1.0 INTRODUCTION

Found Lake is a 336-acre drainage lake in Vilas County that has a maximum depth of 21 feet (Photo 1.0-1). Found Lake is located within the St. Germain River Watershed. The Found Lake Property Owners Association (FLPOA) contracted Onterra to conduct an AIS monitoring survey during 2018 as outlined within their current lake management plant (*Town of Saint Germain Lake Management Plan* - April 2013).

Photo 1.0-1. Found Lake, Vilas County. Photo credit: Onterra, LLC

During the June 2018 survey conducted by Onterra, LLC, a few single plants of Eurasian watermilfoil (*Myriophyllum spicatum* - EWM), a non-native invasive aquatic plant species, were located in the bay on the west side of lake in approximately six to eight feet of water (Figure 1.0-1). Eurasian watermilfoil is present in nearby waterbodies including Lost Lake and Little Saint Germain Lake. Following discussion with WDNR, a hand-harvesting firm was contracted for the removal of the small number of isolated EWM plants as well as to conduct scuba reconnaissance near the public access location. A professional hand harvesting firm was contracted to conduct hand-harvesting of EWM on Found Lake on July 6, 2018. Harvesting efforts included six hours on the lake and a harvest of approximately 0.25 cubic feet of EWM. The divers noted smaller (< 6 inches) EWM plants growing in the immediate area near the mapped occurrences. No EWM was located near the public boat launch during the diver search.

The FLPOA successfully applied for a WDNR AIS-EDR grant during the February 2019 grant cycle. The project includes funding for a continuation of the EWM monitoring and control costs from 2018-2020. The FLPOA is also in the process of creating an updated lake management plan as part of a town-wide effort by the Town of Saint Germain Lakes Committee (TSGLC).

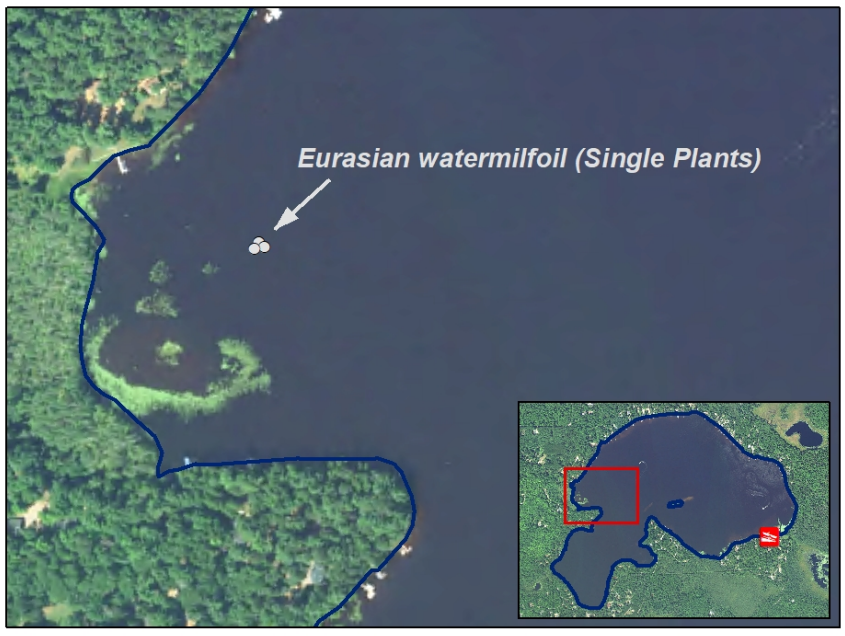


Figure 1.0-1. Found Lake June 2018 Eurasian watermilfoil locations. Extent of large map shown in red.

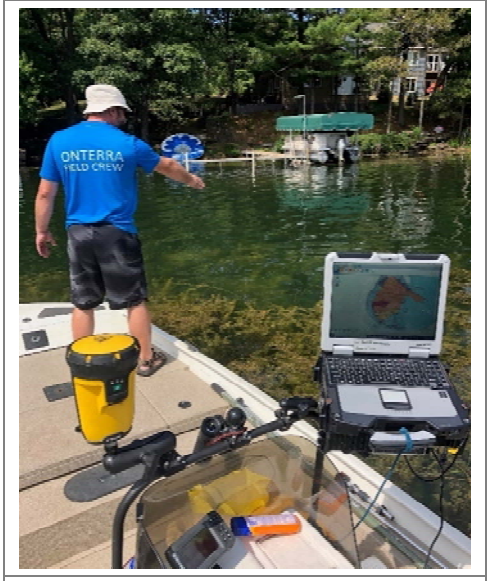
On June 20, 2019, Onterra ecologists completed another early-season AIS survey on Found Lake in an effort to located and map EWM and coordinate potential hand-

harvesting efforts. The area where EWM had been located in 2018 was intensely surveyed from the surface and with a submersible camera and no EWM could be located in this area or anywhere else within the lake. On June 26, 2019, an Onterra diver systematically snorkeled the area surrounding the 2018 EWM location in an effort to detect any plants. The snorkeling search covered an area approximately 50'x 50' over the course of 25 minutes and yielded no new occurrences of EWM. Onterra ecologists returned to Found Lake on August 19, 2019 to conduct the late-season AIS survey. Again, no EWM could be located in the area previously mapped in 2018. Given no EWM was located in Found Lake in 2019, no hand-harvesting activities took place. Funds allocated for contracted professional hand harvesting activities in the grant were not needed and therefore the FLPOA requested and was granted an extension to their grant that allows for a continuation of EWM monitoring surveys during 2021-2022. This report discusses the results of the monitoring surveys that took place during 2020 including a whole-lake point-intercept survey.

2.0 2020 MONITORING RESULTS

It is important to note that two types of surveys are discussed in the subsequent materials: 1) point-intercept surveys and 2) EWM mapping surveys. The point-intercept survey provides a standardized way to gain quantitative information about a lake's aquatic plant population through visiting predetermined locations and using a rake sampler to identify all the plants at each location. The survey methodology allows comparisons to be made over time, as well as between lakes. It is common to see a particularly plant species, such as EWM, very near the sampling location but not yield it on the rake sampler. The point-intercept survey can be applied at various scales. The point-intercept survey is most often applied at the whole-lake scale. The whole-lake point-intercept survey has been conducted on Found Lake in 2010, 2018 and 2020.

