



2020

REPORT

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Hunter Lake: State of the Lake Report to the Conover Town Lakes Committee June 2020

Hunter Lake is located in the southwestern portion of Conover, Wisconsin, south of the Buckatabon Lakes within the Tamarack Pioneer River Watershed.¹ It is a 175 acre (surface area) deep seepage lake with no natural inlet or outlet, and no water level control. The maximum depth is 40 feet, with an average depth of 16.8 feet and a water volume of 3090 acre-ft.²

The southern end of the lake is designated a no-wake nature preserve, accessible by small boat or canoe/kayak, with the shoreland owned by the State of Wisconsin (DNR) on one side, and by a private owner on the other side. A floating nest in this area is typically occupied by a pair of loons each summer; under ideal conditions they produce one or two young during the summer.

In addition to the shoreland owned either by the State of Wisconsin (DNR) or by Vilas County, there are 52 residential parcels on Hunter Lake, including 42 with "improvements." Except for the publicly-owned lands, all properties on the shoreline are zoned R-1 residential.

Some shoreline owners are able to launch boats from their own properties, however most residents and visitors use the public boat launch site at the county park on Hunter Landing Rd at the southeast corner of the lake. The park was originally developed as part of a Civilian Conservation Corp project in the 1930s.

Summer uses of Hunter Lake waters include power boating, waterskiing, pontoon cruising, silent sports (kayak, canoe, or paddleboard), fishing (bluegill, largemouth and smallmouth bass, and walleye), and swimming at the county park beach or private shorelines. Winter uses include ice fishing and snowmobiling.

Hunter Lake has been spared from most invasive plant and animal species that trouble other inland lakes in the area, and is not considered "impaired" by the DNR.³ The presence of Chinese Mystery Snails was first verified at the Hunter Lake county park beach in July 2008.⁴ There is not presently any program to monitor, control or treat invasive species, and no work with an aquatic consultant regarding invasives.

The Hunter Lake Association was formed in 1999 with a mission statement "to preserve and protect Hunter Lake and its surroundings, and to enhance the water quality, fishery, boating safety, and aesthetic values of Hunter Lake, as a public recreational facility for today and for future generations." Members of the association monitored the lake for invasive species, particularly Eurasian Water Milfoil, and performed Secchi depth tests for water clarity/turbidity. The association worked with Vilas County zoning to change shoreline property zoning from Recreational to R-1 Residential. It also supported the Wisconsin Shoreland Initiative in response to state changes in zoning laws (Act 55) in 2015.

The lake association was incorporated in 2016 as "Hunter Lake Vilas Co Corp," a 501(c)(4) non-profit non-stock corporation in Wisconsin. A website <https://chunterlake.wixsite.com/lakeassociation>, a newsletter "Hunter Lake Heritage", and a resident directory are updated and published periodically. Association dues are collected from members in the event funds are needed to remediate introduction of invasive species.

The lake association and residents are concerned about changes to the Hunter Lake county park. Vilas County acquired a 16-1/2 acre parcel northeast of the present park from the State of Wisconsin as part of a program to sell state-owned lands. The county has no plans for further development of the boat landing or the shoreline beach, but in January 2020 the forest in the original county-owned park parcel was clear-cut and graded. New toilet facilities are to be installed during the summer of 2020, and additional vehicle parking will be created. The additional parking will encourage increased boat traffic. Our concern is that more than three speedboats/jet-skis at a time on this small lake, while required to be 200 feet apart from each other and from shore, is a serious safety hazard. The county has stated that there will not be a limit to boat traffic on the lake. In the future, there may also be other new recreational uses. Additional park development, encouraging overuse of the park, the boat landing and lake waters, risks the introduction of new plant and animal invasive species to Hunter Lake, as there is no regular monitoring program in place.

¹ <https://dnr.wi.gov/water/waterDetail.aspx>

² <https://dnr.wi.gov/lakes/maps/DNR/0991700a.pdf>

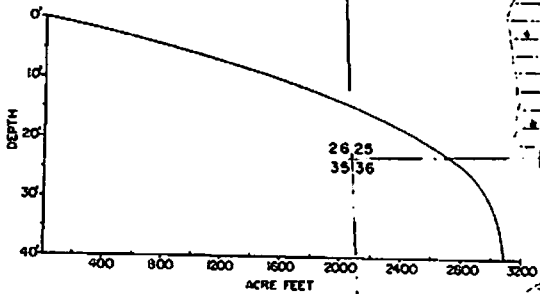
³ <https://dnrmaps.wi.gov/H5/?viewer=SWDV>

⁴ <https://dnr.wi.gov/lakes/invasives/AISLists.aspx>

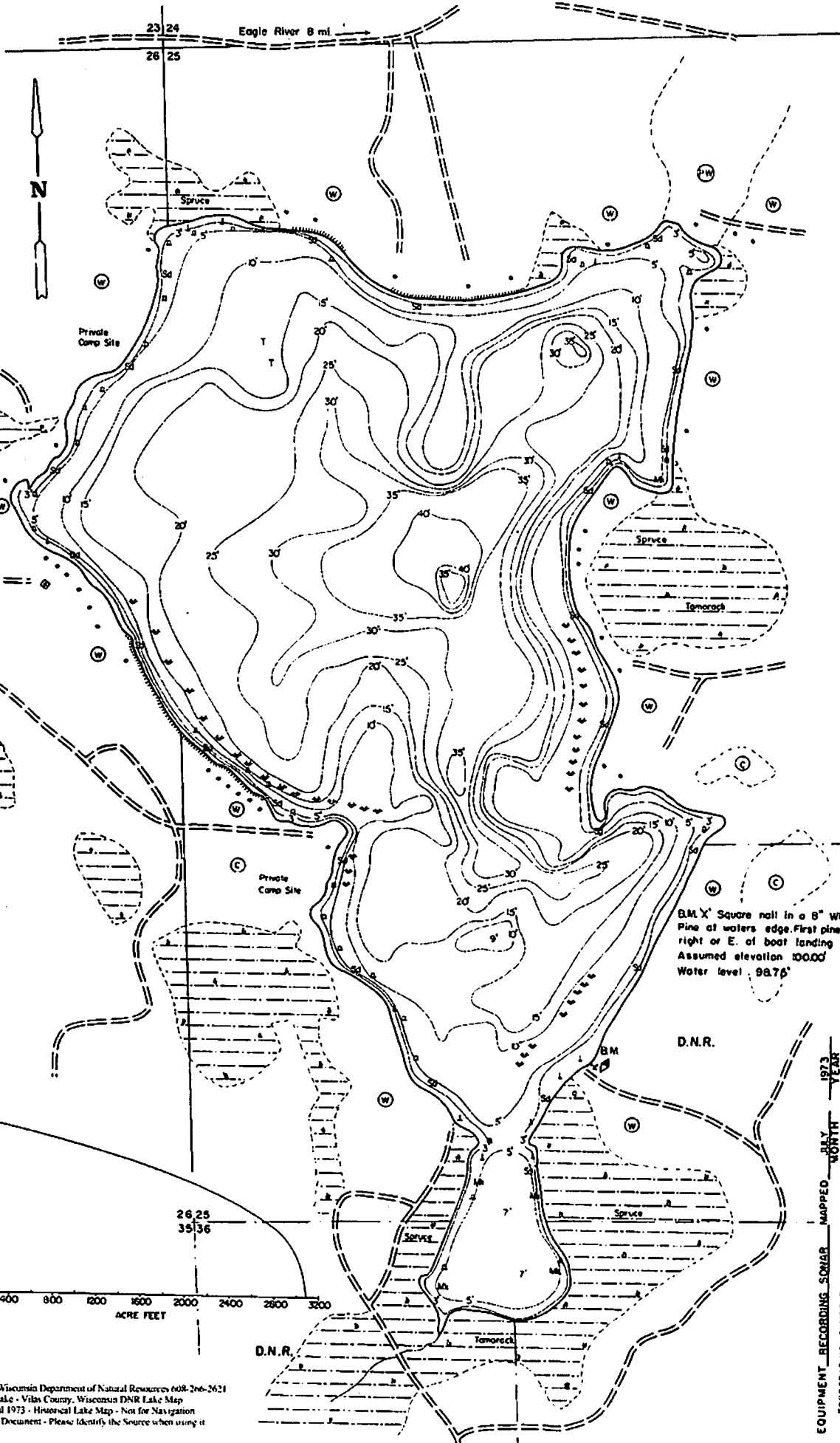
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

LAKE SURVEY MAP

HUNTER LAKE
VILAS COUNTY
SEC. 25, 26 T. 41 N. R. 9 E.



