Appendix A – 2024-28 Minong Flowage Management Discussion

Aquatic plants are the most important part of a lake ecosystem. A lake's rooted plants are the basis of the aquatic ecosystem. They capture the sun's energy and turn it into usable food, "clean" the water of excess nutrients, stabilize shorelines and lake beds, and provide habitat for other organisms like the lake's fish populations. Because of this, preserving them is critical to maintaining a lake's overall health.

In Wisconsin, there are generally two main reasons why aquatic plant management is considered: 1) There are demonstrated ecological changes because of one or more specific aquatic plant (target plant).; and 2) Lake use is restricted or obstructed by one or more specific aquatic plants.

To determine if the first reason applies questions like "has the target plant spread, and/or gotten denser"; and "has that spread and increase in density negatively impacted other, more desirable aquatic plants (non-target plants)?" need to be answered. If the answer to these questions is generally "no", then aquatic plant management is likely not necessary. To determine if the second reason applies, where, when, and what species is causing restricted or obstructed lake use must be determined.

Non-native, aquatic invasive species like EWM and CLP can be problematic, but only when they take over habitat previously filled with other, likely more desirable native aquatic plants, creating a more monotypic plant community. Diversity is key. Generally, the more diverse the aquatic plant community is (i.e. a greater number of different aquatic plants in a lake) the healthier the lake is. The Minong Flowage has a diverse native aquatic plant community consisting of 77 different species (rake, visual, & boat survey) in 2023 and only 151 acres of EWM with an average rake density of 1.49. In 2008, when there were 325+ acres of EWM with an average rake density of 1.93, there were only 65 different species (rake, visual, and boat survey). The average rake density for all aquatic plant species in 2008 was 2.69, in 2023 it was 2.20. Though it is impossible to account for all the changes in the aquatic plant community simply due to the presence of EWM, it is reasonable to assume that if EWM was left unmanaged, it would negatively impact the aquatic plant community.

The presence of EWM does impact lake use and access. Large areas of dense growth EWM have impacted swimming and boating areas adjacent to the County Campground. In the DNR Bay, dense growth EWM has impacted lake use by the Swift Nature Camp and created a major source of EWM potentially being transported by careless boaters away from the DNR boat landing. Property owners in Serenity Bay and the North Basin have had restricted access to open water due to large, dense beds of EWM at times. In a more extreme example of lake use restriction, the presence of dense growth EWM in Serenity Bay hampered the search for two drowning victims in late 2023.

Both reasons why aquatic plant (EWM) management should occur in the Minong Flowage are confirmed beyond reasonable doubt.

EWM MANAGEMENT

First identified in 2002, by 2008, EWM had taken over more than 325 surface acres or nearly 21% of the 1,560-acre Minong Flowage. Management actions including physical removal, the use of herbicides, biological control, and drawdown implemented between 2009 and 2014 reduced the surface area of

EWM to less than 20 acres surveyed in the fall of 2014. However, despite a 16-acre herbicide application in the spring of 2015 and diver/DASH removal, by the fall of 2015 EWM rebounded to cover more than 90 acres. After a 27-acre herbicide application in the spring of 2016, by the fall of 2016 EWM was up to more than 125 acres. The herbicide application of 27 acres in the spring of 2016 was the last large-scale management action implemented on the Flowage until the 2021/22 winter drawdown. Between 2016 and 2021 fall EWM fluctuated between a low of 85 acres in 2018 and more than 205 acres in 2021 before the drawdown was implemented. In the fall of 2022, after the drawdown, there was 116 acres of EWM. This increased to 151 acres in the fall of 2023 despite a 15 acres herbicide application in the spring of 2023.

Figure 1 shows all the EWM in the Minong Flowage south of the Hwy T bridge mapped in 2008 (left), and the total area of the Flowage covered by EWM when overlaying all fall bed mapping results from the last 8 years (2016-2023). Table 1 compares the bed number and acreage between the two maps. From the two maps, if left unmanaged, EWM will again reach levels comparable to 2008.