While the point-intercept survey is a valuable tool to understand the overall plant population of a lake, it does not offer a full account (census) of where a particular species exists in the lake. During the EWM mapping survey, the entire littoral area of the lake is surveyed through visual observations from the boat (Photograph 2.0-1). Field crews supplement the visual survey by deploying a submersible camera along with periodically doing rake tows. The EWM population is mapped using sub-meter GPS technology by using either 1) point-based or 2) area-based methodologies. Large colonies >40 feet in diameter are mapped using polygons (areas) and are qualitatively attributed a density rating based upon a five-tiered scale from *highly scattered* to *surface matting*. Point-based techniques were applied to EWM locations that were considered as *small plant colonies* (<40 feet in diameter), *clumps of plants*, or *single or few plants*.



Photograph 2.0-1. EWM mapping survey on a Waushara County, WI lake. Photo credit Onterra.

Overall, each survey has its strengths and weaknesses, which is why both are utilized in different ways as part of this project. A whole-lake point-intercept survey and two EWM mapping surveys occurred in 2020 on Found Lake and are discussed within this report.

2.1 Whole-lake Point-Intercept Survey

A whole-lake point-intercept aquatic plant surveys was first conducted in Found Lake during 2010 as a component of a lake management planning project. The whole-lake aquatic plant point-intercept survey was replicated by the Wisconsin DNR on July 5 and 6, 2018 following the reported discovery of Eurasian watermilfoil. The survey was replicated once again by Onterra during 2020 and is compared to the previous surveys to understand any changes or trends in the aquatic plant community.

Species List

The species list is simply a list of all of the aquatic plant species, both native and non-native, that were located during the surveys completed in Found Lake in 2010, 2018 and 2020 (Table 2.1-1). The list also contains the growth-form of each plant found (e.g., submergent, emergent, etc.), its scientific name, common name, and its coefficient of conservatism. The latter is discussed in more detail below. Changes in this list over time, whether it is differences in total species present, gains and losses of individual species, or changes in growth forms that are present, can be an early indicator of changes in the ecosystem.

During these surveys, a total of 48 native aquatic plant species were located within or along the immediate shores of Found Lake (Table 2.1-1). One native aquatic plant species present in Found Lake, Vasey's pondweed (*Potamogeton vaseyi*), is listed by the Wisconsin Natural Heritage Inventory Program as a species of special concern because it is rare in Wisconsin, and there is uncertainty regarding its abundance and distribution within the state (Photo 2.1-1).

Photograph 2.1-1. Vasey's pondweed (*Potamogeton vaseyi*). Photo credit Onterra.

Vasey's pondweed produces very thin and pointed leaves that alternate along a long fine stem. In instances when it is able to reach the surface it frequently produces small oval to oblong floating leaves no larger than a human thumbnail. When floating leaves are produced, they often support a small cluster of flowers on a stalk which are held above the water's surface. In Wisconsin, Vasey's pondweed is generally found in lakes in the northern and central regions of the state. Vasey's pondweed was located at seven sampling locations in 2010 (1.6% occurrence), however; was not relocated during subsequent surveys. Two non-native species have been documented during the aquatic plant surveys: Eurasian watermilfoil, and purple loosestrife (*Lythrum salicaria*).

Table 2.1-1. Aquatic plant species located in Found Lake during the 2010, 2018 and 2020 surveys.

Growth Form	Scientific Name	Common Name	Status in Wisconsin	Coefficient of Conservatism	2010	2018	2020
Emergent	*Calla palustris*	Water arum	Native	9		I	
	Carex gynandra	Nodding sedge	Native	6		I	
	Carex lasiocarpa	Narrow-leaved woolly sedge	Native	9	I		
	Carex utriculata	Common yellow lake sedge	Native	7		I	
	Carex vesicaria	Blister sedge	Native	7	X		
	Dulichium arundinaceum	Three-way sedge	Native	9	I		
	Eleocharis palustris	Creeping spikerush	Native	6	X	X	
	Equisetum fluviatile	Water horsetail	Native	7	I		
	Lythrum salicaria	Purple loosestrife	Non-Native - Invasive	N/A	I		
	Pontederia cordata	Pickerelweed	Native	9	X	I	
	Sagittaria latifolia	Common arrowhead	Native	3		I	
	Schoenoplectus tabernaemontani	Softstem bulrush	Native	4	I	I	
	Sparganium americanum	American bur-reed	Native	8		I	
	Typha latifolia	Broad-leaved cattail	Native	1		I	
FL	*Brasenia schreberi*	Watershield	Native	7	X	X	I
	Nuphar variegata	Spatterdock	Native	6	X	X	X
	Nymphaea odorata	White water lily	Native	6	X	X	X
	Persicaria amphibia	Water smartweed	Native	5	X		
	Sparganium angustifolium	Narrow-leaf bur-reed	Native	9		X	
	Sparganium fluctuans	Floating-leaf bur-reed	Native	10	I	X	I
Submergent	*Ceratophyllum demersum*	Coontail	Native	3	X	X	X
	Chara spp.	Muskgrasses	Native	7	X	X	X
	Elatine minima	Waterwort	Native	9	X		X
	Elodea canadensis	Common waterweed	Native	3	X	X	X
	Elodea nuttallii	Slender waterweed	Native	7		X	
	Isoetes spp.	Quillwort spp.	Native	8	X	X	X
	Lobelia dortmanna	Water lobelia	Native	10	X	X	X
	Myriophyllum sibiricum	Northern watermilfoil	Native	7	X		
	Myriophyllum spicatum	Eurasian watermilfoil	Non-Native - Invasive	N/A		I	
	Myriophyllum tenellum	Dwarf watermilfoil	Native	10	X	X	X
	Najas flexilis	Slender naiad	Native	6	X	X	X
	Najas guadalupensis	Southern naiad	Native	7			X
	Nitella spp.	Stoneworts	Native	7	X		
	Potamogeton amplifolius	Large-leaf pondweed	Native	7	X	X	X
	Potamogeton berchtoldii	Slender pondweed	Native	7			X
	Potamogeton epihydrus	Ribbon-leaf pondweed	Native	8			I
	Potamogeton gramineus	Variable-leaf pondweed	Native	7	X	X	X
	Potamogeton illinoensis	Illinois pondweed	Native	6	X		
	Potamogeton natans	Floating-leaf pondweed	Native	5	I		
	Potamogeton praelongus	White-stem pondweed	Native	8	X	X	X
	Potamogeton pusillus	Small pondweed	Native	7	X	X	X
	Potamogeton richardsonii	Clasping-leaf pondweed	Native	5	X		X
	Potamogeton robbinsii	Fern-leaf pondweed	Native	8	X	X	X
	Potamogeton vaseyi	Vasey's pondweed	Native - Special Concern	10	X		
	Potamogeton zosteriformis	Flat-stem pondweed	Native	6	X		
	Ranunculus aquatilis	White water crowfoot	Native	8	X		
	Sagittaria sp. (rosette)	Arrowhead sp. (rosette)	Native	N/A		X	
	Utricularia vulgaris	Common bladderwort	Native	7	X	X	
	Vallisneria americana	Wild celery	Native	6	X	X	X
SE	*Eleocharis acicularis*	Needle spikerush	Native	5	X	X	X
	Juncus pelocarpus	Brown-fruited rush	Native	8	X	X	X
FF	*Riccia fluitans*	Slender riccia	Native	7			I

