1.0 INTRODUCTION

Bass Lake is an approximate 150-acre seepage lake located in Oconto County. The lake has a public landing and a large public beach on its southeast shore. Eurasian watermilfoil (EWM) was discovered in Bass Lake during the summer of 2024. A professional EWM mapping survey was completed in early-fall 2024 to get a census of the population throughout the lake. Samples collected during the 2024 survey were confirmed through DNA analysis to be hybrid watermilfoil (HWM).

Photo 1.0-1. Bass Lake, Oconto County.

The Bass Lake Improvement Association, Inc. (BLIA) is the local organizations overseeing management of Bass Lake. On December 9, 2024, a public meeting was held with the BLIA Board of Directors and Onterra staff. The meeting was held in person with some association members joining via videoconference. The meeting was recorded and provided to other interested association members that could not attend in person. The meeting included an introduction to HWM's lifecycle, monitoring techniques, population dynamics in unmanaged lakes, the use of herbicides and hand-harvesting, and options for an integrated management strategy. Following the meeting, several questions were answered and the board of directors used the information to develop a project utilizing a WDNR AIS Early Discovery Response grant to provide funding assistance for additional monitoring and management activities during 2025-2026.

This report serves as a deliverable for the EDR grant # AIRR30625 and discusses the HWM management and monitoring activities that took place during 2025.

1.1 2025 HWM Monitoring & Management Strategy

The BLIA's integrated strategy for HWM management during 2025 included two herbicide treatments: a spot treatment in the western bay of the lake which was anticipated to impact HWM throughout the bay, and a small spot-treatment site that employs the use of a barrier curtain to aid in maintaining herbicide concentration exposure time (Map 1). The two treatments were anticipated to be independent of one another, and meaningful lake-wide herbicide concentrations were not anticipated. These treatments targeted some of the densest known colonies of HWM within the lake and were located in sites where navigational impairment was occurring during 2024 (Map 2).

The protected nature of site A-25 within a bay on the west end of the lake was believed to be advantageous in terms of holding herbicide concentration exposure times to sufficient levels to achieve HWM mortality, and it was expected that the herbicide would mix within the bay and be of a concentration such that HWM impacts would be expected throughout the bay.

Few case studies have employed barrier curtains with ProcellaCOR surrounding small treatment sites as was proposed at site B-25. The efficacy of the 2025 barrier curtain treatment would be valuable for BLIA and state regulators to understand as it relates to consideration for potential future treatment designs of a similar nature.

The BLIA's integrated management strategy for 2026 also included a professional manual removal effort. Several pre-determined sites were given consideration for harvesting efforts during 2025 and were prioritized based on strategic location and site characteristics (Map 3). The 2025 harvesting efforts would allow BLIA to learn about this type of management strategy and its potential for use in the future within Bass Lake.

1.2 Pretreatment Confirmation and Refinement Survey

Onterra ecologists completed the pretreatment confirmation and refinement survey on June 6, 2025. Parameters such as plant growth stage, water temperature, and water depth were investigated to confirm the final treatment strategy. A pH reading of 8.6 was recorded and water temperatures were 69-70°F in the treatment sites. During this visit, Onterra staff delivered the equipment and monitoring supplies related to the herbicide concentration monitoring efforts being completed by volunteers.

Photo 1.3-1. HWM plants observed during June 6, 2025 pretreatment survey on Bass Lake. Photo by Onterra, LLC

This survey was conducted using a combination of survey methods (visual, rake tows) but largely consisted of visual observations as most of the HWM was visible from the surface. The extents of the colonies approximately matched the footprint mapped during 2024. HWM plants were observed with green growth at the tips (apical meristems) indicating a sufficient growth stage for herbicide absorption (Photo 1.3-1). Based upon the condition of the plants, Onterra indicated that the treatment was ready to take place as soon as applicator logistics allow and final approval from WDNR is obtained. The herbicide application was completed by Aquatic Plant Management, LLC on June 17, 2025. The applicator noted 1 mph winds during application and no adverse conditions present.

A sub-set point-intercept survey was also conducted during the June 6, 2025 pretreatment survey where 45 sampling points were visited within the western bay of the lake in the vicinity of treatment site A-25. These data would be compared to a replication of the survey from data collected during the summer 2025 whole-lake point intercept survey discussed in section 2.1 below.

Volunteer members of the BLIA successfully constructed and deployed a barrier curtain surrounding site B-25 near the public boat landing (Photo 1.3-2). The curtain was installed the day prior to treatment as was removed three days after treatment, as per state regulations.

Photo 1.3-1. Barrier curtain installed by BLIA . Photo credit: BLIA.

2.0 2025 MONITORING RESULTS

Two types of aquatic plant surveys are discussed in the subsequent materials: 1) point-intercept surveys and 2) HWM mapping surveys. Overall, each survey has its strengths and weaknesses, which is why both are utilized in different ways as part of this project.

The point-intercept aquatic plant 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 (Photograph 2.0-1). The survey methodology allows comparisons to be made over time, as well as between lakes. The point-intercept survey is most often applied at the whole-lake scale. The whole-lake point-intercept survey has been conducted on Bass Lake in 2017 and was replicated during 2025. A sub-sample point-intercept survey was utilized in this project to specifically assess a management activity, in this case the 2025 herbicide treatment site A-25. In this scenario, a select portion of the whole-lake point-intercept survey grid located where management was occurring was sampled pretreatment and was replicated post-treatment for comparative analysis.

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. HWM grows high in the water column, which can cause recreation and navigation impediments. This factor allows it to typically be mapped through surface observation. During an HWM mapping survey, the entire littoral area of the lake is surveyed through visual observations from the boat (Photograph 2.0-2). Field crews may supplement the visual survey by deploying a submersible camera along with periodically doing rake tows. The HWM 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 HWM locations that were considered as *small plant colonies* (<40 feet in diameter), *clumps of plants*, or *single or few plants*.

