AHLSTROM MUNKSJÖ

VIA (electronic) eFile only – **Public**

December 18, 2018

Federal Energy Regulatory Commission
Ms. Kimberly D. Bose, Secretary
888 First Street NE
Washington, DC 20426

Re: Mosinee Hydroelectric Project, FERC Project #2207
Invasive Plant Survey Report, 2018

Dear Secretary,

Article 408 of the FERC license for Project #2207 requires that Ahlstrom-Munksjo, (formerly Expera Specialty Solutions) routinely monitor invasive species in project waters. The 2018 monitoring has been conducted per the FERC ORDER AMMENDING INVASIVE PLANT MONITORING PLAN PURSUANT TO ARTICLE 408, (Issued May 2, 2013).

The Licensee is herby eFiling the 2018 survey report. The Wisconsin Department of Natural Resources and US Fish & Wildlife Service correspondence has been included as Appendix F. No changes have been made to the report post Agency review.

Thank you in advance for your review of our report. If you have any questions concerning the report, please do not hesitate to contact me. Please phone me directly at (715) 692-3330 or send an email to Andy.Cychosz@ahlstrom-munksjo.com.

Sincerely,

Andy Cychosz 12/18/2018

Andy Cychosz
Environmental Engineer

Enclosure (eFiling); 2018 Invasive Species Report_FERC #2207

Ahlstrom-Munksjö
100 Main Street
Mosinee, WI 54455

2018 Invasive Species Report

Mosinee Hydroelectric Project
Marathon County, WI
FERC Project No. P-2207

Submitted by Mosinee Paper Corporation

October 16, 2018

Table of Contents

1.0 Executive Summary

Article 408 of the Mosinee Hydroelectric Project (issued September 13, 2006) required the Licensee to conduct annual surveys for purple loosestrife (*Lythrum salicaria*), Eurasian water milfoil (*Myriophyllum spicatum*), and curly-leaf pondweed (*Potamogeton crispus*) for a minimum of five consecutive years, beginning in 2007. A comprehensive report containing all the data was required with the fifth monitoring report and was filed January 5, 2012, including the Licensee's proposed recommendation for future monitoring. The Licensee monitored for Galerucella (Cella) beetle population in 2012 (filed on January 15, 2013) awaiting Commission action on the Licensee's proposed recommendations. Subsequently, on May 2, 2013 the Commission issued its ORDER amending Article 408 (attached as Appendix E) lengthening the invasive plant monitoring frequency from annually to every three years and commencing in 2015. That Commission ORDER also modified the curly-leaf pondweed monitoring window. Curly-leaf pondweed is now to be monitored in June, rather than concurrently with the purple loosestrife and Eurasian water milfoil in Late July or early August.

Purple loosestrife (PL) was once again found throughout the entire survey area. Of the 190 previously documented PL sites, about 9% showed an increase in density, 3% showed a decrease in density, and the other 88% showed no change. Additionally, six additional documented sites were added in the 2018 survey, bringing the total number of documented PL sites to 196. As noted in the previous report, the areas where no PL was found tended to be undisturbed wooded shorelines with northern exposures that limit sunlight penetration.

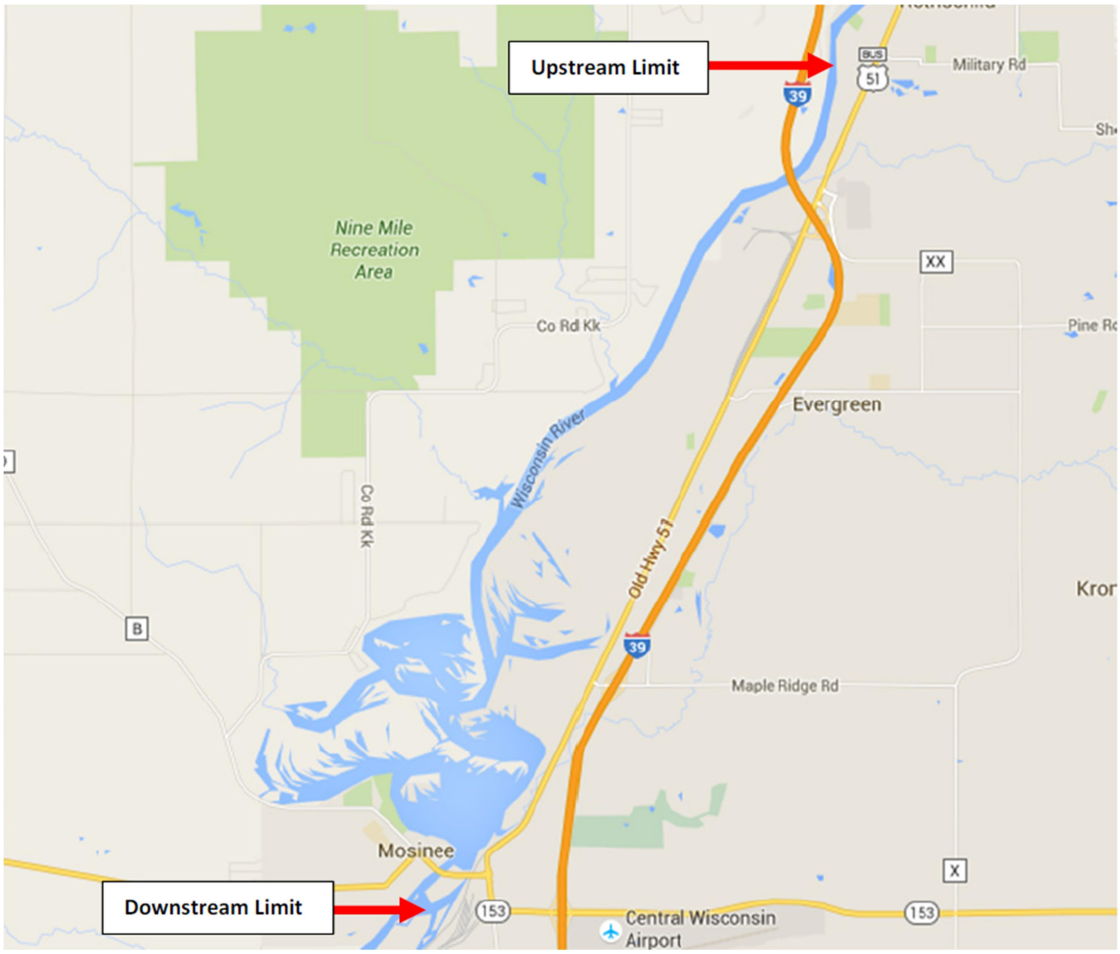
Galerucella (Cella) beetle populations have spread throughout most of the survey area since the low in 2011. An upward trend was observed in the 2012 survey. The 2015 survey noted approximately 54% of the previously documented beetle density sites appeared to have increased in density. The 2018 survey shows the beetle density sites were found to generally be the same as they were in the 2015 survey. About 11% of the previously documented sites showed an increase in beetle density and 11% showed a decrease in beetle density. Areas of beetle damage have been noted on the maps found in APPENDIX A. Additionally, beetles were transferred from the park to the area noted on the map in APPENDIX A.

Eurasian water milfoil (EWM) was found in a few shallow waters, generally consistent with past surveys. Wherever EWM was found, densities were low and did not cause navigational difficulties for the survey crew. No EWM was found in the canal, bypass reach, tailrace, or Half-Moon Lake. Much of what was documented was occurrences of stray singular plants as observed during the meander survey. Past surveys have commented on a decreasing trend and the 2018 survey work agrees with that as well. All plants documented in the Mosinee and Cemetery Slough impoundments were found during meander survey as previously mentioned, and not from the rake methods.

Curly-leaf pondweed (CLP) was noted to have disappeared from the project survey waters in the 2011 survey. It was concluded that CLP had been eliminated from the project reservoirs. Although the 2018 survey did not find any areas of CLP growing in the project survey waters, some floating fragments of CLP were found. These fragments of CLP may have come from upstream outside of the project reservoir boundaries.

2.0 Methods

The upstream and downstream survey limits for PL, CLP, and EWM are shown on the following map labeled "Map of Survey Limits" and were defined as follows: The waters and shoreline of the Wisconsin River and Mosinee Flowage from N44° 52' 48.4" W89° 38' 16.6" WGS84 approximately 1.0 miles upstream of the I-39 Bridge to the dam at the Mosinee Hydroelectric Project; the waters and shoreline of the power canal, bypass reach, and tailrace from the dam at the Mosinee Hydroelectric Project downstream to N44° 47' 10.6" W89° 42' 08.6" WGS84 approximately 0.5 miles downstream of the Highway 153 Bridge; the waters and shoreline of Half-Moon Lake and Cemetery Slough.



Map of Survey Limits

All previous years of monitoring reports and results were reviewed and analyzed prior to performing the 2018 monitoring work for crew familiarity and to assist in the planning of the 2018 work.

The WI DNR's most recent monitoring protocols for AIS has continued to be used as a guide and basis for all the survey work. In November 2006, point intercept sampling locations were acquired from the WIDNR for the Mosinee Flowage (716 acres, 518 sample points), Half-Moon Lake (218 acres, 154 sample points), and Cemetery Slough (135 acres, 102 sample points). These locations were formatted and uploaded to a handheld GPS device with WAAS capability.

No PL plants were manually pulled during this survey. This was due to the large degree of active beetles on the PL plants and to promote Cella distribution. As mentioned previously in this report, beetles were transferred from the park to the area noted on the map in APPENDIX A.

2.1 Purple Loosestrife

PL meander surveys were conducted on the following dates:

- July 21 and 22
- July 28 and 29
- August 4 and 5
- August 18

The PL meander surveys were accomplished by scanning the shoreline and shallow areas of the project waters by two people from a boat. Certain areas were surveyed from land where it was not practical or possible to observe from the boat. These would include the area from the boat barrier to the dam and the head gates of the power canal, the bypass reach, the power canal, the tail race, and the western side of Cemetery Slough along County Hwy B. High powered (15 x 50) image stabilization binoculars were used to facilitate the spotting of plants. A handheld Global Positioning System (GPS) unit with Wide Area Augmentation System (WAAS) enabled was used to locate all the previous locations that have previously been identified, as well as document any new locations.

Maps and comparative results of these surveys are included in APPENDIX A in this report.

2.2 Eurasian Water Milfoil

EWM meander surveys and a point intercept survey were conducted concurrently with the PL meander surveys on the following dates:

- July 21 and 22
- July 28 and 29
- August 4 and 5
- August 18

EWM surveys were performed by visually scanning shallow areas of the project waters during the PL meander survey by two people from a boat. If a suspected plant was observed, a sample was grabbed and identified. During launch and recovery of the survey boat, boat ramps and parking areas were scanned for the presence of EWM plants. These would include River Park, Half-Moon Lake, and Chuck's Landing boat ramps. No EWM was found at any of these boat ramps during the survey.

Besides the standard safety devices located in the survey boat, the following equipment was used: handheld GPS unit with WAAS enabled (with all site locations already loaded), lake maps, field data sheets, 18-foot pole-mounted rake, push pole, depth finder, electric trolling motor, and polarized sunglasses. When navigating to the sites using the GPS unit, the zoom level was set to 80 feet. Once the GPS navigation arrow covered the sample point, a rake was dropped to the bottom and dragged for about 2.5 feet. Weeds retrieved were sorted for the presence of EWM. For each site, the sample point number, latitude, longitude, depth, sediment type, EWM density, and comments were recorded. If northern water milfoil was observed at a sample point, it was noted in the comments field.

For hard to reach sites where no sample could be taken (blocked by logs, blocked by fallen trees, etc.), the depth, sediment type, and EWM and density fields were left blank and N/A (no access) was recorded in the comments field. In the case of inaccessible shallow sloughs with deep muck, the sediment type field was designated as muck even though the survey crew could not actually reach the sample point.

If a sample site produced no weeds, the depth was recorded and a notation was made in the comments field. After the depth of the deepest weed growth was established, for all deeper points, depth was recorded, but no samples were taken and a notation was made in the comments field.

In general, wherever EWM did occur, densities were low and did not cause navigational difficulties for the survey crew.

Maps and comparative results of these surveys are included in APPENDIX B in this report.

2.3 Curly-Leaf Pondweed

CLP meander surveys and a point intercept survey was conducted on the following dates:

- June 9 and 10
- June 16
- June 23 and 24

CLP surveys were performed by visually scanning shallow areas of the project waters by two people from a boat. During launch and recovery of the survey boat, boat ramps and parking areas were scanned for the presence of CLP plants. These would include River Park, Half-Moon Lake, and Chuck's Landing boat ramps. No CLP was found at any of these boat ramps during the survey.

Besides the standard safety devices located in the survey boat, the following equipment was used: handheld GPS unit with WAAS enabled (with all site locations already loaded), lake maps, field data sheets, 18-foot pole-mounted rake, push pole, depth finder, electric trolling motor, and polarized sunglasses. When navigating to the sites using the GPS unit, the zoom level was set to 80 feet. Once the GPS navigation arrow covered the sample point, a rake was dropped to the bottom and dragged for about 2.5 feet. Weeds retrieved were sorted for the presence of CLP. For each site, the sample point number, latitude, longitude, depth, sediment type, CLP density, and comments were recorded. If northern water milfoil was observed at a sample point, it was noted in the comments field.

For hard to reach sites where no sample could be taken (blocked by logs, blocked by fallen trees, etc.), the depth, sediment type, CLP density fields were left blank and N/A (no access) was recorded in the comments field. In the case of inaccessible shallow sloughs with deep muck, the sediment type field was designated as muck even though the survey crew could not actually reach the sample point.

If a sample site produced no weeds, the depth was recorded and a notation was made in the comments field. After the depth of the deepest weed growth was established, for all deeper points, depth was recorded, but no samples were taken and a notation was made in the comments field.

Maps and comparative results of these surveys are included in APPENDIX C in this report.

2.4 Miscellaneous

Previous to initially launching into Mosinee Hydroelectric Project waters, the survey boat and survey equipment were treated with a bleach solution to prevent possible spread of invasive

species from other locations. After the survey was completed and before launching into other waters, the survey boat and survey equipment were again treated with a bleach solution. Weeds were removed from boat and trailer after each recovery and before leaving the boat launch.

3.0 Observations

3.1 Purple Loosestrife

Purple loosestrife (PL) was once again found throughout the entire survey area. Of the 190 previously documented PL sites, about 9% showed an increase in density, 3% showed a decrease in density, and the other 88% showed no change. Additionally, six additional documented sites were added in the 2018 survey, bringing the total number of documented PL sites to 196. As noted in the previous report, the areas where no PL was found tended to be undisturbed wooded shorelines with northern exposures that limit sunlight penetration.

Purple loosestrife sightings slightly increased from the 2015 survey in sunny areas such as this one

Galerucella (Cella) beetle populations have spread throughout most of the survey area since the low in 2011. An upward trend was observed in the 2012 survey. The 2015 survey noted approximately 54% of the previously documented beetle density sites appeared to have increased in density. The 2018 survey shows the beetle density sites were found to generally be the same as they were in the 2015 survey. About 11% of the previously documented sites showed an increase in beetle density and 11% showed a decrease in beetle density. Areas of

beetle damage have been noted on the maps found in APPENDIX A. Additionally, beetles were transferred from the park to the area noted on the map in APPENDIX A.

Purple loosestrife plant completely defoliated from beetle damage (2018)

Rather than record every single occurrence of PL, (and consistent with the previous survey), a density rating method was used to estimate the quantity and locations of plants and a density rating was used for all shoreline areas. Values were assigned for the estimated amount of PL plants per 1000 square feet of area and are categorized as follows:

L (Light) = 1 – 5 plants
M (Medium) = 6 – 25 plants
H (Heavy) = 26 – 100 plants
VH (Very Heavy) = +100 plants

Individual shoreline maps were created at the time of the surveys for all project areas showing PL locations and densities using this method with colors. Although not required by the scope of these surveys, Cella beetle damage at key locations was also noted on the maps.

Cella beetle damage recorded was rated as follows:

Light (or Minor) – There were a few holes and/or some "window paining" on the leaves of one or more PL plants. Overall damage was observed on less than 25% of total leaf area of any individual PL plant, however, many or even most of the PL plants may have exhibited no damage at all. *Depending on time of year, one or more life stages of Cella beetle may have*

been observed on one or more plants, although it is more likely that no Cella would be observed. Light damage may indicate a recovering population or pioneering beetles that have recently migrated into the area.

Medium – Beetle damage was obvious. There were many holes and/or much "window pane" damage on the leaves of one or more PL plants. Overall damage was observed on between 25% and 50% of total leaf area of any individual PL plant, however, a number of the PL plants may have exhibited no damage at all. *Depending on time of year, it would not be unusual to see one or more life stages of Cella beetles on one or more plants. Medium damage may indicate an established population that has not reached a critical mass where migration to find new food sources is a necessity, yet.*

Heavy – Beetle damage was very obvious. There were many holes and/or much "window pane" damage on the leaves of most of the PL plants, although a few plants may have still remained untouched. Overall damage was 50% or greater of total leaf area of any individual PL plant. Some plants may be completely brown or defoliated. *Depending on time of year, it would be likely to find one or more life stages of Cella beetle on one or more plants provided there were still enough green plants remaining to supply adequate food. Heavy damage may indicate that an established population has reached a critical mass and needs to begin migrating to find new food sources to sustain themselves.*

Maps and comparative results of these surveys are included in Appendix A of this report.

Galerucella Beetle shown on visibly damaged purple loosestrife plant from 2018 survey

3.2 Eurasian Water Milfoil

After the 2007 survey, occurrences of EWM steadily declined in each of the subsequent survey years. In 2011, EWM occurrences and coverage was at its lowest numbers within the survey limits. During the 2018 survey, EWM was found in a few shallow waters, generally consistent with past surveys. No EWM was found in the canal, bypass reach, tailrace, or Half-Moon Lake. Much of what was documented was occurrences of stray singular plants as observed during the meander survey. Past surveys have commented on a decreasing trend and the 2018 survey work agrees with that as well. All plants documented in the Mosinee and Cemetery Slough impoundments were found during the meander survey as previously mentioned, and not from the rake methods.

Wherever EWM was found, densities were low and did not cause navigational difficulties for the survey crew.

Eurasian Watermilfoil found in shallow water during 2018 survey

3.3 Curly-Leaf Pondweed

CLP had been decreasing since 2007 with none at all found in project waters in 2011. None was found in any of the survey limits in 2015. It was concluded that CLP had been eliminated from the project reservoirs. Although the 2018 survey did not find any areas of CLP growing in the project survey waters, some floating fragments of CLP were found. These fragments of CLP may have come from upstream outside of the project reservoir boundaries.

3.4 Miscellaneous

The survey crew again noted that PL is abundant in the Mosinee area outside of the project boundary, particularly within the Interstate I-39 corridor which crosses the Wisconsin River near the upstream survey limit. It is likely that seeds and plant fragments from these locations are transferring into the survey area and establishing new PL plants. EWM and CLP have been reported to be found in the Wisconsin River both upstream and downstream of the Mosinee Hydroelectric Project. As noted in the previous survey, spotted knapweed was observed along roadways and in fields surrounding the Mosinee Project corridor, but no plants were observed within the survey boundary. Reed canary grass and Japanese honeysuckle have also been observed in the project area, but were not included in the scope of these surveys.

4.0 Recommendations

4.1 Purple Loosestrife

Biological control for PL is already in place at the Mosinee Project in the form of Galerucella beetles. This has been proven as one of the most effective and economical methods of controlling the spread of PL. Considering the quantity of PL and the terrain in the survey area, chemical and/or mechanical control methods would be very difficult and, most likely, not as effective and is not recommended. Manual control methods of pulling and cutting small occurrences of PL plants were tested within the survey area during the 5-year survey. They were found to have little effect and are not recommended.

The increasing trend of Cella beetle populations tapered off in this survey, as the observed beetle densities were about the same as they were in 2015. As noted in this report, some beetles were moved to an area light beetle density. This area was noted to have medium beetle density in 2015. This may help determine the effectiveness of transporting beetles in future surveys.

It is recommended that the current tri-annual PL surveys continue, with the next survey being conducted in 2021.

4.2 Eurasian Water Milfoil

Comparison of the 2007, 2008, 2009, 2010, and 2011 survey results indicate that quantities of EWM decreased year after year in the entire survey area with 2011 being the year when the least amount of plants were detected. In 2015 a slight increase in the Mosinee and Cemetery Slough impoundments was noted. However, much of what was documented in 2015 were occurrences of stray singular plants observed during the meander survey. The

2018 survey showed a general decrease in observed EWM. Most EWM reported was very sparse or individual plants that were noted. It is recommended that the current tri-annual EWM surveys continue, with the next survey year being conducted in 2021.

4.3 Curly-Leaf Pondweed

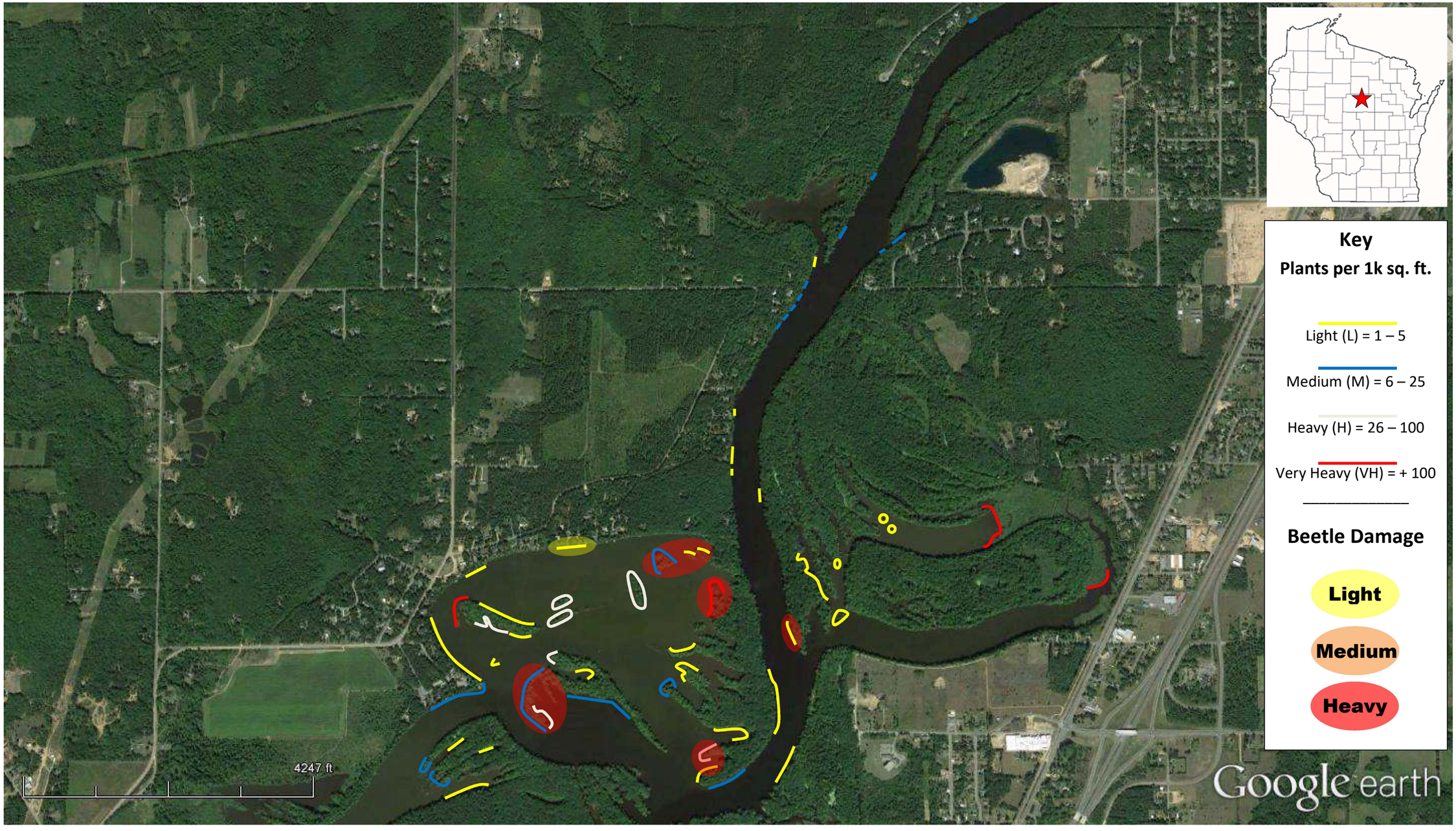
CLP had been decreasing since 2007 with none at all found in project waters in 2011. None was found in any of the survey limits in 2015. It was concluded that CLP had been eliminated from the project reservoirs. Although the 2018 survey did not find any areas of CLP growing in the project survey waters, some floating fragments of CLP were found. These fragments of CLP may have come from upstream outside of the project reservoir boundaries. It is still recommended to discontinue the CLP survey work, as recommended in the 2015 report.

APPENDIX A

Purple Loosestrife Survey Results

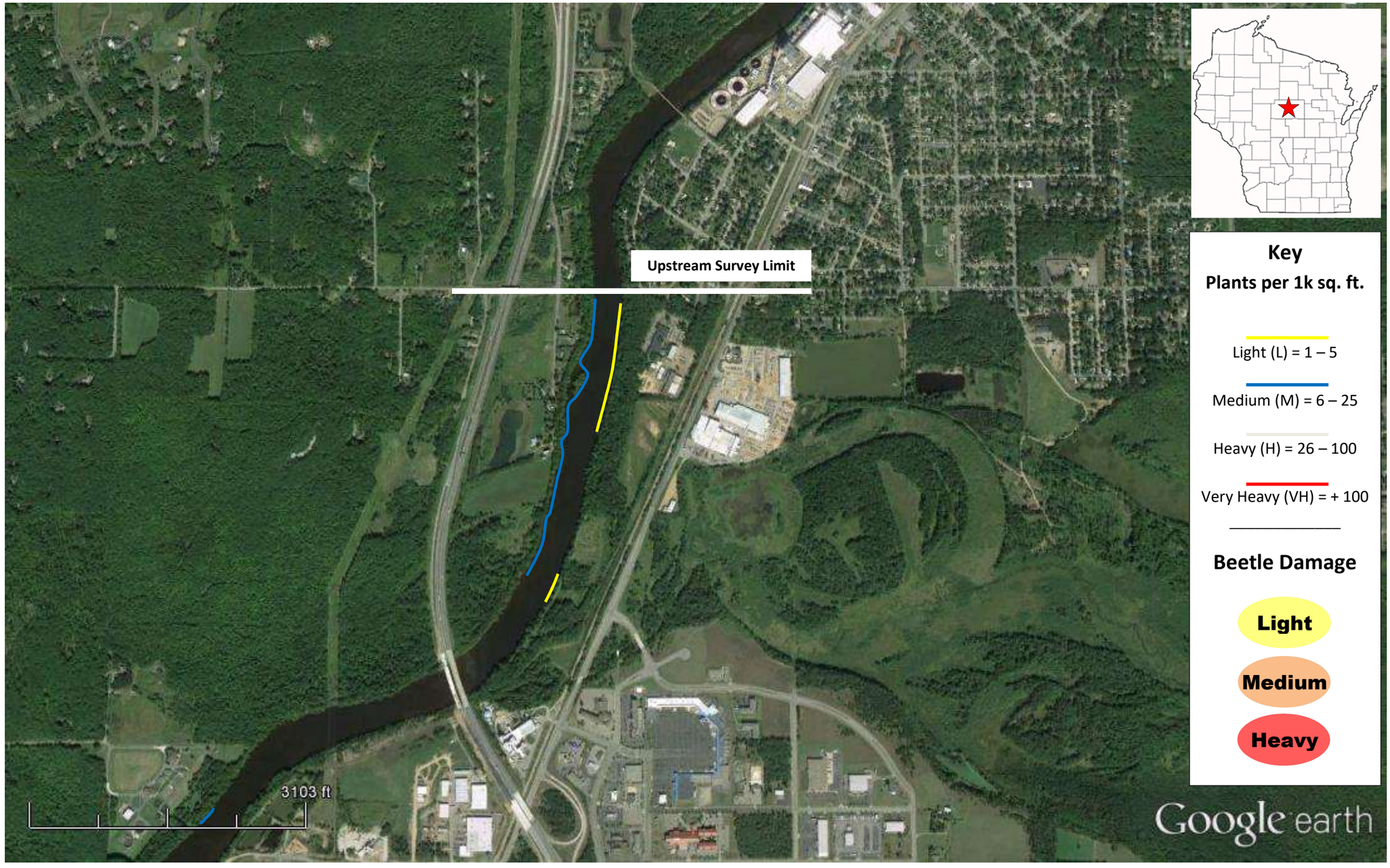
2018 Mosinee Purple Loosestrife Survey – Map #1

2018 Mosinee Purple Loosestrife Survey – Map #2

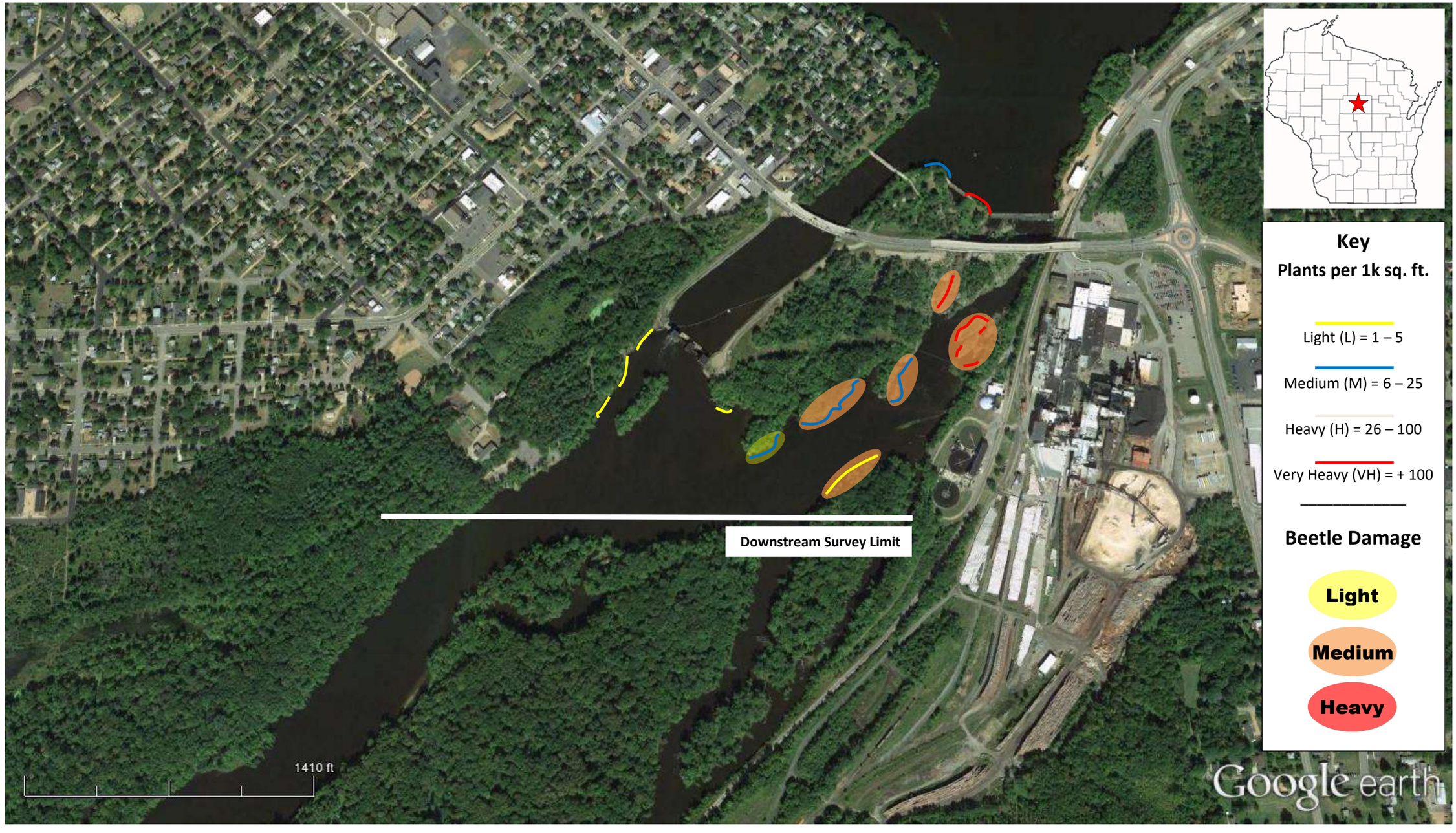


2018 Mosinee Purple Loosestrife Survey – Map #3

2018 Mosinee Purple Loosestrife Survey – Map #4



2018 Mosinee Purple Loosestrife Survey – Map #5



Key

Plants per 1k sq. ft.