F L= Floating-leaf; SE = Submergent & Emergent; FF = Free-Floating
X = Located on rake during point-intercept survey; I = Incidentally located; not located on rake during point-intercept survey

The maximum depth of aquatic plant growth in Found Lake declined from 21 feet in 2010 to 16 feet and 12 feet in 2018 and 2020, respectively (Figure 2.1-1). The maximum depth of plant growth is largely going to be determined by water clarity. In general, aquatic plants grow to a depth of two to three times the average Secchi disk depth. Found Lake has seen significant declines in water clarity in recent years. This reduction in water clarity is believed to be the result of increased concentrations of dissolved organic matter (DOM) entering the lake which give the water a tea-like color. The increase in DOM in Found Lake in recent years has resulted in reduced light availability for plants to photosynthesize, particularly in deeper areas of Found Lake's littoral zone.

The loss of vegetation in Found Lake between 2010 and 2018 occurred primarily in deeper areas of the littoral zone where light availability was reduced to the greatest extent (Figure 2.1-2). The footprint of aquatic plants constricted further between 2018-2020 with even fewer sampling locations being within the maximum depth of water sufficient for harboring aquatic plants (Figure 2.1-2).

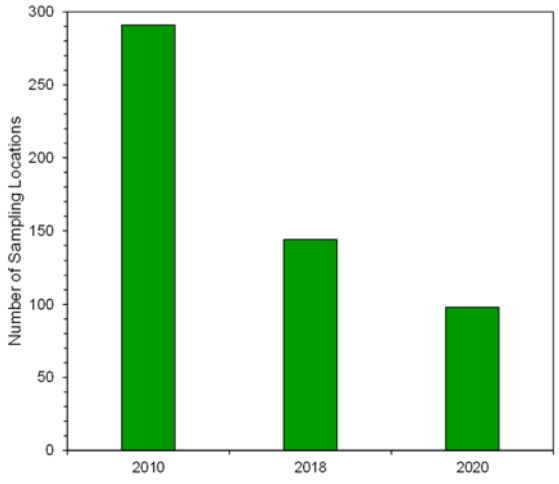


Figure 2.1-1. Number of Sampling Locations with Aquatic Vegetation in Found Lake. Created using data from the 2010, 2018, and 2020 point-intercept surveys.

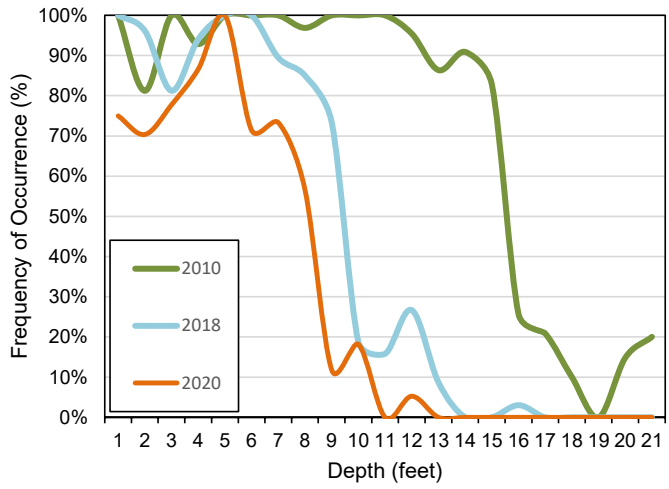


Figure 2.1-2. Found Lake occurrence of vegetation across littoral depths in 2010, 2018, and 2020.

The point-intercept data show that overall aquatic plant occurrence in Found Lake has declined markedly between the 2010 and 2020 surveys. Total rake fullness (TRF) ratings recorded in 2018 indicated the overall biomass of aquatic plants in Found Lake decreased when compared to 2010. In 2010, 52% of sampling locations that contained aquatic vegetation had TRF ratings of 2 or 3 indicating higher biomass, while approximately 15% of sampling locations that contained vegetation in 2018 and 2020 had TRF ratings of 2 or 3 (Figure 2.1-3).

