

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

October 1, 2020

Ms: Mary Gansberg  
WDNR Water Resources Biologist  
2894 Shawano Ave.  
Green Bay, WI 54307-0448  
[Mary.Gansberg@wisconsin.gov](mailto:Mary.Gansberg@wisconsin.gov)

Re; Weed Cutting Report – 2020  
Town of Schleswig Sanitary District No. 1  
Cedar Lake, Manitowoc County

Dear Ms: Gansberg,

This is the 2020 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 weed cutting dates, hours of cutting, and location of cutting. The attached Weed Harvesting Logs refer to the Cedar Lake Weed Harvesting Map that has the referenced cutting locations.

Significant increases in the quantity of Eurasian Water Milfoil is requiring a reassessment of the success of herbicide treatment, DASH, hand pulling and biological treatment. The lake appears to be beyond initial stages of EWM establishment but still at a stage where combined control efforts can be effective. This review and action plan will be developed and implemented in 2021.

**Aquatic Plant Management Plan:**

In accordance with the requirement of the Weed Harvesting Permit, The Town of Schleswig Sanitary District Number 1 contracted Northern Environmental in 2005 to develop an Aquatic Plant Management Plan 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 funding of a replacement weed harvester which was purchased in 2006.

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.

In conjunction with the Plan 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.

## **Weed Cutting Conditions, Observations and Operations:**

### **Lake Conditions and Observations**

Ice left the lake on March 27, 2012.

The lake's level was 6 inches above the outlet in May and stayed above the outlet invert during the summer. Record setting rainfall in 2018 was broken with record setting rainfall in 2019. The lake remained at record high levels throughout the summer. There was no need for the 500 gallon per minute high capacity well to be turned on.

Wild Celery plant growth appeared in several areas of the lake where it had not been previously seen. There seemed to be a few Wild Celery bogs similar to last year. Increased harvesting may have kept the Wild Celery bogs to a reasonable level but many of these bogs were raked up by property owners in the North bay. Elodea bogs approximately 3 feet in diameter were prevalent during early summer of 2016 but not seen in 2017, 2018, 2019 or 2020. The harvesting of Eurasian Water Milfoil (EWM) weed and Wild Celery weed appeared to be the predominant plants harvested through most of the summer. Prior to the increase of the Wild Celery, Native Northern Water Milfoil was the predominant species harvested. Possibly the harvesting of the Wild Celery bogs uprooted in Northern Bay in 2006 and 2007 resulted in a delayed reestablishment of the Wild Celery in the uprooted silty muck area of the Bay. Additional Eurasian water Milfoil locations were documented.

Muskrat sightings and trapping were similar to the number of those trapped in 2018. The muskrat trapping chart is attached. Normal boat traffic seems to dislodge the buoyant Wild Celery plants during late summer. Muskrat activity may be another cause of the dislodged plants.

### **Plant Harvesting Operations**

The mechanical weed harvester was operated by three experienced operators who 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 EWM from reaching the surface in boating areas.

Weed cutting locations were substantially limited to the areas identified on the attached lake map. Northern Water-milfoil appeared to be a small portion of the harvested plants compared to plants harvested prior to 2005.

Mild algae growth with no major blooms was noted through the summer. The secchi disk readings were typically around 10 feet for most of the summer.

## **Weed Cutting Results:**

The attached 2020 Weed Harvesting Log identifies that weeds were cut and harvested over 63 days resulting in 71 harvester loads of weeds taken for disposal and use as farm field compost. Estimating the harvested weeds to weigh 30 pounds per cubic foot and a 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 2019 was 142 tons (30 loads x 4,500 pounds per load / 2,000 pounds per ton).

The attached Weed Harvesting Chart with graphs presents the tonnage of aquatic plants removed. It also presents the impact of hours of harvesting and the increased productivity by the upgrading of harvesting and transport equipment. The 2020 production significantly increased from 2019 efforts. Increases in EWM location and density, increases effort to maintain clear boating lanes with no emergent EWM were the primary reasons for the increased production. The resulting harvesting seemed adequate to provide control around piers, diving platforms and water-skiing lanes while allowing for undisturbed area over the majority of the lake to promote diversity in the plant community.