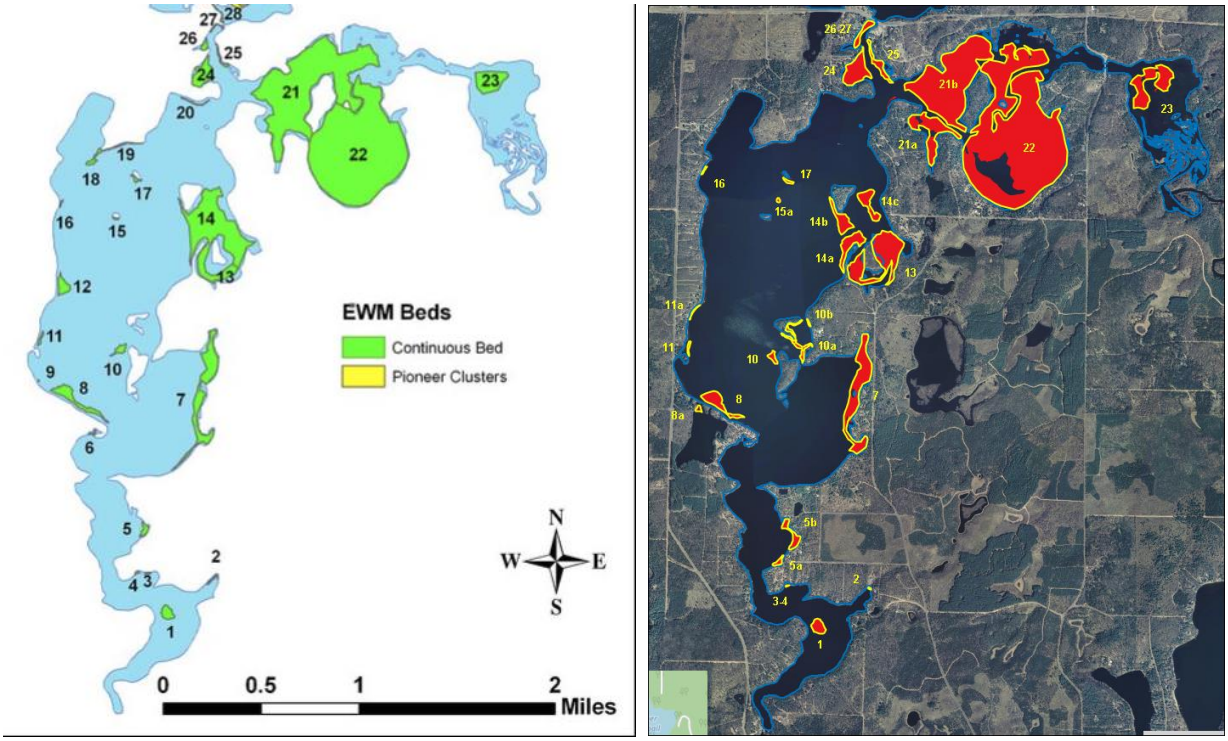

Figure 1: Left - 2008 EWM bed mapping (326 acres); 2016-23 overlap of EWM bed mapping (312 acres)

Table 1: Bed # and total acreage from 2008 and the combined mapping results from 2016-2023

EWM Bed #	2008 Acreage	Combined 2016-23 Acreage
1	2.14	2.3
2	0.28	0.09
3	0.13	0.07
4	0.13	
5a	1.07	0.65
5b		2.47
6	0.23	NB
7	16.03	16.84
8	5.3	4.62
8a	Delcore Pond	0.43
9	0.02	NB
10	1.21	0.99
10a		2.57
10b		0.11
11	0.38	0.4
12	2.56	NB
13	8.17	21.2
14a	38.24	5.02
14b		4.1
14c		4.2
15	0.12	NB
15a		0.19
16	0.1	0.16
17	0.44	0.36
18	1.1	NB
19	0.5	NB
20	0.42	NB
21a	96.95	12.13
21b		55.98
22	133.63	151.44
23	8.92	13.09
24	5.89	8.09
25	0.72	2.66
26	0.75	2.03
27	0.32	
	325.75	**312.19**