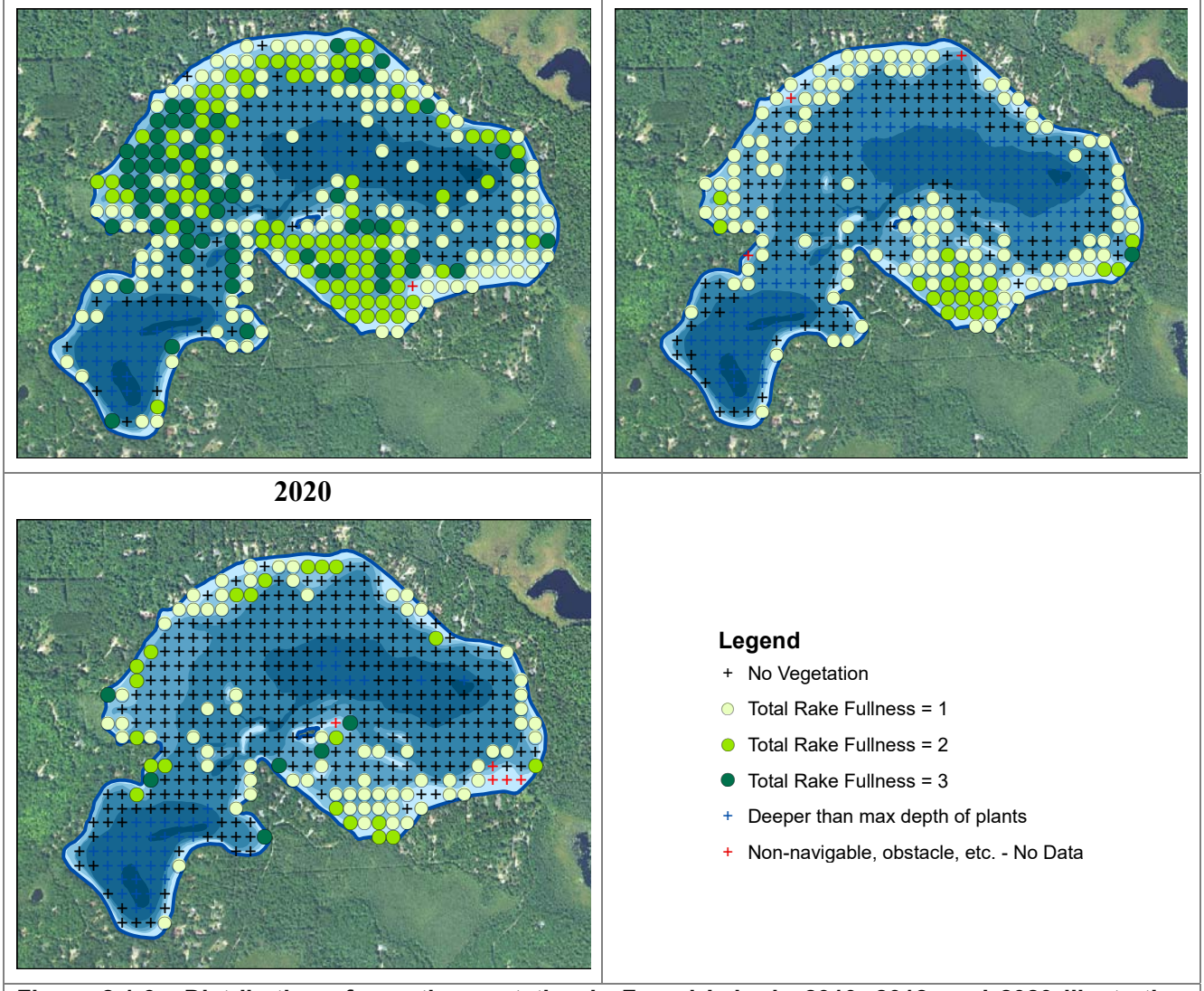


Figure 2.1-3. Distribution of aquatic vegetation in Found Lake in 2010, 2018, and 2020 illustrating reduction in lake-wide vegetation occurrence.

The data that continues to be collected from Wisconsin lake's is revealing that aquatic plant communities are highly dynamic, and populations of individual species have the capacity to fluctuate, sometimes greatly, in their occurrence from year to year and over longer periods of time. These fluctuations are driven by a combination of interacting natural factors including variations in water levels, temperature, ice and snow cover (winter light availability), nutrient availability, changes in water flow, water clarity, length of the growing season, herbivory, disease, and competition (Lacoul and Freedman 2006). In Found Lake, the primary driver of the changes observed is believed to the reduction in water clarity as the result of increased dissolved organic matter. It is anticipated that Found Lake's water clarity will increase during periods of lower precipitation, and aquatic plant abundance will likely increase in response.

Frequency of Occurrence

The data from the three point-intercept surveys completed on Found Lake can be used to compare how the occurrence of individual species have changed between the 2010, 2018, and 2020 surveys. The littoral frequencies of occurrence of aquatic plant species which had a littoral occurrence of at least 5% in one of the three point-intercept surveys are displayed in Figures 2.1-4 and 2.1-5. Field identification can sometimes be difficult for species that exhibit similar morphological features; therefore, the occurrences of small pondweed (*Potamogeton pusillus*) and slender pondweed (*Potamogeton berchtoldii*) have been combined in the following analysis. Appendix A contains a table displaying the littoral frequency of occurrence of all aquatic plant species that have been recorded on the point-intercept surveys for Found Lake.

When comparing the 2020 survey results to the previous survey in 2018, four native species showed a statistically valid increase in occurrence, one species showed a statistical decline in occurrence, and many species showed no change.

In 2010, common waterweed (*Elodea canadensis*) was the most frequently-encountered species in Found Lake with a littoral frequency of occurrence of 43% (Figure 2.1-4). In 2018, its littoral frequency of occurrence had declined to 0.3%, representing a statistically valid reduction in occurrence of 99.3%. The occurrence of common waterweed exhibited a statistically valid increase in 2020 to 2.1% but remains far below the occurrences documented in 2010.

Fern-leaf pondweed (*Potamogeton robbinsii*) and wild celery (*Valisneria americana*) exhibited statistically valid increases in abundance between 2010-2018 and each increased further between 2018-2020. These species are tolerant to lower light conditions which could favor their growth in recent years in Found Lake. Quillworts (*Isoetes spp.*) also exhibited a statistically valid increase from 1.8% in 2018 to 5.3% in 2020. Variable-leaf pondweed (*Potamogeton gramineus*) exhibited a statistically valid increase in occurrence from 2018 to 2020 after declining between 2010-2018.

The occurrence of white-stem pondweed (*Potamogeton praelongus*) was the only native species that showed a statistically valid decrease in occurrence between 2018-2020 with an occurrence of 1.1% in 2020, an 87.9% decrease since 2018.

Many of the species that exhibited decreases in occurrence between 2010 and 2018 either remained at similar levels or declined further in 2020. The occurrence of coontail (*Ceratophyllum demersum*) declined by 77.3% between 2010-2018 and declined further to an occurrence of just 4.8% in 2020. Large-leaf pondweed (*Potamogeton amplifolius*) declined in occurrence by 96.6% from 2010-2018 and remained at approximately the same occurrence (0.5%) in 2020. The combined occurrences of small and slender pondweed decreased from 10.5% in 2010 to 0.6% in 2018 and increased slightly in 2020 to 2.7%. Flat-stem pondweed (*Potamogeton zosteriformis*) had a littoral frequency of 19.3% in 2010 and was not observed in 2018 or 2020.

Eurasian watermilfoil was encountered incidentally during the 2018 point-intercept survey, but has not been physically encountered on the survey rake during any of the surveys.