The harvested submergent weeds were substantially Pond Weed (not Curly Leaf) in June/July and predominantly EWM and Wild Celery in late August/September. Harvesting occurred primarily along the shoreline in lake depths of 12 ft to 5 ft. Observations indicated that populations of Pond Weed and Northern Water-milfoil tend to be located in areas of lake depth less than 12 feet. The Wild Celery Weed was predominantly located in Northern Bay but it appears to be establishing itself in other locations each year. The Wild Celery bogs tend to be caused but motor boating activities and the muskrat population. The harvested areas totaled approximately 35 acres. Most of the harvesting occurred on the west end of the lake and in Northern Bay. This is due to density of weeds, lake depth of less than 12 feet, muck lake bottom, and number and location of complaints. Continued effort should be made to document the spread of the Wild Celery 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 2011, 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. During 2012, hand removal followed up with an aquatic herbicide application has proved temporarily effective. However, the Eurasian Milfoil was identified 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 initial 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 suction removal during 2018 was received. It is anticipated that the suction method will be 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 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 to spot treat this large area and a couple other locations.**

**Increased education efforts consisting of placing paper notices on the windshields of vehicles at the boat landing, physical inspection of boat trailers by volunteers, and presenting informational material and physical examples of the EWM at the Cedar Lake Improvement Association meeting has been implemented. Due to the initial sighting of the EWM near the boat landing, it appears that offsite boating activities transported the EWM to the lake.**

Previous 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 should be questioned until it has been verified.

#### **Aquatic Invasives Control efforts and problems:**

Recent findings of Eurasian Water Milfoil have prompted immediate efforts to control its spread. 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 WDNR for Diver Aided Suction Harvesting (DASH) efforts was granted. The spot poisoning and DASH efforts has appeared to have worked well as the occurrences seem to be controlling the spread.

A comprehensive plan and support by the DNR are required. The poisoning and DASH funding are key. Because of the early and controllable stages of EWM in the lake, it is the best time to spend money in efforts to contain the spread.

**Sanitary District No. 1's 2020 Lake Improvement Accomplishments:**

1. A Diver Aided Suction Harvesting (DASH) grant request for DASH was rejected,
2. Spot Poisoning was required at some larger EWM colonies. EWM information was provided and a volunteer lake inspection day resulting in finding new location of EWM aiding in eradication efforts,
3. Sanitary District Commissioner Scott Otterson performed sampling for e Coli, Chlorophyll, Phosphorus, Lake Temperature over Depth, and Secchi Disc readings,
4. Attended the virtual 43rd Annual Wisconsin Lakes Convention,
5. Native plant plot established in 2010 was maintained near the Harvester Building located in Cedar Lake Watershed with excellent results,
6. A Boat Cleaning Station was maintained at the Boat Landing,
9. A Life Preserver Loaner Station and was maintained at the Boat Landing,

**Proposed Activities in 2020:**

1. Review the APMP update and implement the recommendations,
2. Perform another plant and diversity study,
3. Review options for stemming the spread of EWM,
4. Continue efforts to prevent establishment, locate and eradicate any invasive species; specifically, Eurasian Water-milfoil and Curly Leaf Pondweed,
5. Prepare a grant application for the suction of EWM and any spot treatments on large EWM colonies,
6. Continued water quality monitoring will take place to provide a database for the evaluation of the lake's water quality progression and direction,
7. Monitor surface water runoff for Phosphorus and possible need for treatment project,
8. Attend the 44th Annual Wisconsin Lakes Convention,
9. Actively participate by the Sanitary District members in the Cedar Lake Improvement Association will 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.

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 Logs – 2019 Weed Harvesting Chart with Graphs  
Cedar Lake Weed Harvesting Map Muskrat Trapping Chart  
Cedar Lake Improvement Association Lake Map and Directory

Cc; Dick Jens, Sanitary District Chairman John Brotz, Sanitary District Commissioner