Photograph 2.0-1. Point-intercept survey on a WI lake. Photo credit Onterra.

Photo 2.0-2. HWM/EWM mapping survey on a Wisconsin lake. Photo credit Onterra.

2.1 Quantitative Monitoring: Sub-Set of Whole-lake Point-Intercept Survey

A sub-set of the whole lake point-intercept survey grid was sampled before and after the 2025 herbicide treatment to quantitatively assess the aquatic plant population (Figure 2.1-1). A total of 46 sampling points were included in the study located within a bay on the west end of Bass Lake where herbicide was expected to mix within and be impactful to HWM and other sensitive plants.

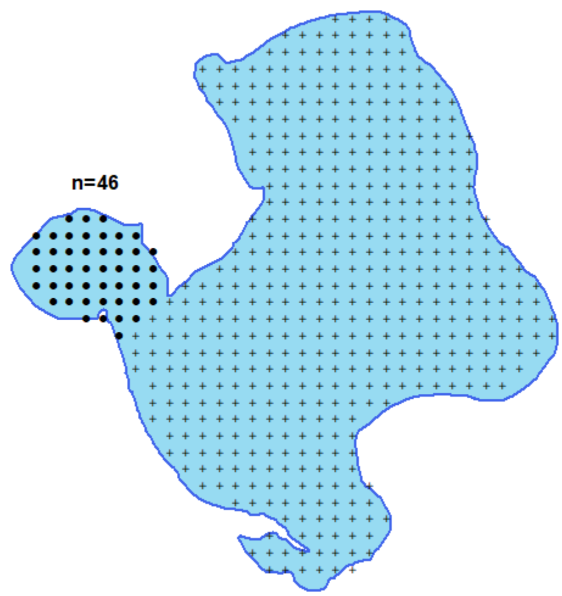


Figure 2.1-1 Sub-Set Point-Intercept Survey Sampling Locations. n=46

During the *pretreatment* point-intercept survey, HWM was found at 20% of the sampling locations and was reduced to 0% during the *year of treatment* (Figure 2.1-2). This 100% decrease in occurrence aligns with expectations for ProcellaCOR treatments for the year of treatment.

Figure 2.1-2 compares the littoral frequency of occurrence of aquatic plant species from the June 6, 2025, pretreatment and July 21, 2025, post-treatment sub-set point-intercept surveys on Bass Lake. The post-treatment data was collected approximately five weeks after the herbicide treatment took place.

Muskgrasses (*Chara* spp.) were the most frequently encountered species in each survey. Muskgrasses typically do well in systems with good water clarity. These species are not susceptible to herbicides used to control HWM and their populations were not statistically different during the period of study.

Common waterweed (*Elodea canadensis*) was relatively common in the pretreatment survey with an occurrence of 15.6% and was not sampled during the post-treatment survey (0%). Common waterweed is not known to be particularly susceptible to ProcellaCOR spot-treatments, with more cases studies indicating no change or increases in occurrences; however, it's decline in this study could be related to the treatment.

The combined occurrences of slender naiad (*Najas flexilis*) and southern naiad (*Najas guadalupensis*) were 0% in the pretreatment survey and increased to 18.6% in the post treatment survey. The increased occurrence of this species may be due to its annual growth cycle in which it may not have been exhibiting much growth at the time of the pretreatment survey. Several other native species were present in low amounts in either replication of the survey but were not statistically different.