Source: Wisconsin Department of Natural Resources 608-266-2621
Hunter Lake - Vilas County, Wisconsin DNR Lake Map
Date - Jul 1973 - Historical Lake Map - Not for Navigation
A Public Document - Please Identify the Source when using it



WATER AREA 1836 ACRES

UNDER 3 FT.	6	%
OVER 20 FT.	39	%
MAX. DEPTH	60	FEET.
TOTAL ALK.	8	PPM.
VOLUME	3080	ACRE FT.
MAIN SHORELINE	3.19	MI.
ISLAND SHORELINE		MI.

SPECIES OF FISH

Walleye	1
Yellow Perch	1
Rock Bass	1
White Sucker	1
Bluegill	1
Trout	1

300' 600' 900' 1200'
SCALE

Access Access with Parking Boat Livery

Drawn by: C. Hill
Field work by: R. H. Smith, J. Smith

B.M. X Square nail in a 6" White Pine at waters edge. First pine to right of E. of boat landing
Assumed elevation 1000.0'
Water level 98.76'

- EQUIPMENT RECORDING SONAR MAPPED MONTH YEAR
- TOPOGRAPHIC SYMBOLS
- Grass
 - Partially wooded
 - Wooded
 - Cleared
 - Pastured
 - Agricultural
 - B.M. Bench Mark
 - Dredging
 - Rever
 - Comp
- LAKE BOTTOM SYMBOLS
- Prot
 - Mb Muck
 - C Clay
 - M. Marl
 - Sd Sand
 - Sf Silt
 - Gr. Gravel
 - R. Rubble
 - Bc Berricks
- 1973 YEAR SYMBOLS
- 9 Boilers
 - St Stumps & Snags
 - Rest coveys to navigation
 - T Submergent vegetation
 - Emergent vegetation
 - Floating vegetation
 - Brush Beliefs



Little Tamarack Flowage Baker Spring Lake Protection and Rehabilitation District

P.O. Box 112, Conover, Wisconsin 54519
littletamaracklakedistrict@gmail.com
<http://littletamarackflowage.org>

2019-2020 “State of the Lake” Report for the Conover Town Lakes Committee

- Final payment was made on our loan for the 2016 dam construction project. (A “Mortgage Burning Party” is being contemplated!) Of the total cost of approximately \$260,000, \$109,000 was covered by a DNR grant; the rest of the cost was largely borne by the Lake District property owners, along with some sizeable donations. From now on, our tax levy will be modest, but we are building up a reserve for potential dam problems or AIS incidents.
- Communication is on-going. The Lake District has a printed brochure available for distribution at both boat landings. It includes a brief history of the Flowage, a map of the waterways, and warnings about no-wake and AIS concerns.
- The Lake District Board has compiled a Manual for Board Members, with responsibilities for each Board Member and Officer. This will make it easier for recruiting new Board Members as needed, by bringing them “up to speed” quickly.
- The engineering firm that built our dam in 2016 inspected the dam last May, to be sure it is operating as expected. It was an interim - not a required ten-year - inspection. There were no problems with the dam. Some erosion of the road embankment was noted at the site of the old outflow. The Town added some fill.
- In 2018, we had a severe blue-green algae bloom on Baker Lake, with water clarity readings of 8” or less. It was back in 2019, but not as bad. A study was commissioned by the Lake District to understand the genesis of the bloom. It showed neither septic nor fertilizer as a cause, leaving forest nutrient runoff as the likely reason for the algae taking hold. Warmer water is also a factor. Blue green algae in Wisconsin lakes is now a top five priority for the DNR. The Lake District Water Quality Committee continues to monitor the water clarity on all three District water bodies.
- Water levels on the Little Tamarack Flowage, Spring Lake and Baker Lake are up again this spring. Our dam tender is closely monitoring the situation. The Lake District has a procedure in place for the holding of an emergency meeting to consider adjustment of the amount of water outflow should the situation warrant.
- Three of our 75 properties changed hands in the past 12 months, and a few are for sale.
- The consensus of property owners at the 2019 Annual Meeting was to join the Conover Town Lakes Committee, and provide a “State of the Lake” Report on an annual basis.

Respectfully submitted,

Sue Holloway 715-547-6048 eaglelight20@gmail.com
Nancy Vogt (alternate) bobandnancy4813@gmail.com



NSTLAKEDISTRICT.COM

***P.O. Box 152
Conover, WI 54519***

Twin Lakes 2019/2020 Update

April, 2020

The battles against EWM on the Twins was in full force in 2019! A summary of our actions follows;

- We performed a Fluridone whole lake treatment of S Twin in 2019 which included an initial treatment in June with 2 bump applications. The EWM was very stubborn to react to the herbicide but late in season did look very impacted and hopefully dead. The EWM is still standing under the ice and we are optimistic that once ice out occurs that we will have favorable results from our efforts. This treatment included very active water sampling to monitor herbicide concentration. Additionally, significant early season monitoring of temperature in the lake was completed to determine depth and timing of lake stratification in order to minimize the loss of herbicide if treatment occurred before stratification.
- We also performed a 14-acre treatment of ProcellaCOR on the SW end of N Twin. The initial results of this treatment were very positive with EWM falling over in approximately 2 weeks and little if any apparent impact to native plants was detected. We had divers examine and take pictures of the results and Onterra performed a late season survey of the treated segment with very good year of treatment efficacy results. The surveys will be critical as we continue to monitor and trend both invasive and native plant species.
- We performed 15 days of aggressive DASH activities on N Twin zones which had concentrations of moderate to dense EWM. The active DASH while effective is quite costly to get desired results in large and dense zones. Thus, we have determined that DASH would typically not be a suggested management practice where invasive colonies are 5 acres or more and instead would typically use DASH in colonies < 5 acres.
- Onterra performed fall surveys in the Twins with specific focus on the area of N Twin where we treated with ProcellaCOR in 2019 as well as pre survey treatment for the area we plan to treat this spring.
- We have expanded our activities/hours of participation in the CBCW this past year.
- We utilized a donation from the NSTLRA to help us replace educational signs at each of the 3 public boat landings on the Twins. They look great!
-

- WE have been very active in the education of our riparian's by;
 - o Sending a variety of email blasts to those members of the LD to inform them of actions we have taken, proposed legislation, educational materials and other pieces.
 - o We have continued to develop our website NSTLAKEDISTRICT.COM where we regularly provide minutes of meetings, permit and grant application and a variety of informational items we believe could be of value to any riparian.

What is Planned for 2020?

- We will be treating 10 acres of N Twin with ProcellaCOR which is our most significant area of EWM colonization on N Twin.
- We will be conducting up to 3 weeks of aggressive DASH on N Twin once EWM has begun growth.
- We intend to expand our CBCW hours at all landings this summer.
- We will be actively monitoring S Twin results of our 2019 Fluridone treatment to determine impact on both natives as well as EWM.
- We will be actively strategizing a variety of integrated pest management activities on the Twins which we may employ in the next 3-5 years.

We appreciate the support of the Phelps Lakes Committee both from a financial and idea sharing perspective as we continue our battle against invasive species.

Respectfully submitted,

Jay Wittman

NSTLPRD

NSTLAKEDISTRICT.COM ... "Preserving Your Up North Dreams ..."

North & South Twin Lakes Annual Report, February 26, 2020

North and South Twin Lakes, Vilas County, are approximate 2,788- and 642- acre drainage lakes, respectively. North Twin Lake flows into South Twin Lake, and South Twin Lake is drained via the Twin River flowing into Pioneer Lake (Figure 1.0-1). The outlet is controlled by a dam operated by the Wisconsin Valley Improvement Corporation (WVIC). Eurasian water milfoil (*Myriophyllum spicatum*; EWM) was first documented in this system in 2001.