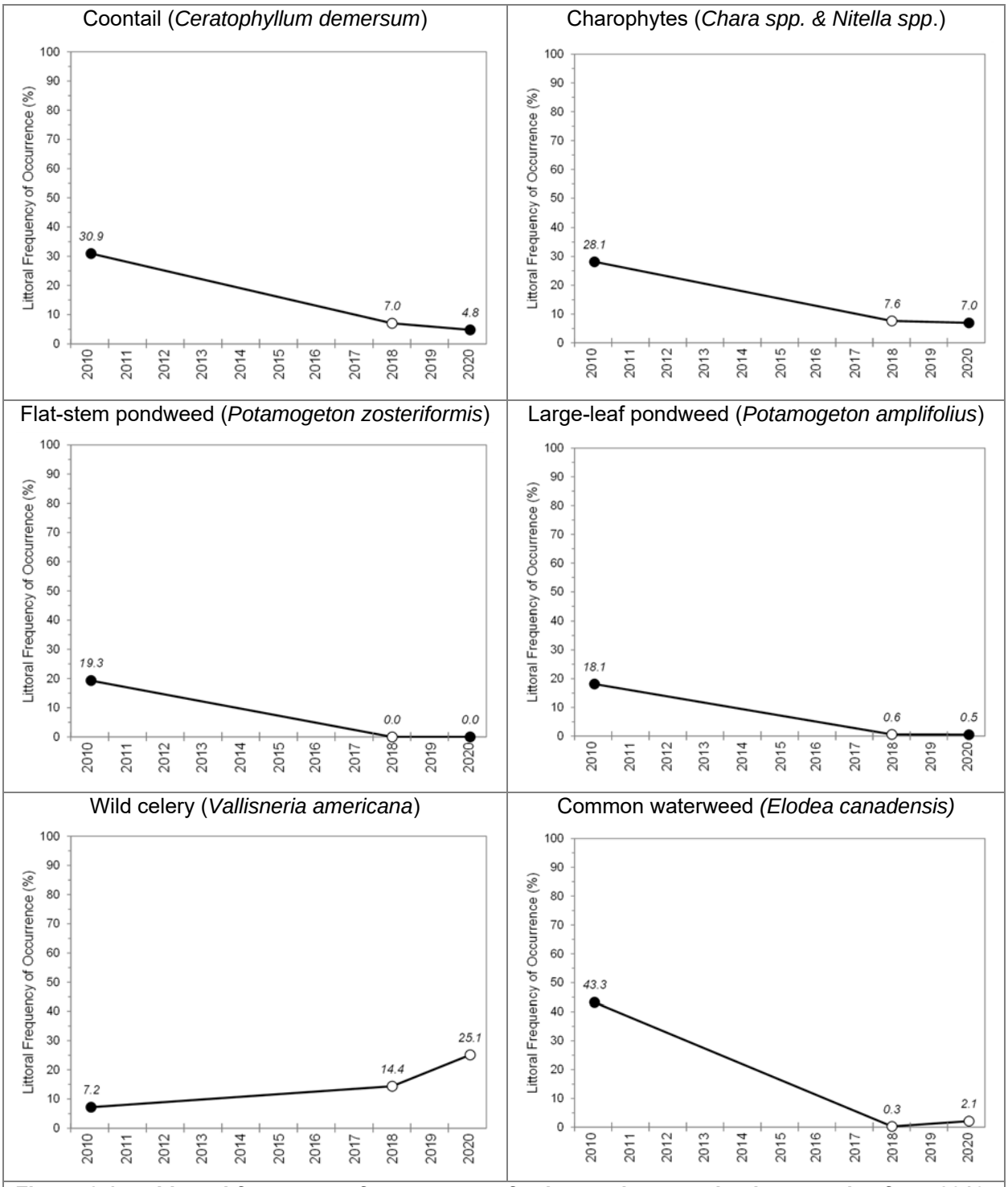


Figure 2.1-4. Littoral frequency of occurrence of select native aquatic plant species from 2010-2020 in Found Lake. Open circle represents statistically valid change from previous survey. (Chi-Square α = 0.05). Species which had an LFOO of at least 5% in at least one of the surveys are displayed.

