Plant Harvesting Operations

Harvesting of EWM in the boating lanes and collecting the Wild Celery bogs was the emphasis of the mechanical harvesting. The harvesting of Eurasian Water Milfoil and Wild Celery weed appeared to be the predominant plants harvested through most of the summer. Nyiad was harvested early and appeared to be unusually excessive in 2023 compared to prior years early in the harvesting. Nyiad was not found to be significant during 2024. However, in 2025 Nyiad was a predominant plant harvested in boating lanes. Of the 28 harvester loads, 0 was EWM, 24 was Wild Celery, and 4 was Nyiad.

Due to the spread of EWM and a 2021 WDNR rejection to allow the herbicide treatment of approximately 5 acres of dense EWM spots, the untreated spots continued to expand. No herbicide treatment occurred in 2023 and 2024 to lessen the possibility of the EWM becoming resistant to the herbicide. A 2025 Whole Lake herbicide treatment Grant allowed for herbicide application in June. A follow-up survey indicated successful eradication of EWM with minimal impact to the native population. By limiting the need for mechanical harvesting of the EWM, the native population of Nyiad and Large Leaf Pondweed expanded.

The mechanical weed harvester operators had reviewed and complied with the WDNR Harvesting Permit Conditions.

The weed cutter operation was primarily Monday through Friday during hours of no wake boating; 7:00 am – 11:00 am. In August and September, additional harvesting occurred on Saturday, Sunday and some evenings in an effort to keep the Wild Celery bogs from the surface in boating areas.

Weed Cutting Results:

The 2025 Weed Harvesting Chart identifies that weeds were cut and harvested over 25 days resulting in 12 harvester loads of weeds taken for application and used as beneficial farm field enhancement. Estimating the harvested weeds to weigh 30 pounds per cubic foot and a harvesting machine load (Harvester not truck) to be 5 ft by 10 ft by 3 ft, a load was 150 cubic feet or 4,500 pounds. Therefore, the total harvest for 2025 was 28 tons (12 loads x 4,500 pounds per load / 2,000 pounds per ton). Fish or turtles encountered during the harvesting were returned to the lake.

HARVESTING CHART																								
Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	
Loads	40	42	51	109	113	50	44	62	53	72	45	38	46	51	48	15	25	63	80	53	39	63	12	
Harvester	90	95	115	245	253	113	99	140	119	162	101	86	104	115	108	34	56	142	179	119	88	142	28	
Tons	40	42	55	64	70	40	37	56	49	52	43	38	45	42	48	23	36	71	71	74	55	67	25	
Days	212	223	240	335	310	176	176	260	238	265	190	134	192	213	206	95	104	223	310	286	192	291	64	
Hours	851	848	956	1,464	1,635	1,278	1,125	1,073	1,004	1,225	1,066	1,276	1,078	1,080	1,049	711	1,082	1,271	1,159	834	913	974	868	
Lbs./Hour	851	848	956	1,464	1,635	1,278	1,125	1,073	1,004	1,225	1,066	1,276	1,078	1,080	1,049	711	1,082	1,271	1,159	834	913	974	868	

In 2025, the harvested submergent weeds were substantially Nyiad in June/July and predominantly Wild Celery in late August/September. Harvesting occurred primarily along the boating lanes in lake depths of 12 ft to 5 ft. Observations indicated that populations of Nyiad, Pond Weed, Wild Celery Weed, and EWM tend to be located in areas of lake depth less than 12 feet. The Wild Celery Weed predominantly found in Cedar Bay appears to be establishing itself in other locations each year. The Wild Celery bogs tend to be caused by motor boating activities and the muskrat population.

Most of the harvesting occurred on the boating lanes, the west end of the lake and in Northern Bay. This is due to density of weeds, lake depth of less than 10 feet, muck lake bottom, and number and location of complaints. Continued effort will be made to document the spread of the Wild Celery Weed and reduction of the Northern Milfoil.

It is noted that in the mid '90's, the predominant weed harvested from the lake was Northern Milfoil. Currently there is minimal removal of the species and it is rarely found.