Controlling the spread of EWM in the Minong Flowage is going to take more than just regular winter drawdowns or large-scale application of aquatic herbicides. Where EWM thrives in the Flowage is just too diverse. The last winter drawdown proved effective at controlling EWM in water up to 5ft in depth. It did not however have any lasting impact on EWM in deeper areas of the Flowage. Herbicide applications are effective but must be done in a manner that does not negatively impact areas of the Flowage with wild rice which likely rules out any application in the northern half of the North Basin, the northern half of Serenity Bay, and the basin east of Smith's Bridge. Diver and DASH removal can be used in a few areas, but dark water and underwater obstructions limit where, and experience has shown that the amount of EWM that can be removed by these methods is minimal and comes at a high cost. Although mechanical harvesting could be used in some areas, harvesting of EWM is not usually done unless other management alternatives are ineffective or prohibited.

In those areas of the Flowage where submerged stumps and other woody debris exist and the water is no more than 5-7ft deep a winter drawdown is likely the best management alternative. The stump fields

limit boat use, would damage mechanical harvesters, and increase the risk level for diver/DASH removal. It is also in these areas that wild rice is most abundant, further limiting any management alternative that might involve the application of aquatic herbicides.

On large shallow flats where the water is no more than 5-7ft deep, winter drawdowns, herbicide application, diver/DASH removal, and mechanical harvesting are all possible. Which one is best depends on the conditions that exist in any given year. If a winter drawdown is already scheduled, it should be as effective at controlling EWM in these areas as it is in the shallow stump fields. In between drawdowns, diver/DASH removal on smaller areas and application of aquatic herbicides on larger areas will be effective. If at some point, the use of mechanical harvesting is employed it would likely be most effective in these areas.

In water greater than 6-7ft, application of aquatic herbicides is likely the best management alternative. EWM in deeper water is less impacted by a winter drawdown. Dark water may limit the ability to do diver/DASH removal. Mechanical harvesting would be able to remove surface mats of EWM but would not prevent rapid regrowth of the cut stems.

An integrated approach, using many management alternatives is recommended. Small-scale physical removal (hand and rake) by individual property owners, larger scale physical removal (hand and rake) by trained teams, diver removal/DASH, application of herbicides, and winter drawdown should all be combined to prevent EWM from increasing in distribution and density while at the same time maintaining or improving the native aquatic plant community. Not all these management actions can be used in all areas of the Flowage. Physical removal by individual property owners is best in the shallow nearshore areas around docks and swimming areas. If volunteers can be organized, or a team of individuals hired, physical removal could occur in select larger areas still in shallow water. Diver removal/DASH is best suited to smaller areas in water too deep to be physically removed by hand or rake, but only in areas without underwater obstructions. Application of aquatic herbicides can take place in deeper water areas away from the wild rice beds. Winter drawdown can be implemented to control EWM in shallow water stump fields and wild rice beds when other forms of management have done all they can.

APPLICATION OF AQUATIC HERBICIDES

In an integrated approach to EWM management, smaller scale management actions should be completed between larger scale management actions to increase the amount of time between large disturbances caused by the management. Physical removal and diver/DASH can be incorporated to manage individual pioneering or reemergent plants and small beds, but larger areas of EWM will require the application of aquatic herbicides. If the application of aquatic herbicide is used, there are several ways to approach it.

2,4D

If a spring or early summer application is to use 2,4D-based products, treatment areas should be at least 5ac in size and be located downstream of any wild rice beds. Smaller areas could be treated if a limno-curtain was installed prior to treatment. The herbicide should be applied at 2-4ppm depending on the size of the treatment area and expected target species contact time. A target species contact time of 18-36 hours or longer is necessary to provide results that can be expected to last more than one season.