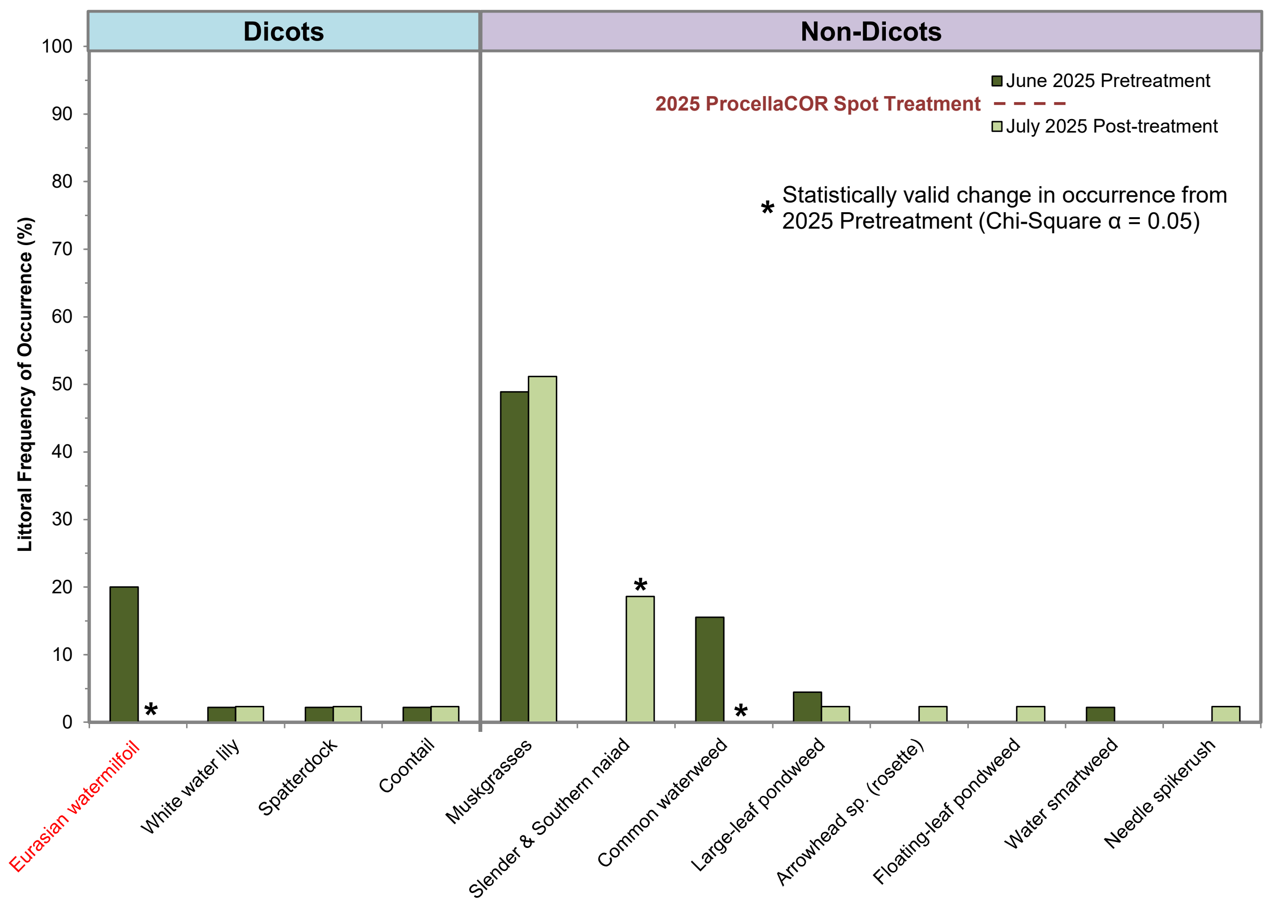


Figure 2.1-1. Littoral Frequency of Occurrence of aquatic plants from 2025 sub-set point-intercept surveys in Bass Lake. (n=46)

2.2 Qualitative Monitoring: HWM Mapping Surveys

The pretreatment HWM population was documented during an October 1, 2024, Late-Season HWM Mapping Survey. After treatment, the HWM population within site A-25 was reduced in the targeted area such that no colonized areas were delineated and the only remaining plants consisted of *single of few plants* or *clumps of plants* occurrences (Figure 2.2-1). The HWM plants observed in the September 2025 mapping survey within site A-25 were green and healthy in appearance and were relatively short-statured. It is assumed that these plants either survived treatment and recovered or were introduced to the site after treatment and were just beginning to grow.

Site B-25 comprised approximately 0.4 acres and targeted a *highly dominant* and *surface matted* HWM colony identified during 2024. No HWM was located in this site during the late-season 2025 mapping survey, indicating that the barrier curtain herbicide treatment appears to have been successful (Figure 2.2-1 – bottom frames. *Single or few plants* HWM occurrences were marked in a few locations around the lake in the 2025 survey including on the north end of the lake and within a small bay on the south end of the lake (Map 4).

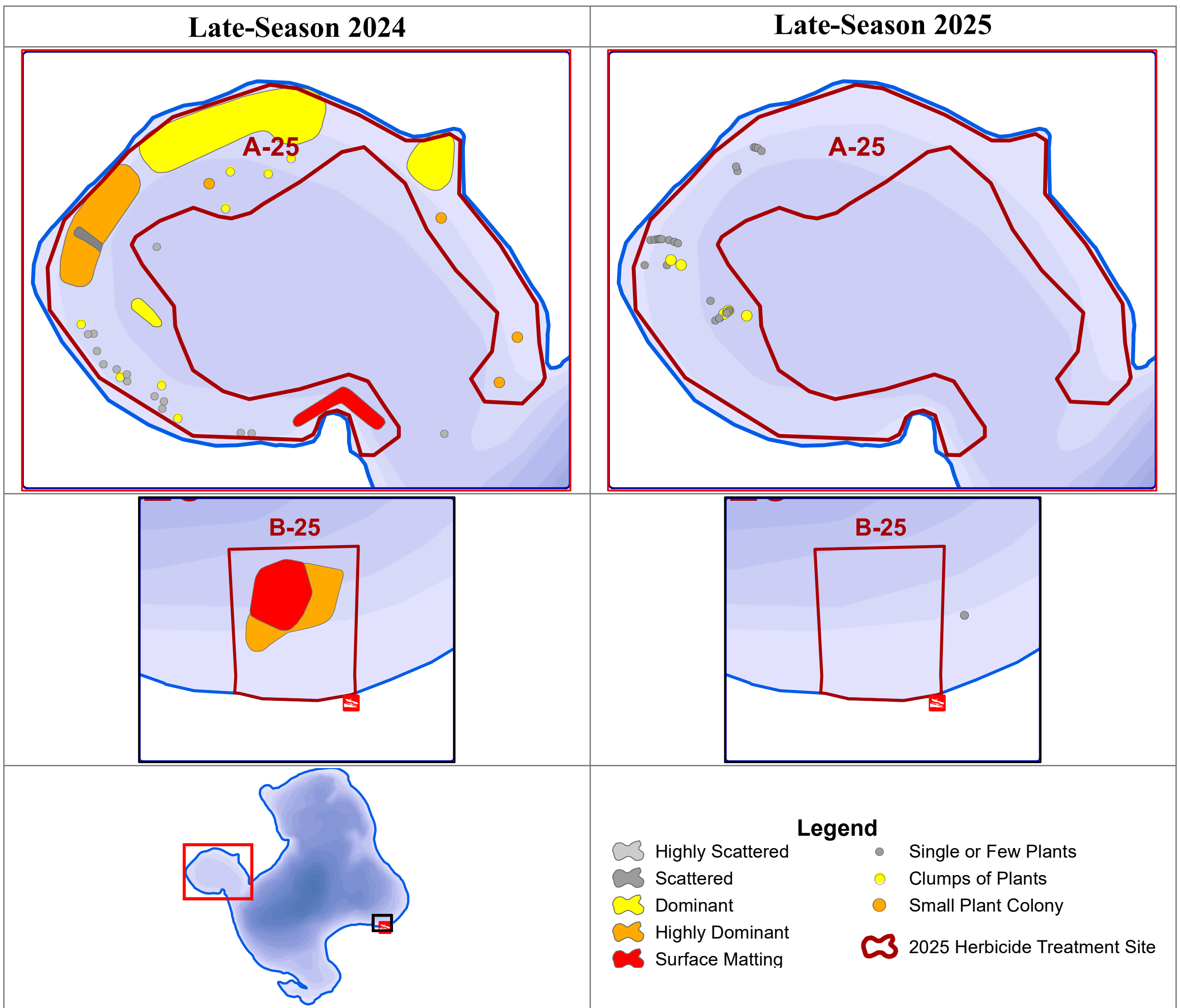


Figure 2.2-1 HWM population before and after herbicide treatment in sites A-25 & B-25.