Light (L) = 1 – 5

Medium (M) = 6 – 25

Heavy (H) = 26 – 100

Very Heavy (VH) = + 100

Beetle Damage

Light

Medium

Heavy

Purple Loosestrife Survey

Project: Mosinee #2207 **Datum:** WGS 84

Date: July 21, 22, 28, 29 & Aug. 4, 5, 18

Crew: JAK, SJK, LAK, BJK

GPS Point	Latitude	Longitude	Plant Height	Stand Area	Beetle Damage	Comments
MOSN PL001	N44° 49.021'	W89° 41.724'	N/A	N/A	N/A	discontinued - see Half-Moon Lake Distribution Map
MOSN PL002	N44° 49.096'	W89° 41.878'	N/A	N/A	N/A	discontinued - see Half-Moon Lake Distribution Map
MOSN PL003	N44° 49.040'	W89° 42.221'	N/A	N/A	N/A	discontinued - see Half-Moon Lake Distribution Map
MOSN PL004	N44° 48.983'	W89° 42.514'	N/A	N/A	N/A	discontinued - see Half-Moon Lake Distribution Map
MOSN PL005	N44° 48.800'	W89° 42.362'	N/A	N/A	N/A	discontinued - see Half-Moon Lake Distribution Map
MOSN PL006	N44° 48.103'	W89° 41.600'	N/A	N/A	N/A	
MOSN PL007	N44° 48.025'	W89° 41.133'	N/A	N/A	N/A	
MOSN PL008	N44° 48.438'	W89° 41.802'	2'-4'	100+	Medium	
MOSN PL009	N44° 48.461'	W89° 42.106'	N/A	N/A	N/A	
MOSN PL010	N44° 48.293'	W89° 42.031'	N/A	N/A	N/A	
MOSN PL011	N44° 48.622'	W89° 42.674'	N/A	N/A	N/A	
MOSN PL012	N44° 48.496'	W89° 43.352'	2' - 6'	>1000 Plants	Light	
MOSN PL013	N44° 48.222'	W89° 41.971'	N/A	N/A	N/A	
MOSN PL014	N44° 48.388'	W89° 41.148'	2'-3'	3 Plants	Light	
MOSN PL015	N44° 49.142'	W89° 41.286'	N/A	N/A	N/A	
MOSN PL016	N44° 49.207'	W89° 41.669'	N/A	N/A	N/A	
MOSN PL017	N44° 49.303'	W89° 41.689'	2'-3'	5 Plants	Light	
MOSN PL018	N44° 49.436'	W89° 41.672'	2'-3'	15 Plants	Light	
MOSN PL019	N44° 49.635'	W89° 41.560'	N/A	N/A	N/A	
MOSN PL020	N44° 49.716'	W89° 41.477'				grouped site, see point #142
MOSN PL021	N44° 49.832'	W89° 41.403'				grouped site, see point #23
MOSN PL022	N44° 49.848'	W89° 41.341'				grouped site, see point #23
MOSN PL023	N44° 50.074'	W89° 41.174'	2'-4'	25 Plants	None	grouped with point #'s 21, 23, 162, 177, 178
MOSN PL024	N44° 50.157'	W89° 41.105'	2'	1	None	
MOSN PL025	N44° 50.357'	W89° 40.957'	3'	2	None	
MOSN PL026	N44° 50.454'	W89° 40.795'	2'-4'	12 Plants	Light	
MOSN PL027	N44° 50.589'	W89° 40.518'	N/A	N/A	N/A	
MOSN PL028	N44° 50.655'	W89° 40.369'	2' - 3'	10 Plants	None	grouped with Point #30
MOSN PL029	N44° 50.683'	W89° 40.393'	N/A	N/A	N/A	
MOSN PL030	N44° 50.685'	W89° 40.248'				grouped with Point #28
MOSN PL031	N44° 50.751'	W89° 40.158'	N/A	N/A	N/A	
MOSN PL032	N44° 50.841'	W89° 40.065'	N/A	N/A	N/A	
MOSN PL033	N44° 50.911'	W89° 40.011'	N/A	N/A	N/A	
MOSN PL034	N44° 50.957'	W89° 39.986'	N/A	N/A	N/A	
MOSN PL035	N44° 50.997'	W89° 39.964'	N/A	N/A	N/A	
MOSN PL036	N44° 51.092'	W89° 39.903'	2'-4'	4 Plants	None	Point #36 and #144 are grouped as a continous site
MOSN PL037	N44° 51.345'	W89° 39.733'	N/A	N/A	N/A	
MOSN PL038	N44° 51.405'	W89° 39.693'	N/A	N/A	N/A	
MOSN PL039	N44° 51.460'	W89° 39.654'	N/A	N/A	N/A	
MOSN PL040	N44° 51.568'	W89° 39.591'	N/A	N/A	N/A	
MOSN PL041	N44° 51.623'	W89° 39.556'	N/A	N/A	N/A	

Purple Loosestrife Survey

Project: Mosinee #2207 **Datum:** WGS 84

Date: July 21, 22, 28, 29 & Aug. 4, 5, 18

Crew: JAK, SJK, LAK, BJK

GPS Point	Latitude	Longitude	Plant Height	Stand Area	Beetle Damage	Comments
MOSN PL042	N44° 51.893'	W89° 39.243'	3'	6 Plants	None	
MOSN PL043	N44° 51.999'	W89° 39.021'	N/A	N/A	N/A	
MOSN PL044	N44° 52.018'	W89° 38.882'	N/A	N/A	N/A	
MOSN PL045	N44° 52.100'	W89° 38.670'	3'-4'	15 Plants	None	
MOSN PL046	N44° 52.156'	W89° 38.591'				
MOSN PL047	N44° 52.244'	W89° 38.516'	N/A	N/A	N/A	
MOSN PL048	N44° 52.329'	W89° 38.459'	N/A	N/A	N/A	
MOSN PL049	N44° 52.396'	W89° 38.433'	1'-4'	25 Plants	None	
MOSN PL050	N44° 52.467'	W89° 38.411'				
MOSN PL051	N44° 52.506'	W89° 38.401'				
MOSN PL052	N44° 52.545'	W89° 38.396'				
MOSN PL053	N44° 52.639'	W89° 38.373'				grouped with Point #49
MOSN PL054	N44° 52.680'	W89° 38.348'				grouped with Point #49
MOSN PL055	N44° 52.717'	W89° 38.333'				
MOSN PL056	N44° 52.803'	W89° 38.322'				grouped with Point #49
MOSN PL057	N44° 52.758'	W89° 38.235'				grouped with Point #49
MOSN PL058	N44° 52.612'	W89° 38.267'	N/A	N/A	N/A	
MOSN PL059	N44° 52.426'	W89° 38.335'	N/A	N/A	N/A	
MOSN PL060	N44° 52.362'	W89° 38.344'	N/A	N/A	N/A	
MOSN PL061	N44° 52.284'	W89° 38.385'				grouped with Point #62
MOSN PL062	N44° 52.186'	W89° 38.444'	2'-4'	5 plants	None	Point #'s 61 and 62 are grouped together
MOSN PL063	N44° 52.118'	W89° 38.510'	N/A	N/A	N/a	
MOSN PL064	N44° 51.992'	W89° 38.722'	3' - 4'	5 Plants	Light	
MOSN PL065	N44° 51.977'	W89° 38.797'	2' - 3'	4 Plants	Heavy	
MOSN PL066	N44° 51.694'	W89° 39.311'	3' - 6'	6 Plants	None	
MOSN PL067	N44° 51.486'	W89° 39.532'	N/A	N/A	N/A	
MOSN PL068	N44° 50.974'	W89° 39.870'	N/A	N/A	N/A	
MOSN PL069	N44° 50.827'	W89° 39.975'	N/A	N/A	N/A	
MOSN PL070	N44° 50.761'	W89° 40.041'	2'	3 Plants	None	
MOSN PL071	N44° 50.640'	W89° 40.197'	N/A	N/A	N/A	
MOSN PL072	N44° 50.466'	W89° 40.569'	N/A	N/A	N/A	
MOSN PL073	N44° 50.428'	W89° 40.670'	N/A	N/A	N/A	
MOSN PL074	N44° 50.153'	W89° 41.034'	N/A	N/A	N/A	
MOSN PL075	N44° 50.179'	W89° 40.930'	N/A	N/A	N/A	
MOSN PL076	N44° 49.981'	W89° 41.120'	N/A	N/A	N/A	
MOSN PL077	N44° 49.677'	W89° 41.362'	N/A	N/A	N/A	
MOSN PL078	N44° 49.488'	W89° 41.556'	N/A	N/A	N/A	
MOSN PL079	N44° 49.015'	W89° 41.505'	2'-4'	3 Plants	None	
MOSN PL080	N44° 48.935'	W89° 41.480'	2'-4'	1 Plant	None	
MOSN PL081	N44° 48.903'	W89° 41.468'	3'	2 Plants	None	
MOSN PL082	N44° 47.267'	W89° 41.822'	N/A	N/A	N/A	
MOSN PL083	N44° 47.285'	W89° 41.802'				

Purple Loosestrife Survey

Project: Mosinee #2207 **Datum:** WGS 84

Date: July 21, 22, 28, 29 & Aug. 4, 5, 18

Crew: JAK, SJK, LAK, BJK

GPS Point	Latitude	Longitude	Plant Height	Stand Area	Beetle Damage	Comments
MOSN PL084	N44° 47.305'	W89° 41.805'	N/A	N/A	N/A	
MOSN PL085 MOSN PL086	N44° 47.344' N44° 47.348'	W89° 41.756' W89° 41.754'	1'-3'	60 Plants	Medium	
MOSN PL087	N44° 47.272'	W89° 42.096'	N/A	N/A	N/A	None found in 2018
MOSN PL088	N44° 47.246'	W89° 42.061'	N/A	N/A	N/A	None found in 2018
MOSN PL089	N44° 47.427'	W89° 41.727'	N/A	N/A	N/A	
MOSN PL090	N44° 47.407'	W89° 41.813'	1'-3'	100+ Plants	Heavy	
MOSN PL091	N44° 47.447'	W89° 42.014'	N/A	N/A	N/A	
MOSN PL092 MOSN PL133	N44° 47.309'	W89° 42.217'	2'-4'	5 plants	Light	grouped with Point #133
MOSN PL093	N44° 47.296'	W89° 42.165'	N/A	N/A	N/A	
MOSN PL094	N44° 47.195'	W89° 41.952'	N/A	N/A	N/A	
MOSN PL095	N44° 47.215'	W89° 41.919'	N/A	N/A	N/A	
MOSN PL096 MOSN PL123	N44° 47.319' N44° 47.350'	W89° 41.862' W89° 41.846'	1'-2'	20 Plants	Medium	
MOSN PL097 MOSN PL098 MOSN PL099	N44° 47.330' N44° 47.338' N44° 47.327'	W89° 41.789' W89° 41.784' W89° 41.764'	1'-3'	~200 - 300 Plants	Light	
MOSN PL100	N44° 48.856'	W89° 42.476'	3'	2 Plants - 20' diameter island	Medium	
MOSN PL101	N44° 47.998'	W89° 43.769'	2' - 9'	>1000 Plants	None	
MOSN PL102	N44° 48.433'	W89° 42.097'	N/A	N/A	N/A	
MOSN PL103	N44° 49.258'	W89° 41.687.	2'	2 Plants	None	grouped with Point #139
MOSN PL104	N44° 49.506'	W89° 41.658'	N/A	N/A	N/A	
MOSN PL105	N44° 49.593'	W89° 41.581'	N/A	N/A	N/A	
MOSN PL106	N44° 49.686'	W89° 41.507'				grouped - see Point #142
MOSN PL107	N44° 49.769'	W89° 41.431'				grouped with Point #23
MOSN PL108	N44° 50.216'	W89° 41.075'	N/A	N/A	N/A	
MOSN PL109	N44° 50.776'	W89° 40.121'	N/A	N/A	N/A	
MOSN PL110	N44° 51.251'	W89° 39.797'	N/A	N/A	N/A	
MOSN PL111	N44° 51.746'	W89° 39.395'	1'-4'	8 Plants	None	
MOSN PL112	N44° 51.305'	W89° 39.660'	N/A	N/A	N/A	
MOSN PL113	N44° 51.196'	W89° 39.744'	N/A	N/A	N/A	
MOSN PL114	N44° 50.271	W89° 40.953'	N/A	N/A	N/A	
MOSN PL115	N44° 50.161'	W89° 40.978'	N/A	N/A	N/A	
MOSN PL116	N44° 50.096'	W89° 41.043'	N/A	N/A	N/A	
MOSN PL117 MOSN PL118	N44° 49.896' N44° 49.931'	W89° 41.133' W89° 41.008'	2'-4'	25 Plants	Medium	
MOSN PL119	N44° 49.788'	W89° 41.264'	N/A	N/A	N/A	
MOSN PL120	N44° 49.429'	W89° 41.586'	N/A	N/A	N/A	
MOSN PL121	N44° 49.336'	W89° 41.596'	N/A	N/A	N/A	
MOSN PL122	N44° 49.261'	W89° 41.586'	N/A	N/A	N/A	

Purple Loosestrife Survey

Project: Mosinee #2207 **Datum:** WGS 84

Date: July 21, 22, 28, 29 & Aug. 4, 5, 18

Crew: JAK, SJK, LAK, BJK

GPS Point	Latitude	Longitude	Plant Height	Stand Area	Beetle Damage	Comments
MOSN PL123	N44° 47.350'	W89° 41.846'	-	-	-	see Point #96
MOSN PL124	N44° 47.373'	W89° 41.772'	N/A	N/A	N/A	
MOSN PL125	N44° 47.395'	W89° 41.731'				
MOSN PL126	N44° 47.445'	W89° 41.755'	N/A	N/A	N/A	
MOSN PL127	N44° 47.453'	W89° 41.810'	N/A	N/A	N/A	
MOSN PL128	N44° 47.465'	W89° 41.888'	N/A	N/A	N/A	
MOSN PL129	N44° 47.377'	W89° 42.021'	N/A	N/A	N/A	
MOSN PL130	N44° 47.331'	W89° 42.083'	N/A	N/A	N/A	
MOSN PL131	N44° 47.332'	W89° 42.121'	N/A	N/A	N/A	
MOSN PL132	N44° 47.274'	W89° 42.176'	N/A	N/A	N/A	
MOSN PL133	N44° 47.216'	W89° 42.313'	-	-	-	grouped with Point #92
MOSN PL134	N44° 47.297'	W89° 42.105'	N/A	N/A	N/A	
MOSN PL135	N44° 48.963'	W89° 41.486'	N/A	N/A	N/A	
MOSN PL136	N44° 49.713'	W89° 41.331'	N/A	N/A	N/A	
MOSN PL137	N44° 49.817'	W89° 41.222'	N/A	N/A	N/A	
MOSN PL138	N44° 49.245'	W89° 41.682'	N/A	N/A	N/A	
MOSN PL139	N44° 49.270'	W89° 41.684'				grouped with Point #103
MOSN PL140	N44° 49.442'	W89° 41.674'	3'	3 Plants	None	
MOSN PL141	N44° 49.544'	W89° 41.630'	N/A	N/A	N/A	
MOSN PL142	N44° 49.757'	W89° 41.442'	3'	5 Plants	None	grouped with Point #'s 20, 176, 106
MOSN PL143	N44° 49.785'	W89° 41.420'	2' - 4'	5 Plants	Light	
MOSN PL144	N44° 51.115'	W89° 39.885'				grouped with Point #36
MOSN PL145	N44° 51.178'	W89° 39.844'	N/A	N/A	N/A	
MOSN PL146	N44° 51.984'	W89° 39.089'	N/A	N/A	N/A	
MOSN PL147	N44° 52.009'	W89° 38.955'	N/A	N/A	N/A	
MOSN PL148	N44° 52.658'	W89° 38.256'				grouped site. See Point # 49 for detail. Points grouped are #'s 53-58, 148, 166, and 190
MOSN PL149	N44° 51.962'	W89° 38.892'	N/A	N/A	N/A	
MOSN PL150	N44° 50.693'	W89° 40.122'	N/A	N/A	N/A	
MOSN PL151	N44° 50.549'	W89° 40.378'	N/A	N/A	N/A	
MOSN PL152	N44° 49.817'	W89° 41.397'	3'	2 Plants	Medium	
MOSN PL153	N44° 48.130'	W89° 41.064'	3'	1 Plant	Light	First observed in 2009. All plants pulled in 2009.
MOSN PL154	N44° 47.367'	W89° 42.046'				shallow water
MOSN PL155	N44° 47.575'	W89° 41.626'	N/A	N/A	N/A	
MOSN PL156	N44° 47.464	W89° 41.808'	N/A	N/A	N/A	
MOSN PL157	N44° 47.442'	W89° 41.928'	N/A	N/A	N/A	
MOSN PL158	N44° 47.289'	W89° 41.934'	2' - 4'	2 Plants	Light	First observed in 2009. No treatment in 2009.
MOSN PL159	N44° 47.250'	W89° 41.871'	2' - 4'	5 - 8 Plants	Unknown	First observed in 2009. Blooming plants on gravel/rock bar. Could not get close enough to see if there was beetle damage. No treatment in 2009.

Purple Loosestrife Survey

Project: Mosinee #2207 **Datum:** WGS 84

Date: July 21, 22, 28, 29 & Aug. 4, 5, 18

Crew: JAK, SJK, LAK, BJK

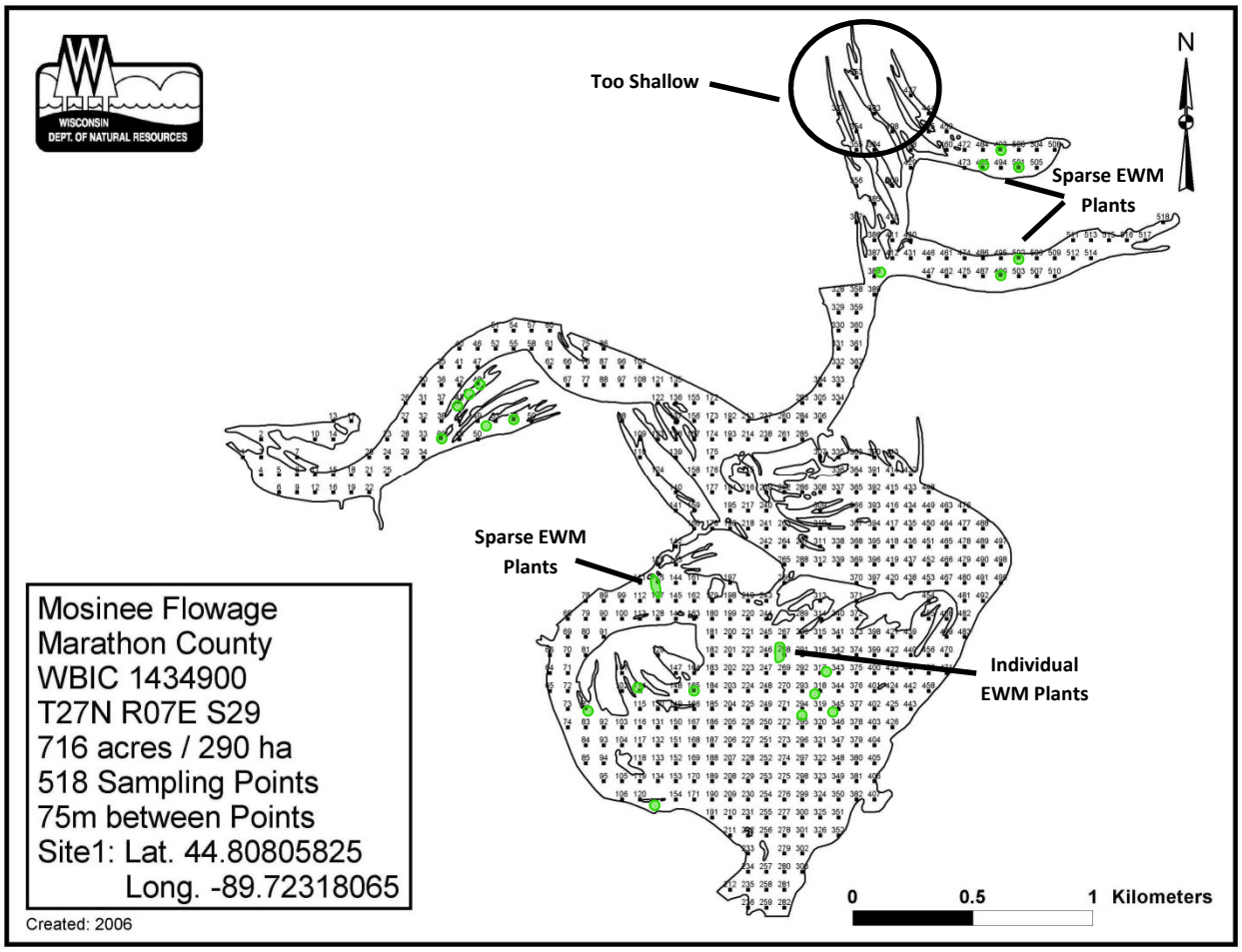
GPS Point	Latitude	Longitude	Plant Height	Stand Area	Beetle Damage	Comments
MOSN PL160	N44° 47.441'	W89° 41.670'	5' - 6'	2 Plants	Unknown	First observed in 2009. Blooming plants next to water intake at east side of spillway. Could not get close enough to see if there was beetle damage. No treatment in 2009.
MOSN PL161	N44° 48.006'	W89° 41.151'	N/A	N/A	N/A	
MOSN PL162	N44° 49.994'	W89° 41.235'	N/A	N/A	N/A	
MOSN PL163	N44° 50.264'	W89° 41.052'	N/A	N/A	N/A	
MOSN PL164	N44° 50.287'	W89° 41.030'	N/A	N/A	N/A	
MOSN PL165	N44° 50.879'	W89° 41.041'	N/A	N/A	N/A	
MOSN PL166	N44° 52.507'	W89° 38.313'				grouped site. See Point # 49 for detail. Points grouped are #'s 53-58, 148, 166, and 190
MOSN PL167	N44° 51.053'	W89° 38.822'	N/A	N/A	N/A	
MOSN PL168	N44° 50.517'	W89° 40.452'	N/A	N/A	N/A	
MOSN PL169	N44° 49.494'	W89° 41.680'	N/A	N/A	N/A	
MOSN PL170	N44° 50.020'	W89° 41.380'	3'	4 Plants	Medium	
MOSN PL171	N44° 47.758'	W89° 41.277'	2'-3'	50 Plants	Heavy	
MOSN PL172	N44° 47.544'	W89° 41.858'	N/A	N/A	N/A	
MOSN PL173	N44° 48.928'	W89° 41.590'	N/A	N/A	N/A	
MOSN PL174	N44° 49.156'	W89° 41.666'	N/A	N/A	N/A	
MOSN PL175	N44° 49.376'	W89° 41.685'	N/A	N/A	N/A	
MOSN PL176	N44° 49.695'	W89° 41.498'				grouped - see Point #142
MOSN PL177	N44° 49.870'	W89° 41.325'	2'-3'	4 Plants	Light	
MOSN PL178	N44° 49.940'	W89° 41.271'	N/A	N/A	N/A	
MOSN PL179	N44° 50.110'	W89° 41.143'	N/A	N/A	N/A	
MOSN PL180	N44° 50.628'	W89° 40.427'	N/A	N/A	N/A	
MOSN PL181	N44° 50.635'	W89° 40.388'	N/A	N/A	N/A	
MOSN PL182	N44° 51.918'	W89° 39.043'	N/A	N/A	N/A	
MOSN PL183	N44° 51.545'	W89° 39.500'	N/A	N/A	N/A	
MOSN PL184	N44° 51.230'	W89° 39.720'	N/A	N/A	N/A	
MOSN PL185	N44° 50.590'	W89° 40.282'	N/A	N/A	N/A	
MOSN PL186	N44° 50.330'	W89° 40.865'	N/A	N/A	N/A	
MOSN PL187	N44° 50.045'	W89° 41.075'	N/A	N/A	N/A	
MOSN PL188	N44° 49.197'	W89° 41.563'	N/A	N/A	N/A	
MOSN PL189	N44° 47.457'	W89° 41.972'	N/A	N/A	N/A	
MOSN PL190	N44° 52.803'	W89° 38.228'				grouped site. See Point # 49 for detail. Points grouped are #'s 53-58, 148, 166, and 190
MOSN PL 191	N44° 47.237'	W89° 42.040'	2'-3'	3 Plants	Medium	
MOSN PL 192	N44° 47.242'	W89° 42.032'				
MOSN PL 193	N44° 47.254'	W89° 42.021'				
MOSN PL 194	N44° 51.536'	W89° 39.505'	3'	3 Plants	Light	
MOSN PL 195	N44° 51.542'	W89° 39.500'	2'-3'	2 Plants	Light	
MOSN PL 196	N44° 51.539'	W89° 39.594'	3'	5 Plants	Light	

APPENDIX B

Eurasian Water Milfoil Survey Results

Mosinee Hydroelectric Project – Reservoir
2018 Invasive Species Monitoring

Eurasian Water Milfoil Distribution Map



EURASIAN WATER MILFOIL Invasive Species Point Intercept Survey Report for 2018
Project/Lake: Mosinee/Mosinee Flowage (518 Sample Points)
Dates: July 21, 22, 28, 29; August 4, 5, 18
WBIC: 1334900
County: Marathon
Crew: JAK, SJK, LAK, BJK
Datum: WGS84

EWM = Eurasian Water Milfoil
CLP = Curly-leaf Pondweed
NWM = Northern Water Milfoil

N/A = Not Accessible
M = Muck
W = Woody Debris
S = Sand
G = Gravel
R = Root Mass (i.e. Lily Pads, Pickerel Weed, etc.)
Rk = Rock