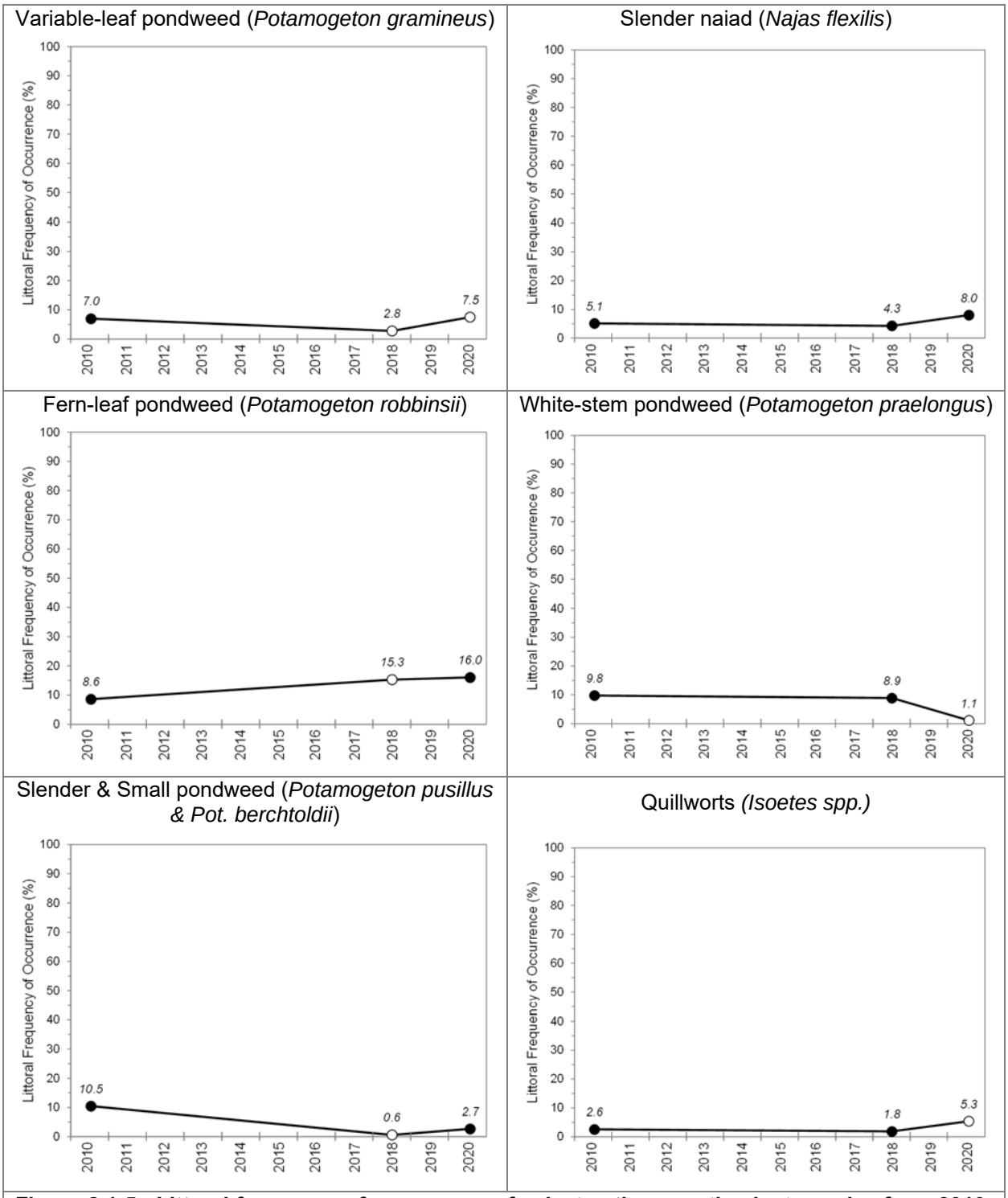


Figure 2.1-5. Littoral frequency of occurrence of select native aquatic plant species from 2010-2020 in Found Lake. Open circle represents statistically valid change from previous survey. (Chi-Square α = 0.05). Species which had an LFOO of at least 5% in at least one of the surveys are displayed.

Floristic Quality Assessment

The floristic quality of a lake's aquatic plant community is calculated using its native *species richness* and their *average conservatism*. Species richness is the number of native aquatic plant species that were physically encountered on the rake during the point-intercept survey. Average conservatism is calculated by taking the sum of the coefficients of conservatism (C-values) of the native species located and dividing it by species richness. Every plant in Wisconsin has been assigned a coefficient of conservatism, ranging from 1-10, which describes the likelihood of that species being found in an undisturbed environment. Species which are more specialized and require undisturbed habitat are given higher coefficients, while species which are more tolerant of environmental disturbance have lower coefficients.

For example, algal-leaf pondweed (*Potamogeton confervoides*) is only found in nutrient-poor, acid lakes in northern Wisconsin and is prone to decline if degradation of these lakes occurs. Because of algal-leaf pondweed's special requirements and sensitivity to disturbance, it has a C-value of 10. In contrast, sago pondweed (*Stuckenia pectinata*) with a C-value of 3, is tolerant of disturbance and is often found in greater abundance in degraded lakes that have higher nutrient concentrations and low water clarity. Higher average conservatism values generally indicate a healthier lake as it is able to support a greater number of environmentally-sensitive aquatic plant species. Low average conservatism values indicate a degraded environment, one that is only able to support disturbance-tolerant species.

On their own, the species richness and average conservatism values for a lake are useful in assessing a lake's plant community; however, the best assessment of the lake's plant community health is determined when the two values are used to calculate the lake's floristic quality. The floristic quality is calculated using the species richness and average conservatism value of the aquatic plant species that were solely encountered on the rake during the point-intercept surveys (equation shown below). This assessment allows the aquatic plant community of Found Lake to be compared to other lakes within the region and state.

$$FQI = \text{Average Coefficient of Conservatism} * \sqrt{\text{Number of Native Species}}$$

Species Diversity

Species diversity is often confused with species richness. As defined previously, species richness is simply the number of species found within a given community. While species diversity utilizes species richness, it also takes into account evenness or the variation in abundance of the individual species within the community. For example, a lake with 10 aquatic plant species that had relatively similar abundances within the community would be more diverse than another lake with 10 aquatic plant species were 50% of the community was comprised of just one or two species.

An aquatic system with high species diversity is more stable than a system with a low diversity. This is analogous to a diverse financial portfolio in that a diverse aquatic plant community can withstand environmental fluctuations much like a diverse portfolio can handle economic fluctuations. A lake with a diverse plant community is also better suited to compete against exotic infestations than a lake with a lower diversity. The diversity of a lake's aquatic plant community is determined using the Simpson's Diversity Index (1-D):

$$D = \sum (n/N)^2$$

where:
n = the total number of instances of a particular species
N = the total number of instances of all species and
D is a value between 0 and 1

If a lake has a diversity index value of 0.90, it means that if two plants were randomly sampled from the lake there is a 90% probability that the two individuals would be of a different species. The Simpson's Diversity Index value from Found Lake is compared to data collected by Onterra and the WDNR Science Services on lakes within the Northern Lakes and Forests ecoregion and on lakes throughout Wisconsin (Figure 2.1-6). Found Lake's Simpson's Diversity Index value was 0.90 in 2010, 0.89 in 2018, and 0.88 in 2020, compared to a northern lakes and forests ecoregion median value of 0.88.

Figure 2.1-7 shows that the native species richness for Found Lake has decreased from 33 in 2010, to 23 in 2018 and 21 in 2020. Data collected from the aquatic plant surveys show that the average conservatism value has declined each year as well from 7.2 in 2010 to 6.8 in 2020. The average conservatism value of 6.8 in 2020 is slightly higher than the ecoregion median.

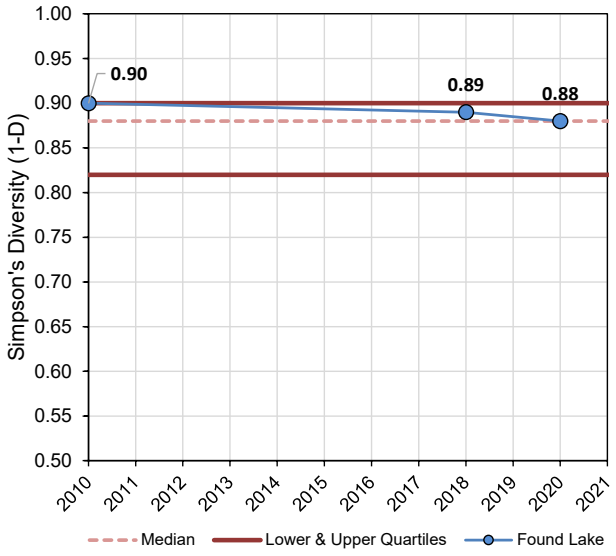


Figure 2.1-6. Found Lake Simpson's Diversity Index. Created using data from the 2010, 2018, and 2020 point-intercept surveys.