TRICLOPYR

Like 2,4D-based herbicides, if spring or early summer application is planned, treatment areas should be at least 5ac in size. The herbicide should be applied at 0.75 to 2.5ppm, again depending on the size of the treatment area and expected target species contact time. Some research suggests that when applied at its lowest recommended concentration (0.75ppm), triclopyr should have "negligible effect on all wild rice growth stages" (Madsen, Wersal, Getsinger, & Nelson, 2008). With this finding, it may be possible to apply a triclopyr-based aquatic herbicide to control EWM closer to, within, or upstream of a wild rice bed in a spring or early summer application. The caveat to this is that at a 0.75ppm application rate for triclopyr, the same research suggests that at least 42 hours of contact time is necessary to achieve an 85% control rate of EWM.

PROCELLACOR

If ProcellaCOR is used, then treatment areas can be <5ac with or without a limno-curtain. However, until more research into the impacts of the herbicide on different stages of wild rice growth is completed, treatment areas should still be located downstream of any wild rice beds. The herbicide should be applied at 3-5pdus per acre-foot of water. Larger treatment areas could be treated on the low end, small areas in deeper water should be treated on the high end.

LATE SUMMER OR FALL HERBICIDE APPLICATION

The USACOE study on the impacts of aquatic herbicides on wild rice (2003) concluded that "wild rice is most resistant to aquatic herbicides applied to the water column when plants are mature or in the late flowering stages of development. Coordinating chemical applications for milfoil control with resistant growth stages of wild rice may minimize herbicide injury to this desirable plant species." This study looked at the impacts of fluridone, endothall, diquat, and 2,4D – all of which had less impact on the later stages of wild rice growth than on the early stages of growth. This suggests that a late summer or fall application of aquatic herbicide adjacent to, within, or upstream would have less negative impact on wild rice than a spring or early summer application.

In 2010, a fall application using a granular form of 2,4D was completed on September 28 when water temperatures were at 58°F. Three small areas of EWM totaling 6.31 acres and located in the wild rice beds east of Smiths Bridge were chemically treated at the maximum label rate of 4.0ppm (Figure 2). At the time, this treatment was supported by the WDNR and St. Croix Tribal Resources, with Tribal Resources donating the granular herbicide used. The treatment appeared to be effective at controlling EWM in the area, however, 2010 fall EWM bed mapping was completed before the impacts of the treatment could be discerned. Fall EWM bed mapping in 2011 found only a handful of plants in the core of the largest bed, the rest of the area appeared clear of EWM by the fall of 2011.

The biggest drawback of completing an herbicide application in the fall versus the spring, is the amount of EWM to be controlled. A fall treatment would target fully established EWM with a lot of biomass, while a spring or early summer application targets beds when EWM is still low in biomass.

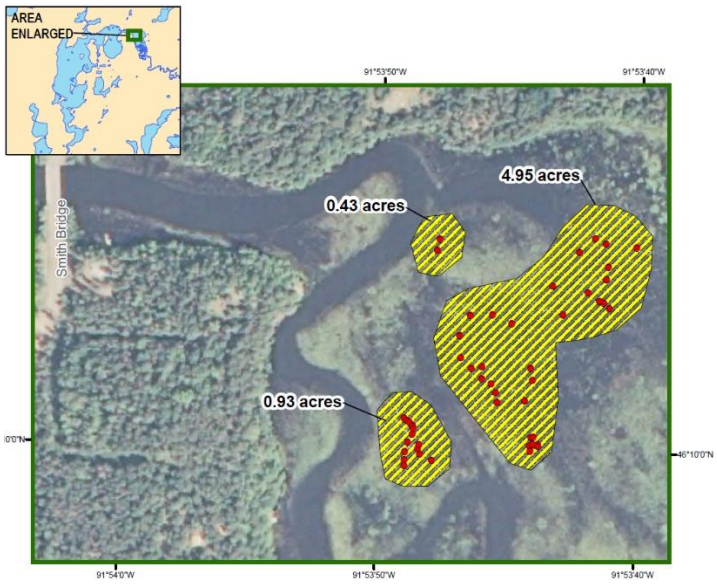

Figure 2: 2010 Fall EWM treatment in the East Basin (east of Smiths Bridge)