Point	Latitude	Longitude	Depth	Sediment	Method	EWM	Comments
1	N44.80805825	W89.72318065	-	M	-	-	N/A Shallow Muck
2	N44.80873111	W89.72222899	-	M	-	-	N/A Shallow Muck
3	N44.80805595	W89.72223223	1	M	Pole Rake	0	No Weeds
4	N44.80738079	W89.72223547	1	M	Pole Rake	0	No Weeds
5	N44.80737848	W89.72128706	2	M	Pole Rake	0	No Weeds
6	N44.80670332	W89.72129031	2	M	Pole Rake	0	No Weeds Secchi Reading 0.5'
7	N44.80805132	W89.72033539	-	M	-	-	N/A Shallow Muck
8	N44.80737616	W89.72033865	2	M	Pole Rake	0	No Weeds
9	N44.806701	W89.72034191	3	M	Pole Rake	0	No Weeds
10	N44.80872415	W89.7193837	-	M	-	-	N/A Shallow Muck
11	N44.80737384	W89.71939024	3	M	Pole Rake	0	No Weeds
12	N44.80669868	W89.71939352	3	M/W	Pole Rake	0	No Weeds
13	N44.80939698	W89.71843198	-	M	-	-	N/A Shallow Muck
14	N44.80872182	W89.71843527	-	M	-	-	N/A Shallow Muck
15	N44.8073715	W89.71844184	3	M	Pole Rake	0	No Weeds
16	N44.80669634	W89.71844512	3	M	Pole Rake	0	No Weeds
17	N44.80939464	W89.71748354	-	M	-	-	N/A Shallow Muck
18	N44.80736916	W89.71749343	4	M/W	Pole Rake	0	No Weeds
19	N44.806694	W89.71749672	3	M/W	Pole Rake	0	No Weeds
20	N44.80804197	W89.71654171	3	S	Pole Rake	0	No Weeds
21	N44.80736681	W89.71654502	4	M	Pole Rake	0	No Weeds
22	N44.80669165	W89.71654833	2	S	Pole Rake	0	No Weeds
23	N44.80871477	W89.71558998	4	S/W	Pole Rake	0	No Weeds
24	N44.80803961	W89.71559329	5	M	Pole Rake	0	No Weeds
25	N44.80736445	W89.71559661	5	W	Pole Rake	0	No Weeds
26	N44.81006272	W89.71463489	3	S	Pole Rake	0	No Weeds
27	N44.80938756	W89.71463822	5	W	Pole Rake	0	No Weeds
28	N44.8087124	W89.71464155	5	M	Pole Rake	0	No Weeds
29	N44.80803725	W89.71464488	5	W	Pole Rake	0	No Weeds
30	N44.81073551	W89.7136831	5	W	Pole Rake	0	No Weeds
31	N44.81006035	W89.71368644	5	M	Pole Rake	0	No Weeds
32	N44.80938519	W89.71368978	5	M	Pole Rake	0	No Weeds
33	N44.80871003	W89.71369312	5	M	Pole Rake	0	No Weeds
34	N44.80803487	W89.71369646	3	S	Pole Rake	0	No Weeds
35	N44.81140828	W89.71273128	5	W	Pole Rake	0	No Weeds Secchi Reading 1.0'
36	N44.81073312	W89.71273463	5	S	Pole Rake	0	No Weeds
37	N44.81005797	W89.71273799	4	S/M	Pole Rake	0	No Weeds
38	N44.80938281	W89.71274134	1	S	Pole Rake	0	No Weeds
39	N44.80870765	W89.71274469	1	S	Pole Rake	0	No Weeds
40	N44.81208105	W89.71177945	6	-	-	-	N/A No Reading
41	N44.81140589	W89.71178281	6	-	-	-	N/A No Reading
42	N44.81073074	W89.71178617	3	S	Pole Rake	0	No Weeds
43	N44.81005558	W89.71178953	-	M	-	-	N/A Shallow Muck
44	N44.80938042	W89.7117929	-	-	-	-	N/A Land
45	N44.80870526	W89.71179626	3	M	Pole Rake	0	No Weeds
46	N44.81207865	W89.71083096	6	-	-	-	N/A No Reading
47	N44.8114035	W89.71083434	3	S	Pole Rake	0	No Weeds
48	N44.81072834	W89.71083771	-	M	-	-	N/A Shallow Muck
49	N44.80937802	W89.71084446	1	M/S	Pole Rake	0	No Weeds
50	N44.80870286	W89.71084783	1	S/W	Pole Rake	0	No Weeds
51	N44.81275141	W89.70987909	6	-	-	-	N/A No Reading
52	N44.81207625	W89.70988248	6	-	-	-	N/A No Reading
53	N44.80937562	W89.70989602	2	M	Pole Rake	0	No Weeds
54	N44.81274899	W89.7089306	7	-	-	-	N/A No Reading
55	N44.81207384	W89.70893399	3	S	Pole Rake	0	No Weeds
56	N44.8093732	W89.70894758	2	M	Pole Rake	0	No Weeds
57	N44.81274657	W89.7079821	10	-	-	-	N/A No Reading

EURASIAN WATER MILFOIL Invasive Species Point Intercept Survey Report for 2018
Project/Lake: Mosinee/Mosinee Flowage (518 Sample Points)
Dates: July 21, 22, 28, 29; August 4, 5, 18
WBIC: 1334900
County: Marathon
Crew: JAK, SJK, LAK, BJK
Datum: WGS84

EWM = Eurasian Water Milfoil
CLP = Curly-leaf Pondweed
NWM = Northern Water Milfoil

N/A = Not Accessible
M = Muck
W = Woody Debris
S = Sand
G = Gravel
R = Root Mass (i.e. Lily Pads, Pickerel Weed, etc.)
Rk = Rock

Point	Lattitude	Longitude	Depth	Sediment	Method	EWM	Comments
58	N44.81207141	W89.70798551	9	-	-	-	N/A No Reading
59	N44.80937078	W89.70799914	-	-	-	-	N/A Land
60	N44.81274414	W89.70703361	9	-	-	-	N/A No Reading
61	N44.81206898	W89.70703702	10	-	-	-	N/A No Reading
62	N44.81139383	W89.70704044	12	-	-	-	N/A No Reading
63	N44.80059129	W89.70709511	2	W	Pole Rake	0	No Weeds
64	N44.79991613	W89.70709853	8	-	-	-	N/A No Reading
65	N44.79924097	W89.70710195	8	-	-	-	N/A No Reading
66	N44.81139139	W89.70609197	10	-	-	-	N/A No Reading
67	N44.81071623	W89.7060954	10	-	-	-	N/A No Reading
68	N44.80193917	W89.70613996	7	-	-	-	N/A No Reading
69	N44.80126401	W89.70614339	7	-	-	-	N/A No Reading
70	N44.80058885	W89.70614682	5	W	Pole Rake	0	No Weeds
71	N44.79991369	W89.70615025	5	S	Pole Rake	0	No Weeds
72	N44.79923853	W89.70615367	4	S	Pole Rake	0	No Weeds Secchi Reading 2.5'
73	N44.79856337	W89.7061571	7	-	-	-	N/A No Reading
74	N44.79788821	W89.70616053	9	-	-	-	N/A No Reading
75	N44.8120641	W89.70514006	3	M	Pole Rake	0	No Weeds
76	N44.81138895	W89.7051435	5	S	Pole Rake	0	No Weeds
77	N44.81071379	W89.70514694	10	-	-	-	N/A No Reading
78	N44.80261188	W89.70518821	6	-	-	-	N/A No Reading
79	N44.80193673	W89.70519165	3	M	Pole Rake	0	No Weeds
80	N44.80126157	W89.70519508	4	S	Pole Rake	0	No Weeds
81	N44.80058641	W89.70519852	4	S	Pole Rake	0	No Weeds
82	N44.79856093	W89.70520884	2	S	Pole Rake	0	No Weeds
83	N44.79788577	W89.70521227	4	M	Pole Rake	0	No Weeds
84	N44.79721061	W89.70521571	7	-	-	-	N/A No Reading
85	N44.79653545	W89.70521915	5	S	Pole Rake	0	No Weeds
86	N44.81206165	W89.70419157	4	S/W	Pole Rake	0	No Weeds
87	N44.81138649	W89.70419502	7	-	-	-	N/A No Reading
88	N44.81071133	W89.70419848	10	-	-	-	N/A No Reading
89	N44.80260943	W89.70423988	5	M	Pole Rake	0	No Weeds
90	N44.80193427	W89.70424333	4	M/S	Pole Rake	0	No Weeds
91	N44.80125911	W89.70424678	3	S	Pole Rake	0	No Weeds
92	N44.79788332	W89.70426402	3	S	Pole Rake	0	No Weeds
93	N44.79720816	W89.70426747	3	W	Pole Rake	0	-
94	N44.796533	W89.70427092	7	-	-	-	N/A No Reading
95	N44.79585784	W89.70427437	3	W	Pole Rake	0	No Weeds
96	N44.81138403	W89.70324655	7	-	-	-	N/A No Reading
97	N44.81070887	W89.70325001	9	-	-	-	N/A No Reading
98	N44.80935856	W89.70325694	-	M	-	-	N/A Shallow Muck
99	N44.80260697	W89.70329155	5	S	Pole Rake	0	No Weeds
100	N44.80193181	W89.70329501	3	S/W	Pole Rake	0	No Weeds
101	N44.79990634	W89.70330539	1	M	Pole Rake	0	-
102	N44.79923118	W89.70330885	3	M	Pole Rake	0	No Weeds
103	N44.79788086	W89.70331577	4	M	Pole Rake	0	No Weeds
104	N44.7972057	W89.70331923	3	M/S	Pole Rake	0	No Weeds
105	N44.79585538	W89.70332615	7	-	-	-	N/A No Reading
106	N44.79518022	W89.70332961	2	S/G	Pole Rake	0	No Weeds
107	N44.81138156	W89.70229808	7	-	-	-	N/A No Reading
108	N44.81070641	W89.70230155	9	-	-	-	N/A No Reading
109	N44.80868093	W89.70231197	-	M	-	-	N/A Shallow Muck
110	N44.80800577	W89.70231544	1	S	Pole Rake	0	No Weeds
111	N44.80327966	W89.70233975	3	M	Pole Rake	0	No Weeds
112	N44.80260451	W89.70234322	5	S	Pole Rake	0	No Weeds
113	N44.80192935	W89.70234669	4	S	Pole Rake	0	No Weeds
114	N44.79922871	W89.70236058	2	M	Pole Rake	0	No Weeds

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Rk = Rock

Point	Lattitude	Longitude	Depth	Sediment	Method	EWM	Comments
115	N44.79855355	W89.70236405	3	S	Pole Rake	0	-
116	N44.79787839	W89.70236752	4	S	Pole Rake	0	No Weeds
117	N44.79720323	W89.70237099	3	S	Pole Rake	0	No Weeds
118	N44.79652807	W89.70237446	2	S	Pole Rake	0	No Weeds
119	N44.79585291	W89.70237793	6	-	-	-	N/A No Reading
120	N44.79517775	W89.7023814	1	S	Pole Rake	0	-
121	N44.81070393	W89.70135309	9	-	-	-	N/A No Reading
122	N44.81002877	W89.70135658	-	-	-	-	Land
123	N44.80867846	W89.70136354	1	M/S	Pole Rake	0	No Weeds
124	N44.80732814	W89.70137051	-	-	-	-	N/A Land
125	N44.80395235	W89.70138793	2	S	Pole Rake	0	No Weeds
126	N44.80327719	W89.70139141	2	S	Pole Rake	0	-
127	N44.80260203	W89.70139489	4	S	Pole Rake	0	No Weeds
128	N44.80192687	W89.70139838	4	W	Pole Rake	0	No Weeds
129	N44.80057655	W89.70140534	-	M	-	-	N/A Shallow Muck
130	N44.79855108	W89.70141579	2	M	Pole Rake	0	-
131	N44.79787592	W89.70141927	4	M	Pole Rake	0	No Weeds
132	N44.79720076	W89.70142275	4	M	Pole Rake	0	No Weeds
133	N44.7965256	W89.70142623	2	S	Pole Rake	0	No Weeds
134	N44.79585044	W89.70142971	6	-	-	-	N/A No Reading
135	N44.81070145	W89.70040463	8	-	-	-	N/A No Reading
136	N44.81002629	W89.70040813	-	-	-	-	N/A Blocked By Down Tree
137	N44.80935113	W89.70041162	-	-	-	-	N/A Land
138	N44.80867597	W89.70041512	2	M/S	Pole Rake	0	No Weeds Fresh water sponges
139	N44.80800081	W89.70041861	3	M	Pole Rake	0	No Weeds
140	N44.8066505	W89.7004256	-	-	-	-	N/A Land
141	N44.80597534	W89.70042909	1	S	Pole Rake	0	No Weeds
142	N44.80462502	W89.70043608	4	S	Pole Rake	0	No Weeds Secchi Reading 2.5'
143	N44.80394986	W89.70043958	5	S	Pole Rake	0	No Weeds
144	N44.8032747	W89.70044307	4	S	Pole Rake	0	No Weeds
145	N44.80259955	W89.70044656	4	S	Pole Rake	0	No Weeds
146	N44.80192439	W89.70045006	4	S/W	Pole Rake	0	No Weeds
147	N44.79989891	W89.70046054	2	S	Pole Rake	0	No Weeds
148	N44.79922375	W89.70046403	3	M	Pole Rake	0	No Weeds
149	N44.79854859	W89.70046753	2	S/M	Pole Rake	0	No Weeds
150	N44.79787343	W89.70047102	3	W	Pole Rake	0	No Weeds
151	N44.79719827	W89.70047451	4	M	Pole Rake	0	No Weeds
152	N44.79652311	W89.700478	4	S	Pole Rake	0	No Weeds
153	N44.79584795	W89.7004815	6	M	Pole Rake	0	No Weeds
154	N44.7951728	W89.70048499	4	W	Pole Rake	0	No Weeds
155	N44.8100238	W89.69945968	9	-	-	-	N/A No Reading
156	N44.80934864	W89.69946318	2	S	Pole Rake	0	No Weeds
157	N44.80867348	W89.69946669	5	W	Pole Rake	0	No Weeds
158	N44.80732316	W89.6994737	10	-	-	-	N/A No Reading
159	N44.80597285	W89.69948071	-	-	-	-	N/A Land
160	N44.80529769	W89.69948422	9	-	-	-	N/A No Reading
161	N44.80327221	W89.69949473	3	M	Pole Rake	0	No Weeds
162	N44.80259705	W89.69949824	5	M/W	Pole Rake	0	No Weeds
163	N44.8019219	W89.69950174	2	S	Pole Rake	0	-
164	N44.79989642	W89.69951225	2	S	Pole Rake	0	No Weeds
165	N44.79922126	W89.69951576	3	W	Pole Rake	0	No Weeds
166	N44.7985461	W89.69951926	2	S	Pole Rake	0	No Weeds
167	N44.79787094	W89.69952277	7	-	-	-	N/A No Reading
168	N44.79719578	W89.69952627	7	-	-	-	N/A No Reading
169	N44.79652062	W89.69952978	7	-	-	-	N/A No Reading
170	N44.79584546	W89.69953328	7	-	-	-	N/A No Reading
171	N44.7951703	W89.69953678	6	-	-	-	N/A No Reading

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Point	Latitude	Longitude	Depth	Sediment	Method	EWM	Comments
172	N44.8100213	W89.69851123	9	-	-	-	N/A No Reading
173	N44.80934614	W89.69851474	10	-	-	-	N/A No Reading
174	N44.80867098	W89.69851826	15	-	-	-	N/A No Reading
175	N44.80799582	W89.69852178	10	-	-	-	N/A No Reading
176	N44.80732066	W89.69852529	12	-	-	-	N/A No Reading
177	N44.80664551	W89.69852881	11	-	-	-	N/A No Reading
178	N44.80529519	W89.69853584	7	-	-	-	N/A No Reading
179	N44.80259456	W89.69854991	3	S	Pole Rake	1	Sparse individual plants
180	N44.8019194	W89.69855342	4	S	Pole Rake	0	No Weeds
181	N44.80124424	W89.69855694	4	S/W	Pole Rake	0	No Weeds
182	N44.80056908	W89.69856046	7	-	-	-	N/A No Reading
183	N44.79989392	W89.69856397	4	S	Pole Rake	0	No Weeds
184	N44.79921876	W89.69856749	3	S	Pole Rake	0	No Weeds
185	N44.7985436	W89.698571	6	-	-	-	N/A No Reading
186	N44.79786844	W89.69857452	7	-	-	-	N/A No Reading
187	N44.79719328	W89.69857803	8	-	-	-	N/A No Reading
188	N44.79651812	W89.69858155	8	-	-	-	N/A No Reading
189	N44.79584297	W89.69858506	9	-	-	-	N/A No Reading
190	N44.79516781	W89.69858858	9	-	-	-	N/A No Reading
191	N44.79449265	W89.69859209	3	M	Pole Rake	0	No Weeds
192	N44.80934363	W89.6975663	7	-	-	-	N/A No Reading
193	N44.80866847	W89.69756983	9	-	-	-	N/A No Reading
194	N44.806643	W89.69758042	1	S	-	-	No weeds
195	N44.80596784	W89.69758394	9	-	-	-	N/A No Reading
196	N44.80529268	W89.69758747	11	-	-	-	N/A No Reading
197	N44.80326721	W89.69759805	2	S	Pole Rake	0	-
198	N44.80259205	W89.69760158	3	S	Pole Rake	1	Sparse individual plants
199	N44.80191689	W89.69760511	5	S/W	Pole Rake	0	No Weeds
200	N44.80124173	W89.69760863	3	S	Pole Rake	0	No Weeds
201	N44.80056657	W89.69761216	3	S	Pole Rake	0	No Weeds
202	N44.79989141	W89.69761569	3	S	Pole Rake	0	No Weeds
203	N44.79921625	W89.69761921	5	S	Pole Rake	0	No Weeds
204	N44.7985411	W89.69762274	7	-	-	-	N/A No Reading
205	N44.79786594	W89.69762627	8	-	-	-	N/A No Reading
206	N44.79719078	W89.69762979	8	-	-	-	N/A No Reading
207	N44.79651562	W89.69763332	8	-	-	-	N/A No Reading
208	N44.79584046	W89.69763684	8	-	-	-	N/A No Reading
209	N44.7951653	W89.69764037	9	-	-	-	N/A No Reading
210	N44.79449014	W89.6976439	8	-	-	-	N/A No Reading
211	N44.79381498	W89.69764742	3	R/S	Pole Rake	0	No Weeds
212	N44.7917895	W89.697658	-	-	-	-	Boat Barrier
213	N44.80934111	W89.69661787	1	S	Pole Rake	0	No Weeds
214	N44.80866596	W89.69662141	10	-	-	-	N/A No Reading
215	N44.80731564	W89.69662848	1	S	Pole Rake	0	No Weeds
216	N44.80664048	W89.69663202	2	S	Pole Rake	0	No Weeds
217	N44.80596533	W89.69663556	4	S	Pole Rake	0	No Weeds
218	N44.80529017	W89.6966391	13	-	-	-	N/A No Reading
219	N44.80258953	W89.69665325	2	S	Pole Rake	0	No Weeds
220	N44.80191438	W89.69665679	5	G	Pole Rake	0	No Weeds
221	N44.80123922	W89.69666033	3	G	Pole Rake	0	No Weeds
222	N44.80056406	W89.69666387	1	S	Pole Rake	1	Sparse individual plants
223	N44.7998889	W89.6966674	3	S	Pole Rake	1	Sparse individual plants
224	N44.79921374	W89.69667094	6	-	-	-	N/A No Reading
225	N44.79853858	W89.69667448	5	S	Pole Rake	0	No Weeds
226	N44.79786342	W89.69667802	6	-	-	-	N/A No Reading
227	N44.79718826	W89.69668155	7	-	-	-	N/A No Reading
228	N44.7965131	W89.69668509	7	-	-	-	N/A No Reading

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Point	Lattitude	Longitude	Depth	Sediment	Method	EWM	Comments
229	N44.79583794	W89.69668863	8	-	-	-	N/A No Reading
230	N44.79516279	W89.69669216	9	-	-	-	N/A No Reading
231	N44.79448763	W89.6966957	9	-	-	-	N/A No Reading
232	N44.79381247	W89.69669924	3	G/S	Pole Rake	0	No Weeds
233	N44.79313731	W89.69670277	9	-	-	-	N/A No Reading
234	N44.79246215	W89.69670631	10	-	-	-	N/A No Reading
235	N44.79178699	W89.69670985	-	-	-	-	Boat Barrier
236	N44.79111183	W89.69671338	-	-	-	-	Boat Barrier
237	N44.80933859	W89.69566943	1	S	Pole Rake	0	No Weeds
238	N44.80866343	W89.69567298	12	-	-	-	N/A No Reading
239	N44.80663796	W89.69568363	-	-	-	-	N/A Land
240	N44.8059628	W89.69568718	1	S	Pole Rake	0	No Weeds
241	N44.80528764	W89.69569073	7	-	-	-	N/A No Reading
242	N44.80461249	W89.69569428	12	-	-	-	N/A No Reading
243	N44.80258701	W89.69570492	7	-	-	-	N/A No Reading
244	N44.80191185	W89.69570847	1	S	Pole Rake	0	No Weeds
245	N44.80123669	W89.69571202	2	S	Pole Rake	0	No Weeds
246	N44.80056154	W89.69571557	3	R	Pole Rake	0	No Weeds Secchi Reading 2.0'
247	N44.79988638	W89.69571912	5	M/S	Pole Rake	0	No Weeds
248	N44.79921122	W89.69572267	5	M	Pole Rake	0	No Weeds
249	N44.79853606	W89.69572622	5	M	Pole Rake	0	No Weeds
250	N44.7978609	W89.69572977	5	M	Pole Rake	0	No Weeds
251	N44.79718574	W89.69573331	5	W	Pole Rake	0	No Weeds
252	N44.79651058	W89.69573686	6	-	-	-	N/A No Reading
253	N44.79583542	W89.69574041	7	-	-	-	N/A No Reading
254	N44.79516026	W89.69574396	9	-	-	-	N/A No Reading
255	N44.7944851	W89.6957475	15	-	-	-	N/A No Reading
256	N44.79380994	W89.69575105	6	-	-	-	N/A No Reading
257	N44.79245963	W89.69575815	10	-	-	-	N/A No Reading
258	N44.79178447	W89.69576169	-	-	-	-	Boat Barrier
259	N44.79110931	W89.69576524	-	-	-	-	Boat Barrier
260	N44.80933606	W89.69472099	3	G	Pole Rake	0	No Weeds
261	N44.8086609	W89.69472455	12	-	-	-	N/A No Reading
262	N44.80663543	W89.69473523	-	-	-	-	N/A Land
263	N44.80528511	W89.69474236	3	S	Pole Rake	0	No Weeds
264	N44.80460995	W89.69474592	7	-	-	-	N/A No Reading
265	N44.8039348	W89.69474948	8	-	-	-	N/A No Reading
266	N44.80325964	W89.69475304	9	-	-	-	N/A No Reading
267	N44.80123416	W89.69476372	3	S/W	Pole Rake	0	No Weeds
268	N44.800559	W89.69476728	3	S	Pole Rake	0	No Weeds
269	N44.79988385	W89.69477084	5	M	Pole Rake	0	No Weeds
270	N44.79920869	W89.6947744	5	S	Pole Rake	0	No Weeds Secchi Reading 2.0'
271	N44.79853353	W89.69477796	5	M/S	Pole Rake	0	No Weeds
272	N44.79785837	W89.69478152	5	M/W	Pole Rake	0	No Weeds
273	N44.79718321	W89.69478507	7	-	-	-	N/A No Reading
274	N44.79650805	W89.69478863	4	S	Pole Rake	0	No Weeds
275	N44.79583289	W89.69479219	4	S	Pole Rake	0	No Weeds
276	N44.79515773	W89.69479575	6	-	-	-	N/A No Reading
277	N44.79448257	W89.69479931	15	-	-	-	N/A No Reading
278	N44.79380741	W89.69480287	15	-	-	-	N/A No Reading
279	N44.79313225	W89.69480643	16	-	-	-	N/A No Reading
280	N44.7924571	W89.69480999	17	-	-	-	N/A No Reading
281	N44.79178194	W89.69481354	14	-	-	-	N/A No Reading
282	N44.79110678	W89.6948171	-	-	-	-	Boat Barrier
283	N44.81000868	W89.69376898	2	G	Pole Rake	0	No Weeds
284	N44.80933352	W89.69377255	7	-	-	-	N/A No Reading
285	N44.80865836	W89.69377612	12	-	-	-	N/A No Reading

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Point	Lattitude	Longitude	Depth	Sediment	Method	EWM	Comments
286	N44.80663289	W89.69378684	-	M	-	-	N/A Shallow Muck
287	N44.80460742	W89.69379756	-	-	-	-	N/A Blocked By Down Tree
288	N44.80393226	W89.69380113	5	S	Pole Rake	0	No Weeds
289	N44.80190678	W89.69381184	2	M/S	Pole Rake	0	No Weeds
290	N44.80123162	W89.69381541	2	S/W	Pole Rake	0	No Weeds
291	N44.80055647	W89.69381898	4	M	Pole Rake	0	No Weeds
292	N44.79988131	W89.69382255	5	M	Pole Rake	0	No Weeds
293	N44.79920615	W89.69382612	5	M	Pole Rake	1	Low density EWM mat
294	N44.79853099	W89.69382969	4	M/S	Pole Rake	1	Low density EWM mat
295	N44.79785583	W89.69383327	4	S	Pole Rake	0	No Weeds
296	N44.79718067	W89.69383684	3	S	Pole Rake	0	No Weeds
297	N44.79650551	W89.69384041	7	S	Pole Rake	0	No Weeds
298	N44.79583035	W89.69384398	11	-	-	-	N/A No Reading
299	N44.7951552	W89.69384755	9	-	-	-	N/A No Reading
300	N44.79448004	W89.69385112	4	S	Pole Rake	0	No Weeds
301	N44.79380488	W89.69385468	9	-	-	-	N/A No Reading
302	N44.79312972	W89.69385825	13	-	-	-	N/A No Reading
303	N44.79245456	W89.69386182	13	-	-	-	N/A No Reading
304	N44.81068129	W89.69281695	3	G/W	Pole Rake	0	No Weeds
305	N44.81000613	W89.69282053	11	-	-	-	N/A No Reading
306	N44.80933097	W89.69282411	14	-	-	-	N/A No Reading
307	N44.80798066	W89.69283128	-	-	-	-	N/A Blocked By Logs
308	N44.80663034	W89.69283845	1	M/S	Pole Rake	0	-
309	N44.80595519	W89.69284203	-	M	-	-	N/A Shallow Muck
310	N44.80528003	W89.69284561	2	S	Pole Rake	0	No Weeds
311	N44.80460487	W89.69284919	1	S	Pole Rake	0	No Weeds
312	N44.80392971	W89.69285278	3	S	Pole Rake	0	No Weeds
313	N44.80257939	W89.69285994	-	M	-	-	N/A Shallow Muck
314	N44.80190424	W89.69286352	1	S	Pole Rake	0	No Weeds
315	N44.80122908	W89.69286711	3	S	Pole Rake	0	No Weeds
316	N44.80055392	W89.69287069	4	W	Pole Rake	0	No Weeds
317	N44.79987876	W89.69287427	3	M	Pole Rake	1	EWM mat area
318	N44.7992036	W89.69287785	4	M	Pole Rake	0	No Weeds
319	N44.79852844	W89.69288143	5	M	Pole Rake	0	No Weeds
320	N44.79785329	W89.69288502	7	-	-	-	N/A No Reading
321	N44.79717813	W89.6928886	5	S	Pole Rake	0	No Weeds
322	N44.79650297	W89.69289218	8	-	-	-	N/A No Reading
323	N44.79582781	W89.69289576	8	-	-	-	N/A No Reading
324	N44.79515265	W89.69289934	3	S	Pole Rake	0	No Weeds
325	N44.79447749	W89.69290292	7	-	-	-	N/A No Reading
326	N44.79380233	W89.6929065	11	-	-	-	N/A No Reading
327	N44.82080608	W89.69181455	-	M	-	-	N/A Shallow Muck
328	N44.81405452	W89.69185051	9	-	-	-	N/A No Reading
329	N44.81337936	W89.69185411	10	-	-	-	N/A No Reading
330	N44.8127042	W89.6918577	11	-	-	-	N/A No Reading
331	N44.81202905	W89.6918613	11	-	-	-	N/A No Reading
332	N44.81135389	W89.69186489	13	-	-	-	N/A No Reading
333	N44.81067873	W89.69186849	15	-	-	-	N/A No Reading
334	N44.81000358	W89.69187208	11	-	-	-	N/A No Reading
335	N44.8079781	W89.69188286	-	-	-	-	N/A Land
336	N44.80730295	W89.69188646	2	M	Pole Rake	0	-
337	N44.80662779	W89.69189005	2	M	Pole Rake	0	No Weeds
338	N44.80460231	W89.69190083	-	-	-	-	N/A Blocked By Bullrush
339	N44.80392716	W89.69190443	3	S	Pole Rake	0	No Weeds Secchi Reading 2.0'
340	N44.80190168	W89.69191521	2	S	Pole Rake	0	No Weeds
341	N44.80122652	W89.6919188	3	S/W	Pole Rake	0	No Weeds
342	N44.80055137	W89.69192239	3	W	Pole Rake	0	No Weeds