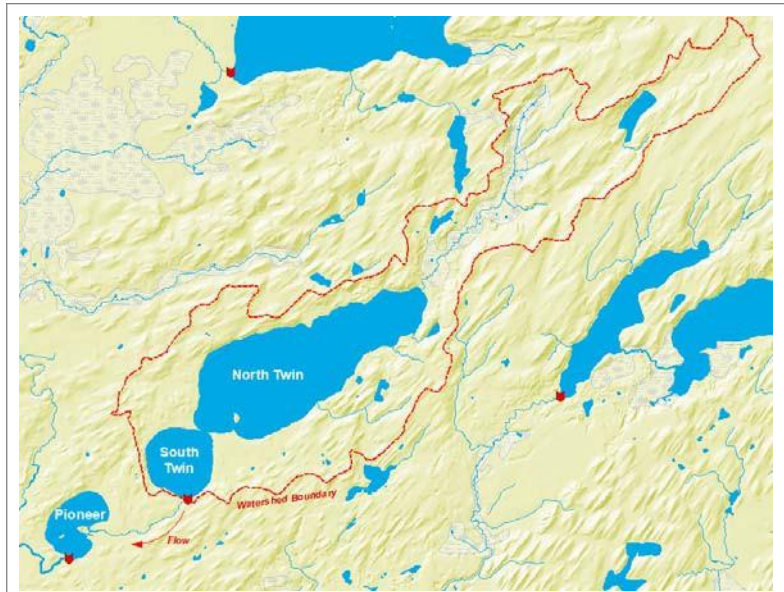


Figure 1.0-1 North & South Twin Lakes, Vilas County

Control Strategy Development

The District created an EWM population management goal for inclusion within *North and South Twin Lakes Comprehensive Management Plan* (June 2018), including a trigger for when an action would be considered for implementation. The District would initiate discussion, planning, and pretreatment stages of a whole-lake herbicide treatment when EWM populations measured from the point- intercept survey

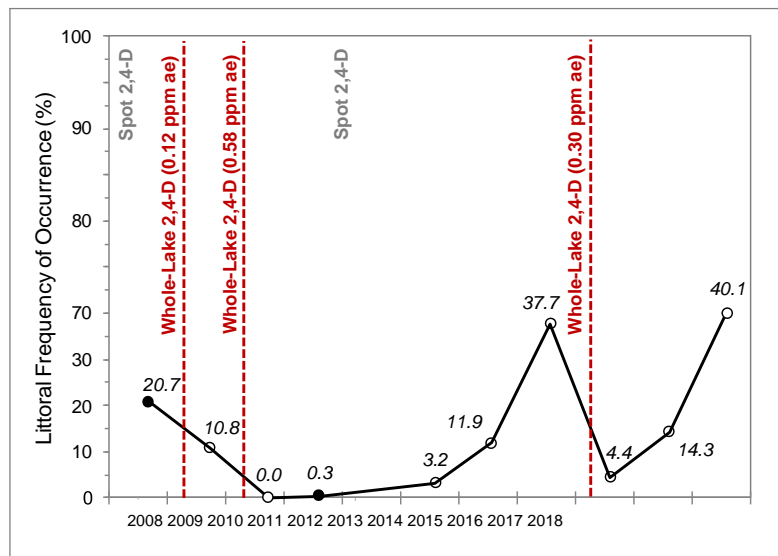


Figure 2.0-1. Littoral occurrence of EWM from South Twin Lake from 2008-2018. Open circle represents a statistically valid change from previous survey (Chi-square $\alpha = 0.05$).

exceed 12% littoral frequency of occurrence (LFOO). This threshold was based upon coupling the South Twin Lake point-intercept data at these levels with the Late-Summer EWM Mapping Survey data. When EWM populations exceeded this approximate benchmark in the past, *highly dominant* and *surface matted* conditions started becoming apparent.

North Twin Lake 2019 EWM Control Strategy

As outlined in the *North and South Twin Lakes Comprehensive Lake Management Plan* (June 2018), the NSTRLPRD created a strategy where the entirety of the EWM population on North Twin is being considered for active management. The goal of the Lake District is to use hand-harvesting as a preferred control mechanism, but has established a management trigger when herbicide spot treatment would be considered. If the following trigger is met, the Lake District would consider conducting herbicide spot treatments: “colonized areas where a sufficiently large treatment area can be constructed to hold concentration and exposure times (preference to *dominant* or greater density AIS populations).” The management action also indicates that spot treatments would likely need to be conducted with herbicides that are effective with anticipated short exposure times.

The area extending north from the entrance to South Twin Lake towards the Lakota Street boat landing experienced large increases in EWM density during the past few years and this site surpassed the Lake District’s threshold for consideration for herbicide spot treatment. This prompted the collection of pretreatment data during the late-season of 2018. Using a 23-meter spacing, 105 point-intercept sub-sample locations were placed over this site and data was collected in mid-October, with EWM being located at approximately 57% of sampling locations. The Lake District determined this site was a priority for active management during spring of 2019 and investigated potential treatment options.

Based on the results of the 2016 large-scale spot treatment, the Lake District did not believe that the combination 2,4-D and endothall use-pattern would meet expectations. The Lake District investigated Aquastrike™ (UPI), which is a commercially available combination of diquat and endothall. Ultimately, the Lake District chose florpyrauxifen-benzyl, commercially available as ProcellaCOR™ (SePRO). This herbicide is specifically designed to control invasive milfoil in short exposure time scenarios. ProcellaCOR™ is in a new class of synthetic auxin mimic herbicides (arylpicolinates) with short concentration and exposure time (CET) requirements compared to other systemic herbicides. Because this is a new herbicide, data available from field trials is relatively limited.

During the winter of 2018-2019, the Lake District worked closely with Onterra, WDNR, SePRO and other project partners in developing the specific components of the herbicide treatment strategy.

As follow-up measures from the 2016 large-scale spot treatment in the southern end of the lake near the island, the District implemented professional hand-harvesting with DASH in 2019. In addition to a greater amount of effort in 2019, the Lake District believed that greater strides in EWM population management can be achieved by implementing the strategy earlier in the growing season when EWM and native plants are at an earlier growth stage.

2019 North Twin Lake Monitoring Results – Herbicide Spot Treatment

Onterra staff completed a Pre-Treatment Confirmation and Refinement Survey on North Twin Lake on May 22, 2019. The purpose of the survey was to refine the proposed treatment area extents and average depths as well as to gauge the condition and growth stage of the EWM population in the site. Onterra also provided volunteers from the District with the training and supplies necessary to carry out the post-treatment herbicide concentration monitoring.

During the survey, the crew observed the condition of the EWM plants in the treatment area characterized by mostly brownish colored plants that were likely from biomass that persisted since the previous year.

Some new growth in the form of greenish colored meristems was observed on many plants. The crew confirmed the extent of the proposed application area and completed a sub point-intercept survey in the proposed site to determine the frequency of occurrence of EWM. The sub point-intercept survey showed EWM was present at 44 of the 105 sampling locations representing a 41.9% frequency of occurrence. The average depth of the application area was modified from 7.0 to 8.0 feet as a result of the survey. Based on the growth condition of the EWM observed during the pretreatment survey, and following consultation with SePRO, it was believed that the herbicide spot treatment would be more effective if the plants were allowed to gain more active growth to allow for greater herbicide uptake. Volunteers from the District monitored the progression of the growth stage of the EWM and other aquatic plants in the following weeks and relayed those observations to the project partners to aid in determining the appropriate timing of the herbicide treatment. The herbicide treatment was completed on the morning of June 17, 2019 by Clean Lakes, Inc.

The efficacy of the 2019 ProcellaCOR treatment site was evaluated through qualitative and quantitative methods following treatment. Additionally, herbicide concentration monitoring was conducted in the hours and days following the herbicide treatment during which trained volunteers from the NSTLPRD collected and shipped samples to SePRO's laboratory for analysis. The herbicide concentration monitoring plan associated with the treatment was developed by Onterra, WDNR, and SePRO with the intent of gaining sufficient data to aid in understanding the concentrations of floryprauxifen-benzyl that

were achieved in the treatment area in the hours and days after treatment. Samples were collected from four sites within the herbicide application area at six time intervals after treatment. A copy of the herbicide concentration monitoring plan as well as the results are included as Appendix A.

Only a few of the herbicide concentration monitoring samples collected in hours after treatment had concentrations of florpyrauxifen-benzyl above the detection limit (1 ppb). SePRO, the manufacturer of ProcellaCOR, has stated that the herbicide rapidly binds with the organic material which may have been the case in association with this treatment. With the large scale Fluridone treatment taking place in South Twin Lake during 2019, samples were collected from within the North Twin treatment area to test for the presence of Fluridone. None of these samples showed detectable levels of Fluridone.