2.3 Herbicide Concentration Monitoring

The herbicide concentration monitoring plan associated with the treatment was developed by Onterra and the WDNR, with the intent of gaining sufficient data to aid in understanding the concentrations of herbicide that were achieved after treatment. Samples were collected at three sites within Bass Lake following treatment – two within direct application areas (B1 and B2), and one site located at the deepest hole in the lake's center (B3) where herbicide was not directly applied. A copy of the herbicide concentration monitoring plan is included as Appendix A. All samples were collected by local volunteers and upon completion of the sampling, were shipped to the Wisconsin State Lab of Hygiene for analysis. The WSLH has lower detection limits for florpyrauxifen-benzyl (0.05 ppb vs 0.06 ppb) and florpyrauxifen acid (0.048 ppb vs .150 ppb) compared to EPL Bioanalytical Services which was used in prior years.

The active ingredient of ProcellaCOR is florpyrauxifen-benzyl (FPB). Following herbicide application, concentrations of FPB are initially high within the lake and immediately start to degrade (Figure 2.3-1). Based upon Onterra's experience with whole-lake ProcellaCOR treatments, FPB typically degrades below detection limits in 7-14 days after treatment (DAT). FPB degrades into a number of derivate chemicals including the acid metabolite (florpyrauxifen acid, FP acid). Albeit to a lesser degree, the acid metabolite has herbicidal properties and continues to impact EWM and other sensitive plant species, which is why testing is directed towards it. As a product of FPB degradation, FP acid concentrations typically peak around 7-14 DAT following whole-lake treatments, often earlier in lakes with higher pH. The degradation of FP acid into inert components is less predictable than for FPB, with concentration often being below detection limits by 30-40 DAT but may persist out to 70 DAT or longer on some systems.

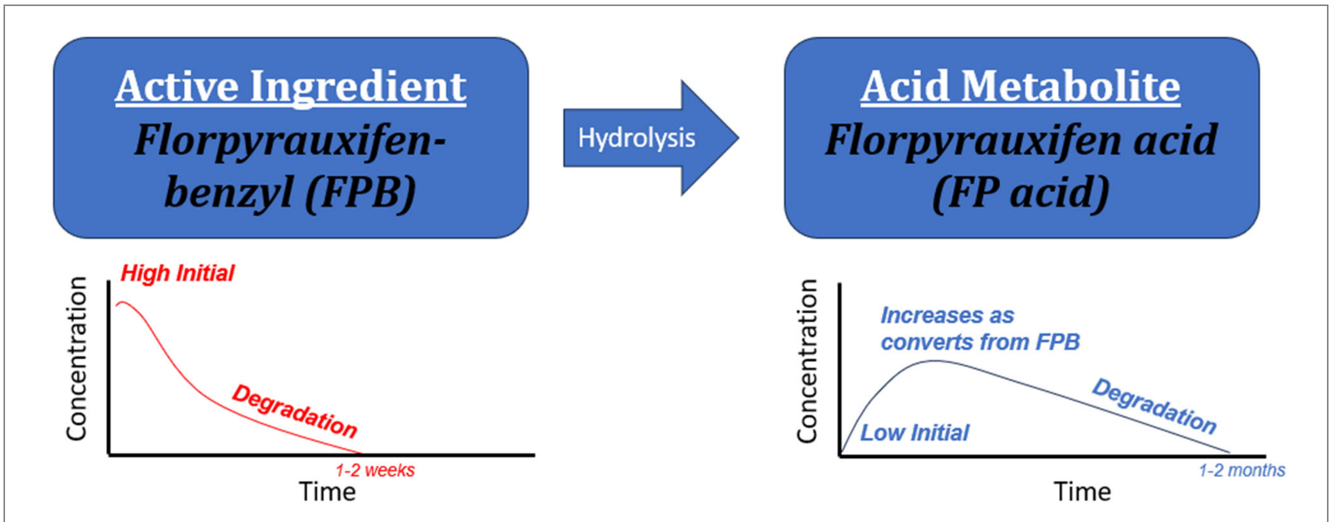


Figure 2.3-1. Schematic of ProcellaCOR degradation. Created by Onterra.

The FPB concentrations within the first 24 HAT were similar between sites B1 and B2 as expected, assuming herbicide mixing occurred within the western bay of the lake (Figure 2.3-2). The active ingredient was below detection limits at 3 DAT and all subsequent sampling intervals. FPB was not detected at site B3 in the center of the lake at any sampling intervals, which is an indication that the herbicide did not mix throughout the lake and thus lake-wide impacts to HWM and sensitive native plants would not be expected.

FPB acid has herbicidal properties and continues to impact HWM and other sensitive plant species which is why it is also studied. In association with the 2025 Bass Lake treatment, FPB was below detection limits at all time intervals which was somewhat unexpected.