MONITORING FOR PESTICIDES

If aquatic herbicides are applied near any wild rice bed, and normal herbicide concentration testing and completed dye studies are not enough to ease Tribal concerns about contaminated rice, it may be possible to complete a study that would more definitively prove or disprove that the pesticide applied reached the wild rice.

In 2009, a study was completed on the St. Croix River that included monitoring for pesticides. The study came about because owners of a cranberry bog were using water from the St. Croix River for crop irrigation and for flooding during harvest, and then were discharging the water through runoff from precipitation and irrigation, or through groundwater discharge back into the river. Stakeholders from the area were concerned about pesticide contamination from the cranberry bog.

After several attempts to monitor pesticides in the river via sediment samples and water samples grabbed from the river were inconclusive, researchers installed Polar Organic Chemical Integrative Sampler (POCIS) devices to monitor pesticide concentrations (Figure 3). POCIS devices were selected because they can accumulate water soluble compounds in low concentrations, provide qualitative and quantitative measurements of compounds, and are more logistically sound than grab samples. POCIS devices can remain in-stream for extended periods of time, generally one month, which provides time-weighted average concentrations of compounds. This extended sampling period also captures low concentrations and episodic events that could otherwise be missed in grab samples and can provide an exposure assessment of aquatic organisms. In short, these devices could potentially determine more definitively, if the herbicide applied to control EWM ends up in the wild rice.

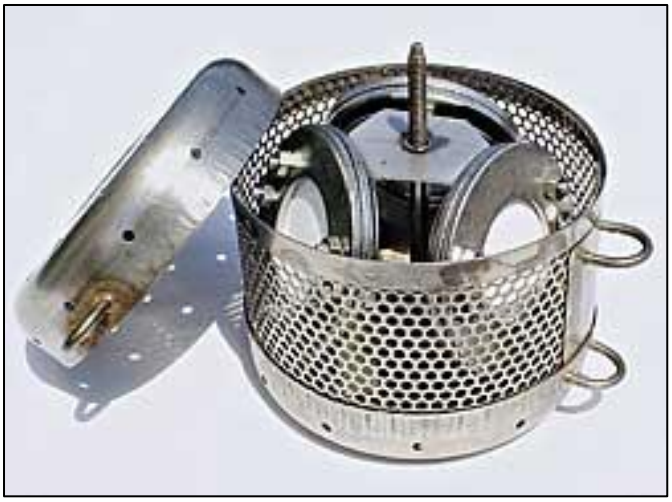

Figure 3: POCIS devices (discs with white centers) shown mounted in a deployment canister. (Source: www.est-lab.com/pocis.php)

WINTER DRAWDOWN

The average size of the littoral zone of the Flowage over six PI surveys was 832 acres. Using the average littoral zone, EWM covered between 3.2% (2014) and 40.3% (2008) from 2008 to 2023. When asked how many acres of EWM should lead to a winter drawdown proposal, members of the MFA felt the tipping point should be kept relatively high. The MFA Board and its constituency were comfortable with the winter drawdown following a year when mapping identified 208 acres or 25% of the average littoral zone with EWM but felt lesser amounts would lead to drawdowns occurring too frequently. This Plan recommends a winter drawdown be proposed when EWM reaches 200 acres or 24% of the average littoral zone.

DRAWDOWN PERMIT

The current Drawdown Permit issued to Washburn County Highway Department expires on November 1, 2024. Working with Washburn County, the MFA should either request another 5yr extension to the existing drawdown permit or apply for a new drawdown permit that will cover the next five years. A current WDNR permit will make the implementation of a winter drawdown if EWM reaches a designated level easier.