2019 North Twin Lake Monitoring Results – Professional Hand Harvesting

Onterra staff completed a focuses Early Season AIS Survey on June 20, 2019. During the survey, only select areas of North Twin Lake were mapped where EWM has historically found and where preliminary hand-harvesting activities were being considered. The results where a total of four sites were included in the final DASH strategy for 2019.

The District contracted with Aquatic Plant Management, LLC to provide nine days of professional DASH services in 2019. AIS removal specialists from APM conducted harvesting activities on June 26- 28, July 8-12 and July 15, 2019. During the course of the removal efforts, a total of 853.5 cubic feet of EWM was harvested No removal efforts took place in three additional sites that were included in the permitted areas.

Onterra staff completed the 2019 Late-Season EWM Mapping Survey on North Twin Lake on September 10-11 & 17. The entire littoral area of the lake was included in the scope of the survey. The survey crews experienced variable weather conditions during the survey with a mix of sun and clouds, rain, and wind. Crews noted that the water appeared turbid at the time of the survey with lower water clarity than accustomed to. To supplement the visual survey, a submersible camera was deployed in select locations where active management occurred during 2019.

The survey results show colonized EWM present in approximately the same locations as has been documented in previous surveys. Colonized areas of EWM that consisted of *highly scattered, scattered, or dominant* densities were mapped in the vicinity of the island on the south end of North Twin Lake. The EWM population in the remaining areas of the lake was relatively sparse with a few congregations of *single or few plant* occurrences. The reduction in the EWM population in the site met or exceeded lake managers' expectations for the control strategy.

Pioneer Lake – State of the Lake Report June 2020

Background information:

The Pioneer Lake Association was established in September 2016 and became a non-profit, non-stock corporation in September 2017. Pioneer Lake is made up of 80 privately owned parcels.

In 2018 it was agreed to hire a Barb Gajewski of Many Waters to create a Lake Management plan for Pioneer Lake. She applied and awarded a grant for a Lake Management Plan. Meanwhile, Vilas County also received a directive lake grant to create a baseline study of Pioneer Lake. There was no previous study on record.

Throughout the Spring, Summer and Fall of 2019, the Vilas County Lake Conservation Specialist (Cathy Higley), a Vilas County Intern and one of our dedicated lake residents, spent 80+ hours taking water samples, weed specimens, shoreline evaluation and pictures to determine the health of the lake waters, fishing habitat, invasive species, shoreline erosion, woody habitat and concentration of piers and boat lifts. A 45 page draft of the report was provided in May of 2020 and distributed via email and Association website to the membership.

Key points of interest:

- Invasive species of Chinese Mystery Snail, Banded mystery snails and Narrow leaf cattail. Spiny waterflea and Zebra mussel data will not be available until fall of 2020. Invasive Eurasian Milfoil was found and verified on the downstream side of the Twin River – Monheim Rd. Crossing.
- Runoff, Erosion and bare soil were noted in report and are concerns to be addressed.

Beginning in 2019, two volunteers were trained on the use of Secchi disk to gather and record data on water quality. This is in conjunction with Sandy Wickman, Outreach Specialist of DNR Water Resource Management.

In 2019, a volunteer provided transportation and help facilitate water samples with a representative from South Twin Lake 4 times during the season. This was to determine if chemical being used to treat Milfoil on South Twin was coming into Pioneer Lake via connection creek.

2018-19 Six members were trained in the Clean Boat Clean Water Program. We have provided print resources and educated other members at our annual meeting.

2019 a buoy was donated by a lake member to be installed as a marker at a distended rock in mid water.

The Town of Conover installed a new public landing dock in 2019.

Immediate Future:

The Lake Management task force will be sending out a questionnaire to membership to gather data on lake use. Consultant, Barb Gajewski will use the results of Vilas County Report and the questionnaire to develop the Lake Management Plan.

A water level monitoring device is being researched and will hopefully be installed this summer. It is needed to accurately record water height as the setting of the Twin Lake Dam influences the height.

Continue education of residents regarding healthy lake living and care of property.

Soliet Lake Report

Very little has changed on Soliet Lake over the last year. It is a small bog lake. It has 5 riparian owners. Within the last 25 years, lily pads have begun to grow on the edges of the lake and the shore in some places have become less swampy. This probably indicates there has been a silt build up over time. There are small fish in the lake resulting from stocking done by one of the owners several years ago but they never seem to grow in size. It is just a serene, picturesque small lake tucked away in the woods.

State of the Lake, Stormy Lake

We are rather fortunate at Stormy Lake not to have the obvious and devastating effects from AIS as some other lakes in the area.

Stormy Lake does harbor the Spiny Water Flea. It is a small, virtually invisible crustacean with a "spine" which makes it unpalatable to most small fish. It reproduces quickly and effectively (even asexually). The spiny water flea feeds on zooplankton (largely Daphnia) that are the bottom of the food chain - thus affecting the fishery from the bottom up. Its presence can also foster algae blooms because of Daphnia loss. There is ongoing research seeking predators, but currently the flea grows unchecked.

Anecdotally, I see turbidity in the water I've not seen before. I'm not sure if this is a seasonal issue (pollens, recent storms, etc.) or a long term trend. We will monitor it.

Like most other lakes, Stormy Lake water levels are abnormally high. Coupled with high levels of power boat activity and water skiing, shoreline erosion is an ongoing threat.

Weeds are creeping slowly into Stormy Lake. Time will tell if this is a result of the rise in water levels encroaching on the shoreline seedbed or a concession to the long term eutrophication process of all lakes.

I believe the biggest challenge to the health and viability of Stormy Lake is the apathy of the riparian owners. I have tried for two years to organize participation in the CBCW program to no avail. The attitude seems to be "It can't happen here, so why bother."

If more visible AIS arrives, the likely response will be: ""What are YOU going to do about it?" I wish it weren't so.

Respectfully submitted,

Tom Navratil rtnavratil@gmail.com 262-880-2142

State of the Lake report for Upper and Lower Buckatabon

June 8th 2020

We've had a very busy past year on Buckatabon Lakes. Following is a report on what we've been up to on these two lakes.

We first discovered EWM on Upper Buckatabon in August of 2015. We have been actively managing the spread of this invasive ever since then. This past year we have worked on EWM management using funds provided by the DNR through our 2nd Rapid Response Grant. In 2015, our first grant provided immediate funding for monitoring and removing the invasive aquatic plant.

Even with these grants and using both divers and DASH to remove infestations of EWM it has continuously spread in the Upper Lake and has slowly moved in to portions of the lower lake. This year we will be limited in our removal efforts due to lack of funds.

Our lake assn, Buckatabon Lakes Assn., has been working with our contractor, Many Waters, to develop and complete a Lake Planning Grant application. Following email for further information

We will once again be participants in Citizen Lake Monitoring Network, CLMN. We have been participants in this DNR program for the past 3 years doing water collection on both lakes, sample preparation, and shipping to State Lab for DNR analysis.

Weevil study. We are just starting a possible 3+ year study raising weevils for EWM control. We will be working closely with the Vilas County Land and Water Conservation department and the DNR. The DNR is funding this project. We will be active volunteer participants in this process. See following email for further explanation.

As we do every year we recently installed Buoys in Upper Buckatabon stating AIS AREA KEEP OUT. These were approved by the DNR and overall have been effective in keeping boat traffic out of a heavily AIS area. This helps to minimize fragmentation of the EWM and reduces the spread

This past fall we purchased and planted 3,000 six " to eight" walleye in both lakes. DNR approval was obtained with specifics as to what walleyes were acceptable to plant in our lakes. We obtained funding through various fund raising activities with no funding from the DNR. This coming fall we have current plans to plant another 3,000 walleye with the same specifications.

We are starting the installation of an AIS weed bag dispenser kiosk at the Upper Buckatabon boat landing for collection of EWM that fishermen and recreational boaters may snag while out on the lake.