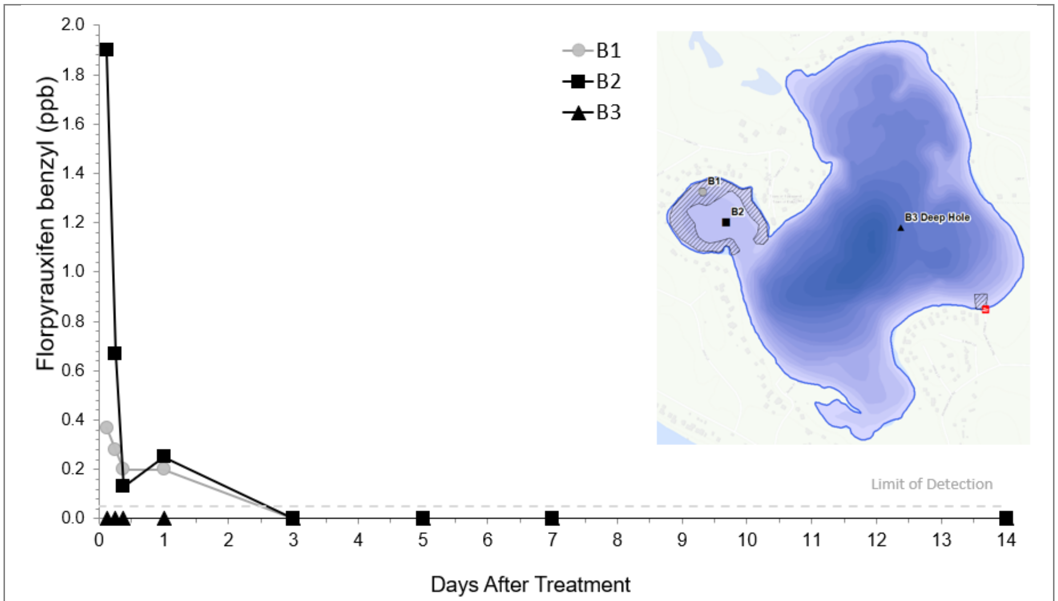


Figure 2.3-2. Florpyrauxifen-benzyl concentrations following a June 2025 ProcellaCOR herbicide treatment on Bass Lake. Limit of detection = 0.06 ppb.

2.4 Whole-lake Point-Intercept Survey

The whole-lake point-intercept survey was completed by Onterra ecologists on July 21, 2025. This survey serves to assess the entire aquatic plant population in the lake and is not directly related to monitoring of the 2025 HWM management activities. A sub-set of these data was used to evaluate the A-25 treatment as discussed in section 2.1 above. The whole-lake point-intercept survey included visiting 339 sampling locations spaced at a 33-meter resolution. Aquatic plants were present at depths out to 22 feet, resulting in a total of 271 sampling points that were within the littoral area of the lake, or at depths of 22 feet or less. A total of 20 native aquatic plant species were encountered during the survey along with one non-native species (HWM). Figure 2.4-1 displays the littoral frequency of occurrence of all aquatic plants encountered during the survey. Muskgrasses (*Chara* spp.) were by far the most frequently encountered native plant species in the lake, while slender & southern naiad were common as well. Most native species had a littoral frequency of occurrence of less than 2%. Eurasian watermilfoil was present at one sampling location in the 2025 survey resulting in an occurrence of 0.4% (Map 5).

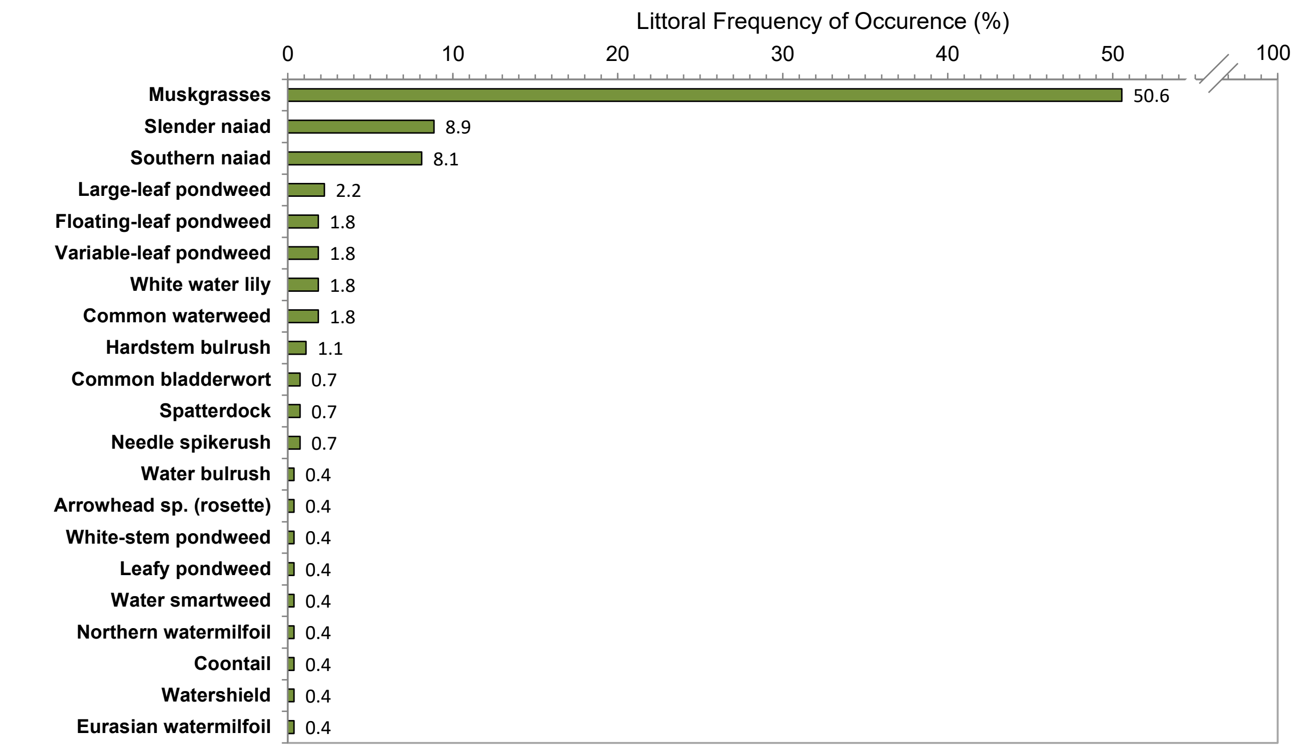


Figure 2.1-1. Littoral Frequency of Occurrence of aquatic plants from July 2025 whole-lake point-intercept survey in Bass Lake. (n=271)