Combining Found Lake's aquatic plant species richness and average conservatism values to produce its Floristic Quality Index (FQI) results in a value of 31.2 for 2020 compared to 41.4 in 2010 and 33.6 in 2018. The 2020 floristic quality remains slightly above the median values for the ecoregion and state (Figure 2.1-7).

Overall, this analysis shows that Found Lake's aquatic plant community is of similar quality when compared to the majority of lakes in the ecoregion and the state. The reduction in Found Lake's FQI value between 2010 and 2020 is likely due to the overall reduction in aquatic plant abundance due to reduced water clarity brought about by natural processes, and it is not an indication of degrading conditions.

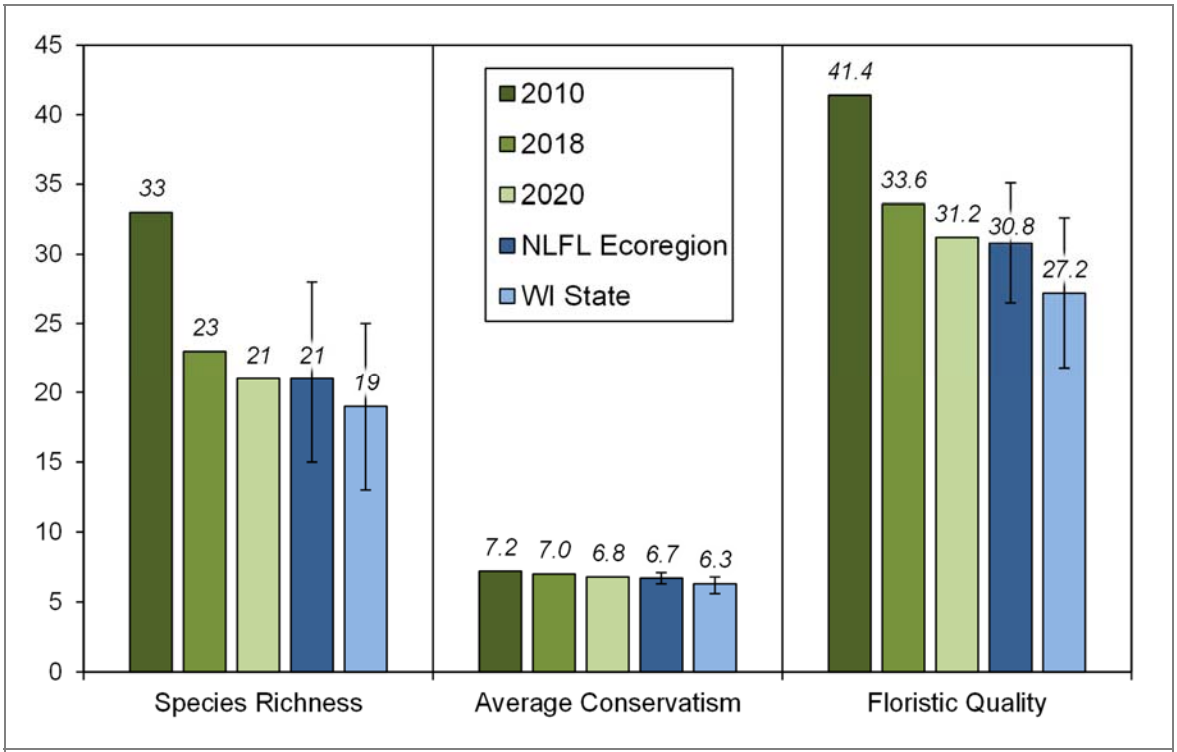


Figure 2.1-7. Found Lake Floristic Quality Assessment. Created using data from the 2010, 2018, and 2020 point-intercept surveys. Analysis following Nichols (1999) where NLFL = Northern Lakes and Forests - Lakes Ecoregion.

3.0 EWM MAPPING SURVEYS

A series of EWM mapping surveys were used within this project to monitor the EWM population and guide potential hand harvesting efforts (Figure 3.0-1). In late-spring/early summer, an Early Season Aquatic Invasive Species Survey (ESAIS) was completed. The ESAIS survey is completed at a time when water is often clearer, and EWM is often growing taller in the water column than most native aquatic plants. The survey timing also corresponds the timing of the expected peak growth stage of another aquatic invasive species, curly-leaf pondweed (CLP) which is known to be within nearby lakes including Little Saint Germain Lake and Lost Lake. The results of the ESAIS survey are used to determine the hand-harvesting strategy for the summer. The second monitoring survey is the Late-Summer EWM Mapping Survey which is conducted towards the end of the growing season and corresponds with the expected peak growth state of EWM. The Late-

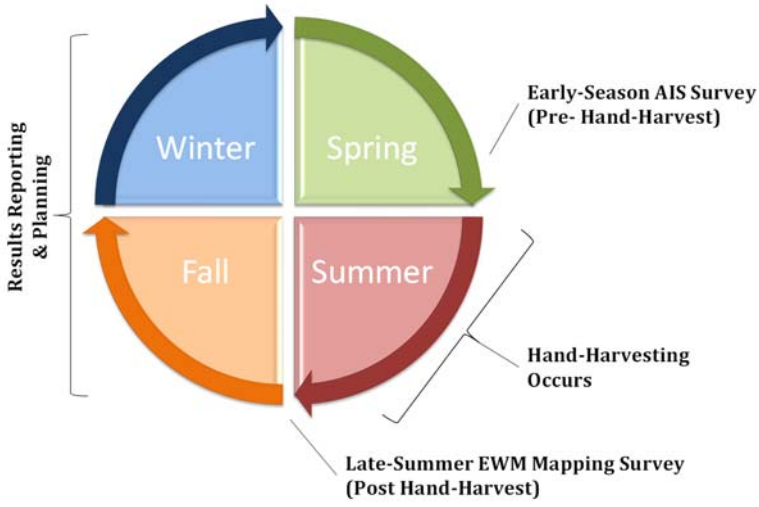


Figure 3.0-1. Project timeline diagram.

Summer survey is used to evaluate any hand harvesting activities that have taken place and is important in development of the following years' monitoring or control strategy.