Lake District development - Over the last year the year the Buckatabon Lakes Assn has begun the baby steps toward forming a Lake District. The first step was to educate the Board of Directors regarding the process and the ramifications of a Lake District. It was our intention to hit the ground running and begin the arduous process of identifying all of the landowners on the lakes and determining how each parcel was held so we could build a mailing list for ballots that must be sent to each owner. Covid-19, however, has slowed our plan of hitting the ground running to something slightly greater than a standstill. The County Courthouse is now open again and we can now proceed with our plan. We realize that forming a Lake District is a very precise process and we are determined to get it right the first time. We still hope to maintain our planned timetable of getting ballots to the riparian owners in the early spring of 2021.

Retro fitting pontoon boat - Buckatabon Lakes Association recently purchased the base frame and hull of a 20' pontoon boat to be remodeled by BLA members. The boat will be used for monitoring the spread of EWM as well as removal efforts for this AIS.

Finally, we are in our final year of our second Rapid Response Grant.

Submitted by Daniel Benson

Please see the following report:

**Buckatabon Lakes Eurasian Watermilfoil Control and
Prevention Rapid Response Project**

Wisconsin Department of Natural Resources
Surface Water Grants Program
Aquatic Invasive Species
Grant # AIRR-23419

Buckatabon Lakes Eurasian Watermilfoil Control and Prevention Rapid Response Project

Upper and Lower Buckatabon Lakes - Vilas County, WI

2019 Annual Reporting

Submitted To:
Wisconsin Department of Natural Resources
Attention: Carol Warden, Aquatic Invasive Species Specialist –UW Trout Lake
Trout Lake Station, 3110 Trout Lake Station Dr, Boulder Junction, WI 54512
Phone: 608.890.4721

And

Buckatabon Lakes Association, Inc.
P.O. Box 133
Conover, WI 54519

Submitted By:

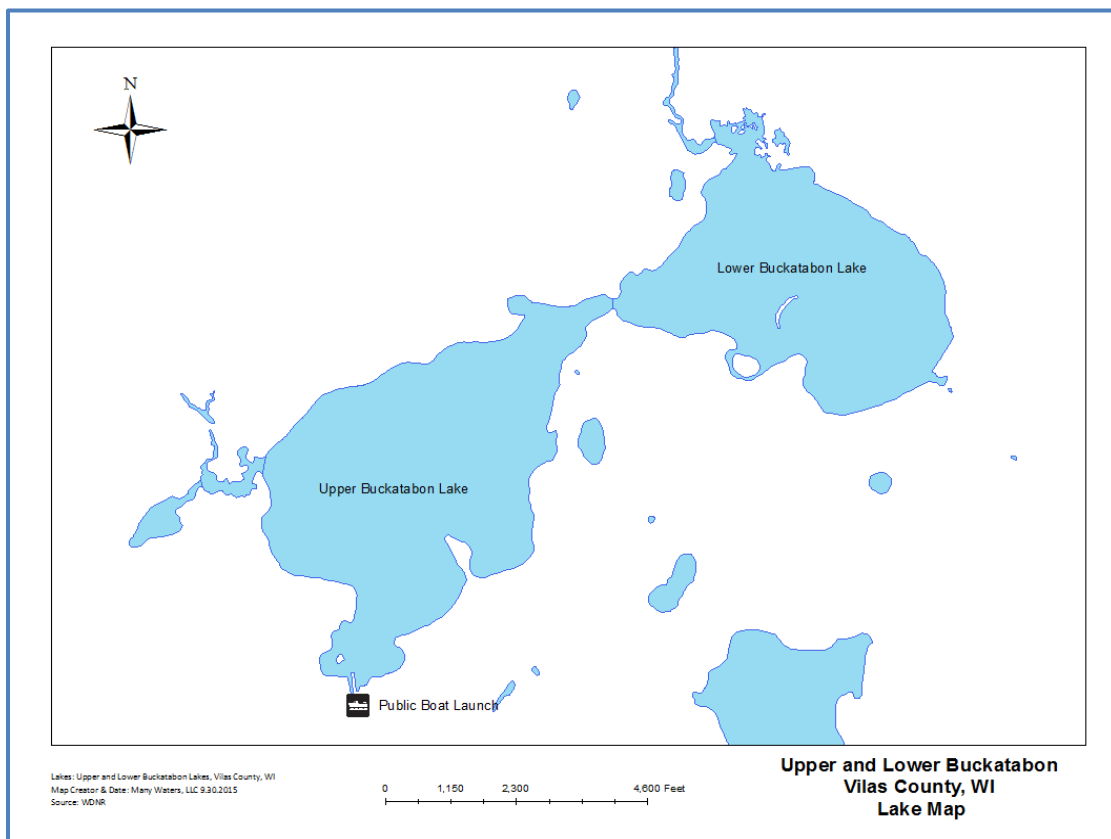
Many Waters, LLC
2527 Lake Ottawa Road
Iron River, MI, 49935
906.284.2198

Contact: Bill Artwich; billartwich@gmail.com
Barb Gajewski; skih2o@hotmail.com

PROJECT OVERVIEW

Upper and Lower Buckatabon Lakes are connected water bodies located in Conover Township, Vilas County, WI with 493 and 378 surface water acres respectfully. Upper Buckatabon has a maximum depth of 47 feet and Lower Buckatabon has a maximum depth of 16 feet. Both lakes are drainage lakes and Two-Story Natural Communities. The WDNR defines two-story lakes as those that “are often more than 50 feet deep and are always stratified in the summer”. These lakes have the potential to support coldwater fish, such as Cisco, in cooler deeper waters of the lake. Recently, the WDNR listed both Upper and Lower Buckatabon Lakes on the State’s impairment listing for exceeding phosphorous levels defined for a two-story natural community.

Buckatabon Creek flows into Upper Buckatabon Lake from the north. This creek is a cool-cold headwater creek that supports a Class II trout stream. Located in the Tamarack Pioneer River Watershed, land cover is primarily forests (63%), wetlands (18%), and open water (10%). This watershed ranks medium for nonpoint sources affecting lakes. A dam owned and operated by Wisconsin Valley Improvement Company is located along the eastern end of Lower Buckatabon that drains Buckatabon Creek to the Wisconsin River. A public boat launch owned by Vilas County is located on Upper Buckatabon, whereas a channel between Upper Buckatabon and Lower Buckatabon provides public access to Lower Buckatabon. Private boat launches also provide access to Lower Buckatabon. Aquatic invasive species known to occur on the Buckatabon Lakes include banded mystery snails, Chinese mystery snails, Eurasian watermilfoil and yellow iris.