3.0 PROFESSIONAL HAND HARVESTING/DIVER ASSISTED SUCTION HARVEST SUMMARY

The BLIA contracted with Aquatic Plant Management, LLC during 2025 to conduct professional hand harvesting efforts, including the use of diver assisted suction harvesting (DASH), at known HWM locations around the lake that were not a part of the herbicide management strategy. Spatial data from the 2024 HWM population was provided by Onterra to APM, LLC to aid in guiding the removal efforts. A summary report issued by APM, LLC provides details of the professional harvesting activities and is included as Appendix B. Contracted divers from APM, LLC conducted harvesting activities on July 31-August 1, 2025. Divers encountered modest HWM around the pre-determined DASH work sites with less HWM present than expected based upon previous HWM mapping surveys. Dive crews shifted to other known HWM locations on the northeast and northwest shorelines where 7.7 cubic feet of HWM was hand pulled. The dive team noted that some root crowns with missing stalks were present in some of the work areas, and many fragments were resting on the lakebed in some work sites.

4.0 CONCLUSIONS & DISCUSSION

The 2025 HWM management and monitoring strategy was implemented as planned for Bass Lake. The initial result of the herbicide treatment shows a high level of HWM reduction in the target areas with modest amounts of HWM detected lake-wide post-treatment. While the *year of treatment* results are promising, the *year after treatment* results from 2026 are needed to get a full understanding of treatment efficacy. Measured herbicide concentrations were consistent with expectations for FPB, but lower than anticipated for FPB acid. The role of FPB acid in treatment outcomes is not fully understood and is a topic of interest in future studies.

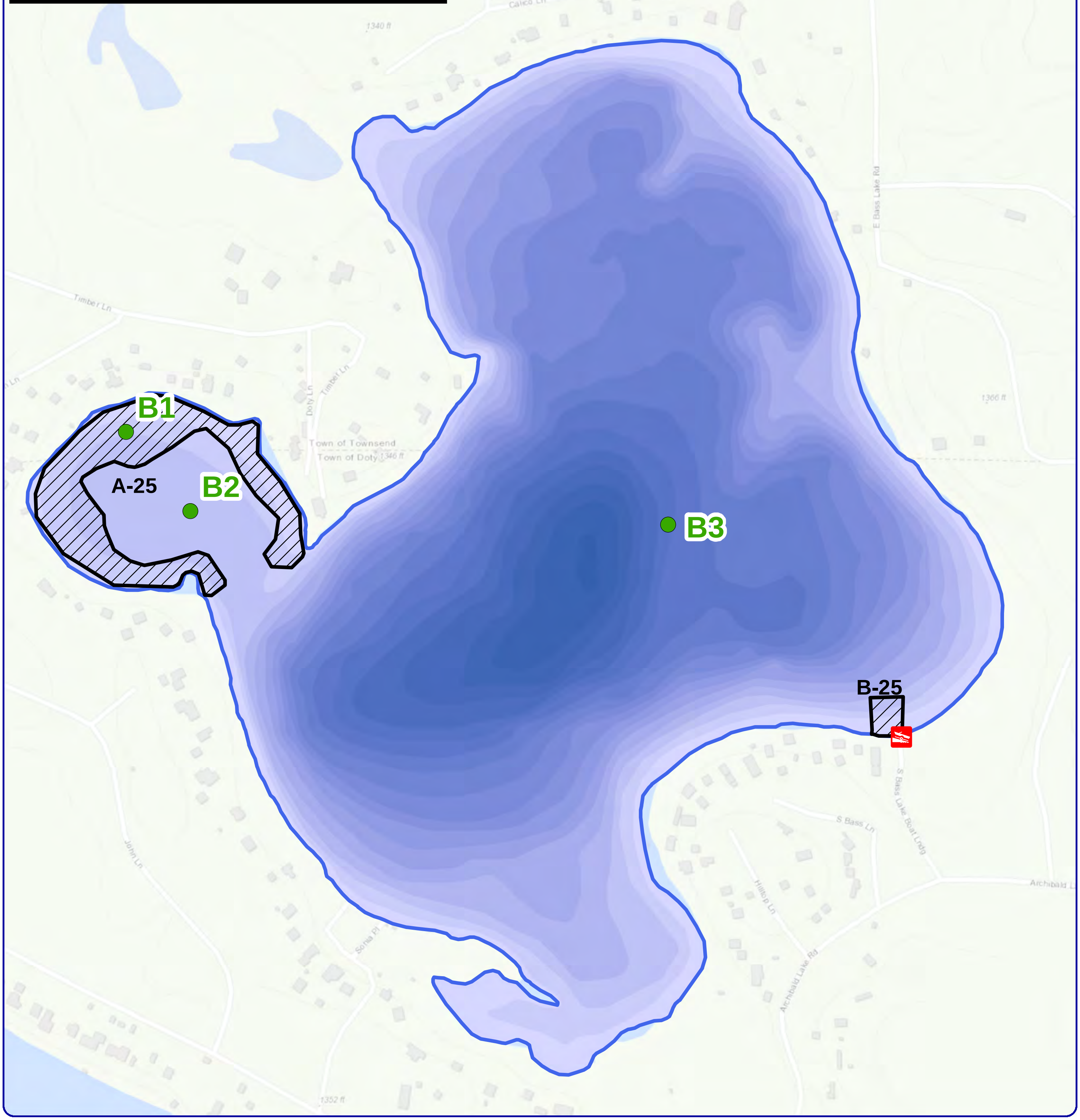
Lake-wide reductions of HWM were observed in 2025, and it is difficult to determine what role the herbicide treatments may have played in that result. Notes by the professional dive team from July 31-August 1 indicated that some HWM plants were reduced to root crowns without plant stems in work sites that were not in direct herbicide application areas. This observation may be the result of sub-lethal exposure to herbicide, where plants are injured but root crowns remain viable from which regrowth may occur. The lack of detectable levels of herbicide at site B3 in the center of the lake suggests that lake-wide mixing did not occur and that herbicide impacts beyond the vicinity of the application areas may be limited. It will be important to monitor HWM sites in 2026 to determine whether plants were able to survive the 2025 treatment and regrow in 2026.