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Rk = Rock

Point	Lattitude	Longitude	Depth	Sediment	Method	EWM	Comments
343	N44.79987621	W89.69192599	4	S	Pole Rake	1	EWM low density (part of mat)
344	N44.79920105	W89.69192958	3	S	Pole Rake	0	No Weeds
345	N44.79852589	W89.69193317	3	W	Pole Rake	0	No Weeds
346	N44.79785073	W89.69193677	8	-	-	-	N/A No Reading
347	N44.79717557	W89.69194036	7	-	-	-	N/A No Reading
348	N44.79650041	W89.69194395	8	-	-	-	N/A No Reading
349	N44.79582525	W89.69194754	3	S	Pole Rake	0	No Weeds
350	N44.7951501	W89.69195113	9	-	-	-	N/A No Reading
351	N44.79447494	W89.69195473	9	-	-	-	N/A No Reading
352	N44.79379978	W89.69195832	2	G	Pole Rake	0	No Weeds
353	N44.82215383	W89.69085871	-	-	-	-	N/A Blocked By Logs
354	N44.82012836	W89.69086953	-	-	-	-	N/A Blocked By Down Tree
355	N44.81945321	W89.69087314	2	M	Pole Rake	0	-
356	N44.81810289	W89.69088035	-	M	-	-	N/A Shallow Muck
357	N44.81675258	W89.69088757	-	-	-	-	N/A Land
358	N44.81405196	W89.69090199	8	-	-	-	N/A No Reading
359	N44.8133768	W89.6909056	9	-	-	-	N/A No Reading
360	N44.81270164	W89.69090921	10	-	-	-	N/A No Reading
361	N44.81202648	W89.69091281	10	-	-	-	N/A No Reading
362	N44.81135133	W89.69091642	4	G	Pole Rake	0	No Weeds
363	N44.80797554	W89.69093445	3	S	Pole Rake	0	No Weeds
364	N44.80730038	W89.69093805	-	-	-	-	N/A Land
365	N44.80662523	W89.69094166	2	M	Pole Rake	0	-
366	N44.80595007	W89.69094526	2	M/S	Pole Rake	0	No Weeds
367	N44.80527491	W89.69094887	1	S	Pole Rake	0	No Weeds
368	N44.80459975	W89.69095247	-	-	-	-	N/A Land
369	N44.80392459	W89.69095608	2	S	Pole Rake	0	-
370	N44.80324944	W89.69095968	5	S	Pole Rake	0	No Weeds
371	N44.80257428	W89.69096329	-	-	-	-	N/A Land
372	N44.80189912	W89.69096689	2	M/S	Pole Rake	0	No Weeds
373	N44.80122396	W89.6909705	3	M	Pole Rake	0	No Weeds
374	N44.8005488	W89.6909741	3	W	Pole Rake	0	No Weeds
375	N44.79987365	W89.6909777	3	S	Pole Rake	0	No Weeds
376	N44.79919849	W89.69098131	3	S/W	Pole Rake	0	No Weeds
377	N44.79852333	W89.69098491	3	S	Pole Rake	0	No Weeds
378	N44.79784817	W89.69098852	8	-	-	-	N/A No Reading
379	N44.79717301	W89.69099212	8	-	-	-	N/A No Reading
380	N44.79649785	W89.69099572	7	-	-	-	N/A No Reading
381	N44.79582269	W89.69099933	3	S	Pole Rake	0	No Weeds
382	N44.79514753	W89.69100293	3	G	Pole Rake	0	No Weeds
383	N44.82080095	W89.6899173	-	-	-	-	N/A Blocked By Logs
384	N44.81945064	W89.68992453	-	-	-	-	N/A Blocked By Logs
385	N44.81742517	W89.68993539	2	M	Pole Rake	0	-
386	N44.81607485	W89.68994263	2	M	Pole Rake	1	No Weeds
387	N44.8153997	W89.68994624	3	M/W	Pole Rake	0	-
388	N44.81472454	W89.68994986	3	M	Pole Rake	0	No Weeds
389	N44.81404938	W89.68995348	6	-	-	-	N/A No Reading
390	N44.80797297	W89.68998603	1	S/W	Pole Rake	0	No Weeds
391	N44.80729781	W89.68998965	2	M/S	Pole Rake	0	No Weeds
392	N44.80662266	W89.68999327	2	S/W	Pole Rake	0	No Weeds
393	N44.8059475	W89.68999688	2	M/S	Pole Rake	0	No Weeds
394	N44.80527234	W89.6900005	4	S	Pole Rake	0	No Weeds
395	N44.80459718	W89.69000411	1	M/S	Pole Rake	0	No Weeds
396	N44.80392202	W89.69000773	2	S	Pole Rake	0	No Weeds
397	N44.80324687	W89.69001135	5	S	Pole Rake	0	No Weeds
398	N44.80122139	W89.69002219	3	S/W	Pole Rake	0	No Weeds
399	N44.80054623	W89.69002581	3	S	Pole Rake	0	No Weeds

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Point	Lattitude	Longitude	Depth	Sediment	Method	EWM	Comments
400	N44.79987108	W89.69002942	3	M	Pole Rake	1	EWM – part of a mat
401	N44.79919592	W89.69003304	2	S	Pole Rake	0	No Weeds
402	N44.79852076	W89.69003665	4	S	Pole Rake	0	No Weeds
403	N44.7978456	W89.69004027	10	-	-	-	N/A No Reading
404	N44.79717044	W89.69004388	9	-	-	-	N/A No Reading
405	N44.79649528	W89.69004749	2	S	Pole Rake	0	No Weeds
406	N44.79582012	W89.69005111	2	G/S	Pole Rake	0	No Weeds
407	N44.79514496	W89.69005472	1	S	Pole Rake	0	No Weeds
408	N44.82012321	W89.6889723	-	-	-	-	N/A Blocked By Logs
409	N44.81809774	W89.68898319	2	M	Pole Rake	0	-
410	N44.81674743	W89.68899045	3	M	Pole Rake	0	-
411	N44.81607227	W89.68899408	3	M	Pole Rake	0	No Weeds
412	N44.81539712	W89.68899771	3	M	Pole Rake	0	No Weeds Secchi 2.2'
413	N44.80797039	W89.68903762	-	-	-	-	N/A Land
414	N44.80729523	W89.68904125	2	S	Pole Rake	0	No Weeds
415	N44.80662008	W89.68904487	4	M/S	Pole Rake	0	No Weeds
416	N44.80594492	W89.6890485	3	M	Pole Rake	0	No Weeds
417	N44.80526976	W89.68905213	4	S	Pole Rake	0	No Weeds
418	N44.8045946	W89.68905575	4	S	Pole Rake	0	No Weeds
419	N44.80391945	W89.68905938	-	-	-	-	N/A Land
420	N44.80324429	W89.68906301	5	S	Pole Rake	0	No Weeds
421	N44.80121881	W89.68907389	3	S/W	Pole Rake	0	No Weeds
422	N44.80054366	W89.68907751	3	M	Pole Rake	0	No Weeds
423	N44.7998685	W89.68908114	2	S	Pole Rake	0	No Weeds
424	N44.79919334	W89.68908477	2	S	Pole Rake	0	No Weeds
425	N44.79851818	W89.68908839	9	-	-	-	N/A No Reading
426	N44.79784302	W89.68909202	13	-	-	-	N/A No Reading
427	N44.82147094	W89.6880164	1	M/S	Pole Rake	0	-
428	N44.81944547	W89.68802733	-	-	-	-	N/A Blocked By Logs
429	N44.81877031	W89.68803097	2	M	Pole Rake	0	Blocked by logs
430	N44.81606969	W89.68804553	1	M/W	Pole Rake	1	-
431	N44.81539453	W89.68804917	3	M	Pole Rake	1	-
432	N44.80729265	W89.68809284	2	M	Pole Rake	0	-
433	N44.80661749	W89.68809648	3	S	Pole Rake	0	-
434	N44.80594233	W89.68810012	4	M	Pole Rake	0	No Weeds
435	N44.80526718	W89.68810376	3	S	Pole Rake	0	No Weeds
436	N44.80459202	W89.68810739	4	S	Pole Rake	0	No Weeds
437	N44.80391686	W89.68811103	-	-	-	0	NA too shallow
438	N44.8032417	W89.68811467	4	S	Pole Rake	0	No Weeds
439	N44.80121623	W89.68812558	1	S	Pole Rake	0	No Weeds
440	N44.80054107	W89.68812922	2	M	Pole Rake	0	No Weeds
441	N44.79986591	W89.68813286	2	S	Pole Rake	0	No Weeds
442	N44.79919075	W89.68813649	8	-	-	-	N/A No Reading
443	N44.7985156	W89.68814013	12	-	-	-	N/A No Reading
444	N44.82079318	W89.68707142	-	-	-	0	Blocked by logs
445	N44.82011803	W89.68707507	-	M	-	-	N/A Shallow Muck
446	N44.81539194	W89.68710063	4	M	Pole Rake	1	-
447	N44.81471678	W89.68710428	4	M	Pole Rake	0	No Weeds
448	N44.8066149	W89.68714809	4	M	Pole Rake	1	-
449	N44.80593974	W89.68715174	4	M	Pole Rake	0	No Weeds
450	N44.80526458	W89.68715539	3	S/W	Pole Rake	0	No Weeds
451	N44.80458942	W89.68715903	5	M	Pole Rake	0	No Weeds
452	N44.80391427	W89.68716268	3	S	Pole Rake	0	No Weeds
453	N44.80323911	W89.68716633	4	S	Pole Rake	0	No Weeds
454	N44.80256395	W89.68716998	-	M	-	-	N/A Shallow Muck
455	N44.80188879	W89.68717363	-	M	-	-	N/A Shallow Muck
456	N44.80053848	W89.68718093	2	S	Pole Rake	0	No Weeds

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Point	Lattitude	Longitude	Depth	Sediment	Method	EWM	Comments
457	N44.79986332	W89.68718457	8	-	-	-	N/A No Reading
458	N44.79918816	W89.68718822	14	-	-	-	N/A No Reading
459	N44.82011543	W89.68612646	1	M	Pole Rake	0	No Weeds
460	N44.81944027	W89.68613012	1	M/W	Pole Rake	0	No Weeds
461	N44.81538933	W89.6861521	4	S	Pole Rake	0	No Weeds
462	N44.81471418	W89.68615576	4	M	Pole Rake	0	No Weeds
463	N44.80593714	W89.68620335	3	M	Pole Rake	0	No Weeds
464	N44.80526198	W89.68620701	5	M	Pole Rake	0	No Weeds
465	N44.80458682	W89.68621067	6	-	-	-	N/A No Reading
466	N44.80391166	W89.68621433	4	S	Pole Rake	0	No Weeds
467	N44.80323651	W89.68621799	4	S	Pole Rake	0	No Weeds
468	N44.80188619	W89.68622531	1	M	Pole Rake	0	No Weeds
469	N44.80121103	W89.68622897	2	M/S	Pole Rake	0	No Weeds
470	N44.80053588	W89.68623263	10	-	-	-	N/A No Reading
471	N44.79986072	W89.68623629	11	-	-	-	N/A No Reading
472	N44.81943766	W89.68518152	-	M	-	0	N/A Blocked by Down Tree
473	N44.8187625	W89.68518519	-	-	-	-	N/A Blocked By Down Tree
474	N44.81538672	W89.68520356	4	M/W	Pole Rake	0	No Weeds
475	N44.81471157	W89.68520723	4	M	Pole Rake	0	No Weeds
476	N44.80593453	W89.68525497	4	M	Pole Rake	0	No Weeds
477	N44.80525937	W89.68525864	6	-	-	-	N/A No Reading
478	N44.80458421	W89.68526232	6	-	-	-	N/A No Reading
479	N44.80390906	W89.68526599	7	-	-	-	N/A No Reading
480	N44.8032339	W89.68526966	18	-	-	-	N/A No Reading
481	N44.80255874	W89.68527333	15	-	-	-	N/A No Reading
482	N44.80188358	W89.685277	16	-	-	-	N/A No Reading
483	N44.80120842	W89.68528067	13	-	-	-	N/A No Reading
484	N44.81943504	W89.68423292	2	M/S	Pole Rake	0	No Weeds
485	N44.81875988	W89.6842366	2	M	Pole Rake	0	No Weeds
486	N44.8153841	W89.68425502	4	M	Pole Rake	0	No Weeds
487	N44.81470895	W89.68425871	4	M	Pole Rake	1	-
488	N44.80525675	W89.68431027	6	-	-	-	N/A No Reading
489	N44.8045816	W89.68431396	6	-	-	-	N/A No Reading
490	N44.80390644	W89.68431764	7	-	-	-	N/A No Reading
491	N44.80323128	W89.68432132	10	-	-	-	N/A No Reading
492	N44.80255612	W89.684325	8	-	-	-	N/A No Reading
493	N44.81943241	W89.68328431	-	-	-	0	N/A Blocked by Down Trees
494	N44.81875726	W89.68328801	-	-	-	0	N/A Blocked by Down Trees
495	N44.81538148	W89.68330649	4	M	Pole Rake	0	-
496	N44.81470632	W89.68331018	3	M	Pole Rake	1	- Secchi Reading 2.0'
497	N44.80457897	W89.6833656	6	-	-	-	N/A No Reading
498	N44.80390381	W89.68336929	6	-	-	-	N/A No Reading
499	N44.80322865	W89.68337298	4	S/G	Pole Rake	0	No Weeds
500	N44.81942978	W89.68233571	-	-	-	0	N/A Blocked by Down Trees
501	N44.81875462	W89.68233942	-	-	-	0	N/A Blocked by Down Trees
502	N44.81537884	W89.68235795	4	M	Pole Rake	0	No Weeds
503	N44.81470369	W89.68236166	3	M	Pole Rake	0	-
504	N44.81942714	W89.68138711	-	-	-	0	N/A Blocked by Down Trees
505	N44.81875198	W89.68139083	-	M	-	-	N/A Shallow Muck
506	N44.8153762	W89.68140942	4	M	Pole Rake	0	No Weeds
507	N44.81470105	W89.68141313	3	M/W	Pole Rake	1	-
508	N44.81942449	W89.68043851	-	M	-	-	N/A Shallow Muck
509	N44.81537355	W89.68046088	3	M	Pole Rake	1	-
510	N44.8146984	W89.68046461	2	M	Pole Rake	0	-
511	N44.81604605	W89.6795086	3	M	Pole Rake	0	No Weeds
512	N44.81537089	W89.67951234	2	M	Pole Rake	0	-
513	N44.81604338	W89.67856006	3	M	Pole Rake	0	No Weeds

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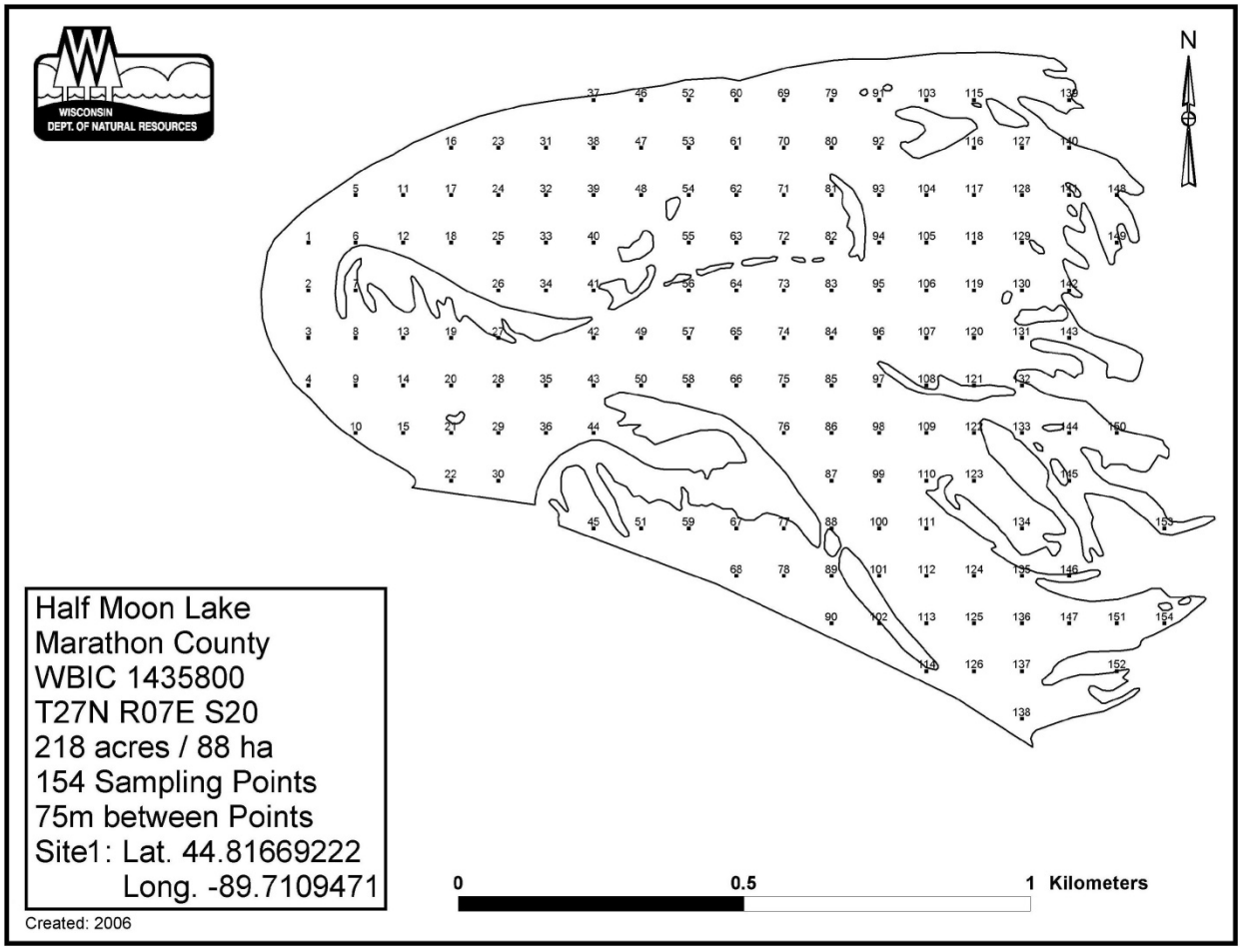
Point	Latitude	Longitude	Depth	Sediment	Method	EWM	Comments
514	N44.81536823	W89.67856381	1	M	Pole Rake	0	-
515	N44.81604071	W89.67761151	2	M	Pole Rake	0	No Weeds
516	N44.81603803	W89.67666296	2	M	Pole Rake	0	No Weeds
517	N44.81603534	W89.67571442	2	M	Pole Rake	0	No Weeds
518	N44.8167078	W89.67476208	1	M	Pole Rake	0	No Weeds

Mosinee Hydroelectric Project – Half-Moon Lake
2018 Invasive Species Monitoring

Eurasian Water Milfoil Distribution Map – None found in 2018



EURASIAN WATER MILFOIL Invasive Species Point Intercept Survey Report for 2018

Project/Lake: Mosinee/Half Moon Lake (154 Sample Points)

Dates: July 21, 22, 28, 29; August 4, 5, 18

WBIC: 1435800

County: Marathon

Crew: JBK, SJK, LAK, BJK

Datum: WGS84

EWM = Eurasian Water Milfoil

CLP = Curly-leaf Pondweed

NWM = Northern Water Milfoil

N/A = Not Accessible

M = Muck

W = Woody Debris

S = Sand

G = Gravel

R = Root Mass (i.e. Lily Pads, Pickerel Weed, etc.)

Rk = Rock

Point	Latitude	Longitude	Depth	Sediment	Method	EWM	Comments
1	N44.81669222	W89.7109471	9	-	-	-	N/A No Reading
2	N44.81601706	W89.71095047	6	-	-	-	N/A No Reading
3	N44.8153419	W89.71095385	8	-	-	-	N/A No Reading
4	N44.81466675	W89.71095722	7	-	-	-	N/A No Reading
5	N44.81736497	W89.70999516	9	-	-	-	N/A No Reading
6	N44.81668981	W89.70999854	6	W	Pole Rake	0	No Weeds Secchi Reading 1.5' algae
7	N44.81601466	W89.71000192	2	M	Pole Rake	0	No Weeds
8	N44.8153395	W89.71000531	6	-	-	-	N/A No Reading
9	N44.81466434	W89.71000869	7	-	-	-	N/A No Reading
10	N44.81398918	W89.71001207	6	-	-	-	N/A No Reading
11	N44.81736256	W89.70904658	8	-	-	-	N/A No Reading
12	N44.8166874	W89.70904998	7	-	-	-	N/A No Reading
13	N44.81533709	W89.70905677	6	-	-	-	N/A No Reading
14	N44.81466193	W89.70906016	4	S/W	Pole Rake	0	No Weeds
15	N44.81398677	W89.70906356	6	-	-	-	N/A No Reading
16	N44.8180353	W89.70809461	7	-	-	-	N/A No Reading
17	N44.81736014	W89.70809801	6	-	-	-	N/A No Reading
18	N44.81668498	W89.70810142	7	-	-	-	N/A No Reading
19	N44.81533467	W89.70810823	6	-	-	-	N/A No Reading
20	N44.81465951	W89.70811164	3	S	Pole Rake	0	No Weeds
21	N44.81398435	W89.70811504	6	-	-	-	N/A No Reading
22	N44.81330919	W89.70811845	9	-	-	-	N/A No Reading
23	N44.81803287	W89.70714603	6	-	-	-	N/A No Reading
24	N44.81735771	W89.70714944	6	-	-	-	N/A No Reading
25	N44.81668255	W89.70715286	5	M/W	Pole Rake	0	No Weeds
26	N44.8160074	W89.70715628	3	W	Pole Rake	0	No Weeds
27	N44.81533224	W89.70715969	1	S	Pole Rake	0	No Weeds
28	N44.81465708	W89.70716311	10	-	-	-	N/A No Reading
29	N44.81398192	W89.70716653	11	-	-	-	N/A No Reading
30	N44.81330676	W89.70716995	10	-	-	-	N/A No Reading
31	N44.81803043	W89.70619744	6	-	-	-	N/A No Reading
32	N44.81735527	W89.70620087	5	M/W	Pole Rake	0	No Weeds
33	N44.81668012	W89.7062043	4	W	Pole Rake	0	No Weeds
34	N44.81600496	W89.70620773	3	S	Pole Rake	0	No Weeds
35	N44.81465464	W89.70621459	11	-	-	-	N/A No Reading
36	N44.81397949	W89.70621801	3	S	Pole Rake	0	No Weeds
37	N44.81870314	W89.70524542	6	-	-	-	N/A No Reading
38	N44.81802799	W89.70524886	6	-	-	-	N/A No Reading
39	N44.81735283	W89.7052523	4	M	Pole Rake	0	No Weeds
40	N44.81667767	W89.70525574	1	S	Pole Rake	0	No Weeds
41	N44.81600251	W89.70525918	1	S	Pole Rake	0	No Weeds
42	N44.81532736	W89.70526262	10	-	-	-	N/A No Reading
43	N44.8146522	W89.70526606	8	S	Pole Rake	0	No Weeds
44	N44.81397704	W89.7052695	2	S	Pole Rake	0	No Weeds
45	N44.81262673	W89.70527638	3	M	Pole Rake	0	No Weeds
46	N44.81870069	W89.70429683	4	S	Pole Rake	0	No Weeds
47	N44.81802553	W89.70430028	5	M	Pole Rake	0	No Weeds
48	N44.81735038	W89.70430373	3	S	Pole Rake	0	No Weeds
49	N44.81532491	W89.70431408	11	-	-	-	N/A No Reading
50	N44.81464975	W89.70431753	3	S	Pole Rake	0	No Weeds
51	N44.81262428	W89.70432788	4	M	Pole Rake	0	No Weeds
52	N44.81869823	W89.70334824	4	M	Pole Rake	0	No Weeds
53	N44.81802307	W89.7033517	1	S	Pole Rake	0	No Weeds

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R = Root Mass (i.e. Lily Pads, Pickerel Weed, etc.)
Rk = Rock

Point	Latitude	Longitude	Depth	Sediment	Method	EWM	Comments
54	N44.81734792	W89.70335516	4	M	Pole Rake	0	No Weeds
55	N44.81667276	W89.70335862	3	M	Pole Rake	0	No Weeds
56	N44.8159976	W89.70336208	4	M/S	Pole Rake	0	No Weeds
57	N44.81532245	W89.70336555	10	-	-	-	N/A No Reading
58	N44.81464729	W89.70336901	7	-	-	-	N/A No Reading
59	N44.81262182	W89.70337939	3	S	Pole Rake	0	No Weeds
60	N44.81869576	W89.70239965	4	M	Pole Rake	0	No Weeds
61	N44.81802061	W89.70240312	4	M/S	Pole Rake	0	No Weeds
62	N44.81734545	W89.70240659	3	W	Pole Rake	0	No Weeds
63	N44.81667029	W89.70241006	3	M/W	Pole Rake	0	No Weeds
64	N44.81599514	W89.70241354	5	M	Pole Rake	0	No Weeds
65	N44.81531998	W89.70241701	9	-	-	-	N/A No Reading
66	N44.81464482	W89.70242048	9	-	-	-	N/A No Reading
67	N44.81261935	W89.7024309	4	W	Pole Rake	0	No Weeds
68	N44.81194419	W89.70243437	6	-	-	-	N/A No Reading
69	N44.81869329	W89.70145105	4	M/W	Pole Rake	0	No Weeds
70	N44.81801813	W89.70145454	2	S	Pole Rake	0	No Weeds
71	N44.81734297	W89.70145802	3	S	Pole Rake	0	No Weeds
72	N44.81666782	W89.7014615	3	S	Pole Rake	0	No Weeds
73	N44.81599266	W89.70146499	3	S/W	Pole Rake	0	No Weeds
74	N44.8153175	W89.70146847	4	W	Pole Rake	0	No Weeds
75	N44.81464235	W89.70147195	9	-	-	-	N/A No Reading
76	N44.81396719	W89.70147544	9	-	-	-	N/A No Reading
77	N44.81261687	W89.7014824	4	W	Pole Rake	0	No Weeds
78	N44.81194172	W89.70148589	3	W	Pole Rake	0	No Weeds
79	N44.8186908	W89.70050246	3	M/S	Pole Rake	0	No Weeds
80	N44.81801565	W89.70050596	3	S/W	Pole Rake	0	No Weeds
81	N44.81734049	W89.70050945	2	M/S	Pole Rake	0	No Weeds
82	N44.81666533	W89.70051295	2	S	Pole Rake	0	No Weeds
83	N44.81599018	W89.70051644	4	W	Pole Rake	0	No Weeds
84	N44.81531502	W89.70051993	4	M/S	Pole Rake	0	No Weeds
85	N44.81463986	W89.70052343	5	S	Pole Rake	0	No Weeds
86	N44.8139647	W89.70052692	8	-	-	-	N/A No Reading
87	N44.81328955	W89.70053042	8	-	-	-	N/A No Reading
88	N44.81261439	W89.70053391	4	S	Pole Rake	0	No Weeds
89	N44.81193923	W89.70053741	4	S/W	Pole Rake	0	No Weeds
90	N44.81126407	W89.7005409	7	-	-	-	N/A No Reading
91	N44.81868831	W89.69955387	2	M/W	Pole Rake	0	No Weeds
92	N44.81801316	W89.69955738	4	M	Pole Rake	0	No Weeds
93	N44.817338	W89.69956088	4	M	Pole Rake	0	No Weeds
94	N44.81666284	W89.69956439	4	M/W	Pole Rake	0	No Weeds Secchi Reading 1.0' algea
95	N44.81598769	W89.69956789	4	M	Pole Rake	0	No Weeds
96	N44.81531253	W89.6995714	3	M/W	Pole Rake	0	No Weeds
97	N44.81463737	W89.6995749	3	M/S	Pole Rake	0	No Weeds
98	N44.81396221	W89.69957841	4	W	Pole Rake	0	No Weeds
99	N44.81328706	W89.69958191	7	-	-	-	N/A No Reading
100	N44.8126119	W89.69958542	7	-	-	-	N/A No Reading
101	N44.81193674	W89.69958892	7	-	-	-	N/A No Reading
102	N44.81126158	W89.69959243	1	S	Pole Rake	0	No Weeds
103	N44.81868581	W89.69860528	1	S	Pole Rake	0	No Weeds
104	N44.8173355	W89.69861231	4	M	Pole Rake	0	No Weeds
105	N44.81666034	W89.69861583	4	M	Pole Rake	0	No Weeds
106	N44.81598519	W89.69861935	3	W	Pole Rake	0	No Weeds