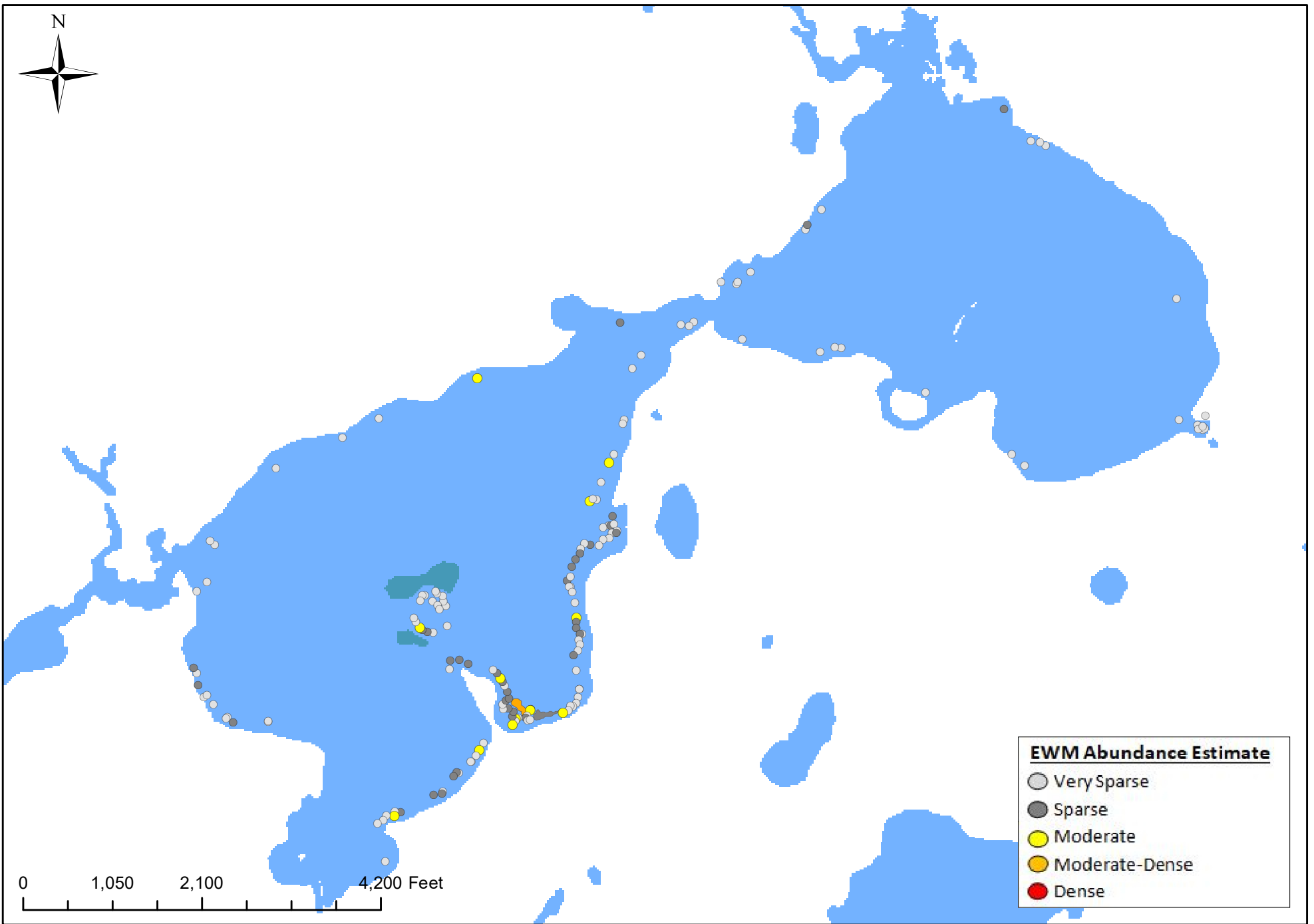
This report is a summary of 2019 activities completed under the WDNR Aquatic Invasive Species Grant # AIRR-23419 for Eurasian watermilfoil (EWM) including (1) Eurasian watermilfoil (EWM) monitoring, (2) EWM management strategies and, (3) discussion of project highlights.

EWM SEASONAL MONITORING

Aquatic invasive species (AIS) monitoring targets Eurasian watermilfoil but includes other aquatic and wetland invasive plant species. The first survey, timed during the first half of the growing season, reconfirms previous EWM locations to refine management strategies and monitors for EWM, mainly in shallow waters. The second survey, timed to capture EWM plants at or near their greatest annual growth potential occurs during the second half of the growing season and includes deeper waters and off shore locations where vegetation grows.

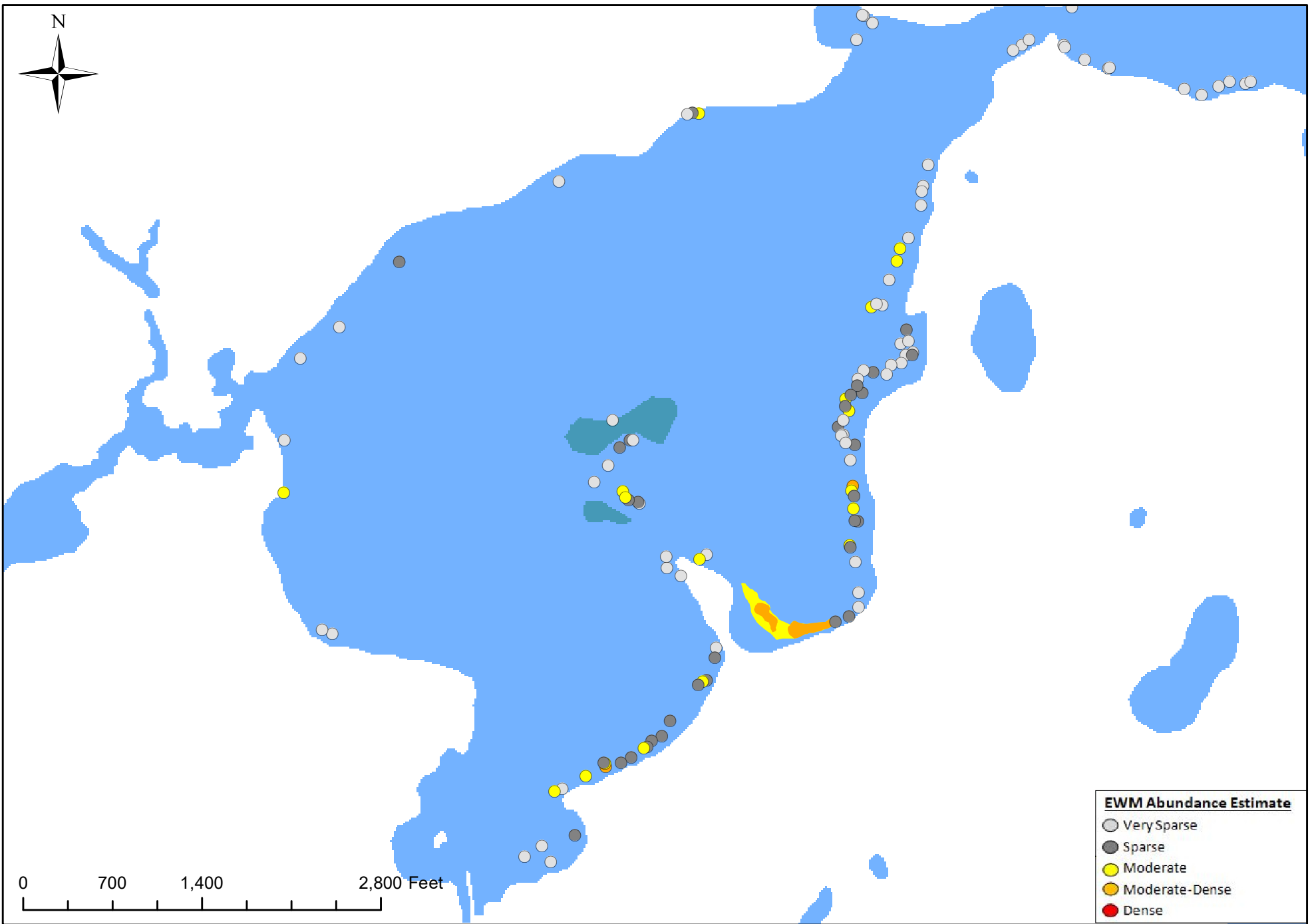
Monitoring efforts are qualitative in nature, meaning information collected describes the condition or population of the target AIS rather than relying on measured or quantitatively collected and calculated values. Smaller sites are geo-referenced with a GPS point and extent is determined by visually estimating coverage in foot-circumference. This is an observed estimate of exact extent, not footprint. On average, these sites are less than a 0.10 of an acre in size. Larger sites, typically greater than a 0.10 of an acre in size, are circumnavigated and extent in acres is calculated and represented on a map with a polygon.

Early season monitoring took place on July 8th and focused on relocating existing EWM locations and high likelihood areas including boat launches, shallow bays and regions adjacent to known locations. Populations of EWM within the general regions of previous known sites grew in size and density since the end of the 2018, with highest abundances found in Upper Buckatabon. Multiple new locations of EWM found on Lower Buckatabon consisted of sparse to very sparse colonies. Mid/Late season EWM monitoring took place on September 28th detecting EWM in the general locations already known to exist on Upper and numerous new locations on Lower Buckatabon Lakes.