The scope of the open EDR-Grant project includes funding for transmission of data to an active management firm, replication of the subset point-intercept survey in the western bay of the lake, and associated reporting. If available funds remain from the grant for the active management activities (herbicide or hand harvesting), BLIA should consider applying these funds to a professional hand harvesting strategy in 2026. Data from the late-season 2025 HWM mapping survey would guide any harvesting activities. All known HWM occurrences documented in 2025 would be appropriate for a manual removal management strategy in 2026. Harvesting efforts on the scale of 1-2 days may be sufficient to target all known HWM occurrences in 2026.

The BLIA applied for a WDNR planning grant in the fall 2025 cycle which provides funds to assist in the creation of an aquatic plant management plan. Aspects of that project include full analysis of the 2025 whole-lake point-intercept survey, a replication of the late-season HWM mapping survey, a floating-leaf/emergent plant community mapping survey, a riparian stakeholder survey, and planning meetings. The replication of the HWM mapping survey will serve to evaluate the 2025 treatment strategy as it relates to expected longevity of control. The development of an aquatic plant management plan will serve to guide the BLIA's HWM management strategy for approximately the next five years and would incorporate the knowledge and experience gained from the 2024-2025 HWM monitoring and management activities that have taken place on Bass Lake. The APM plan that is created will be consistent with current understandings of Best Management Practices in relation to HWM management.

2025 Final EWM Control Strategy *ProcellaCOR Spot Treatment*					
Site	Acres	Avg Depth (ft)	Volume (acre-ft)	PDU Rate (per acre-ft)	PDU Total
A-25	6.0	4.5	27.0	5.0	135
Total	**6.0**		27.0		135

2025 Final EWM Control Strategy *ProcellaCOR Spot Treatment w/in Limno Curtain*						
Site	Acres	Avg Depth (ft)	Volume (acre-ft)	PDU Rate (per acre-ft)	PDU Total	Curtain Length (ft)
B-25	0.4	5.0	2.0	8.0	16	~400
Total	**0.4**		2.0		16	



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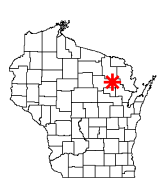
www.onterra-eco.com

Sources
Roads and Hydro: WDNR
Bathy: WDNR, digitized by Onterra
Aquatic Plants: Onterra, 2024
Basemap: ESRI AGOL
Map Date: 6-9-2025 TWH