Invasive Species:

In the spring of 2009, DNR representatives identified Eurasian water Milfoil at the boat landing. Upon notification, Sanitary District representatives contacted the DNR to determine proper eradication methods. A permit for the application of the aquatic herbicide was received. Hand removal followed up with an aquatic herbicide application had proved temporarily effective. However, the Eurasian water Milfoil was subsequently observed and a request was made to allow additional aquatic herbicide treatment in a localized area during 2013. A permit for selective herbicide treatment was issued and localized treatment near the boat landing occurred in the early summer. During 2014, additional lake invasives inspections by residents and the DNR located an additional location of EWM at the Cedars Resort dock. Hand pulling removed the plant. A DNR permit for spot treatment of the boat landing, harvester dock, and the Resort pier was acquired and chemical treatment of these areas was completed. EWM sightings were made but due to late summer sightings, the locations were treated by herbicide or hand pulling during 2017.

Additional EWM sightings were made in 2017 and a grant request for Diver Aided Suction Harvesting (DASH) during 2018 was received. The suction method is best used in early stages of EWM establishment. A full report of the diver aided suction harvesting was prepared upon completion of the project. It successfully removed early development EWM sites. However, a large concentration of EWM was located in Cedar/Northern Bay during the suction operation. It was determined that the quantity was too large to be removed by the suction method. A permit was received later to spot treat this large area and a couple other locations.

Previous 1996 reports of what was thought to be Eurasian Water-milfoil as noted in the Cedar Lake 2004 Weed Cutting Report was found to be Northern Water-milfoil. No Eurasian Water-milfoil was found during Northern Environmental's two lake grid

assessments in 2005 and observations in 2006. A follow-up Littoral Zone Survey was performed on August 30, 2007 by Northern Environmental. The purpose of the follow-up was to identify the extent of the Wild Celery Weed in Cedar Bay (a.k.a. Northern Bay) along with recommendations on the control of the problem. Also, the survey was to recheck for infestations of the WDNR reported Eurasian Water Milfoil and the Curly-leaf Pondweed.

(Corrections regarding the incorrect reference to Eurasian Water-milfoil should be noted on the Cedar Lake 2004 Weed Cutting Report.) In early 1993, the WDNR reported a single location of Eurasian Water-milfoil and a single location of Curly Leaf Pondweed. This follow-up survey looked specifically for these two invasive species and could not find any. Specific survey for the plants was performed by Scott Otterson who has been trained in the identification of the two invasive species. No evidence was found for either of the two species in 2008, 2009, or 2010. Due to the lack of spread of the two invasive species from the original WDNR identified locations, the accurate initial identification and existence was questioned. **The WDNR has revised their records to note no Curly Leaf Pondweed exists in Cedar Lake. An effort is being made to accurately indicate a first EWM documentation in 2009 at the boat landing.**

Historic and Current Aquatic Invasives Control efforts and problems:

Findings of Eurasian Water Milfoil have prompted immediate efforts to control its spread by improved herbicide treatment and mechanical harvesting. Initially, hand removal was attempted. Spot poisoning was implemented when it was determined that hand pulling alone could not stem the expansion of the plants. Because the lake was in the early stages of attack, a grant request of the DNR for Diver Aided Suction Harvesting (DASH) efforts was granted. Areas of EWM infestation proved too extensive for DASH methods and herbicide treatment was requested in the dense EWM areas. In 2021, the District received approval for herbicide treatment a large 5-acre EWM patch in North/Cedar Bay. However, approximately 5 acres of small dense EWM spots were not permitted for treatment. Mechanical harvesting and additional harvesters were hired and harvesting hours were expended to attempt to control these areas. These “No Treat” areas expanded and a permit to treat the was granted. The areas were treated during 2022 and significant eradication was noted. Only mechanical harvesting was used during 2023 and 2024 to prevent plants from becoming resistant to the herbicide. It is anticipated that the successful herbicide treatment in 2025 will maintain a safe recreational lake for several years before EWM treatment will be needed

Sanitary District No. 1's 2025 Lake Improvement Accomplishments:

1. Received Grant and herbicide treated the whole lake for EWM successfully,
2. Twenty-eight post treatment water samples were taken,
3. Post treatment survey indicated minimal impact to the native plant community,
4. Mechanically harvested Wild Celery in boating lanes,
5. Monitored plant community,
6. Implemented Grant for the Clean Boats program

7. Sanitary District Commissioner Scott Otterson performed sampling for chlorophyll, Phosphorus, Lake Temperature over Depth, E.coli, and Secchi Disc readings,
8. Attended the 48th Annual Wisconsin Lakes Convention,
9. Native plant plot established in 2010 was maintained near the Harvester Building located in Cedar Lake Watershed with excellent results,
10. A Boat Cleaning Station was maintained at the Boat Landing,
11. A Life Preserver Loaner Station and was maintained at the Boat Landing,
12. Educational Meetings presented EWM efforts,
13. US Coast Guard Aux gave inspections for safe boating program,
14. Two new Sanitary District Commissioners were added to the current three.
15. Pollinator seed mix was provided to residents through the Sanitary District

Proposed Activities in 2026:

1. Implement the APMP recommendations,
2. Continue requirements of the whole lake treatment program,
3. Perform another plant and diversity study,
4. Revise DNR invasive listing of first EWM sighting from 1996 to 2009,
5. Continue consulting with the Manitowoc County Soil and Water on a plan to limit Phosphorus runoff from nearby agricultural land,
6. Continue water quality monitoring to provide a database for the evaluation of the lake's water quality progression and direction,
7. Develop a lake water budget from available data to better understand Cedar Lake levels,
8. Attend the 49th Annual Wisconsin Lakes Convention,
9. Actively participate in the Cedar Lake Improvement Association to provide education of the membership on key environmental issues; non-phosphorus fertilizer, shoreline buffers, lake quality, etc.
10. Continue USCG Auxiliary boater inspection and education program,
11. Continue the Clean Boats inspections.

Continued study and education will be needed to maintain a high level of beneficial use of Cedar Lake.

Sincerely,

Scott Otterson, P.E.
Sanitary District Commissioner

Attachments; Weed Harvesting Chart with Graphs
Cedar Lake Mechanical Harvesting Map Figure 10

Cc: Mike Strebe, Sanitary District Chairman
John Brotz, Sanitary District Commissioner
Niel Larson, Sanitary District Commissioner
Joe Noworatzky, Sanitary District Commissioner