Lake: Upper and Lower Buckatabon, Vilas County, WI
Map Date & Creator: 8.13.19, updated 3.18.20, Many Waters, LLC
Survey Date: 7.8.19
Source: WDNR hydro, EWM-Many Waters
File: Buckatabon_ES_2019

**Early Season EWM Survey
Upper and Lower Buckatabon Lakes
2019**



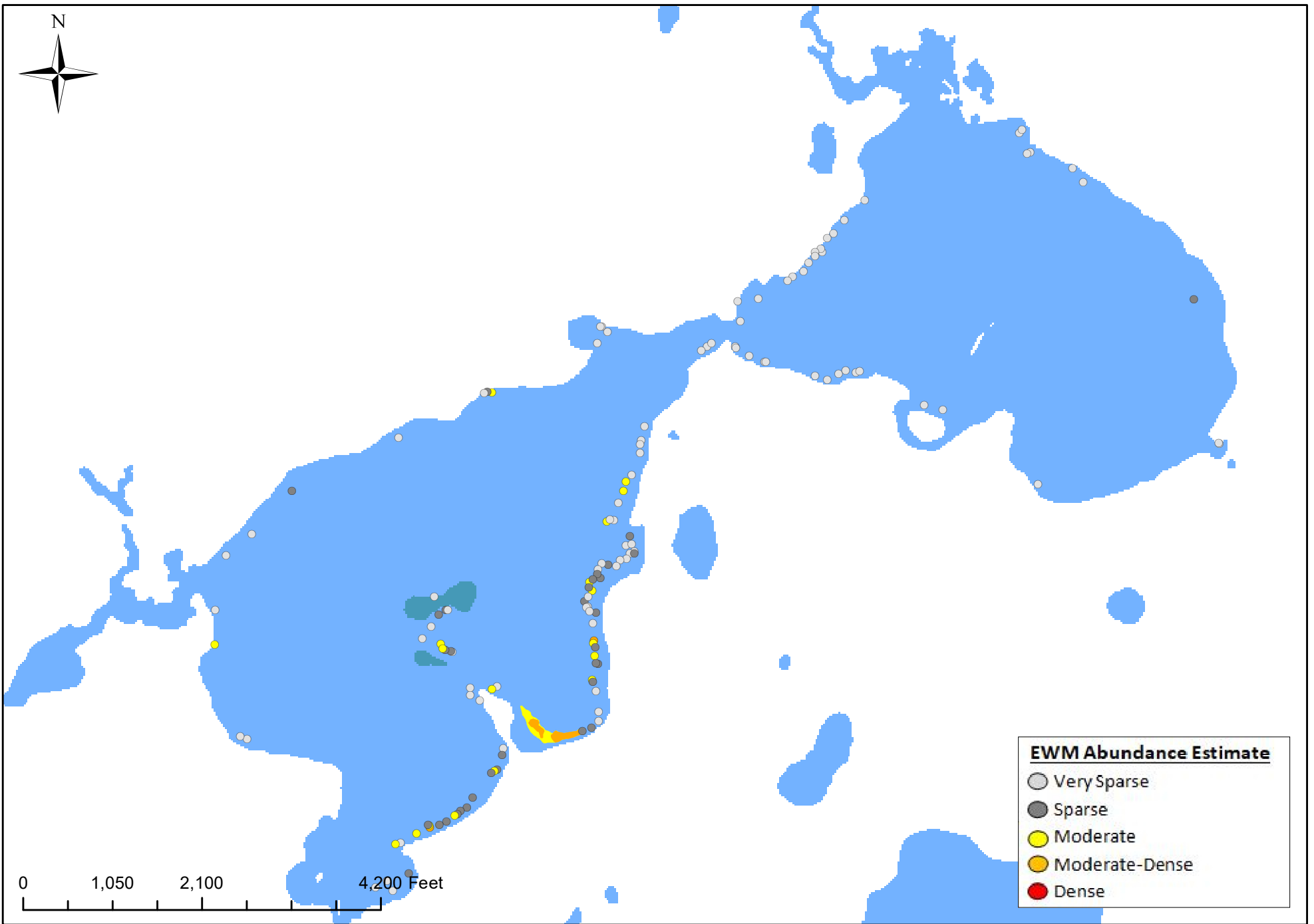
Lake: Upper Buckatabon, Vilas County, WI
Map Date & Creator: 3.18.20, Many Waters, LLC
Survey Date: 9.28.2019
Source: WDNR hydro, EWM-Many Waters
File: Buckatabon_MLSS_EOY_2019

**Upper Buckatabon Lake
Mid/Late Season EWM Survey
2019**



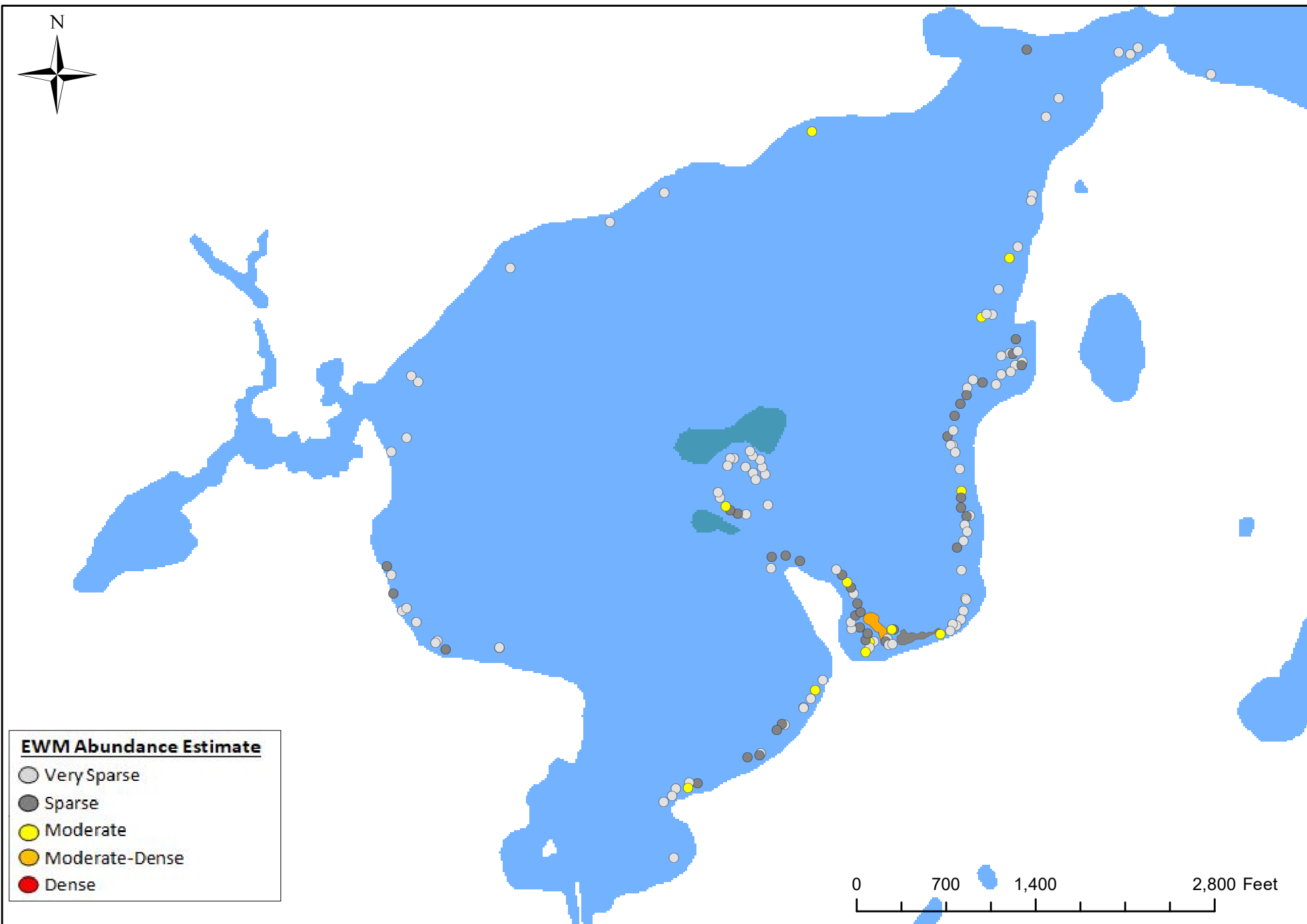
Lake: Lower Buckatabon, Vilas County, WI
 Map Date & Creator: 8.13.19, updated 3.18.20, Many Waters, LLC
 Survey Date: 7.8.19
 Source: WDNR hydro, EWM-Many Waters
 File: Buckatabon_ES_2019

**Early Season EWM Survey
 Lower Buckatabon
 2019**



Lake: Upper and Lower Buckatabon, Vilas County, WI
Map Date & Creator: 3.18.20, Many Waters, LLC
Survey Date: 9.28.2019
Source: WDNR hydro, EWM-Many Waters
File: Buckatabon_ES_2019

**Mid/Late Season EWM Survey
Upper and Lower Buckatabon Lakes
2019**



Lake: Upper Buckatabon, Vilas County, WI
Map Date & Creator: 8.13.19, updated 3.18.20, Many Waters, LLC
Survey Date: 7.8.19
Source: WDNR hydro, EWM-Many Waters
File: Buckatabon_ES_2019

**Early Season EWM Survey
Upper Buckatabon
2019**



Lake: Lower Buckatabon, Vilas County, WI
Map Date & Creator: 3.18.20, Many Waters, LLC
Survey Date: 9.28.2019
Source: WDNR hydro, EWM-Many Waters
File: Buckatabon_MLSS_EOY_2019

**Lower Buckatabon Lake
Mid/Late Season EWM Survey
2019**

EWM MANAGEMENT

Due to the expansion of EWM across Upper Buckatabon and several new locations of EWM found in Lower Buckatabon, EWM management sought to reduce distribution (foot-print) of EWM rather than overall abundance. The approach included hand removing all EWM locations on Lower Buckatabon and emphasizing low density and regionally isolated sites on Upper Buckatabon. The distribution reduction rationale was to target these smaller less dense sites before they could potentially expand and reduce lake-wide footprint. This meant that no DASH work was performed in 2019. Given the current status of EWM of Upper Buckatabon, DASH efforts may have reduced EWM abundance at very localized level, but would have done very little to reduce lake-wide abundance or foot-print.