AIS POPULATION CONTROL GRANT APPLICATION

If annual EWM bed mapping identifies 200 or more acres of EWM in the Flowage in any given year and a decision is made to pursue a winter drawdown, the MFA should immediately develop an AIS Population Control Grant to help fund its implementation. The largest expenses associated with a winter drawdown are expected to be pre- and post-drawdown PI aquatic plant survey work and reimbursement for the loss of hydro-power generation during the drawdown.

PRE- AND POST-DRAWDOWN WHOLE-LAKE PI AQUATIC PLANT SURVEY

Since a winter drawdown will impact the entire Flowage, a pre-drawdown, whole-lake, PI survey should be completed in the summer season immediately following the mapping, unless for other reasons a similar survey has already been completed within 18 months. All 878 points in the Minong Flowage and the 108 points in Delcore Pond should be included following WDNR protocol. Advance notice should be given to the Cranberry Lake Association so they may complete a PI survey if they choose to. A post-

drawdown survey should be completed in the summer season following the winter drawdown unless a PI survey is already scheduled within 18 months of the drawdown for another reason.

SCENARIO-BASED MANAGEMENT

This APM Plan recommends a scenario-based approach to managing EWM in the Flowage. In a scenario-based approach to EWM management, there is no set minimum or maximum amount of EWM that is "OK" in the lake, or a "trigger" for management. Any amount of EWM at any time can be managed in the lake, albeit using different management alternatives. Determining when to use a particular management alternative or to move to a different alternative is the basis of a scenario-based approach to control EWM. Doing so minimizes negative impacts to native aquatic vegetation caused by the continued spread of EWM or by the management used to control EWM.

To support a scenario-based approach to EWM management in the Minong Flowage, the following monitoring and control activities are recommended.

1) EWM will be monitored by volunteers throughout the growing season.
2) Summer bed mapping will be completed annually by a Resource Professional.
3) Areas of EWM with sparse, isolated plants will be hand pulled or raked by volunteers in shallow water (≈ 3 feet) around docks and along shorelines.
    a. These services can be completed at any time during the open-water season and do not require a WDNR permit.
4) Free diving, snorkel, and/or scuba diver removal of EWM in deeper water will take place in areas with isolated plants, small clumps, or small beds of plants where practical and if resources are available.
    a. Used on areas of EWM <0.01 acre (not definitive, use as a guideline)
    b. Could be done by MFA volunteers or contracted by the lake organization, can be completed at any time during the open water season.
    c. Does not require a WDNR permit.
5) DASH can be used in place of or in combination with free diving, snorkel, and/or scuba diver removal of EWM where practical and if resources are available. DASH may allow larger areas of EWM to be managed without the use of herbicides.
    a. Used on areas >0.01 acre (not definitive, use as guideline)
    b. Would be contracted by the MFA, can be completed at any time during the open water season.
    c. Requires a WDNR Mechanical Harvesting permit.
6) Aquatic herbicides can be considered in any area under the following guidelines.
    a. Conditions exist that are likely to make other management alternatives less effective.
        i. Bed size and density of EWM in the area (>0.5 acres, not definitive – use as a guideline)
            1. Up to a 50-ft buffer can be extended around any mapped bed.
            2. Small beds within 100-ft of each other can be combined to make larger beds.
        ii. Location of the area in relation to lake access and usability
            1. Example: Adjacent to the WDNR public boat landing
        iii. Water depth and clarity
        iv. Limited or unavailable access to contracted diver or DASH services

v. Limited financial resources
vi. Less than a majority constituent support for a proposed management action.

b. Areas that are <5.00 acres should be treated with PCOR.
   i. Only to be applied in the main basin of the lake, not the North Bay, Serenity Bay, or the East Basin until more research on its impact to wild rice is completed.
   ii. Application rates will be limited to 5pdus/acft or less, unless discussion with the Company dealing PCOR, the Consultant/lake organization, the WDNR, and the Applicator recommend and agree on higher rates.
   iii. 2,4D or triclopyr-based herbicides can be considered if a limno-curtain is installed around the treatment area.