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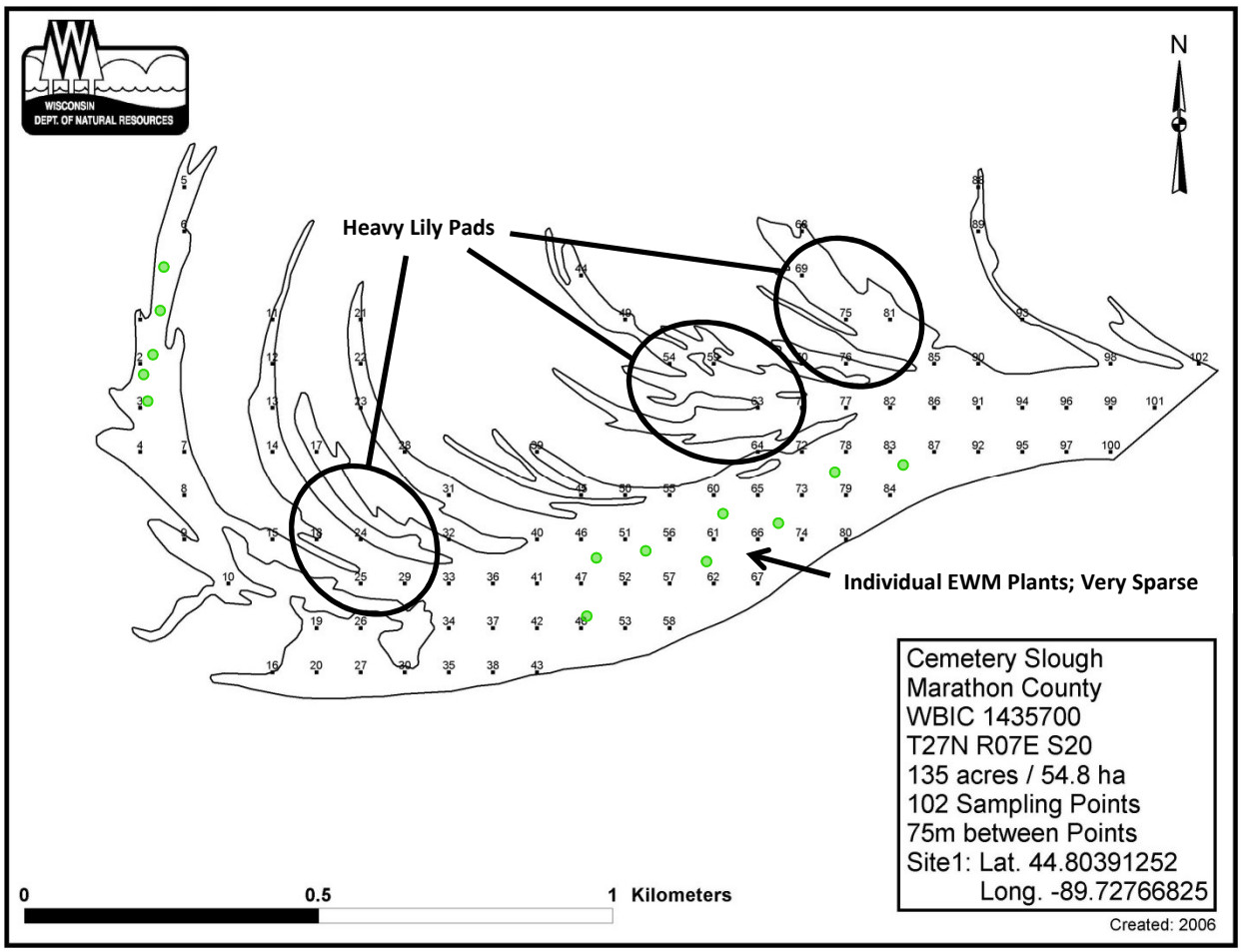
Point	Latitude	Longitude	Depth	Sediment	Method	EWM	Comments
107	N44.81531003	W89.69862286	3	W	Pole Rake	0	No Weeds
108	N44.81463487	W89.69862638	1	W	Pole Rake	0	No Weeds
109	N44.81395971	W89.69862989	3	S	Pole Rake	0	No Weeds
110	N44.81328456	W89.69863341	1	S	Pole Rake	0	No Weeds
111	N44.8126094	W89.69863693	6	-	-	-	N/A No Reading
112	N44.81193424	W89.69864044	6	-	-	-	N/A No Reading
113	N44.81125908	W89.69864396	6	S	Pole Rake	0	No Weeds
114	N44.81058393	W89.69864748	4	S	Pole Rake	0	No Weeds
115	N44.81868331	W89.69765669	-	-	-	-	N/A Land
116	N44.81800815	W89.69766021	4	M	Pole Rake	0	No Weeds
117	N44.81733299	W89.69766374	3	W	Pole Rake	0	No Weeds
118	N44.81665784	W89.69766727	3	W	Pole Rake	0	No Weeds
119	N44.81598268	W89.6976708	4	S	Pole Rake	0	No Weeds
120	N44.81530752	W89.69767433	3	S	Pole Rake	0	No Weeds
121	N44.81463236	W89.69767785	1	S	Pole Rake	0	No Weeds
122	N44.81395721	W89.69768138	1	S	Pole Rake	0	No Weeds
123	N44.81328205	W89.69768491	3	M	Pole Rake	0	No Weeds
124	N44.81193174	W89.69769196	5	M/S	Pole Rake	0	No Weeds
125	N44.81125658	W89.69769549	4	W	Pole Rake	0	No Weeds
126	N44.81058142	W89.69769902	4	W	Pole Rake	0	No Weeds
127	N44.81800563	W89.69671163	3	M	Pole Rake	0	No Weeds
128	N44.81733048	W89.69671517	3	S	Pole Rake	0	No Weeds
129	N44.81665532	W89.69671871	3	M	Pole Rake	0	No Weeds
130	N44.81598016	W89.69672225	2	S/W	Pole Rake	0	No Weeds
131	N44.81530501	W89.69672579	2	M	Pole Rake	0	No Weeds
132	N44.81462985	W89.69672933	1	S	Pole Rake	0	No Weeds
133	N44.81395469	W89.69673287	1	M	Pole Rake	-	No Weeds
134	N44.81260438	W89.69673994	1	M	Pole Rake	0	No Weeds
135	N44.81192922	W89.69674348	1	S	Pole Rake	0	No Weeds
136	N44.81125406	W89.69674702	3	S	Pole Rake	0	No Weeds
137	N44.81057891	W89.69675056	2	S	Pole Rake	0	No Weeds
138	N44.80990375	W89.6967541	3	S	Pole Rake	0	No Weeds
139	N44.81867827	W89.6957595	-	-	-	-	N/A Land
140	N44.81800311	W89.69576305	3	M	Pole Rake	0	No Weeds
141	N44.81732795	W89.6957666	-	S	-	-	N/A Shallow Sand
142	N44.81597764	W89.6957737	-	-	-	-	N/A Land
143	N44.81530248	W89.69577725	-	M	-	-	N/A Shallow Muck
144	N44.81395217	W89.69578435	-	M	-	-	N/A Shallow Muck
145	N44.81327701	W89.6957879	-	-	-	-	N/A Too Shallow
146	N44.8119267	W89.695795	-	-	-	-	N/A Land
147	N44.81125154	W89.69579855	2	S	Pole Rake	0	No Weeds
148	N44.81732542	W89.69481803	-	-	-	-	N/A Land
149	N44.81665027	W89.6948216	-	-	-	-	N/A Land
150	N44.81394964	W89.69483584	-	-	-	-	N/A Too Shallow
151	N44.81124901	W89.69485008	2	M	Pole Rake	0	No Weeds
152	N44.81057385	W89.69485364	-	-	-	-	N/A Land
153	N44.81259679	W89.69389447	-	-	-	-	N/A Too Shallow
154	N44.81124647	W89.69390161	-	-	-	-	N/A Land

Mosinee Hydroelectric Project – Cemetery Slough
2018 Invasive Species Monitoring

Eurasian Water Milfoil Distribution Map



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Project/Lake: Mosinee/Cemetery Slough (102 Sample Points)
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Point	Latitude	Longitude	Depth	Sediment	Method	EWM	Comments
1	N44.80391252	W89.72766825	1	M	Pole Rake	0	Plants visible within 50’
2	N44.80323736	W89.72767143	2	M	Pole Rake	0	Plants visible within 50’
3	N44.8025622	W89.7276746	3	M	Pole Rake	0	Plants visible within 50’
4	N44.80188704	W89.72767778	2	M	Pole Rake	0	No Weeds Secchi Reading 1.4'
5	N44.80593573	W89.72671033	2	M/S	Pole Rake	0	No Weeds
6	N44.80526057	W89.72671352	2	M	Pole Rake	0	No Weeds
7	N44.80188477	W89.72672946	2	M	Pole Rake	0	No Weeds
8	N44.80120961	W89.72673265	2	M	Pole Rake	0	No Weeds
9	N44.80053445	W89.72673583	-	M	-	-	N/A Shallow Muck
10	N44.79985702	W89.72579073	1	M	Pole Rake	0	No Weeds
11	N44.8039057	W89.72482319	-	M	-	-	N/A Shallow Muck
12	N44.80323054	W89.7248264	-	-	-	0	N/A Blocked by logs
13	N44.80255538	W89.72482961	-	-	-	0	N/A Blocked by logs
14	N44.80188022	W89.72483282	-	M	-	-	Shallow, muck
15	N44.8005299	W89.72483924	1	M	Pole Rake	0	No Weeds
16	N44.79850442	W89.72484887	-	-	-	-	N/A Land
17	N44.80187793	W89.7238845	-	M	-	-	N/A Shallow Muck
18	N44.80052761	W89.72389094	2	M	Pole Rake	0	No Weeds
19	N44.79917729	W89.72389738	-	M	-	-	N/A Shallow Muck
20	N44.79850213	W89.7239006	1	M	Pole Rake	0	No Weeds
21	N44.80390111	W89.72292649	-	-	-	-	N/A Blocked By Logs
22	N44.80322595	W89.72292972	-	-	-	-	N/A Blocked By Logs
23	N44.80255079	W89.72293295	-	M	-	-	N/A Shallow Muck
24	N44.80052531	W89.72294265	1	S/W	Pole Rake	0	No Weeds
25	N44.79985015	W89.72294588	2	M	Pole Rake	1	-
26	N44.79917499	W89.72294911	-	M	-	-	N/A Shallow Muck
27	N44.79849983	W89.72295234	2	M	Pole Rake	0	No Weeds
28	N44.80187333	W89.72198787	-	M	-	-	N/A Shallow Muck
29	N44.79984785	W89.72199759	2	M/S	Pole Rake	0	-
30	N44.79849753	W89.72200408	2	M	Pole Rake	0	No Weeds
31	N44.80119586	W89.7210428	1	M	Pole Rake	0	No Weeds
32	N44.8005207	W89.72104606	1	S/M	Pole Rake	0	No Weeds
33	N44.79984554	W89.72104931	3	M	Pole Rake	0	No Weeds
34	N44.79917038	W89.72105256	3	M	Pole Rake	0	No Weeds
35	N44.79849522	W89.72105581	2	M	Pole Rake	0	No Weeds
36	N44.79984322	W89.72010102	3	M	Pole Rake	0	Some individual EWM plants within 50’
37	N44.79916806	W89.72010429	3	M	Pole Rake	0	No Weeds
38	N44.7984929	W89.72010755	3	M	Pole Rake	0	No Weeds
39	N44.80186637	W89.71914291	-	-	-	-	N/A Blocked By Logs
40	N44.80051605	W89.71914946	2	M/S	Pole Rake	0	No Weeds
41	N44.79984089	W89.71915274	3	M	Pole Rake	0	No Weeds
42	N44.79916573	W89.71915601	3	M	Pole Rake	0	Some individual EWM plants within 50’
43	N44.79849057	W89.71915929	1	S	Pole Rake	0	No Weeds
44	N44.80456467	W89.71818145	-	M	-	-	N/A Shallow Muck
45	N44.80118887	W89.71819788	-	-	-	-	N/A Blocked By Logs
46	N44.80051371	W89.71820117	3	M	Pole Rake	0	Some EWM plants observed within 50’
47	N44.79983855	W89.71820445	3	M	Pole Rake	0	No Weeds
48	N44.79916339	W89.71820774	3	M	Pole Rake	0	No Weeds
49	N44.80388717	W89.71723638	-	M	-	-	N/A Shallow Muck
50	N44.80118653	W89.71724957	-	-	-	-	N/A Blocked By Logs
51	N44.80051137	W89.71725287	3	M/W	Pole Rake	0	No Weeds
52	N44.79983621	W89.71725617	3	M	Pole Rake	0	No Weeds
53	N44.79916105	W89.71725947	3	M	Pole Rake	0	Some EWM plants observed within 50’
54	N44.80320966	W89.71629134	-	-	-	-	N/A Land
55	N44.80118418	W89.71630127	2	S	Pole Rake	0	No Weeds
56	N44.80050902	W89.71630458	3	M	Pole Rake	0	No Weeds

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Rk = Rock

Point	Lattitude	Longitude	Depth	Sediment	Method	EWM	Comments
57	N44.79983386	W89.71630789	3	M	Pole Rake	0	No Weeds
58	N44.7991587	W89.71631119	3	M	Pole Rake	0	No Weeds
59	N44.8032073	W89.715343	-	M	-	-	N/A Shallow Muck
60	N44.80118182	W89.71535296	3	M	Pole Rake	0	Some EWM plants observed within 50’
61	N44.80050666	W89.71535628	3	M	Pole Rake	0	No Weeds
62	N44.7998315	W89.7153596	3	M	Pole Rake	0	No Weeds
63	N44.80252977	W89.71439799	-	M	-	-	N/A Shallow Muck
64	N44.80185461	W89.71440132	1	S	Pole Rake	0	No Weeds Secchi Reading 0.9'
65	N44.80117945	W89.71440466	4	M	Pole Rake	0	No Weeds
66	N44.80050429	W89.71440799	3	M	Pole Rake	0	Some EWM plants observed within 50’
67	N44.79982913	W89.71441132	3	M	Pole Rake	0	No Weeds
68	N44.80522803	W89.7134363	-	M	-	-	N/A Shallow Muck
69	N44.80455287	W89.71343964	1	M	Pole Rake	1	-
70	N44.80320255	W89.71344632	-	M	-	-	N/A Shallow Muck
71	N44.80252739	W89.71344967	3	M	Pole Rake	0	-
72	N44.80185223	W89.71345301	1	S	Pole Rake	0	No Weeds
73	N44.80117707	W89.71345635	4	M	Pole Rake	0	No Weeds
74	N44.80050191	W89.71345969	3	M	Pole Rake	0	No Weeds
75	N44.80387533	W89.71249463	-	M	-	-	N/A Shallow Muck
76	N44.80320017	W89.71249798	-	M	-	-	N/A Shallow Muck
77	N44.80252501	W89.71250134	2	M	Pole Rake	0	No Weeds
78	N44.80184985	W89.71250469	4	M	Pole Rake	0	No Weeds
79	N44.80117469	W89.71250804	4	M	Pole Rake	0	No Weeds
80	N44.80049953	W89.7125114	3	W	Pole Rake	0	No Weeds
81	N44.80387294	W89.71154628	2	M	Pole Rake	0	No Weeds
82	N44.80252262	W89.71155301	3	S	Pole Rake	0	No Weeds
83	N44.80184746	W89.71155637	5	M	Pole Rake	0	No Weeds
84	N44.8011723	W89.71155974	5	M	Pole Rake	0	No Weeds
85	N44.80319538	W89.71060131	3	M	Pole Rake	0	No Weeds
86	N44.80252022	W89.71060468	5	M	Pole Rake	0	No Weeds
87	N44.80184506	W89.71060806	5	M	Pole Rake	0	No Weeds
88	N44.80589361	W89.70963942	-	M	-	-	N/A Shallow Muck
89	N44.80521845	W89.70964281	-	M	-	-	N/A Shallow Muck
90	N44.80319297	W89.70965297	1	S	Pole Rake	0	No Weeds
91	N44.80251781	W89.70965635	5	M	Pole Rake	0	No Weeds Secchi Reading 1.5'
92	N44.80184265	W89.70965974	6	-	-	-	N/A No Reading
93	N44.80386572	W89.70870123	-	M	-	-	N/A Shallow Muck
94	N44.8025154	W89.70870803	6	-	-	-	N/A No Reading
95	N44.80184024	W89.70871142	6	-	-	-	N/A No Reading
96	N44.80251298	W89.7077597	6	-	-	-	N/A No Reading
97	N44.80183782	W89.70776311	4	S/W	Pole Rake	0	No Weeds
98	N44.8031857	W89.70680795	1	S	Pole Rake	0	No Weeds
99	N44.80251054	W89.70681137	6	-	-	-	N/A No Reading
100	N44.80183539	W89.70681479	4	S/W	Pole Rake	0	No Weeds
101	N44.80250811	W89.70586304	5	W	Pole Rake	0	No Weeds
102	N44.80318082	W89.70491127	1	S	Pole Rake	0	No Weeds

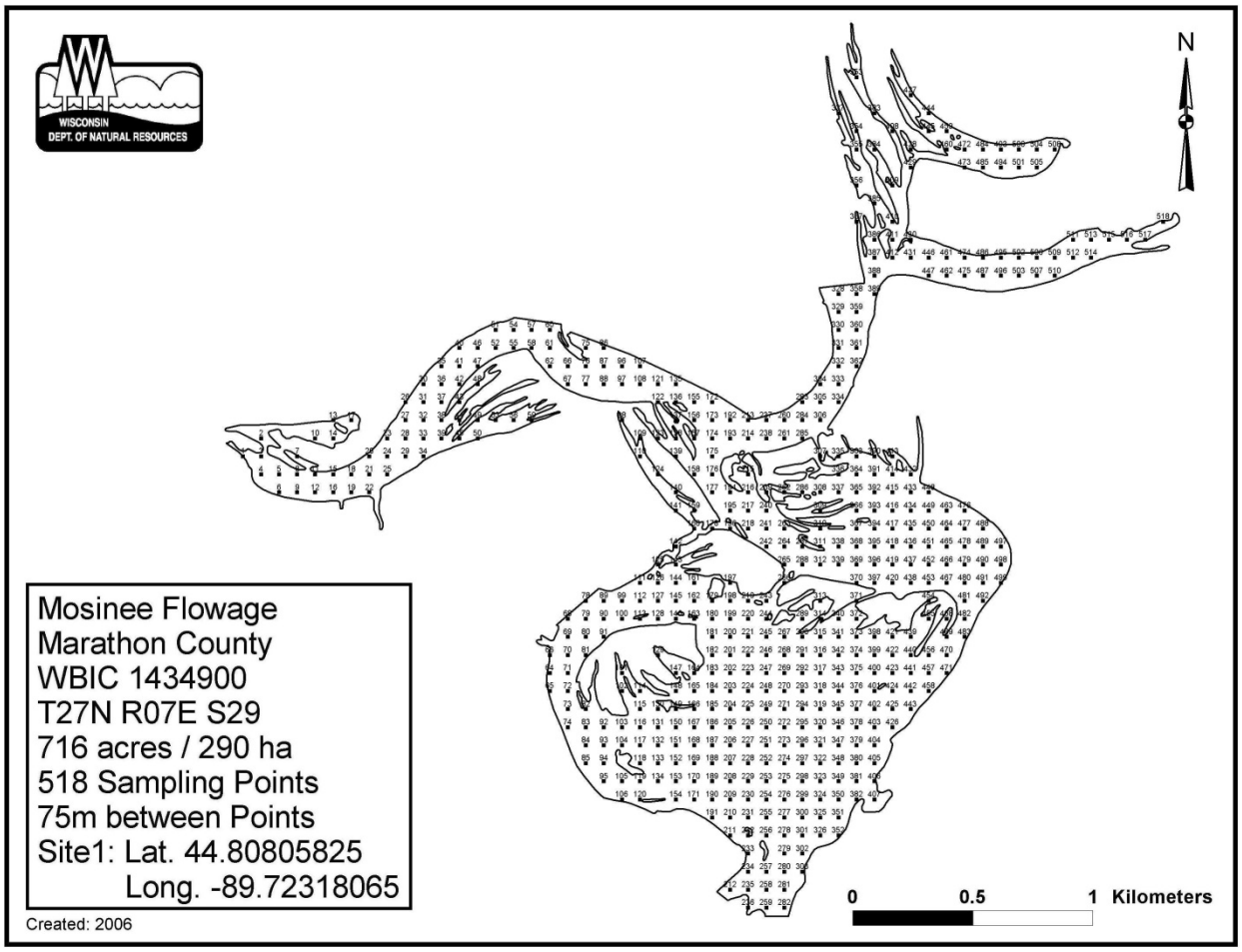
APPENDIX C

Curly-Leaf Pondweed Survey Results

Mosinee Hydroelectric Project – Reservoir
2018 Invasive Species Monitoring

Curly-Leaf Pondweed Distribution Map

- **None found in 2018**



CURLY-LEAF PONDWEED Invasive Species Point Intercept Survey Report for 2018
Project/Lake: Mosinee/Mosinee Flowage (518 Sample Points)
Dates: June 9, 10, 16, 23, 24
WBIC: 1334900
County: Marathon
Crew: JAK, SJK, LAK, BJK
Datum: WGS84

EWM = Eurasian Water Milfoil
CLP = Curly-leaf Pondweed
NWM = Northern Water Milfoil

N/A = Not Accessible
M = Muck
W = Woody Debris
S = Sand
G = Gravel
R = Root Mass (i.e. Lily Pads, Pickerel Weed, etc.)
Rk = Rock

Point	Latitude	Longitude	Depth	Sediment	Method	CLP	Comments
1	N44.80805825	W89.72318065	-	M	-	-	N/A Shallow Muck
2	N44.80873111	W89.72222899	-	M	-	-	N/A Shallow Muck
3	N44.80805595	W89.72223223	1	M	Pole Rake	0	No Weeds
4	N44.80738079	W89.72223547	1	M	Pole Rake	0	No Weeds
5	N44.80737848	W89.72128706	2	M	Pole Rake	0	No Weeds
6	N44.80670332	W89.72129031	2	M	Pole Rake	0	No Weeds Secchi Reading 0.6’
7	N44.80805132	W89.72033539	-	M	-	-	N/A Shallow Muck
8	N44.80737616	W89.72033865	2	M	Pole Rake	0	No Weeds
9	N44.806701	W89.72034191	3	M	Pole Rake	0	No Weeds
10	N44.80872415	W89.7193837	-	M	-	-	N/A Shallow Muck
11	N44.80737384	W89.71939024	3	M	Pole Rake	0	No Weeds
12	N44.80669868	W89.71939352	3	M/W	Pole Rake	0	No Weeds
13	N44.80939698	W89.71843198	-	M	-	-	N/A Shallow Muck
14	N44.80872182	W89.71843527	-	M	-	-	N/A Shallow Muck
15	N44.8073715	W89.71844184	3	M	Pole Rake	0	No Weeds
16	N44.80669634	W89.71844512	3	M	Pole Rake	0	No Weeds
17	N44.80939464	W89.71748354	-	M	-	-	N/A Shallow Muck
18	N44.80736916	W89.71749343	4	M/W	Pole Rake	0	No Weeds
19	N44.806694	W89.71749672	3	M/W	Pole Rake	0	No Weeds
20	N44.80804197	W89.71654171	3	S	Pole Rake	0	No Weeds
21	N44.80736681	W89.71654502	4	M	Pole Rake	0	No Weeds
22	N44.80669165	W89.71654833	3	S	Pole Rake	0	No Weeds
23	N44.80871477	W89.71558998	4	S/W	Pole Rake	0	No Weeds
24	N44.80803961	W89.71559329	5	M	Pole Rake	0	No Weeds
25	N44.80736445	W89.71559661	5	W	Pole Rake	0	No Weeds
26	N44.81006272	W89.71463489	3	G/S	Pole Rake	0	No Weeds
27	N44.80938756	W89.71463822	5	W	Pole Rake	0	No Weeds
28	N44.8087124	W89.71464155	5	M	Pole Rake	0	No Weeds
29	N44.80803725	W89.71464488	5	W	Pole Rake	0	No Weeds
30	N44.81073551	W89.7136831	5	W	Pole Rake	0	No Weeds
31	N44.81006035	W89.71368644	5	M	Pole Rake	0	No Weeds
32	N44.80938519	W89.71368978	5	M	Pole Rake	0	No Weeds
33	N44.80871003	W89.71369312	5	M	Pole Rake	0	No Weeds
34	N44.80803487	W89.71369646	3	S/W	Pole Rake	0	No Weeds
35	N44.81140828	W89.71273128	5	W	Pole Rake	0	No Weeds Secchi Reading 1.0'
36	N44.81073312	W89.71273463	5	S	Pole Rake	0	No Weeds
37	N44.81005797	W89.71273799	4	M	Pole Rake	0	No Weeds
38	N44.80938281	W89.71274134	1	S	Pole Rake	0	No Weeds
39	N44.80870765	W89.71274469	1	S	Pole Rake	0	No Weeds
40	N44.81208105	W89.71177945	6	-	-	-	N/A No Reading
41	N44.81140589	W89.71178281	6	-	-	-	N/A No Reading
42	N44.81073074	W89.71178617	3	S/W	Pole Rake	0	No Weeds
43	N44.81005558	W89.71178953	-	M	-	-	N/A Shallow Muck
44	N44.80938042	W89.7117929	-	-	-	-	N/A Land
45	N44.80870526	W89.71179626	3	M	Pole Rake	0	No Weeds
46	N44.81207865	W89.71083096	6	-	-	-	N/A No Reading
47	N44.8114035	W89.71083434	2	S	Pole Rake	0	No Weeds
48	N44.81072834	W89.71083771	-	M	-	-	N/A Shallow Muck
49	N44.80937802	W89.71084446	1	M/S	Pole Rake	0	No Weeds
50	N44.80870286	W89.71084783	1	S/W	Pole Rake	0	No Weeds
51	N44.81275141	W89.70987909	6	-	-	-	N/A No Reading
52	N44.81207625	W89.70988248	6	-	-	-	N/A No Reading
53	N44.80937562	W89.70989602	2	M	Pole Rake	0	No Weeds
54	N44.81274899	W89.7089306	7	-	-	-	N/A No Reading
55	N44.81207384	W89.70893399	3	S	Pole Rake	0	No Weeds
56	N44.8093732	W89.70894758	2	M	Pole Rake	0	No Weeds
57	N44.81274657	W89.7079821	10	-	-	-	N/A No Reading

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W = Woody Debris
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G = Gravel
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Rk = Rock

Point	Latitude	Longitude	Depth	Sediment	Method	CLP	Comments
58	N44.81207141	W89.70798551	9	-	-	-	N/A No Reading
59	N44.80937078	W89.70799914	-	-	-	-	N/A Land
60	N44.81274414	W89.70703361	9	-	-	-	N/A No Reading
61	N44.81206898	W89.70703702	10	-	-	-	N/A No Reading
62	N44.81139383	W89.70704044	12	-	-	-	N/A No Reading
63	N44.80059129	W89.70709511	2	W	Pole Rake	0	No Weeds
64	N44.79991613	W89.70709853	8	-	-	-	N/A No Reading
65	N44.79924097	W89.70710195	8	-	-	-	N/A No Reading
66	N44.81139139	W89.70609197	10	-	-	-	N/A No Reading
67	N44.81071623	W89.7060954	10	-	-	-	N/A No Reading
68	N44.80193917	W89.70613996	7	-	-	-	N/A No Reading
69	N44.80126401	W89.70614339	7	-	-	-	N/A No Reading
70	N44.80058885	W89.70614682	5	W	Pole Rake	0	No Weeds
71	N44.79991369	W89.70615025	5	S	Pole Rake	0	No Weeds
72	N44.79923853	W89.70615367	4	W	Pole Rake	0	No Weeds Secchi Reading 2.0'
73	N44.79856337	W89.7061571	7	-	-	-	N/A No Reading
74	N44.79788821	W89.70616053	9	-	-	-	N/A No Reading
75	N44.8120641	W89.70514006	3	M/S	Pole Rake	0	No Weeds
76	N44.81138895	W89.7051435	5	S	Pole Rake	0	No Weeds
77	N44.81071379	W89.70514694	10	-	-	-	N/A No Reading
78	N44.80261188	W89.70518821	6	-	-	-	N/A No Reading
79	N44.80193673	W89.70519165	4	M	Pole Rake	0	No Weeds
80	N44.80126157	W89.70519508	4	S/M	Pole Rake	0	No Weeds
81	N44.80058641	W89.70519852	4	S	Pole Rake	0	No Weeds
82	N44.79856093	W89.70520884	2	S	Pole Rake	0	No Weeds
83	N44.79788577	W89.70521227	4	M	Pole Rake	0	No Weeds
84	N44.79721061	W89.70521571	7	-	-	-	N/A No Reading
85	N44.79653545	W89.70521915	5	S	Pole Rake	0	No Weeds
86	N44.81206165	W89.70419157	4	S/W	Pole Rake	0	No Weeds
87	N44.81138649	W89.70419502	7	-	-	-	N/A No Reading
88	N44.81071133	W89.70419848	10	-	-	-	N/A No Reading
89	N44.80260943	W89.70423988	5	M	Pole Rake	0	No Weeds
90	N44.80193427	W89.70424333	4	M/S	Pole Rake	0	No Weeds
91	N44.80125911	W89.70424678	3	S	Pole Rake	0	No Weeds
92	N44.79788332	W89.70426402	3	S	Pole Rake	0	No Weeds
93	N44.79720816	W89.70426747	3	W	Pole Rake	0	-
94	N44.796533	W89.70427092	7	-	-	-	N/A No Reading
95	N44.79585784	W89.70427437	3	W	Pole Rake	0	No Weeds
96	N44.81138403	W89.70324655	7	-	-	-	N/A No Reading
97	N44.81070887	W89.70325001	9	-	-	-	N/A No Reading
98	N44.80935856	W89.70325694	-	M	-	-	N/A Shallow Muck
99	N44.80260697	W89.70329155	5	S	Pole Rake	0	No Weeds
100	N44.80193181	W89.70329501	3	S/W	Pole Rake	0	No Weeds
101	N44.79990634	W89.70330539	1	M	Pole Rake	0	-
102	N44.79923118	W89.70330885	3	M	Pole Rake	0	No Weeds
103	N44.79788086	W89.70331577	4	M	Pole Rake	0	No Weeds
104	N44.7972057	W89.70331923	3	M/S	Pole Rake	0	No Weeds
105	N44.79585538	W89.70332615	7	-	-	-	N/A No Reading
106	N44.79518022	W89.70332961	2	S/G	Pole Rake	0	No Weeds
107	N44.81138156	W89.70229808	7	-	-	-	N/A No Reading
108	N44.81070641	W89.70230155	9	-	-	-	N/A No Reading
109	N44.80868093	W89.70231197	-	M	-	-	N/A Shallow Muck
110	N44.80800577	W89.70231544	1	S	Pole Rake	0	No Weeds
111	N44.80327966	W89.70233975	3	M	Pole Rake	0	No Weeds
112	N44.80260451	W89.70234322	5	S	Pole Rake	0	No Weeds
113	N44.80192935	W89.70234669	4	M	Pole Rake	0	No Weeds
114	N44.79922871	W89.70236058	2	M	Pole Rake	0	No Weeds