TOWN OF SCHLESWIG SANITARY DISTRICT NO.1 CEDAR LAKE MANITOWOC COUNTY

2025 WEED HARVESTING REPORT

HARVESTING CHART

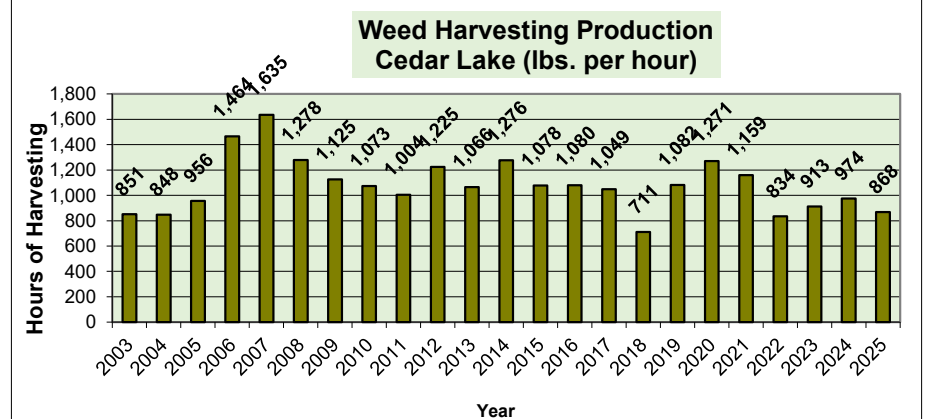
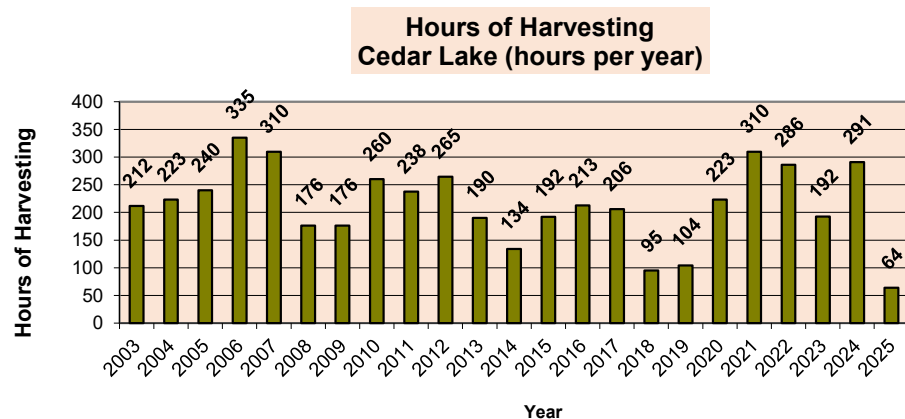
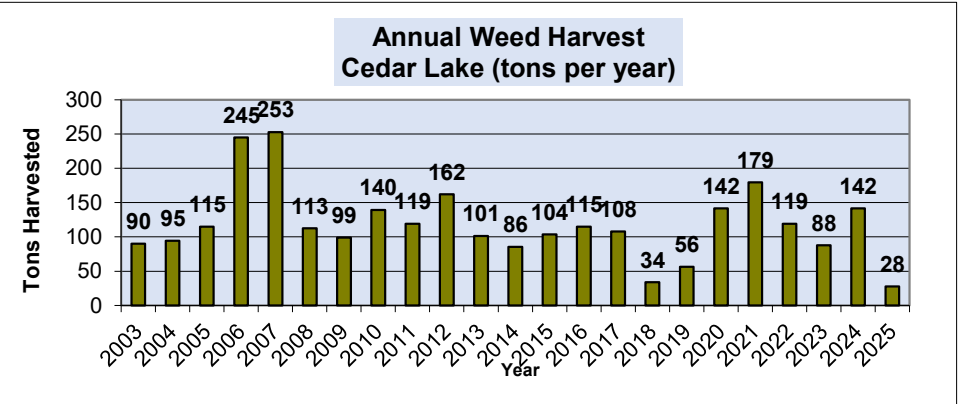
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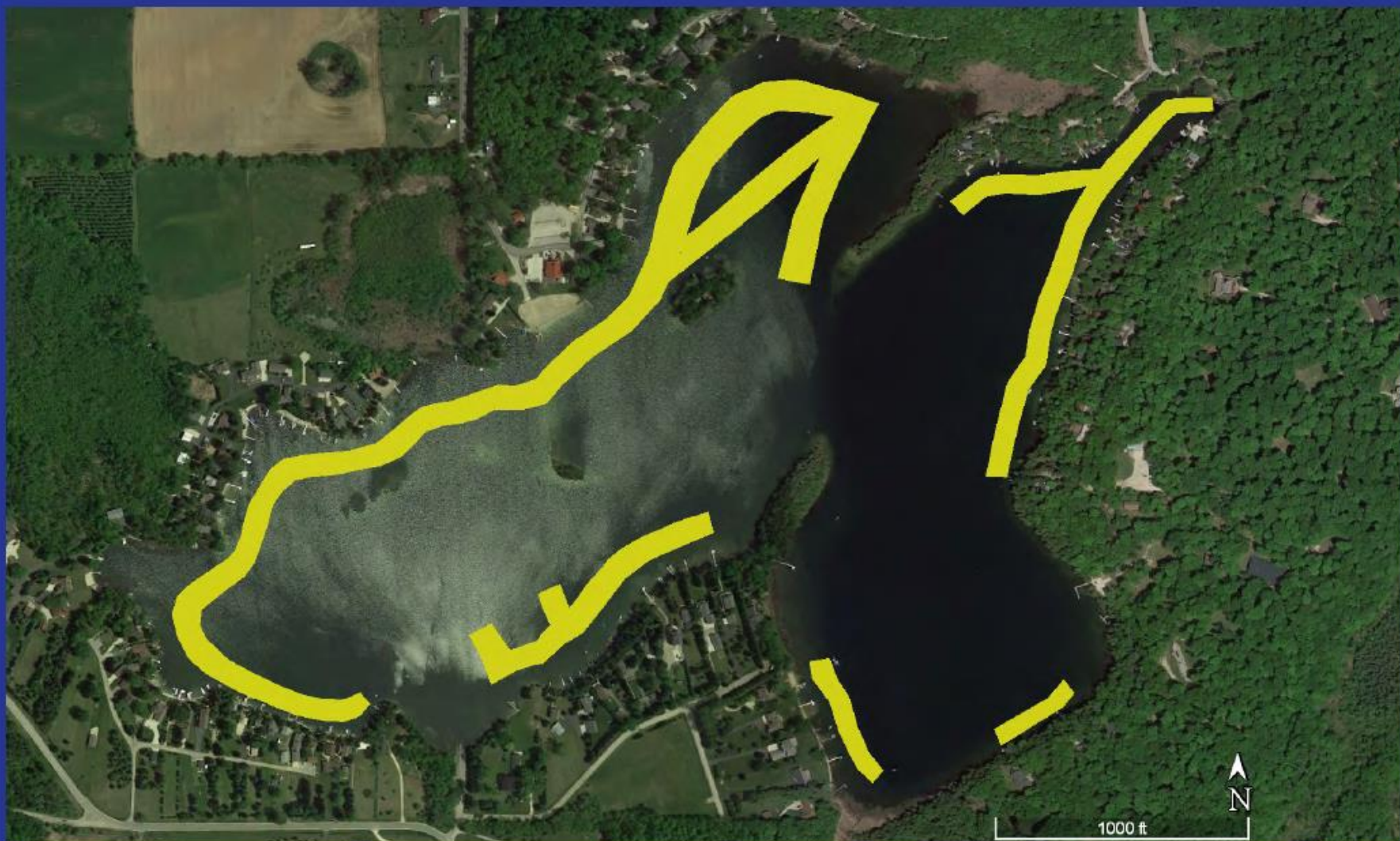
Notes:

1. Est. 30 lbs. of weeds/cu.ft...
2. Est. 150 cu. ft. per load (harvester load not truck load)
3. Truck replaced wagon for weed hauling in 2005
4. New weed harvester used in 2006

Comments:

1. Weed removal production increased with the addition of the truck and new harvester. This may partially be due to the collection of a large number of wild celery weed bogs in 2006
2. Weed tonnage removed increased with the increase in hours of removal.
3. The bulk of the loads from mid-August 2007 on were Wild Celery.
4. Record rainfall 2008, no-wake, lack of Wild Celery Weed bogs dislodged limited harvest
5. More Wild Celery Weed patches noted around lake. First ID of EWM at boat landing 2011
6. 2012 truck loads may have been larger than typical
7. Most of the weeds were Illinois Pondweed or similar in 2013 fewer Wild Celery
8. 2016 Most elodea bogs noted in 21 years of observation, higher than normal celery weed
9. 2017 No significant elodea bogs noted. Low to normal wild celery bogs high lake level
10. 2018 Diver Assisted Suction Harvesting efforts reduced the number of harvesting hours. Wild Celery bogs weren't bad this year. Lake level was high.
11. 2020 80% of North Bay was EWM
12. 6 inches of rain in 12 hrs (5 inches is 100 yr event) July 14, 2021 North Bay Was treated with very good success with Procellicor PC
13. Two weeks of cold Spring weather in 2022 delayed growth and harvesting. Second season of treatment reduced EWM available plants for harvest.
14. Two weeks of cold Spring weather in 2023 delayed growth and harvesting. Second season of treatment reduced EWM available plants for harvest. No 2023 treatment.
15. Record short ice on may have caused less clarity. No herbicide treatment during 2024
16. Whole Lake Grant herbicide treatment eliminated EWM in 2025 and no EWM harvesting for most of the year . Wild Celery Bog harvesting increased
17. 2025 EWM elimination had expansive Niaad and some LargeLeaf Pondweed increase





Mechanical Harvesting Locations

- Harvesting only in depths of 5-ft or more
- Avoid harvest of high-value species except when navigation is impeded
- Total harvest area of 23.7 acres