c. Areas ≥5.0 acres may be treated with PCOR, 2,4D-based herbicides, 2,4D/triclopyr blends, triclopyr, or contact herbicides (endothall and diquat) depending on available resources.
   i. Suggested application rates for PCOR are 3-5pdus/acft.
      1. Only to be applied in the main basin of the lake, not the North Bay, Serenity Bay, or the East Basin.
   ii. Suggested application rates for 2,4D-based herbicides are 2-4ppm/acft depending on size (larger treatment areas could be managed with <4ppm/acft).
      1. May be applied to the southern halves of the North Bay and Serenity Bay.
      2. Fall applications can be considered if near wild rice.
   iii. Suggested application rates for other herbicides – follow label instructions.
   iv. Treatments >5 acres using any aquatic herbicide may have a basin-wide or lakewide impact, so the following monitoring is <u>suggested</u>.
      1. Pre (prior year and/or year of) and post (year of and/or year after) treatment aquatic plant surveys within the proposed treatment areas.
      2. Herbicide concentration monitoring.
   v. Treatments >10 acres using any aquatic herbicide may have a basin-wide or lakewide impact, so the following monitoring is <u>required</u>.
      1. Pre (prior year and/or year of) and post (year of and/or year after) treatment aquatic plant surveys within the proposed treatment areas.
      2. Herbicide concentration monitoring.

d. The same area will not be chemically treated two years in a row with the same herbicide or any herbicide with the same mode of action as determined by Weed Science Society of America (WSSA) Groups.[1]
   i. PCOR, 2,4D, and triclopyr are all Group 4 herbicides.
   ii. Diquat is a Group 22 herbicide.
   iii. Endothall is a Group 31 herbicide.

7) Winter Drawdown can be considered when EWM in a late summer bed mapping survey reaches 24% (200 acres) of the average littoral zone (832 acres).
   a. Work with the Washburn County Highway Department to either extend the existing drawdown permit (end date 11/01/2024) or apply for a new 5-yr drawdown permit (through 2029).
   b. Prepare a WDNR Population Control Grant to help defray expenses associated with the drawdown.

[1] https://wssa.net/weed/herbicides/

i. Primary expenses would include a whole-lake PI survey and reimbursement for lost power generation during the drawdown.
ii. Pre-grant due September 15th of the given year.
iii. Final grant due November 15th of the given year.

c. Complete a whole-lake, PI survey work.
    i. In the summer/late summer season prior to the planned drawdown
    ii. In the summer season following the planned drawdown
d. Implement other monitoring programs as determined in planning.

AQUATIC PLANT SURVEY WORK

A late summer EWM bed-mapping survey of the entire littoral zone of the Minong Flowage will be completed annually. If beds of EWM are identified that reach or exceed 3 acres, have not been chemically treated in that year, and there is reason to consider herbicide application the following year, new points will be created and a point-intercept, aquatic plant survey within the newly identified area will be completed to document the presence of EWM and native plants. Management proposals will be made based on the results of this survey. If an herbicide proposal is made and approved for the following season, a pre-treatment readiness survey will be completed to determine if an appropriate amount of EWM growth has been attained to implement the treatment. The result of the treatment will be documented by repeating the point-intercept survey in the summer following the treatment year. As mentioned, the same area will not be treated two years in a row, providing an opportunity to see longer term impacts of the treatment if there are any.

WILD RICE

Wild rice will be monitored annually via aerial photography completed by GLIFWC. In years of large-scale management action pre- and post-treatment PI surveys will be completed following WDNR guidelines. At least every five years, whole-lake PI surveys will be completed. Bed mapping of wild rice is not recommended in this Plan. In any given year, it can be added if requested by Tribal Resources, and if Tribal Resources are willing to share in the cost of the survey, or the survey is funded by WDNR grants.