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R = Root Mass (i.e. Lily Pads, Pickerel Weed, etc.)
Rk = Rock

Point	Latitude	Longitude	Depth	Sediment	Method	CLP	Comments
115	N44.79855355	W89.70236405	3	S	Pole Rake	0	-
116	N44.79787839	W89.70236752	4	M	Pole Rake	0	No Weeds
117	N44.79720323	W89.70237099	3	S	Pole Rake	0	No Weeds
118	N44.79652807	W89.70237446	2	S	Pole Rake	0	No Weeds
119	N44.79585291	W89.70237793	6	-	-	-	N/A No Reading
120	N44.79517775	W89.7023814	2	M	Pole Rake	0	-
121	N44.81070393	W89.70135309	9	-	-	-	N/A No Reading
122	N44.81002877	W89.70135658	-	-	-	-	N/A Land
123	N44.80867846	W89.70136354	1	M/S	Pole Rake	0	No Weeds
124	N44.80732814	W89.70137051	-	-	-	-	N/A Land
125	N44.80395235	W89.70138793	2	S	Pole Rake	0	No Weeds
126	N44.80327719	W89.70139141	2	S	Pole Rake	0	-
127	N44.80260203	W89.70139489	4	S	Pole Rake	0	No Weeds
128	N44.80192687	W89.70139838	4	W	Pole Rake	0	No Weeds
129	N44.80057655	W89.70140534	-	M	-	-	N/A Shallow Muck
130	N44.79855108	W89.70141579	2	M	Pole Rake	0	-
131	N44.79787592	W89.70141927	4	M	Pole Rake	0	No Weeds
132	N44.79720076	W89.70142275	4	M	Pole Rake	0	No Weeds
133	N44.7965256	W89.70142623	2	S	Pole Rake	0	No Weeds
134	N44.79585044	W89.70142971	6	-	-	-	N/A No Reading
135	N44.81070145	W89.70040463	8	-	-	-	N/A No Reading
136	N44.81002629	W89.70040813	-	-	-	-	N/A Blocked By Down Tree
137	N44.80935113	W89.70041162	-	-	-	-	N/A Land
138	N44.80867597	W89.70041512	2	M/S	Pole Rake	0	No Weeds Fresh water sponges
139	N44.80800081	W89.70041861	3	M	Pole Rake	0	No Weeds
140	N44.8066505	W89.7004256	-	-	-	-	N/A Land
141	N44.80597534	W89.70042909	1	S	Pole Rake	0	No Weeds
142	N44.80462502	W89.70043608	4	S	Pole Rake	0	No Weeds Secchi Reading 2.0'
143	N44.80394986	W89.70043958	5	S	Pole Rake	0	No Weeds
144	N44.8032747	W89.70044307	4	S	Pole Rake	0	No Weeds
145	N44.80259955	W89.70044656	4	S	Pole Rake	0	No Weeds
146	N44.80192439	W89.70045006	4	S	Pole Rake	0	No Weeds
147	N44.79989891	W89.70046054	2	S	Pole Rake	0	No Weeds
148	N44.79922375	W89.70046403	3	M	Pole Rake	0	No Weeds
149	N44.79854859	W89.70046753	2	S/M	Pole Rake	0	No Weeds
150	N44.79787343	W89.70047102	4	W	Pole Rake	0	No Weeds
151	N44.79719827	W89.70047451	4	M	Pole Rake	0	No Weeds
152	N44.79652311	W89.700478	4	S	Pole Rake	0	No Weeds
153	N44.79584795	W89.7004815	6	M	Pole Rake	0	No Weeds
154	N44.7951728	W89.70048499	4	W	Pole Rake	0	No Weeds
155	N44.8100238	W89.69945968	9	-	-	-	N/A No Reading
156	N44.80934864	W89.69946318	2	S	Pole Rake	0	No Weeds
157	N44.80867348	W89.69946669	4	W	Pole Rake	0	No Weeds
158	N44.80732316	W89.6994737	10	-	-	-	N/A No Reading
159	N44.80597285	W89.69948071	-	-	-	-	N/A Land
160	N44.80529769	W89.69948422	9	-	-	-	N/A No Reading
161	N44.80327221	W89.69949473	3	M	Pole Rake	0	No Weeds
162	N44.80259705	W89.69949824	5	M/W	Pole Rake	0	No Weeds
163	N44.8019219	W89.69950174	2	S	Pole Rake	0	-
164	N44.79989642	W89.69951225	2	S	Pole Rake	0	No Weeds
165	N44.79922126	W89.69951576	3	W	Pole Rake	0	No Weeds
166	N44.7985461	W89.69951926	2	S	Pole Rake	0	No Weeds
167	N44.79787094	W89.69952277	7	-	-	-	N/A No Reading
168	N44.79719578	W89.69952627	7	-	-	-	N/A No Reading
169	N44.79652062	W89.69952978	7	-	-	-	N/A No Reading
170	N44.79584546	W89.69953328	7	-	-	-	N/A No Reading
171	N44.7951703	W89.69953678	6	-	-	-	N/A No Reading

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R = Root Mass (i.e. Lily Pads, Pickerel Weed, etc.)
Rk = Rock

Point	Latitude	Longitude	Depth	Sediment	Method	CLP	Comments
172	N44.8100213	W89.69851123	9	-	-	-	N/A No Reading
173	N44.80934614	W89.69851474	10	-	-	-	N/A No Reading
174	N44.80867098	W89.69851826	15	-	-	-	N/A No Reading
175	N44.80799582	W89.69852178	10	-	-	-	N/A No Reading
176	N44.80732066	W89.69852529	12	-	-	-	N/A No Reading
177	N44.80664551	W89.69852881	11	-	-	-	N/A No Reading
178	N44.80529519	W89.69853584	7	-	-	-	N/A No Reading
179	N44.80259456	W89.69854991	3	S	Pole Rake	0	EWM present
180	N44.8019194	W89.69855342	4	S	Pole Rake	0	No Weeds
181	N44.80124424	W89.69855694	4	S/W	Pole Rake	0	No Weeds
182	N44.80056908	W89.69856046	7	-	-	-	N/A No Reading
183	N44.79989392	W89.69856397	4	S	Pole Rake	0	No Weeds
184	N44.79921876	W89.69856749	3	S	Pole Rake	0	No Weeds
185	N44.7985436	W89.698571	6	-	-	-	N/A No Reading
186	N44.79786844	W89.69857452	7	-	-	-	N/A No Reading
187	N44.79719328	W89.69857803	8	-	-	-	N/A No Reading
188	N44.79651812	W89.69858155	8	-	-	-	N/A No Reading
189	N44.79584297	W89.69858506	9	-	-	-	N/A No Reading
190	N44.79516781	W89.69858858	9	-	-	-	N/A No Reading
191	N44.79449265	W89.69859209	3	M	Pole Rake	0	No Weeds
192	N44.80934363	W89.6975663	7	-	-	-	N/A No Reading
193	N44.80866847	W89.69756983	9	-	-	-	N/A No Reading
194	N44.806643	W89.69758042	1	S	-	-	No Weeds
195	N44.80596784	W89.69758394	8	-	-	-	N/A No Reading
196	N44.80529268	W89.69758747	11	-	-	-	N/A No Reading
197	N44.80326721	W89.69759805	2	S	Pole Rake	0	-
198	N44.80259205	W89.69760158	3	S	Pole Rake	0	EWM present
199	N44.80191689	W89.69760511	6	S/W	Pole Rake	0	No Weeds
200	N44.80124173	W89.69760863	3	S	Pole Rake	0	No Weeds
201	N44.80056657	W89.69761216	3	S	Pole Rake	0	No Weeds
202	N44.79989141	W89.69761569	3	S	Pole Rake	0	No Weeds
203	N44.79921625	W89.69761921	5	S	Pole Rake	0	No Weeds
204	N44.7985411	W89.69762274	7	-	-	-	N/A No Reading
205	N44.79786594	W89.69762627	8	-	-	-	N/A No Reading
206	N44.79719078	W89.69762979	8	-	-	-	N/A No Reading
207	N44.79651562	W89.69763332	8	-	-	-	N/A No Reading
208	N44.79584046	W89.69763684	8	-	-	-	N/A No Reading
209	N44.7951653	W89.69764037	9	-	-	-	N/A No Reading
210	N44.79449014	W89.6976439	8	-	-	-	N/A No Reading
211	N44.79381498	W89.69764742	3	R/S	Pole Rake	0	No Weeds
212	N44.7917895	W89.697658	-	-	-	-	Boat Barrier
213	N44.80934111	W89.69661787	1	S	Pole Rake	0	No Weeds
214	N44.80866596	W89.69662141	10	-	-	-	N/A No Reading
215	N44.80731564	W89.69662848	1	S	Pole Rake	0	No Weeds
216	N44.80664048	W89.69663202	2	S	Pole Rake	0	No Weeds
217	N44.80596533	W89.69663556	4	S	Pole Rake	0	No Weeds
218	N44.80529017	W89.6966391	13	-	-	-	N/A No Reading
219	N44.80258953	W89.69665325	2	S	Pole Rake	0	No Weeds
220	N44.80191438	W89.69665679	5	G	Pole Rake	0	No Weeds
221	N44.80123922	W89.69666033	3	G	Pole Rake	0	No Weeds
222	N44.80056406	W89.69666387	1	S	Pole Rake	0	-
223	N44.7998889	W89.6966674	3	S	Pole Rake	0	-
224	N44.79921374	W89.69667094	6	-	-	-	N/A No Reading
225	N44.79853858	W89.69667448	5	S	Pole Rake	0	No Weeds
226	N44.79786342	W89.69667802	6	-	-	-	N/A No Reading
227	N44.79718826	W89.69668155	7	-	-	-	N/A No Reading
228	N44.7965131	W89.69668509	7	-	-	-	N/A No Reading

CURLY-LEAF PONDWEED Invasive Species Point Intercept Survey Report for 2018
Project/Lake: Mosinee/Mosinee Flowage (518 Sample Points)
Dates: June 9, 10, 16, 23, 24
WBIC: 1334900
County: Marathon
Crew: JAK, SJK, LAK, BJK
Datum: WGS84

EWM = Eurasian Water Milfoil
CLP = Curly-leaf Pondweed
NWM = Northern Water Milfoil

N/A = Not Accessible
M = Muck
W = Woody Debris
S = Sand
G = Gravel
R = Root Mass (i.e. Lily Pads, Pickerel Weed, etc.)
Rk = Rock

Point	Latitude	Longitude	Depth	Sediment	Method	CLP	Comments
229	N44.79583794	W89.69668863	8	-	-	-	N/A No Reading
230	N44.79516279	W89.69669216	9	-	-	-	N/A No Reading
231	N44.79448763	W89.6966957	9	-	-	-	N/A No Reading
232	N44.79381247	W89.69669924	3	G/S	Pole Rake	0	No Weeds
233	N44.79313731	W89.69670277	9	-	-	-	N/A No Reading
234	N44.79246215	W89.69670631	10	-	-	-	N/A No Reading
235	N44.79178699	W89.69670985	-	-	-	-	Boat Barrier
236	N44.79111183	W89.69671338	-	-	-	-	Boat Barrier
237	N44.80933859	W89.69566943	1	S	Pole Rake	0	No Weeds
238	N44.80866343	W89.69567298	12	-	-	-	N/A No Reading
239	N44.80663796	W89.69568363	-	-	-	-	N/A Land
240	N44.8059628	W89.69568718	1	S	Pole Rake	0	No Weeds
241	N44.80528764	W89.69569073	7	-	-	-	N/A No Reading
242	N44.80461249	W89.69569428	12	-	-	-	N/A No Reading
243	N44.80258701	W89.69570492	7	-	-	-	N/A No Reading
244	N44.80191185	W89.69570847	1	S	Pole Rake	0	No Weeds
245	N44.80123669	W89.69571202	2	S	Pole Rake	0	No Weeds
246	N44.80056154	W89.69571557	3	R	Pole Rake	0	No Weeds Secchi Reading 2.0'
247	N44.79988638	W89.69571912	5	M/S	Pole Rake	0	No Weeds
248	N44.79921122	W89.69572267	5	M	Pole Rake	0	No Weeds
249	N44.79853606	W89.69572622	5	M	Pole Rake	0	No Weeds
250	N44.7978609	W89.69572977	5	M	Pole Rake	0	No Weeds
251	N44.79718574	W89.69573331	5	W	Pole Rake	0	No Weeds
252	N44.79651058	W89.69573686	6	-	-	-	N/A No Reading
253	N44.79583542	W89.69574041	7	-	-	-	N/A No Reading
254	N44.79516026	W89.69574396	9	-	-	-	N/A No Reading
255	N44.7944851	W89.6957475	15	-	-	-	N/A No Reading
256	N44.79380994	W89.69575105	6	-	-	-	N/A No Reading
257	N44.79245963	W89.69575815	10	-	-	-	N/A No Reading
258	N44.79178447	W89.69576169	-	-	-	-	Boat Barrier
259	N44.79110931	W89.69576524	-	-	-	-	Boat Barrier
260	N44.80933606	W89.69472099	3	G	Pole Rake	0	No Weeds
261	N44.8086609	W89.69472455	12	-	-	-	N/A No Reading
262	N44.80663543	W89.69473523	-	-	-	-	N/A Land
263	N44.80528511	W89.69474236	3	S	Pole Rake	0	No Weeds
264	N44.80460995	W89.69474592	7	-	-	-	N/A No Reading
265	N44.8039348	W89.69474948	8	-	-	-	N/A No Reading
266	N44.80325964	W89.69475304	9	-	-	-	N/A No Reading
267	N44.80123416	W89.69476372	3	S/W	Pole Rake	0	No Weeds
268	N44.800559	W89.69476728	3	S	Pole Rake	0	No Weeds
269	N44.79988385	W89.69477084	5	M	Pole Rake	0	No Weeds
270	N44.79920869	W89.6947744	5	S	Pole Rake	0	No Weeds Secchi Reading 2.5'
271	N44.79853353	W89.69477796	5	M/S	Pole Rake	0	No Weeds
272	N44.79785837	W89.69478152	5	M/W	Pole Rake	0	No Weeds
273	N44.79718321	W89.69478507	7	-	-	-	N/A No Reading
274	N44.79650805	W89.69478863	4	S	Pole Rake	0	No Weeds
275	N44.79583289	W89.69479219	4	S	Pole Rake	0	No Weeds
276	N44.79515773	W89.69479575	6	-	-	-	N/A No Reading
277	N44.79448257	W89.69479931	15	-	-	-	N/A No Reading
278	N44.79380741	W89.69480287	15	-	-	-	N/A No Reading
279	N44.79313225	W89.69480643	16	-	-	-	N/A No Reading
280	N44.7924571	W89.69480999	17	-	-	-	N/A No Reading
281	N44.79178194	W89.69481354	14	-	-	-	N/A No Reading
282	N44.79110678	W89.6948171	-	-	-	-	Boat Barrier
283	N44.81000868	W89.69376898	2	G	Pole Rake	0	No Weeds
284	N44.80933352	W89.69377255	7	-	-	-	N/A No Reading
285	N44.80865836	W89.69377612	12	-	-	-	N/A No Reading

CURLY-LEAF PONDWEED Invasive Species Point Intercept Survey Report for 2018
Project/Lake: Mosinee/Mosinee Flowage (518 Sample Points)
Dates: June 9, 10, 16, 23, 24
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County: Marathon
Crew: JAK, SJK, LAK, BJK
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EWM = Eurasian Water Milfoil
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Rk = Rock

Point	Latitude	Longitude	Depth	Sediment	Method	CLP	Comments
286	N44.80663289	W89.69378684	-	M	-	-	N/A Shallow Muck
287	N44.80460742	W89.69379756	-	-	-	-	N/A Blocked By Down Tree
288	N44.80393226	W89.69380113	5	S	Pole Rake	0	No Weeds
289	N44.80190678	W89.69381184	2	M/S	Pole Rake	0	No Weeds
290	N44.80123162	W89.69381541	2	S/W	Pole Rake	0	No Weeds
291	N44.80055647	W89.69381898	4	M	Pole Rake	0	No Weeds
292	N44.79988131	W89.69382255	5	M	Pole Rake	0	No Weeds
293	N44.79920615	W89.69382612	5	M	Pole Rake	0	-
294	N44.79853099	W89.69382969	4	M/S	Pole Rake	0	-
295	N44.79785583	W89.69383327	4	S	Pole Rake	0	No Weeds
296	N44.79718067	W89.69383684	3	S	Pole Rake	0	No Weeds
297	N44.79650551	W89.69384041	7	S	Pole Rake	0	No Weeds
298	N44.79583035	W89.69384398	11	-	-	-	N/A No Reading
299	N44.7951552	W89.69384755	9	-	-	-	N/A No Reading
300	N44.79448004	W89.69385112	4	S	Pole Rake	0	No Weeds
301	N44.79380488	W89.69385468	9	-	-	-	N/A No Reading
302	N44.79312972	W89.69385825	13	-	-	-	N/A No Reading
303	N44.79245456	W89.69386182	13	-	-	-	N/A No Reading
304	N44.81068129	W89.69281695	3	G/W	Pole Rake	0	No Weeds
305	N44.81000613	W89.69282053	11	-	-	-	N/A No Reading
306	N44.80933097	W89.69282411	14	-	-	-	N/A No Reading
307	N44.80798066	W89.69283128	-	-	-	-	N/A Blocked By Logs
308	N44.80663034	W89.69283845	1	M/S	Pole Rake	0	-
309	N44.80595519	W89.69284203	-	M	-	-	N/A Shallow Muck
310	N44.80528003	W89.69284561	2	S	Pole Rake	0	No Weeds
311	N44.80460487	W89.69284919	1	S	Pole Rake	0	No Weeds
312	N44.80392971	W89.69285278	3	S	Pole Rake	0	No Weeds
313	N44.80257939	W89.69285994	-	M	-	-	N/A Shallow Muck
314	N44.80190424	W89.69286352	1	S	Pole Rake	0	No Weeds
315	N44.80122908	W89.69286711	3	S	Pole Rake	0	No Weeds
316	N44.80055392	W89.69287069	4	W	Pole Rake	0	No Weeds
317	N44.79987876	W89.69287427	3	M	Pole Rake	0	EWM present
318	N44.7992036	W89.69287785	4	M	Pole Rake	0	No Weeds
319	N44.79852844	W89.69288143	5	M	Pole Rake	0	No Weeds
320	N44.79785329	W89.69288502	7	-	-	-	N/A No Reading
321	N44.79717813	W89.6928886	5	S	Pole Rake	0	No Weeds
322	N44.79650297	W89.69289218	8	-	-	-	N/A No Reading
323	N44.79582781	W89.69289576	8	-	-	-	N/A No Reading
324	N44.79515265	W89.69289934	3	S	Pole Rake	0	No Weeds
325	N44.79447749	W89.69290292	7	-	-	-	N/A No Reading
326	N44.79380233	W89.6929065	11	-	-	-	N/A No Reading
327	N44.82080608	W89.69181455	-	M	-	-	N/A Shallow Muck
328	N44.81405452	W89.69185051	9	-	-	-	N/A No Reading
329	N44.81337936	W89.69185411	10	-	-	-	N/A No Reading
330	N44.8127042	W89.6918577	11	-	-	-	N/A No Reading
331	N44.81202905	W89.6918613	11	-	-	-	N/A No Reading
332	N44.81135389	W89.69186489	13	-	-	-	N/A No Reading
333	N44.81067873	W89.69186849	15	-	-	-	N/A No Reading
334	N44.81000358	W89.69187208	11	-	-	-	N/A No Reading
335	N44.8079781	W89.69188286	-	-	-	-	N/A Land
336	N44.80730295	W89.69188646	2	M	Pole Rake	0	-
337	N44.80662779	W89.69189005	2	M	Pole Rake	0	No Weeds
338	N44.80460231	W89.69190083	-	-	-	-	N/A Blocked
339	N44.80392716	W89.69190443	3	S	Pole Rake	0	No Weeds Secchi Reading 1.5'
340	N44.80190168	W89.69191521	2	S	Pole Rake	0	No Weeds
341	N44.80122652	W89.6919188	3	S/W	Pole Rake	0	No Weeds
342	N44.80055137	W89.69192239	3	W	Pole Rake		No Weeds

CURLY-LEAF PONDWEED Invasive Species Point Intercept Survey Report for 2018
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Rk = Rock

Point	Latitude	Longitude	Depth	Sediment	Method	CLP	Comments
343	N44.79987621	W89.69192599	4	S	Pole Rake	0	-
344	N44.79920105	W89.69192958	3	S	Pole Rake	0	No Weeds
345	N44.79852589	W89.69193317	3	W	Pole Rake	0	No Weeds
346	N44.79785073	W89.69193677	8	-	-	-	N/A No Reading
347	N44.79717557	W89.69194036	7	-	-	-	N/A No Reading
348	N44.79650041	W89.69194395	8	-	-	-	N/A No Reading
349	N44.79582525	W89.69194754	3	S	Pole Rake	0	No Weeds
350	N44.7951501	W89.69195113	9	-	-	-	N/A No Reading
351	N44.79447494	W89.69195473	9	-	-	-	N/A No Reading
352	N44.79379978	W89.69195832	2	G	Pole Rake	0	No Weeds
353	N44.82215383	W89.69085871	-	-	-	-	N/A Blocked By Logs
354	N44.82012836	W89.69086953	-	-	-	-	N/A Blocked By Down Tree
355	N44.81945321	W89.69087314	2	M	Pole Rake	0	-
356	N44.81810289	W89.69088035	-	M	-	-	N/A Shallow Muck
357	N44.81675258	W89.69088757	-	-	-	-	N/A Land
358	N44.81405196	W89.69090199	8	-	-	-	N/A No Reading
359	N44.8133768	W89.6909056	9	-	-	-	N/A No Reading
360	N44.81270164	W89.69090921	10	-	-	-	N/A No Reading
361	N44.81202648	W89.69091281	10	-	-	-	N/A No Reading
362	N44.81135133	W89.69091642	4	G	Pole Rake	0	No Weeds
363	N44.80797554	W89.69093445	3	S	Pole Rake	0	No Weeds
364	N44.80730038	W89.69093805	-	-	-	-	N/A Land
365	N44.80662523	W89.69094166	2	M	Pole Rake	0	-
366	N44.80595007	W89.69094526	2	M/S	Pole Rake	0	No Weeds
367	N44.80527491	W89.69094887	1	S	Pole Rake	0	No Weeds
368	N44.80459975	W89.69095247	-	-	-	-	N/A Land
369	N44.80392459	W89.69095608	2	S	Pole Rake	0	-
370	N44.80324944	W89.69095968	5	S	Pole Rake	0	No Weeds
371	N44.80257428	W89.69096329	-	-	-	-	N/A Land
372	N44.80189912	W89.69096689	2	M/S	Pole Rake	0	No Weeds
373	N44.80122396	W89.6909705	3	M	Pole Rake	0	No Weeds
374	N44.8005488	W89.6909741	3	W	Pole Rake	0	No Weeds
375	N44.79987365	W89.6909777	3	3	Pole Rake	0	No Weeds
376	N44.79919849	W89.69098131	3	S/W	Pole Rake	0	No Weeds
377	N44.79852333	W89.69098491	3	S	Pole Rake	0	No Weeds
378	N44.79784817	W89.69098852	8	-	-	-	N/A No Reading
379	N44.79717301	W89.69099212	8	-	-	-	N/A No Reading
380	N44.79649785	W89.69099572	7	-	-	-	N/A No Reading
381	N44.79582269	W89.69099933	3	S	Pole Rake	0	No Weeds
382	N44.79514753	W89.69100293	3	G	Pole Rake	0	No Weeds
383	N44.82080095	W89.6899173	-	-	-	-	N/A Blocked By Logs
384	N44.81945064	W89.68992453	-	-	-	-	N/A Blocked By Logs
385	N44.81742517	W89.68993539	2	M	Pole Rake	0	-
386	N44.81607485	W89.68994263	2	M	Pole Rake	0	No Weeds
387	N44.8153997	W89.68994624	3	M/W	Pole Rake	0	-
388	N44.81472454	W89.68994986	3	M	Pole Rake	0	No Weeds
389	N44.81404938	W89.68995348	6	-	-	-	N/A No Reading
390	N44.80797297	W89.68998603	1	S/W	Pole Rake	0	No Weeds
391	N44.80729781	W89.68998965	2	M/S	Pole Rake	0	No Weeds
392	N44.80662266	W89.68999327	2	S/W	Pole Rake	0	No Weeds
393	N44.8059475	W89.68999688	2	M/S	Pole Rake	0	No Weeds
394	N44.80527234	W89.6900005	4	S	Pole Rake	0	No Weeds
395	N44.80459718	W89.69000411	1	M/S	Pole Rake	0	No Weeds
396	N44.80392202	W89.69000773	2	S	Pole Rake	0	No Weeds
397	N44.80324687	W89.69001135	5	S	Pole Rake	0	No Weeds
398	N44.80122139	W89.69002219	3	S/W	Pole Rake	0	No Weeds
399	N44.80054623	W89.69002581	3	S	Pole Rake	0	No Weeds

CURLY-LEAF PONDWEED Invasive Species Point Intercept Survey Report for 2018
Project/Lake: Mosinee/Mosinee Flowage (518 Sample Points)
Dates: June 9, 10, 16, 23, 24
WBIC: 1334900
County: Marathon
Crew: JAK, SJK, LAK, BJK
Datum: WGS84

EWM = Eurasian Water Milfoil
CLP = Curly-leaf Pondweed
NWM = Northern Water Milfoil

N/A = Not Accessible
M = Muck
W = Woody Debris
S = Sand
G = Gravel
R = Root Mass (i.e. Lily Pads, Pickerel Weed, etc.)
Rk = Rock