All known locations based on the early season mapping were dove on Lower Buckatabon. In total divers removed 200 plants weighing 30 pounds (wet weight). Dive efforts focused on isolated locations of EWM on Upper Buckatabon starting north of the boat launch working clock-wise around the lake to the first moderate colony found just south of the entrance to the springs. In total divers removed 67 plants weighing 14 pounds (wet weight).

Figure 1: Change in EWM acreage (point based and polygon based mapping combined) categorized by estimated abundance 2015-2019 – Upper and Lower Buckatabon Lakes Combined.

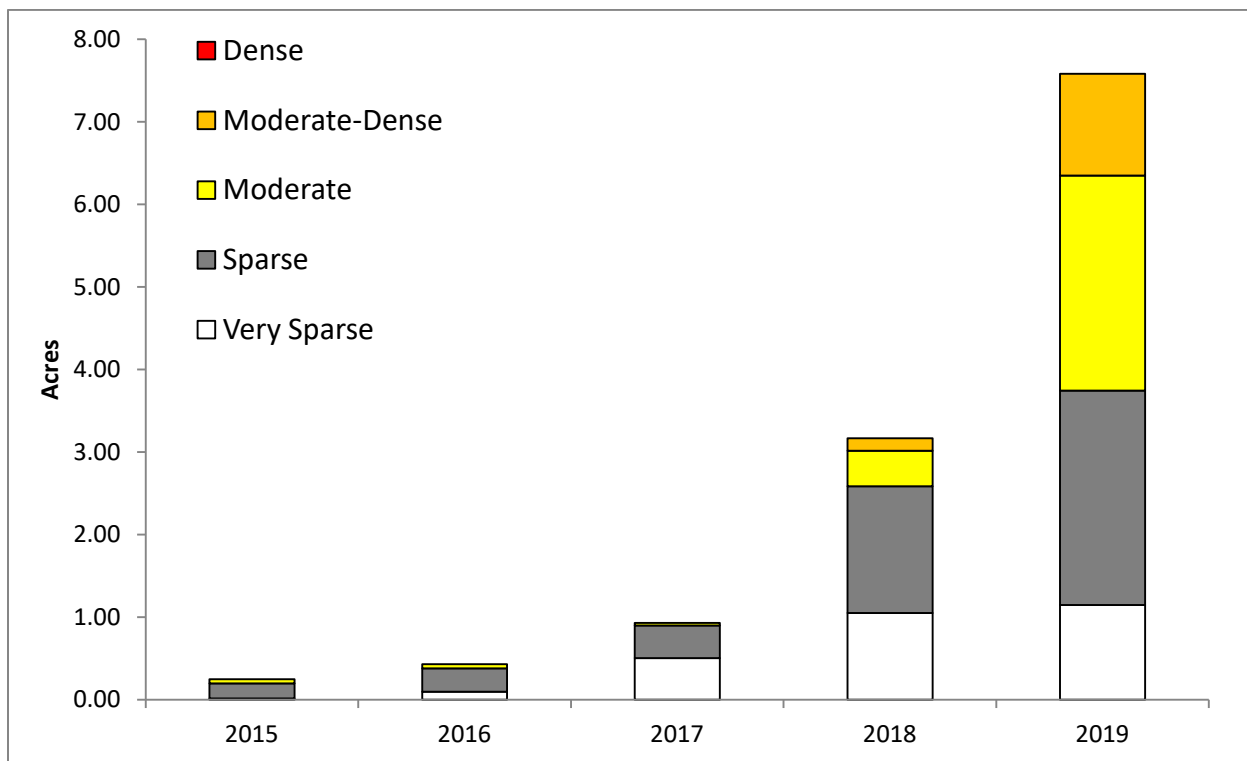


Table 1: Change in EWM acreage (point based and polygon based mapping combined) categorized by estimated abundance 2015-2019 – Upper and Lower Buckatabon Lakes Combined.

EWM Abundance Estimate	2015	2016	2017	2018	2019
Very Sparse	0.02	0.10	0.50	1.05	1.15
Sparse	0.18	0.28	0.40	1.54	2.60
Moderate	0.05	0.05	0.03	0.43	2.61
Moderate-Dense	0.00	0.00	0.00	0.15	1.23
Dense	0.00	0.00	0.00	0.00	0.00
TOTALS (acres)	0.25	0.43	0.93	3.17	7.58

FUTURE MANAGMENT EWM

Eurasian watermilfoil can potentially alter native aquatic plant ecosystems and cause recreational use and impairment issues. Conversely, not all lakes may experience high populations of Eurasian watermilfoil, particularly in Northern Wisconsin.¹ Recent WDNR research suggests that across the State of Wisconsin, many lakes do not reach lake-wide high densities, as previously once thought. Nonetheless, it is important to recognize that aquatic ecosystems are dynamic and a lake may have a “low” lake-wide EWM population, but still experience localized lake use and access issues caused by EWM. Annual variations in both native and invasive plants occur and further research is needed to understand how lake ecology and climate may play a role in seasonal variability. Lake-wide, EWM makes up a small portion of the aquatic plant community on both Upper and Lower Buckatabon Lakes. A point intercept survey in 2019 detected a frequency of littoral occurrence of EWM on Upper Buckatabon Lake of 1.80% and 0.23% on Lower Buckatabon.

Many sites on Upper Buckatabon documented in 2018 have expanded in 2019, with a notable expansion along most of the southeastern shore. The current EWM population represents a small portion of the total littoral area colonized; however, there are sites on Upper Buckatabon Lake that are at nuisance levels. There is subjectivity in defining nuisance, based on perspective, lake use, and knowledge of invasive species. However, a narrative description of the regions of nuisance would describe EWM effecting reasonable access and use of the lake and in some locations impede watercraft mobility. Having to motor around EWM beds to access property or having to clear a prop is affecting reasonable access and lake use. To address spread caused in EWM abundant areas of the lake, the BLA buoys off these areas to limit boat traffic and fragmentation caused by boat props. The main area currently buoyed each year is the bay located southeast of the islands. Continuing a foot-print reduction with the use of hand removal and DASH, coupled with additional control measured discussed below would be the designed approach going into 2020.

End of the season EWM locations on Lower Buckatabon have varied since monitoring began in 2015, with anywhere from zero to 13 sites documented. At the end of the 2019 season, monitoring detected 39 EWM locations. Most sites still consist of sparse to very sparse EWM. Continuing to target each known location one to two times a season would be the designed approach going into 2020.

The BLA is taking a very proactive approach to EWM management and AIS prevention. Prevention efforts include participating in Clean Boats Clean Waters inspections and initiating a new campaign in 2020 to educate lake users about the importance of not tossing all weeds collected on recreational equipment back into the lake. The BLA is working with Vilas County Land and Water Conservation Department to initiate a weevil rearing program for Buckatabon Lakes. The County received WDNR surface water grant funds and will be working with Association members on this project beginning in 2020. Golden Sands RC&D Council is providing technical assistance and 2020 stock weevils.

¹ Nault, M. 2016. The science behind the “so-called” super weed. Wisconsin Natural Resources 2016: 10-12.