3.1 Early Season Aquatic Invasive Species Survey (ESAIS)

On June 20, 2020, Onterra field crews completed the early season AIS survey (ESAIS) on Found Lake. Crews noted good conditions during the survey with a mix of sun and clouds and light to moderate winds. The entire littoral area of the lake was searched for EWM and a higher level of focus was devoted to the site where EWM was located previously including the use of a submersible camera. During the survey, crews did not locate EWM anywhere in the lake. The FLPOA was encouraged to consider investigating the previous location periodically over the summer if they have the means to do so. Contracting with a professional harvesting company to dive the site was not advised given that no EWM was located.

3.2 Late-Summer EWM Mapping Survey

The Late-Summer EWM Mapping Survey was conducted on August 25, 2020. Survey crews noted reduced water clarity at the time of the survey with the appearance of an algae bloom in part of the lake. The entire littoral area of the lake was surveyed with added focus once again within the site where EWM had been located in 2018. Multiple rake tows and transects with the submersible camera yeiled no new EWM findings in the previously known location and no EWM was found anywhere in the lake.

4.0 CONCLUSIONS AND DISCUSSION

Multiple aquatic plant surveys were completed during 2020 on Found Lake. The entire aquatic plant community was assessed through the whole-lake point-intercept survey which showed a drastic decrease in occurrence for many species compared to the survey that was completed during 2010. Most of these species decreases occurred between the 2010 and 2018 surveys, and few signs of rebound or resurgence were evident when incorporating the results of the 2020 survey. The declining aquatic plant community is attributed to changes in Found Lake's water clarity, likely as a result of high precipitation in recent years. A similar declining native aquatic plant population has been documented in nearby Lost Lake around the same time period suggesting some sort of regional environmentally driven factors may be causing the observed declines in many plant species. A detailed analysis of these aquatic plant population dynamics and related water quality analysis is included within the *Town of Saint Germain Comprehensive Management Plan Update* – (Draft February 2021).

Since initial discovery in June 2018 and subsequent harvesting efforts, EWM has not been observed in Found Lake in any of the surveys conducted during 2019 or 2020. The FLPOA is cautiously optimistic that EWM may have been detected early after initial introduction allowing for the complete removal of all EWM plants in the lake. Although eradication of established EWM populations is very unlikely, it is possible that eradication could be achieved when the population is very low in a lake as was the case for Found Lake. It is possible that EWM still exists somewhere in Found Lake but is present in very low amounts that have escaped detection in recent surveys. Continued monitoring will be very important in ensuring that EWM does not gain a foothold in Found Lake.

The FLPOA has extended this project to utilize the remaining funds in their open WDNR grant. Monitoring will continue during 2021 and 2022 with the completion of early season and late-season

EWM mapping surveys. In the event that EWM is detected during any survey, the FLPOA will be prepared to enlist local or professional hand harvesting services to target the occurrences.

A

APPENDIX A

Littoral Frequency of Occurrence of Aquatic Plants from 2010, 2018, and 2020 Point-Intercept Surveys on Found Lake.

Scientific Name	Common Name	LFOO (%)		
		2010	2018	2020
Elodea canadensis	Common waterweed	43.3	0.3	2.1
Ceratophyllum demersum	Coontail	30.9	7.0	4.8
Chara & Nitella	Charophytes	28.1	7.6	7.0
Vallisneria americana	Wild celery	7.2	14.4	25.1
Potamogeton robbinsii	Fern-leaf pondweed	8.6	15.3	16.0
Nitella spp.	Stoneworts	20.9	0.0	0.0
Chara spp.	Muskgrasses	8.4	7.6	7.0
Potamogeton zosteriformis	Flat-stem pondweed	19.3	0.0	0.0
Potamogeton amplifolius	Large-leaf pondweed	18.1	0.6	0.5
Potamogeton praelongus	White-stem pondweed	9.8	8.9	1.1
Potamogeton gramineus	Variable-leaf pondweed	7.0	2.8	7.5
Najas flexilis	Slender naiad	5.1	4.3	8.0
Potamogeton berchtoldii & P. pusillus	Slender & Small pondweeds	10.5	0.6	2.7
Potamogeton pusillus	Small pondweed	10.5	0.6	0.5
Juncus pelocarpus	Brown-fruited rush	3.7	2.4	5.3
Isoetes spp.	Quillwort spp.	2.6	1.8	5.3
Myriophyllum tenellum	Dwarf watermilfoil	2.6	3.4	2.7
Eleocharis acicularis	Needle spikerush	1.9	0.9	3.2
Elatine minima	Waterwort	3.3	0.0	1.1
Nuphar variegata	Spatterdock	1.9	1.5	1.1
Nymphaea odorata	White water lily	0.7	1.5	1.1
Potamogeton berchtoldii	Slender pondweed	0.0	0.0	2.1
Eleocharis palustris	Creeping spikerush	0.9	1.2	0.0
Potamogeton vaseyi	Vasey's pondweed	1.6	0.0	0.0
Potamogeton richardsonii	Clasping-leaf pondweed	0.5	0.0	1.1
Potamogeton hybrid 1	Pondweed Hybrid 1	1.4	0.0	0.0
Lobelia dortmanna	Water lobelia	0.2	0.3	1.1
Brasenia schreberi	Watershield	0.7	0.9	0.0
Najas guadalupensis	Southern naiad	0.0	0.0	1.1
Utricularia vulgaris	Common bladderwort	0.5	0.3	0.0
Potamogeton illinoensis	Illinois pondweed	0.5	0.0	0.0
Sparganium fluctuans	Floating-leaf bur-reed	0.0	0.3	0.0
Sparganium angustifolium	Narrow-leaf bur-reed	0.0	0.3	0.0
Sagittaria sp. (rosette)	Arrowhead sp. (rosette)	0.0	0.3	0.0
Ranunculus aquatilis	White water crowfoot	0.2	0.0	0.0
Pontederia cordata	Pickerelweed	0.2	0.0	0.0
Persicaria amphibia	Water smartweed	0.2	0.0	0.0
Myriophyllum sibiricum	Northern watermilfoil	0.2	0.0	0.0
Fissidens spp. & Fontinalis spp.	Aquatic Moss	0.0	0.3	0.0
Elodea nuttallii	Slender waterweed	0.0	0.3	0.0
Carex vesicaria	Blister sedge	0.2	0.0	0.0