Point	Latitude	Longitude	Depth	Sediment	Method	CLP	Comments
400	N44.79987108	W89.69002942	3	M	Pole Rake	0	-
401	N44.79919592	W89.69003304	2	S	Pole Rake	0	No Weeds
402	N44.79852076	W89.69003665	4	S	Pole Rake	0	No Weeds
403	N44.7978456	W89.69004027	10	-	-	-	N/A No Reading
404	N44.79717044	W89.69004388	9	-	-	-	N/A No Reading
405	N44.79649528	W89.69004749	2	S	Pole Rake	0	No Weeds
406	N44.79582012	W89.69005111	2	G/S	Pole Rake	0	No Weeds
407	N44.79514496	W89.69005472	1	S	Pole Rake	0	No Weeds
408	N44.82012321	W89.6889723	-	-	-	-	N/A Blocked By Logs
409	N44.81809774	W89.68898319	2	M	Pole Rake	0	-
410	N44.81674743	W89.68899045	3	M	Pole Rake	0	-
411	N44.81607227	W89.68899408	3	M	Pole Rake	0	No Weeds
412	N44.81539712	W89.68899771	3	M	Pole Rake	0	No Weeds Secchi 2.0'
413	N44.80797039	W89.68903762	-	-	-	-	N/A Land
414	N44.80729523	W89.68904125	2	S	Pole Rake	0	No Weeds
415	N44.80662008	W89.68904487	4	M/S	Pole Rake	0	No Weeds
416	N44.80594492	W89.6890485	3	M	Pole Rake	0	No Weeds
417	N44.80526976	W89.68905213	4	S	Pole Rake	0	No Weeds
418	N44.8045946	W89.68905575	4	S	Pole Rake	0	No Weeds
419	N44.80391945	W89.68905938	-	-	-	-	N/A Land
420	N44.80324429	W89.68906301	5	S	Pole Rake	0	No Weeds
421	N44.80121881	W89.68907389	3	S/W	Pole Rake	0	No Weeds
422	N44.80054366	W89.68907751	3	M	Pole Rake	0	No Weeds
423	N44.7998685	W89.68908114	2	S	Pole Rake	0	No Weeds
424	N44.79919334	W89.68908477	2	S	Pole Rake	0	No Weeds
425	N44.79851818	W89.68908839	9	-	-	-	N/A No Reading
426	N44.79784302	W89.68909202	13	-	-	-	N/A No Reading
427	N44.82147094	W89.6880164	1	M/S	Pole Rake	0	-
428	N44.81944547	W89.68802733	-	-	-	-	N/A Blocked By Logs
429	N44.81877031	W89.68803097	2	M	Pole Rake	0	_
430	N44.81606969	W89.68804553	1	M/W	Pole Rake	0	-
431	N44.81539453	W89.68804917	3	M	Pole Rake	0	No Weeds
432	N44.80729265	W89.68809284	2	M	Pole Rake	0	-
433	N44.80661749	W89.68809648	3	S	Pole Rake	0	-
434	N44.80594233	W89.68810012	4	M	Pole Rake	0	No Weeds
435	N44.80526718	W89.68810376	3	S	Pole Rake	0	No Weeds
436	N44.80459202	W89.68810739	4	S	Pole Rake	0	No Weeds
437	N44.80391686	W89.68811103	-	-	-	0	N/A too shallow
438	N44.8032417	W89.68811467	4	S	Pole Rake	0	No Weeds
439	N44.80121623	W89.68812558	1	S	Pole Rake	0	No Weeds
440	N44.80054107	W89.68812922	2	M	Pole Rake	0	No Weeds
441	N44.79986591	W89.68813286	2	S	Pole Rake	0	No Weeds
442	N44.79919075	W89.68813649	8	-	-	-	N/A No Reading
443	N44.7985156	W89.68814013	12	-	-	-	N/A No Reading
444	N44.82079318	W89.68707142	-	-	-	0	Blocked by logs
445	N44.82011803	W89.68707507	-	M	-	-	N/A Shallow Muck
446	N44.81539194	W89.68710063	4	M	Pole Rake	0	No Weeds
447	N44.81471678	W89.68710428	4	M	Pole Rake	0	No Weeds
448	N44.8066149	W89.68714809	4	M	Pole Rake	0	No Weeds
449	N44.80593974	W89.68715174	4	M	Pole Rake	0	No Weeds
450	N44.80526458	W89.68715539	3	S/W	Pole Rake	0	No Weeds
451	N44.80458942	W89.68715903	5	M	Pole Rake	0	No Weeds
452	N44.80391427	W89.68716268	3	S	Pole Rake	0	No Weeds
453	N44.80323911	W89.68716633	4	S	Pole Rake	0	No Weeds
454	N44.80256395	W89.68716998	-	M	-	-	N/A Shallow Muck
455	N44.80188879	W89.68717363	-	M	-	-	N/A Shallow Muck
456	N44.80053848	W89.68718093	2	S	Pole Rake	0	No Weeds

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Point	Latitude	Longitude	Depth	Sediment	Method	CLP	Comments
457	N44.79986332	W89.68718457	8	-	-	-	N/A No Reading
458	N44.79918816	W89.68718822	14	-	-	-	N/A No Reading
459	N44.82011543	W89.68612646	1	M	Pole Rake	0	No Weeds
460	N44.81944027	W89.68613012	1	M/W	Pole Rake	0	No Weeds
461	N44.81538933	W89.6861521	4	S	Pole Rake	0	No Weeds
462	N44.81471418	W89.68615576	4	M	Pole Rake	0	No Weeds
463	N44.80593714	W89.68620335	3	M	Pole Rake	0	No Weeds
464	N44.80526198	W89.68620701	5	M	Pole Rake	0	No Weeds
465	N44.80458682	W89.68621067	6	-	-	-	N/A No Reading
466	N44.80391166	W89.68621433	4	S	Pole Rake	0	No Weeds
467	N44.80323651	W89.68621799	4	S	Pole Rake	0	No Weeds
468	N44.80188619	W89.68622531	1	M	Pole Rake	0	No Weeds
469	N44.80121103	W89.68622897	2	M/S	Pole Rake	0	No Weeds
470	N44.80053588	W89.68623263	10	-	-	-	N/A No Reading
471	N44.79986072	W89.68623629	11	-	-	-	N/A No Reading
472	N44.81943766	W89.68518152	-	-	-	0	N/A Blocked By Down Tree
473	N44.8187625	W89.68518519	-	-	-	-	N/A Blocked By Down Tree
474	N44.81538672	W89.68520356	4	M/W	Pole Rake	0	No Weeds
475	N44.81471157	W89.68520723	4	M	Pole Rake	0	No Weeds
476	N44.80593453	W89.68525497	4	M	Pole Rake	0	No Weeds
477	N44.80525937	W89.68525864	6	-	-	-	N/A No Reading
478	N44.80458421	W89.68526232	6	-	-	-	N/A No Reading
479	N44.80390906	W89.68526599	7	-	-	-	N/A No Reading
480	N44.8032339	W89.68526966	18	-	-	-	N/A No Reading
481	N44.80255874	W89.68527333	15	-	-	-	N/A No Reading
482	N44.80188358	W89.685277	16	-	-	-	N/A No Reading
483	N44.80120842	W89.68528067	13	-	-	-	N/A No Reading
484	N44.81943504	W89.68423292	-	-	-	0	N/A Blocked by Down Trees
485	N44.81875988	W89.6842366	-	-	-	0	N/A Blocked by Down Trees
486	N44.8153841	W89.68425502	4	M	Pole Rake	0	No Weeds
487	N44.81470895	W89.68425871	4	M	Pole Rake	0	-
488	N44.80525675	W89.68431027	6	-	-	-	N/A No Reading
489	N44.8045816	W89.68431396	6	-	-	-	N/A No Reading
490	N44.80390644	W89.68431764	7	-	-	-	N/A No Reading
491	N44.80323128	W89.68432132	10	-	-	-	N/A No Reading
492	N44.80255612	W89.684325	8	-	-	-	N/A No Reading
493	N44.81943241	W89.68328431	-	-	-	0	N/A Blocked by Down Trees
494	N44.81875726	W89.68328801	-	-	-	0	N/A Blocked by down Trees
495	N44.81538148	W89.68330649	4	M	Pole Rake	0	-
496	N44.81470632	W89.68331018	3	M	Pole Rake	0	- Secchi Reading 1.9'
497	N44.80457897	W89.6833656	6	-	-	-	N/A No Reading
498	N44.80390381	W89.68336929	6	-	-	-	N/A No Reading
499	N44.80322865	W89.68337298	4	S/G	Pole Rake	0	No Weeds
500	N44.81942978	W89.68233571	-	-	-	0	N/A Blocked by Down Trees
501	N44.81875462	W89.68233942	-	-	-	0	N/A Blocked by Down Trees
502	N44.81537884	W89.68235795	4	M	Pole Rake	0	No Weeds
503	N44.81470369	W89.68236166	3	M	Pole Rake	0	-
504	N44.81942714	W89.68138711	-	-	-	0	N/A Blocked by Down Trees
505	N44.81875198	W89.68139083	-	M	-	-	N/A Shallow Muck
506	N44.8153762	W89.68140942	4	M	Pole Rake	0	No Weeds
507	N44.81470105	W89.68141313	3	M/W	Pole Rake	0	-
508	N44.81942449	W89.68043851	-	M	-	-	N/A Shallow Muck
509	N44.81537355	W89.68046088	3	M	Pole Rake	0	-
510	N44.8146984	W89.68046461	2	M	Pole Rake	0	-
511	N44.81604605	W89.6795086	3	M	Pole Rake	0	No Weeds
512	N44.81537089	W89.67951234	2	M	Pole Rake	0	-
513	N44.81604338	W89.67856006	3	M	Pole Rake	0	No Weeds

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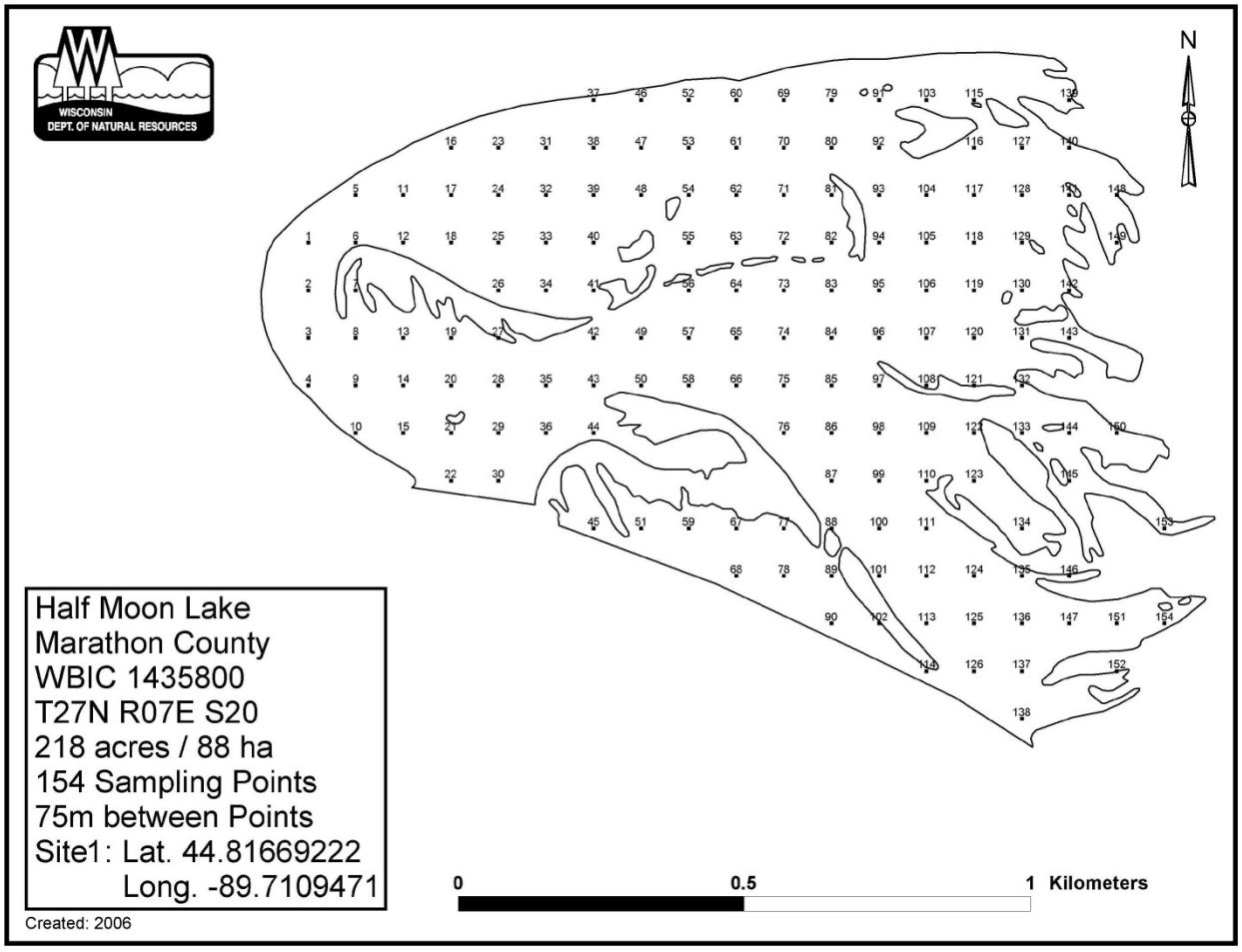
Point	Latitude	Longitude	Depth	Sediment	Method	CLP	Comments
514	N44.81536823	W89.67856381	1	M	Pole Rake	0	-
515	N44.81604071	W89.67761151	2	M	Pole Rake	0	No Weeds
516	N44.81603803	W89.67666296	2	M	Pole Rake	0	No Weeds
517	N44.81603534	W89.67571442	2	M	Pole Rake	0	No Weeds
518	N44.8167078	W89.67476208	1	M	Pole Rake	0	No Weeds

Mosinee Hydroelectric Project – Half-Moon Lake
2018 Invasive Species Monitoring

Curly-Leaf Pondweed Distribution Map

- **None found in 2018**



CURLY – LEAF PONDWEED Invasive Species Point Intercept Survey Report for 2018
Project/Lake: Mosinee/Half Moon Lake (154 Sample Points)
Dates: June 9, 10, 16, 23, 24
WBIC: 1435800
County: Marathon
Crew: JSK, SJK, LAK, BJK
Datum: WGS84

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Point	Latitude	Longitude	Depth	Sediment	Method	CLP	Comments
1	N44.81669222	W89.7109471	9	-	-	-	N/A No Reading
2	N44.81601706	W89.71095047	6	-	-	-	N/A No Reading
3	N44.8153419	W89.71095385	8	-	-	-	N/A No Reading
4	N44.81466675	W89.71095722	7	-	-	-	N/A No Reading
5	N44.81736497	W89.70999516	9	-	-	-	N/A No Reading
6	N44.81668981	W89.70999854	6	W	Pole Rake	0	No Weeds Secchi Reading 2.0' algae
7	N44.81601466	W89.71000192	2	M	Pole Rake	0	No Weeds
8	N44.8153395	W89.71000531	6	-	-	-	N/A No Reading
9	N44.81466434	W89.71000869	7	-	-	-	N/A No Reading
10	N44.81398918	W89.71001207	6	-	-	-	N/A No Reading
11	N44.81736256	W89.70904658	8	-	-	-	N/A No Reading
12	N44.8166874	W89.70904998	7	-	-	-	N/A No Reading
13	N44.81533709	W89.70905677	6	-	-	-	N/A No Reading
14	N44.81466193	W89.70906016	4	S/W	Pole Rake	0	No Weeds
15	N44.81398677	W89.70906356	6	-	-	-	N/A No Reading
16	N44.8180353	W89.70809461	7	-	-	-	N/A No Reading
17	N44.81736014	W89.70809801	6	-	-	-	N/A No Reading
18	N44.81668498	W89.70810142	7	-	-	-	N/A No Reading
19	N44.81533467	W89.70810823	6	-	-	-	N/A No Reading
20	N44.81465951	W89.70811164	3	S	Pole Rake	0	No Weeds
21	N44.81398435	W89.70811504	6	-	-	-	N/A No Reading
22	N44.81330919	W89.70811845	9	-	-	-	N/A No Reading
23	N44.81803287	W89.70714603	6	-	-	-	N/A No Reading
24	N44.81735771	W89.70714944	6	-	-	-	N/A No Reading
25	N44.81668255	W89.70715286	5	M/W	Pole Rake	0	No Weeds
26	N44.8160074	W89.70715628	3	W	Pole Rake	0	No Weeds
27	N44.81533224	W89.70715969	1	S	Pole Rake	0	No Weeds
28	N44.81465708	W89.70716311	10	-	-	-	N/A No Reading
29	N44.81398192	W89.70716653	11	-	-	-	N/A No Reading
30	N44.81330676	W89.70716995	10	-	-	-	N/A No Reading
31	N44.81803043	W89.70619744	6	-	-	-	N/A No Reading
32	N44.81735527	W89.70620087	5	M/W	Pole Rake	0	No Weeds
33	N44.81668012	W89.7062043	4	W	Pole Rake	0	No Weeds
34	N44.81600496	W89.70620773	3	S	Pole Rake	0	No Weeds
35	N44.81465464	W89.70621459	10	-	-	-	N/A No Reading
36	N44.81397949	W89.70621801	3	S	Pole Rake	0	No Weeds
37	N44.81870314	W89.70524542	6	-	-	-	N/A No Reading
38	N44.81802799	W89.70524886	6	-	-	-	N/A No Reading
39	N44.81735283	W89.7052523	4	M	Pole Rake	0	No Weeds
40	N44.81667767	W89.70525574	1	S	Pole Rake	0	No Weeds
41	N44.81600251	W89.70525918	1	S	Pole Rake	0	No Weeds
42	N44.81532736	W89.70526262	10	-	-	-	N/A No Reading
43	N44.8146522	W89.70526606	8	S	Pole Rake	0	No Weeds
44	N44.81397704	W89.7052695	2	S	Pole Rake	0	No Weeds
45	N44.81262673	W89.70527638	3	M	Pole Rake	0	No Weeds
46	N44.81870069	W89.70429683	4	S	Pole Rake	0	No Weeds
47	N44.81802553	W89.70430028	5	M	Pole Rake	0	No Weeds
48	N44.81735038	W89.70430373	3	S	Pole Rake	0	No Weeds
49	N44.81532491	W89.70431408	11	-	-	-	N/A No Reading
50	N44.81464975	W89.70431753	3	S	Pole Rake	0	No Weeds
51	N44.81262428	W89.70432788	4	M	Pole Rake	0	No Weeds
52	N44.81869823	W89.70334824	4	M	Pole Rake	0	No Weeds
53	N44.81802307	W89.7033517	1	S	Pole Rake	0	No Weeds

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54	N44.81734792	W89.70335516	3	M	Pole Rake	0	No Weeds
55	N44.81667276	W89.70335862	3	M	Pole Rake	0	No Weeds
56	N44.8159976	W89.70336208	4	M/S	Pole Rake	0	No Weeds
57	N44.81532245	W89.70336555	10	-	-	-	N/A No Reading
58	N44.81464729	W89.70336901	7	-	-	-	N/A No Reading
59	N44.81262182	W89.70337939	3	S	Pole Rake	0	No Weeds
60	N44.81869576	W89.70239965	4	M	Pole Rake	0	No Weeds
61	N44.81802061	W89.70240312	4	M/S	Pole Rake	0	No Weeds
62	N44.81734545	W89.70240659	3	W	Pole Rake	0	No Weeds
63	N44.81667029	W89.70241006	3	M/W	Pole Rake	0	No Weeds
64	N44.81599514	W89.70241354	5	M	Pole Rake	0	No Weeds
65	N44.81531998	W89.70241701	6	S	Pole Rake	0	No Weeds
66	N44.81464482	W89.70242048	6	S	Pole Rake	0	No Weeds
67	N44.81261935	W89.7024309	4	W	Pole Rake	0	No Weeds
68	N44.81194419	W89.70243437	6	-	-	-	N/A No Reading
69	N44.81869329	W89.70145105	4	M	Pole Rake	0	No Weeds
70	N44.81801813	W89.70145454	2	S	Pole Rake	0	No Weeds
71	N44.81734297	W89.70145802	3	S	Pole Rake	0	No Weeds
72	N44.81666782	W89.7014615	3	S	Pole Rake	0	No Weeds
73	N44.81599266	W89.70146499	3	S	Pole Rake	0	No Weeds
74	N44.8153175	W89.70146847	4	W	Pole Rake	0	No Weeds
75	N44.81464235	W89.70147195	9	-	-	-	N/A No Reading
76	N44.81396719	W89.70147544	9	-	-	-	N/A No Reading
77	N44.81261687	W89.7014824	4	W	Pole Rake	0	No Weeds
78	N44.81194172	W89.70148589	3	W	Pole Rake	0	No Weeds
79	N44.8186908	W89.70050246	3	M/S	Pole Rake	0	No Weeds
80	N44.81801565	W89.70050596	3	S/W	Pole Rake	0	No Weeds
81	N44.81734049	W89.70050945	2	M/S	Pole Rake	0	No Weeds
82	N44.81666533	W89.70051295	2	S	Pole Rake	0	No Weeds
83	N44.81599018	W89.70051644	4	W	Pole Rake	0	No Weeds
84	N44.81531502	W89.70051993	4	M/S	Pole Rake	0	No Weeds
85	N44.81463986	W89.70052343	5	S	Pole Rake	0	No Weeds
86	N44.8139647	W89.70052692	8	-	-	-	N/A No Reading
87	N44.81328955	W89.70053042	8	-	-	-	N/A No Reading
88	N44.81261439	W89.70053391	4	S	Pole Rake	0	No Weeds
89	N44.81193923	W89.70053741	4	S/W	Pole Rake	0	No Weeds
90	N44.81126407	W89.7005409	7	-	-	-	N/A No Reading
91	N44.81868831	W89.69955387	2	M/W	Pole Rake	0	No Weeds
92	N44.81801316	W89.69955738	4	M	Pole Rake	0	No Weeds
93	N44.817338	W89.69956088	4	M	Pole Rake	0	No Weeds
94	N44.81666284	W89.69956439	4	M/W	Pole Rake	0	No Weeds Secchi Reading 1.0' algea
95	N44.81598769	W89.69956789	4	M	Pole Rake	0	No Weeds
96	N44.81531253	W89.6995714	3	M/W	Pole Rake	0	No Weeds
97	N44.81463737	W89.6995749	3	M/S	Pole Rake	0	No Weeds
98	N44.81396221	W89.69957841	4	W	Pole Rake	0	No Weeds
99	N44.81328706	W89.69958191	7	-	-	-	N/A No Reading
100	N44.8126119	W89.69958542	7	-	-	-	N/A No Reading
101	N44.81193674	W89.69958892	7	-	-	-	N/A No Reading
102	N44.81126158	W89.69959243	1	S	Pole Rake	0	No Weeds
103	N44.81868581	W89.69860528	1	S	Pole Rake	0	No Weeds
104	N44.8173355	W89.69861231	4	M	Pole Rake	0	No Weeds
105	N44.81666034	W89.69861583	4	M	Pole Rake	0	No Weeds
106	N44.81598519	W89.69861935	3	W	Pole Rake	0	No Weeds

CURLY – LEAF PONDWEED Invasive Species Point Intercept Survey Report for 2018
Project/Lake: Mosinee/Half Moon Lake (154 Sample Points)
Dates: June 9, 10, 16, 23, 24
WBIC: 1435800
County: Marathon
Crew: JSK, SJK, LAK, BJK
Datum: WGS84

EWM = Eurasian Water Milfoil
CLP = Curly-leaf Pondweed
NWM = Northern Water Milfoil

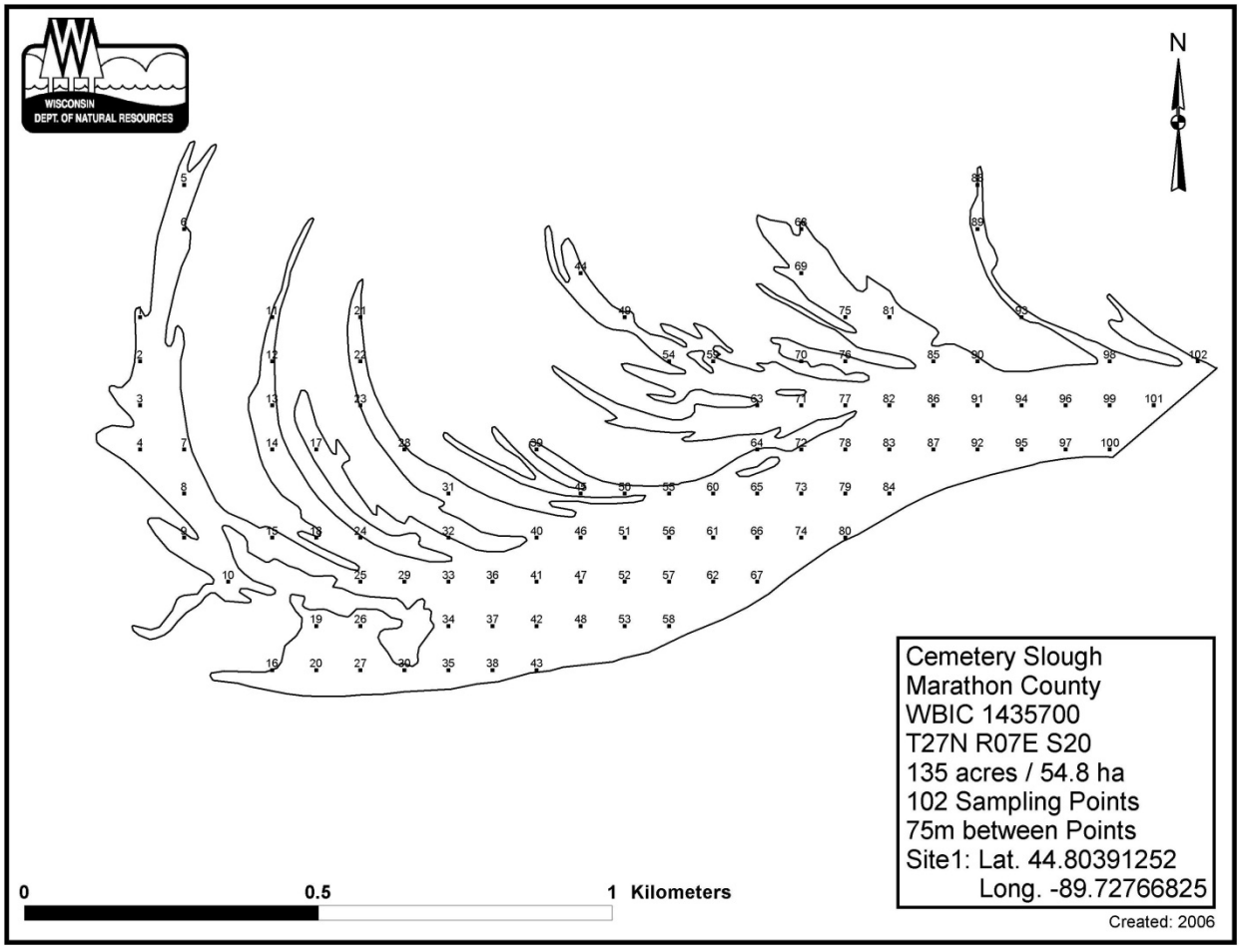
N/A = Not Accessible
M = Muck
W = Woody Debris
S = Sand
G = Gravel
R = Root Mass (i.e. Lily Pads, Pickerel Weed, etc.)
Rk = Rock

Point	Latitude	Longitude	Depth	Sediment	Method	CLP	Comments
107	N44.81531003	W89.69862286	3	W	Pole Rake	0	No Weeds
108	N44.81463487	W89.69862638	1	W	Pole Rake	0	No Weeds
109	N44.81395971	W89.69862989	3	S	Pole Rake	0	No Weeds
110	N44.81328456	W89.69863341	1	S	Pole Rake	0	No Weeds
111	N44.8126094	W89.69863693	6	-	-	-	N/A No Reading
112	N44.81193424	W89.69864044	6	-	-	-	N/A No Reading
113	N44.81125908	W89.69864396	5	S	Pole Rake	0	No Weeds
114	N44.81058393	W89.69864748	4	S	Pole Rake	0	No Weeds
115	N44.81868331	W89.69765669	-	-	-	-	N/A Land
116	N44.81800815	W89.69766021	4	M	Pole Rake	0	No Weeds
117	N44.81733299	W89.69766374	3	W	Pole Rake	0	No Weeds
118	N44.81665784	W89.69766727	3	W	Pole Rake	0	No Weeds
119	N44.81598268	W89.6976708	4	S	Pole Rake	0	No Weeds
120	N44.81530752	W89.69767433	3	S	Pole Rake	0	No Weeds
121	N44.81463236	W89.69767785	1	S	Pole Rake	0	No Weeds
122	N44.81395721	W89.69768138	1	S	Pole Rake	0	No Weeds
123	N44.81328205	W89.69768491	3	M	Pole Rake	0	No Weeds
124	N44.81193174	W89.69769196	5	M/S	Pole Rake	0	No Weeds
125	N44.81125658	W89.69769549	4	W	Pole Rake	0	No Weeds
126	N44.81058142	W89.69769902	4	W	Pole Rake	0	No Weeds
127	N44.81800563	W89.69671163	3	M	Pole Rake	0	No Weeds
128	N44.81733048	W89.69671517	3	S	Pole Rake	0	No Weeds
129	N44.81665532	W89.69671871	2	M	Pole Rake	0	No Weeds
130	N44.81598016	W89.69672225	2	S/W	Pole Rake	0	No Weeds
131	N44.81530501	W89.69672579	2	M	Pole Rake	0	No Weeds
132	N44.81462985	W89.69672933	1	S	Pole Rake	0	No Weeds
133	N44.81395469	W89.69673287	1	M	Pole Rake	0	No Weeds
134	N44.81260438	W89.69673994	1	M	Pole Rake	0	No Weeds
135	N44.81192922	W89.69674348	1	S	Pole Rake	0	No Weeds
136	N44.81125406	W89.69674702	3	S	Pole Rake	0	No Weeds
137	N44.81057891	W89.69675056	2	S	Pole Rake	0	No Weeds
138	N44.80990375	W89.6967541	3	S	Pole Rake	0	No Weeds
139	N44.81867827	W89.6957595	-	-	-	-	N/A Land
140	N44.81800311	W89.69576305	3	M	Pole Rake	0	No Weeds
141	N44.81732795	W89.6957666	-	S	-	-	N/A Shallow Sand
142	N44.81597764	W89.6957737	-	-	-	-	N/A Land
143	N44.81530248	W89.69577725	-	M	-	-	N/A Shallow Muck
144	N44.81395217	W89.69578435	-	M	-	-	N/A Shallow Muck
145	N44.81327701	W89.6957879	-	-	-	-	N/A Too Shallow
146	N44.8119267	W89.695795	-	-	-	-	N/A Land
147	N44.81125154	W89.69579855	2	S	Pole Rake	0	No Weeds
148	N44.81732542	W89.69481803	-	-	-	-	N/A Land
149	N44.81665027	W89.6948216	-	-	-	-	N/A Land
150	N44.81394964	W89.69483584	-	-	-	-	N/A Too Shallow
151	N44.81124901	W89.69485008	2	M	Pole Rake	0	No Weeds
152	N44.81057385	W89.69485364	-	-	-	-	N/A Land
153	N44.81259679	W89.69389447	-	-	-	-	N/A Too Shallow
154	N44.81124647	W89.69390161	-	-	-	-	N/A Land