CLP

Early season, cold water PI surveys focusing on CLP should be completed in the same year that summer, whole-lake, PI surveys are completed, roughly every five years. CLP should be monitored annually in mid to late June by trained volunteers following a meandering survey approach. During the survey, if it is determined that there is more CLP than what is normally identified, more formal CLP bed mapping should be considered. A bed is defined as an area where the target species makes up >50% of all aquatic plants and has a definable edge. In high-density areas, the target species may not have a definable edge but is still present. The level of target species growth within each area will be ranked using the WDNR's standard 1-3 rake fullness scale. A bed will be recorded by placing a string of waypoints around the edges of the bed using a Garmin GPS unit. These data will then be mapped, and the acreage of each bed determined to the nearest hundredth of an acre. If moderate to dense beds of CLP exceeding 5 acres are found and appear to be negatively impacting native aquatic plants including wild rice and/or are posing significant navigational impairment are identified, management of those beds could be proposed in the following year.

PURPLE LOOSESTRIFE

MFA volunteers will continue to monitor purple loosestrife in and around the shores and wetlands adjacent to the Flowage. If found, attempts will be made to physically remove the individual plants, or at least remove the flowering heads to reduce seed production. In addition, campers and counselors at the Swift Nature Camp have raised Galerucella beetles as a part of their nature curriculum. While the numbers of beetles raised by the Camp far outweighs the current need for beetles, there are many other places in Washburn County where beetles can be released. To that end, the MFA will work with Washburn County to identify beetle releases sites not on the Flowage.

OTHER AIS

Zebra mussels, spiny waterflea, and other AIS will be monitored by MFA volunteers following WDNR CLMN AIS monitoring guidelines. MFA volunteers will continue to place zebra mussel plate samplers at strategic places in the Flowage under the guidance of the Washburn County AIS Coordinator. If monitoring finds any AIS not already in the Flowage, it will be reported to the WDNR, at which point appropriate management actions will be taken.

WATER QUALITY TESTING

There is a substantial amount of water clarity and water quality data courtesy of the Citizen Lake Monitoring Network and MFA volunteers. This data is used to compare changes in water quality in the Minong Flowage over time and to help determine if EWM and EWM management actions are affecting water quality. The MFA will continue monitoring both the Central Basin and the Deep Hole near the dam. In addition, a site in the North Basin or Serenity Bay will be added. All sites will collect Secchi disk readings of water clarity, total phosphorus, and chlorophyll-a data. Temperature and dissolved oxygen data may be collected as well.

2024-2028 AQUATIC PLANT MANAGEMENT GOALS, OBJECTIVES, AND ACTIONS

There are seven goals associated with this Aquatic Plant Management Plan. Each goal has several objectives and a list of actions to complete to help meet the objective and accomplish the goal (Appendix B). Each of these goals is important for keeping the Minong Flowage healthy and maintaining its expected uses over at least the next five years. The objectives included in this plan are measurable and presumed to be reachable and reasonable. The actions in this plan are intended to be implemented by the MFA with input and assistance from its lake constituency and from the WDNR, private consultants, and other resource professionals.

- Goal 1 – Maintain open and involved stakeholder participation in EWM management planning, implementation, and evaluation.
- Goal 2 – Protect and enhance the native aquatic plant community.
- Goal 3 – Minimize the negative impact of EWM on the native aquatic plant community, lake use and access, and the investment of property owners.
- Goal 4 – Reduce the threat that a new aquatic invasive species will be introduced and go undetected in the Minong Flowage and that existing AIS will be carried to other lakes.

- Goal 5 – Improve the level of knowledge property owners and lake users have related to aquatic invasive species and how they can impact the lake.

- Goal 6 – Improve the level of knowledge property owners and lake users have related to how their actions impact the aquatic plant community, lake community, water quality.

- Goal 7 – Complete APM Plan implementation and maintenance for a period of five years following adaptive management practices.