Mosinee Hydroelectric Project – Cemetery Slough
2018 Invasive Species Monitoring

Curly-Leaf Pondweed Distribution Map

- **None found in 2018**



CURLY – LEAF PONDWEED Invasive Species Point Intercept Survey Report For 2018
Project/Lake: Mosinee/Cemetery Slough (102 Sample Points)
Dates: June 9, 10, 16, 23, 24
WBIC: 1435700
County: Marathon
Crew: JSK, SJK, LAK, BJK
Datum: WGS84

EWM = Eurasian Water Milfoil
CLP = Curly-leaf Pondweed
NWM = Northern Water Milfoil

N/A = Not Accessible
M = Muck
W = Woody Debris
S = Sand
G = Gravel
R = Root Mass (i.e. Lily Pads, Pickerel Weed, etc.)
Rk = Rock

Point	Latitude	Longitude	Depth	Sediment	Method	CLP	Comments
1	N44.80391252	W89.72766825	1	M	Pole Rake	0	No Weeds
2	N44.80323736	W89.72767143	2	M	Pole Rake	0	No Weeds
3	N44.8025622	W89.7276746	3	M	Pole Rake	0	No Weeds
4	N44.80188704	W89.72767778	2	M	Pole Rake	0	No Weeds Secchi Reading 1.5'
5	N44.80593573	W89.72671033	2	M/S	Pole Rake	0	No Weeds
6	N44.80526057	W89.72671352	2	M	Pole Rake	0	No Weeds
7	N44.80188477	W89.72672946	2	M	Pole Rake	0	No Weeds
8	N44.80120961	W89.72673265	2	M	Pole Rake	0	No Weeds
9	N44.80053445	W89.72673583	-	M	-	-	N/A Shallow Muck
10	N44.79985702	W89.72579073	1	M	Pole Rake	0	No Weeds
11	N44.8039057	W89.72482319	-	M	-	-	N/A Shallow Muck
12	N44.80323054	W89.7248264	-	-	-	0	N/A Blocked by logs
13	N44.80255538	W89.72482961	-	-	-	0	N/A Blocked by logs
14	N44.80188022	W89.72483282	-	M	-	0	Shallow, muck
15	N44.8005299	W89.72483924	1	M	Pole Rake	0	No Weeds
16	N44.79850442	W89.72484887	-	-	-	-	N/A Land
17	N44.80187793	W89.7238845	-	M	-	-	N/A Shallow Muck
18	N44.80052761	W89.72389094	2	M	Pole Rake	0	No Weeds
19	N44.79917729	W89.72389738	-	M	-	-	N/A Shallow Muck
20	N44.79850213	W89.7239006	1	M	Pole Rake	0	No Weeds
21	N44.80390111	W89.72292649	-	-	-	-	N/A Blocked By Logs
22	N44.80322595	W89.72292972	-	-	-	-	N/A Blocked By Logs
23	N44.80255079	W89.72293295	-	M	-	-	N/A Shallow Muck
24	N44.80052531	W89.72294265	1	S/W	Pole Rake	0	No Weeds
25	N44.79985015	W89.72294588	2	M	Pole Rake	0	-
26	N44.79917499	W89.72294911	-	M	-	-	N/A Shallow Muck
27	N44.79849983	W89.72295234	2	M	Pole Rake	0	No Weeds
28	N44.80187333	W89.72198787	-	M	-	-	N/A Shallow Muck
29	N44.79984785	W89.72199759	2	M	Pole Rake	0	-
30	N44.79849753	W89.72200408	2	M	Pole Rake	0	No Weeds
31	N44.80119586	W89.7210428	1	M	Pole Rake	0	No Weeds
32	N44.8005207	W89.72104606	1	M	Pole Rake	0	No Weeds
33	N44.79984554	W89.72104931	3	M	Pole Rake	0	No Weeds
34	N44.79917038	W89.72105256	3	M	Pole Rake	0	No Weeds
35	N44.79849522	W89.72105581	2	M	Pole Rake	0	No Weeds
36	N44.79984322	W89.72010102	3	M	Pole Rake	0	No Weeds
37	N44.79916806	W89.72010429	3	M	Pole Rake	0	No Weeds
38	N44.7984929	W89.72010755	3	M	Pole Rake	0	No Weeds
39	N44.80186637	W89.71914291	-	-	-	-	N/A Blocked By Logs
40	N44.80051605	W89.71914946	2	M	Pole Rake	0	No Weeds
41	N44.79984089	W89.71915274	3	M	Pole Rake	0	No Weeds
42	N44.79916573	W89.71915601	3	M	Pole Rake	0	No Weeds
43	N44.79849057	W89.71915929	1	S	Pole Rake	0	No Weeds
44	N44.80456467	W89.71818145	-	M	-	-	N/A Shallow Muck
45	N44.80118887	W89.71819788	-	-	-	-	N/A Blocked By Logs
46	N44.80051371	W89.71820117	3	M	Pole Rake	0	No Weeds
47	N44.79983855	W89.71820445	3	M	Pole Rake	0	No Weeds
48	N44.79916339	W89.71820774	3	M	Pole Rake	0	No Weeds
49	N44.80388717	W89.71723638	-	M	-	-	N/A Shallow Muck
50	N44.80118653	W89.71724957	-	-	-	-	N/A Blocked By Logs
51	N44.80051137	W89.71725287	3	M/W	Pole Rake	0	No Weeds
52	N44.79983621	W89.71725617	3	M	Pole Rake	0	No Weeds
53	N44.79916105	W89.71725947	3	M	Pole Rake	0	No Weeds
54	N44.80320966	W89.71629134	-	-	-	-	N/A Land
55	N44.80118418	W89.71630127	2	S	Pole Rake	0	No Weeds
56	N44.80050902	W89.71630458	3	M	Pole Rake	0	No Weeds

CURLY – LEAF PONDWEED Invasive Species Point Intercept Survey Report For 2018
Project/Lake: Mosinee/Cemetery Slough (102 Sample Points)
Dates: June 9, 10, 16, 23, 24
WBIC: 1435700
County: Marathon
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Datum: WGS84

EWM = Eurasian Water Milfoil
CLP = Curly-leaf Pondweed
NWM = Northern Water Milfoil

N/A = Not Accessible
M = Muck
W = Woody Debris
S = Sand
G = Gravel
R = Root Mass (i.e. Lily Pads, Pickerel Weed, etc.)
Rk = Rock

Point	Lattitude	Longitude	Depth	Sediment	Method	CLP	Comments
57	N44.79983386	W89.71630789	3	M	Pole Rake	0	No Weeds
58	N44.7991587	W89.71631119	3	M	Pole Rake	0	No Weeds
59	N44.8032073	W89.715343	-	M	-	-	N/A Shallow Muck
60	N44.80118182	W89.71535296	3	M	Pole Rake	0	No Weeds
61	N44.80050666	W89.71535628	3	M	Pole Rake	0	No Weeds
62	N44.7998315	W89.7153596	3	M	Pole Rake	0	No Weeds
63	N44.80252977	W89.71439799	-	M	-	-	N/A Shallow Muck
64	N44.80185461	W89.71440132	1	S	Pole Rake	0	No Weeds Secchi Reading 1.5'
65	N44.80117945	W89.71440466	4	M	Pole Rake	0	No Weeds
66	N44.80050429	W89.71440799	3	M	Pole Rake	0	No Weeds
67	N44.79982913	W89.71441132	3	M	Pole Rake	0	No Weeds
68	N44.80522803	W89.7134363	-	M	-	-	N/A Shallow Muck
69	N44.80455287	W89.71343964	1	M	Pole Rake	0	-
70	N44.80320255	W89.71344632	-	M	-	-	N/A Shallow Muck
71	N44.80252739	W89.71344967	3	M	Pole Rake	0	-
72	N44.80185223	W89.71345301	1	S	Pole Rake	0	No Weeds
73	N44.80117707	W89.71345635	4	M	Pole Rake	0	No Weeds
74	N44.80050191	W89.71345969	3	M	Pole Rake	0	No Weeds
75	N44.80387533	W89.71249463	-	M	-	-	N/A Shallow Muck
76	N44.80320017	W89.71249798	-	M	-	-	N/A Shallow Muck
77	N44.80252501	W89.71250134	2	M	Pole Rake	0	No Weeds
78	N44.80184985	W89.71250469	4	M	Pole Rake	0	No Weeds
79	N44.80117469	W89.71250804	4	M	Pole Rake	0	No Weeds
80	N44.80049953	W89.7125114	3	W	Pole Rake	0	No Weeds
81	N44.80387294	W89.71154628	2	M	Pole Rake	0	No Weeds
82	N44.80252262	W89.71155301	3	S	Pole Rake	0	No Weeds
83	N44.80184746	W89.71155637	5	M	Pole Rake	0	No Weeds
84	N44.8011723	W89.71155974	5	M	Pole Rake	0	No Weeds
85	N44.80319538	W89.71060131	3	M	Pole Rake	0	No Weeds
86	N44.80252022	W89.71060468	5	M	Pole Rake	0	No Weeds
87	N44.80184506	W89.71060806	5	M	Pole Rake	0	No Weeds
88	N44.80589361	W89.70963942	-	M	-	-	N/A Shallow Muck
89	N44.80521845	W89.70964281	-	M	-	-	N/A Shallow Muck
90	N44.80319297	W89.70965297	1	S	Pole Rake	0	No Weeds
91	N44.80251781	W89.70965635	5	M	Pole Rake	0	No Weeds Secchi Reading 1.5'
92	N44.80184265	W89.70965974	6	-	-	-	N/A No Reading
93	N44.80386572	W89.70870123	-	M	-	-	N/A Shallow Muck
94	N44.8025154	W89.70870803	6	-	-	-	N/A No Reading
95	N44.80184024	W89.70871142	6	-	-	-	N/A No Reading
96	N44.80251298	W89.7077597	6	-	-	-	N/A No Reading
97	N44.80183782	W89.70776311	4	S/W	Pole Rake	0	No Weeds
98	N44.8031857	W89.70680795	1	S	Pole Rake	0	No Weeds
99	N44.80251054	W89.70681137	6	-	-	-	N/A No Reading
100	N44.80183539	W89.70681479	5	S	Pole Rake	0	No Weeds
101	N44.80250811	W89.70586304	6	S/W	Pole Rake	0	No Weeds
102	N44.80318082	W89.70491127	1	S	Pole Rake	0	No Weeds

APPENDIX D

Reservoir Elevations during Survey Dates

Mosinee Hydroelectric Project

Impoundment operating levels for the dates of the 2018 invasive species survey as confirmed by operation personnel were as follows:

	Avg.	Min.	Max.
July 25th, 2018	1138.11	1137.64	1138.50
July 26th, 2018	1138.51	1138.25	1138.76
July 30th, 2018	1137.84	1137.70	1137.95
Aug 1st, 2018	1137.74	1137.63	1137.81
Aug 2nd, 2018	1137.92	1137.81	1138.00
Aug 8th, 2018	1137.70	1137.38	1137.95

* All Reservoir Elevations recorded at Hydro Plant Intake

APPENDIX E

FERC ORDER AMENDING INVASIVE PLANT MONITORING PLAN PURSUANT TO ARTICLE 408 (Issued May 2, 2013)

143 FERC ¶ 62,081
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Wausau Paper Mills, LLC Project No. 2207-022

ORDER AMENDING INVASIVE PLANT MONITORING PLAN PURSUANT TO ARTICLE 408

(Issued May 2, 2013)

1. On January 5, 2012, Wausau Paper Mills, LLC, licensee for the Mosinee Hydroelectric Project,[1] filed its Invasive Species Five-Year Comprehensive Report containing a request to amend its Invasive Plant Monitoring Plan, as approved in the Commission's Order Modifying and Approving Invasive Plant Monitoring Plan Pursuant to Article 408 (September 13, 2006 Order).[2] The licensee filed its 2012 monitoring report on January 15, 2013. The project is located on the Wisconsin River in Marathon County, Wisconsin.

Background

2. Ordering paragraph (B) of the September 13, 2006 Order requires the licensee to conduct annual surveys for purple loosestrife (loosestrife) and Eurasian water milfoil (Eurasian milfoil) within the project boundary for a minimum of five consecutive years, beginning in 2007. Monitoring reports must include any recommended control methods for the management/elimination of these invasive species. Monitoring reports are due to the Commission by December 31 of each survey year and are required for at least five consecutive years. A comprehensive report containing a comparison of all the data collected over five years is required as the fifth monitoring report, due to the Commission by December 31, 2011. If after five consecutive years there are either no invasive plant species present or no spread of existing invasive plants, the licensee may then propose an alternative monitoring/reporting frequency in the 2011 report, after agency consultation. The licensee is required to continue monitoring for invasive plants annually until a

[1] Order Issuing New License at 111 FERC ¶ 62,033 (2005).

[2] 116 FERC ¶ 62,206 (2006).

proposed alternative monitoring frequency is approved by the Commission. The Commission reserved the right to require modifications to the monitoring plan and implementation of control measures, based on the licensee's monitoring reports or on new information, as it becomes available.

Five-Year Study Results

3. The five-year study period began in 2007 and extended through 2011 for loosestrife, Eurasian milfoil and curly leaf pondweed (CL pondweed) at three impoundments: Half-Moon Lake, Cemetery Slough and Mosinee Flowage. The licensee controlled loosestrife by hand pulling or cutting it off and removing the clusters. The licensee also used two species of *Galerucella* (cella) beetles for biological control. Combined results of loosestrife shoreline distribution at the three project reservoirs are summarized in the table below (source: staff):

Year of loosestrife Survey	None Present (% distribution)	Light (1-5 plants) (% distribution)	Medium (6-25 plants) (% distrib)	Heavy (26-100 plants) (% distrib)	Very Heavy (>100 plants) (% distrib)
2007	45	34	11	3	7
2008	35	45	10	4	6
2009	47	33	6	4	10
2010	69	16	5	2	8
2011	44	37	8	2	9

4. The licensee also voluntarily monitored cella beetle density on stands of loosestrife throughout the project. Cella beetle density increased gradually since 2007 with the highest density found in 2010, which is when loosestrife was lowest in density. In 2011, cella beetles reduced to their lowest density due to unusually high water levels from high river flows at the Mosinee Project and the distribution of loosestrife began to increase.

5. The licensee monitored for Eurasian milfoil and CL pondweed using meander surveys and point intercept surveys. No Eurasian milfoil occurred in Half-Moon Lake, or in depths greater than five feet in Cemetery Slough and Mosinee Flowage. After 2007, the distribution of Eurasian milfoil continued to decline, with the least amount found in 2011. Likewise, no CL pondweed occurred in Half-Moon Lake and since 2007, the distribution of CL pondweed has declined with none found in the three impoundments in 2011.

Proposed Amendments

6. In the January 5, 2012 filing, the licensee proposes amending the survey frequency for monitoring CL pondweed and Eurasian milfoil from annually to once every five years, with the next surveys occurring in 2016. The licensee surveyed cella beetles and loosestrife again in 2012 to see if the cella beetle population increased after the high flow incident in 2010/2011 and if the loosestrife distribution correspondingly decreased. If the cella beetle population rebounds and the loosestrife distribution decreases in 2012, the licensee recommends conducting less frequent loosestrife monitoring in addition to that for CL pondweed and Eurasian milfoil.

7. As a result of the 2012 cella beetle and loosestrife monitoring, on January 15, 2013, the licensee filed monitoring results indicating that cella beetle numbers increased since 2011 and loosestrife sightings and vigor appear the same in 2012 as in 2011 at the sites sampled for cella beetles. The licensee says cella beetle populations will continue to increase if there are no additional detrimental incidents to cella beetle development such as the high water events of 2010/2011.

Agency Consultation

8. On November 14, 2011, the licensee sent a copy of the five-year comprehensive report to the U.S. Fish and Wildlife Service (FWS) – Green Bay Field Office and the Wisconsin Department of Natural Resources (Wisconsin DNR) for review and comment as required by the September 13, 2006 Order. The licensee asked the resource agencies to provide comments by December 16, 2011. The resource agencies did not file written comments by the licensee's deadline. However, by memorandum[3] dated February 24, 2012, Wisconsin DNR writes that the survey frequency should not be lengthened to once every five years as recommended by the licensee. The Wisconsin DNR recommends surveying once every three years using rake fullness surveys and to complete CL pondweed surveys in June followed by a complete survey in late July for all invasive species. The Wisconsin DNR also recognizes that the survey frequency may need to change if major pool elevation changes occur due to species response to fluctuating water levels.

[3] Memorandum from Scott Provost, Water Resources Specialist at Wisconsin DNR, to Cheryl Laatsch, Rob McLennan and Scott Watson. This memorandum was filed by Commission staff on April 4, 2013.

Staff's Conclusions

9. The licensee proposes no further monitoring until 2016. According to the September 13, 2006 Order, if the 2011 report finds no invasive plants present, or the existing populations show no sign of spread, the licensee may propose an alternative monitoring schedule at that time, and the licensee must continue monitoring annually for invasive plants until a proposed alternative is approved by the Commission.

10. Results in the comprehensive report show a decrease in CL pondweed and Eurasian milfoil since 2007, with no CL pondweed found in 2011. Continued monitoring is needed to determine if CL pondweed has been eliminated from the project reservoirs. Due to decreases in the distribution of Eurasian milfoil and CL pondweed since 2007, staff agrees that a decrease in monitoring frequency should be approved. Results show that loosestrife distribution was least in 2010. The licensee found the lowest quantity of cella beetles in 2011 due to high water levels. The licensee says the low quantity of cella beetles is correlated with the increase distribution of loosestrife; staff agrees.

11. Staff notes that loosestrife is extremely prolific. The literature indicates that a single, mature loosestrife plant can produce more than 2.5 million seeds annually (Southeast Exotic Pest Plant Council, 2013).[4] In addition, although it is a perennial, loosestrife is capable of producing viable seeds during its first growing season. Given its high seed output and its ability to produce seeds in its first growing season, loosestrife can establish substantial soil seed banks, remaining viable for years (Forest Service, 2013).[5] The Forest Service documents that loosestrife stands have contained an average of 37,963 loosestrife seeds per square foot in the top two inches of soil. While, every stand of loosestrife is different, the prolific nature of this invasive plant justifies using caution when reducing the frequency of monitoring. To lengthen the monitoring intervals from annually to every five years could result in increased quantities of invasive plants that could affect native species. An increased invasive population could also result in the more costly use of a combination of multiple control methods. While the numbers of invasive plants have decreased over the past five years, the quantity of seed in the seedbank is unknown; therefore, continued monitoring is prudent.

[4] Published online March 19, 2013 at http://www.se-eppc.org/manual/loosestrife.html.

[5] Published online March 19, 2013 at http://www.fs.fed.us/database/feis/plants/forb/lytsal/all.html.

12. Likewise, while no CL pondweed occurred at the reservoirs in 2011, staff needs further surveys before confirming that CL pondweed has been eliminated from the project reservoirs. CL pondweed reproduces through the production of dormant vegetative propagules called turions. Each plant produces hundreds of turions in the spring just before the plant begins to die. Turions remain dormant in the sediment through the summer until the water cools in the fall when turions germinate. Turions can remain viable in the sediment for a number of years.[6]

13. Based upon the review of the above information, the September 13, 2006 Order should be amended to lengthen the invasive plant monitoring frequency from annually to every three years. Monitoring every five years as recommended by the licensee is not recommended at this time for the reasons stated above. Previous cases exist where the Commission stated that conducting surveys every five years may not be frequent enough for monitoring invasive species.[7]

14. Staff concurs with the Wisconsin DNR that the CL pondweed surveys should occur in June using the rake methods, followed by complete surveys for loosestrife and Eurasian milfoil in late July or early August. The licensee should file tri-annual monitoring reports containing data for all three species with the FWS and Wisconsin DNR by October 31, beginning in 2015. The monitoring reports should include any control methods used for the management of these invasive species, as necessary to protect native plant and animal species at the project. The licensee should allow for agency comments and subsequently file its monitoring reports with the Commission by December 31 every year that surveys are conducted. The licensee should allow the resource agencies a minimum of 30 days to submit comments and recommendations on the monitoring reports before filing the reports with the Commission. If the licensee does not adopt a recommendation from the resource agencies, the report should include the licensee's reasons, based on site-specific considerations. The Commission should reserve the right to require modifications to the monitoring plan and implementation of control measures, based on the licensee's monitoring reports and new information, as it becomes available.

The Director orders:

(A) The January 5, 2012 request to amend the Order Modifying and Approving

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[6] Published online March 19, 2013 at http://www.in.gov/dnr/files/curleyleaf_pondweed.pdf.

[7] See Rhinelander Project, 115 FERC ¶ 62,106 (2006); Grandmother Falls, 114 FERC ¶ 62,044 (2006); and Webber Project, 101 FERC ¶ 61,335 (2002).

Invasive Plan Monitoring Plan Pursuant to Article 408, issued September 13, 2006, is approved, as modified by Ordering paragraph (B) below:

(B) The licensee shall conduct tri-annual surveys for invasive plants within the project boundary, beginning in the summer of 2015. The surveys for curly leaf pondweed shall occur in June, using the rake methods, followed by complete surveys for purple loosestrife and Eurasian water milfoil in late July or early August. The licensee shall file tri-annual monitoring reports containing data for all three species with the U.S. Fish and Wildlife Service and the Wisconsin Department of Natural Resources by October 31, beginning in 2015. The monitoring reports shall include any control methods used for the management of these invasive species, as necessary, to protect native plant and animal species at the project. The licensee shall allow for agency comments and subsequently file its monitoring reports with the Commission by December 31 every year that surveys are conducted. The licensee shall allow the resource agencies a minimum of 30 days to submit comments and recommendation on the monitoring reports before filing the reports with the Commission. If the licensee does not adopt a recommendation from the resource agencies, the report shall include the licensee's reasons, based on site-specific considerations. The Commission reserves the right to require modifications to the monitoring plan and implementation of control measures, based on the licensee's monitoring reports and new information, as it becomes available.

(C) This order constitutes final agency action. Any party may file a request for rehearing of this order within 30 days from the date of its issuance, as provided in Section 313(a) of the Federal Power Act, 16 U.S.C § 825*l* (2006), and the Commission's regulations at 18 C.F.R § 385.713(2012). The filing of a request for rehearing does not operate as a stay of the effective date of this order, or of any other date specified in this order. The licensee's failure to file a request for rehearing shall constitute acceptance of this order.

Steve Hocking
Chief, Environmental Review Branch
Division of Hydropower Administration
and Compliance

OEP/DHAC: Linton,C 5/2/13. 041
Bc: dhac, e-library, linton

Document Content(s)

APPENDIX F

Licensee/Agency Correspondence

- **Licensee Correspondence**
- **Agency Invitation to Comment dated November 16, 2018**
- **WI DNR Comments dated November 27, 2018**
- **US FWS Comments dated November 29, 2018**

EXPERA
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VIA (electronic) eFiling only

December 8, 2015

The Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, DC 20426

RE: Mosinee Hydroelectric Project, FERC Project # 2207, Invasive Plant Survey 2015

Dear Secretary:

Article 408 of the FERC license for Project # 2207 requires that Expera Specialty Solutions, LLC – Mosinee Project [formerly Wausau Mills LLC (Licensee)] monitor invasive species for the Project. The 2015 monitoring has been conducted per the FERC ORDER AMMENDING INVASIVE PLANT MONITORING PLAN PURSUANT TO ARTICLE 408, (Issued May 2, 2013).

The Licensee is hereby eFiling the 2015 survey report. The Wisconsin Department of Natural Resources and US Fish & Wildlife Service correspondence has been included as Appendix F. No changes were made to the report after Agency review. The Licensee recommends discontinuing to monitor for Curly Leaf Pondweed. We believe it does not exist within project waters as the report indicates.

Thank you in advance for your review of our report. I can be reached at 715-692-3330 or by email at jpauls@experaspecialty.com

Sincerely,

James N. Pauls 12/8/2015

James N. Pauls
Manager of Environmental Services
Expera Specialty Solutions, LLC – Mosinee Mill
100 Main Street,
Mosinee, WI 54455

Enclosure (eFiled); 15-12-08 Mosinee Paper Mills FERC #2207 2015 invasive plant survey FINAL

From: Scott Klabunde <scott.klabunde63@gmail.com>
Sent: Friday, November 16, 2018 9:35 AM
To: Utrup, Nick <nick_utrup@fws.gov>; Laatsch, Cheryl - DNR <Cheryl.Laatsch@wisconsin.gov>
Subject: Mosinee Hydroelectric Project, FERC Project #2207, Invasive Plant Survey 2018

Dear Nick(USFWS) and Cheryl (WI DNR),

Please find attached a copy of the 2018 survey work for Mosinee, FERC #2207. The monitoring has been conducted per FERC ORDER AMMENDING INVASIVE PLANT MONITORING PLAN PURSUANT TO ARTICLE 408, (ISSUED MAY 2, 2013). A copy of the FERC requirements has included in the Report for your convenience.

Please distribute as appropriate to others in your departments respectively for review and formal comments.

Specifically, the Licensee would like to discontinue the monitoring for Curly-Leaf Pondweed, none has been found in the 2011, 2015 and also the 2018 surveys.

Thank you in advance for your review time and any comments!

Scott Klabunde

920-570-2156

scott.klabunde63@gmail.com

Laatsch, Cheryl - DNR <Cheryl.Laatsch@wisconsin.gov> Tue, Nov 27, 2018 at 9:48 AM

To: Scott Klabunde <scott.klabunde63@gmail.com>
Cc: "Lepsch, Jodi A - DNR" <Jodi.Lepsch@wisconsin.gov>

Hi Scott – Staff have reviewed the report and have the following comments/revisions.

We would like to discuss your request to stop the CLP surveys. We propose to modify the AIS Mgt Plan for Mosinee, and we would like to discuss training for the people that are completing the surveys.

Additionally, we recommend conducting one of their Eurasian watermilfoil surveys at the end of June so you are still be likely to detect any Curly Leaf Pondweed (CLP). It's rare for CLP to disappear from a system without some type of management. CLP turions remain viable for seven years (or more) so some may be dormant due to some unknown factor and may reappear.

Please let me know who I should contact to set up a conf call to discuss our comments and training. Thanks

We are committed to service excellence.

Visit our survey at http://dnr.wi.gov/customersurvey to evaluate how I did.

Cheryl Laatsch

Statewide FERC Coordinator

Bureau of Environmental Analysis and Sustainability

Wisconsin Dept of Natural Resources

N7725 Hwy 28

Horicon WI 53032

(T) 920-387-7869 (Fax) 920-387-7888

Cheryl.laatsch@wisconsin.gov

dnr.wi.gov

Scott Klabunde <scott.klabunde63@gmail.com> Tue, Nov 27, 2018 at 1:57 PM
To: "Laatsch, Cheryl - DNR" <Cheryl.Laatsch@wisconsin.gov>
Cc: Jodi.Lepsch@wisconsin.gov

Hi Cheryl,

Thanks for your speedy response, and your time on the phone earlier today.

As we discussed, we will go ahead and file the 2018 report including the Department staff comments with the Commission. If there is anything new for the Licensee to formally propose/change regarding future monitoring work, (such as revised schedules or discontinuing the CLP phase) the Licensee can formally request under separate cover to the Commission with Department's approval, should the Department agree.

Regarding the training...yes, I will forward you several dates for a discussion, invite the Licensee and include the folks responsible for the field work.

Thanks!
Scott

Laatsch, Cheryl - DNR <Cheryl.Laatsch@wisconsin.gov> Tue, Nov 27, 2018 at 2:16 PM
To: Scott Klabunde <scott.klabunde63@gmail.com>

Thanks

We are committed to service excellence.

Visit our survey at http://dnr.wi.gov/customersurvey to evaluate how I did.

Cheryl Laatsch

Statewide FERC Coordinator

Bureau of Environmental Analysis and Sustainability

Wisconsin Dept of Natural Resources

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Utrup, Nick <nick_utrup@fws.gov> Thu, Nov 29, 2018 at 9:25 AM
To: Scott Klabunde <scott.klabunde63@gmail.com>
Cc: "Laatsch, Cheryl - DNR" <cheryl.laatsch@wisconsin.gov>

We have reviewed the report and have no comments.

Thanks,

Nick

Nick Utrup
U.S. Fish and Wildlife Service
Minnesota/Wisconsin Field Office
4101 American Boulevard East
Bloomington, MN 55425

Office: (952) 252-0092 Ext. 204
FAX: (952) 646-2873
Email: Nick_Utrup@fws.gov

Scott Klabunde <scott.klabunde63@gmail.com> Thu, Nov 29, 2018 at 9:09 AM
To: "Utrup, Nick" <nick_utrup@fws.gov>
Cc: "Laatsch, Cheryl - DNR" <cheryl.laatsch@wisconsin.gov>

Thanks Nick!

Scott