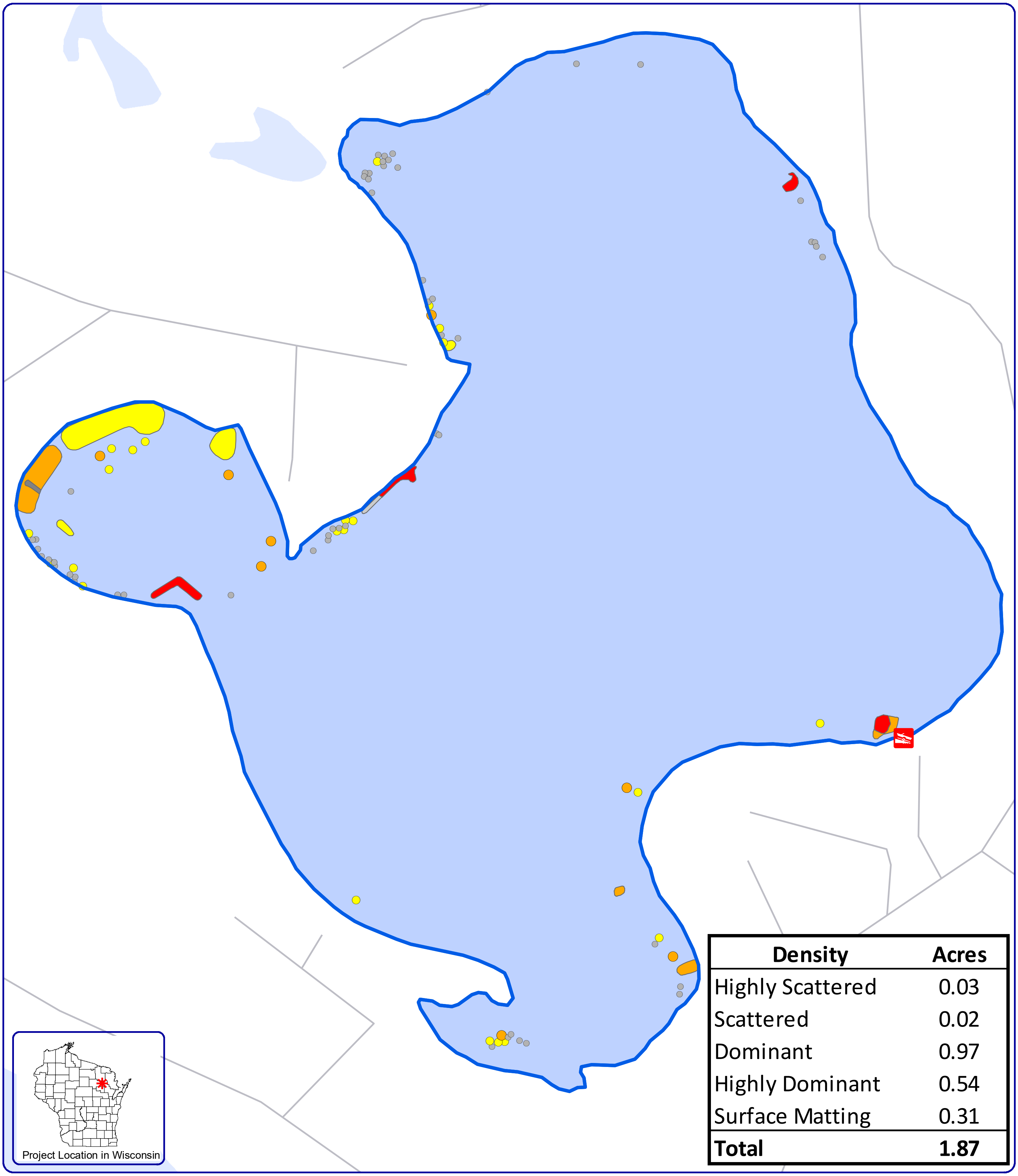
Project Location in Wisconsin

Legend

2025 Treatment Site

Herbicide Concentration Monitoring Location

Map 1
Bass Lake
Oconto County, Wisconsin
Final 2025 EWM Treatment Strategy



Density	Acres
Highly Scattered	0.03
Scattered	0.02
Dominant	0.97
Highly Dominant	0.54
Surface Matting	0.31
Total	**1.87**

Legend

Eurasian watermilfoil (October 1, 2024)

- Highly Scattered
- Scattered
- Dominant
- Highly Dominant
- Surface Matting
- Single or Few Plants
- Clumps of Plants
- Small Plant Colony

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Sources
Roads and Hydro: WDNR
Aquatic Plants: Onterra, 2024
Map Date: October 3, 2024 - ALC

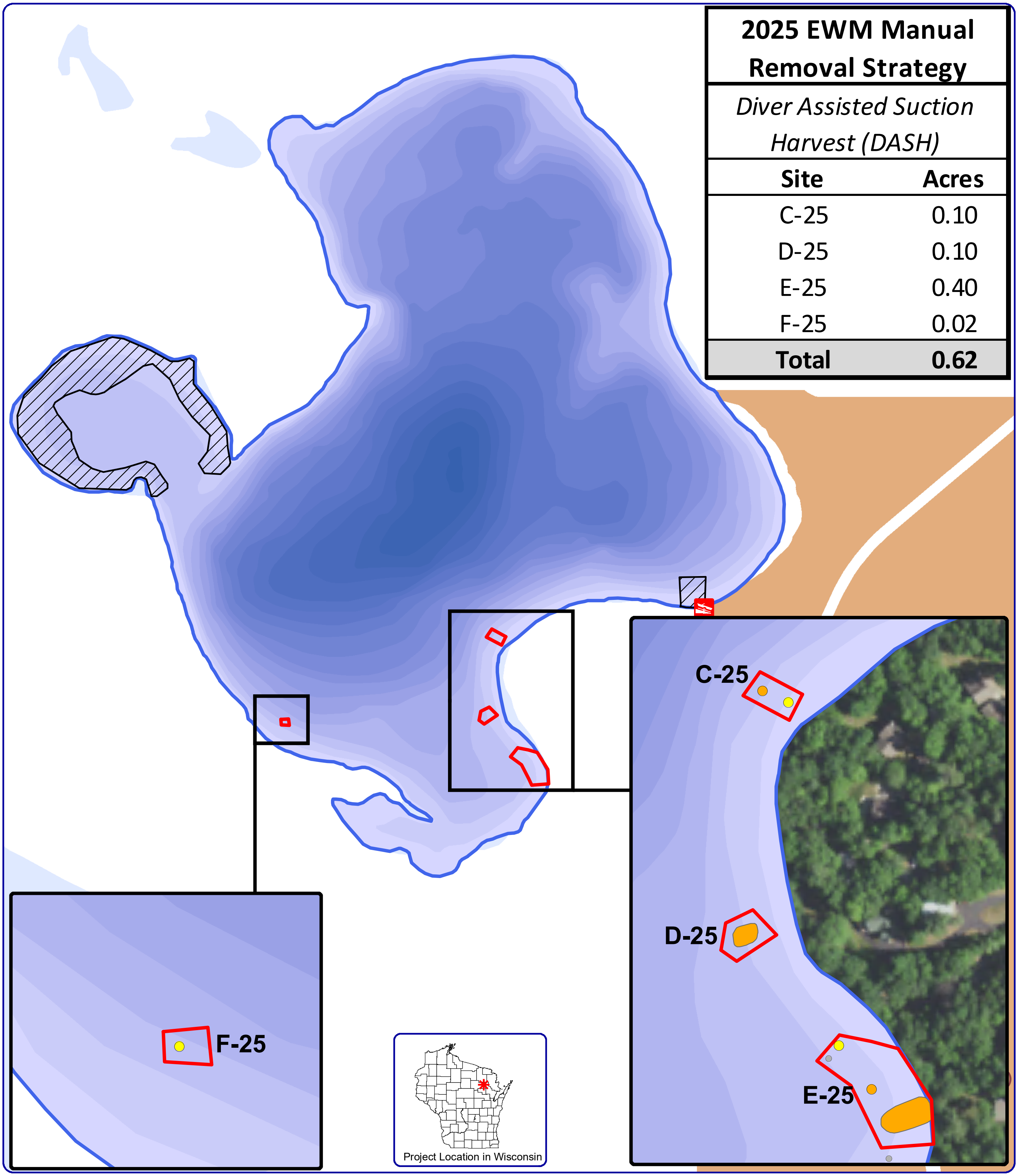
Map 2
Bass Lake
Oconto County, Wisconsin

October 2024
Eurasian Watermilfoil
Survey Results

2025 EWM Manual Removal Strategy

Diver Assisted Suction Harvest (DASH)

Site	Acres
C-25	0.10
D-25	0.10
E-25	0.40
F-25	0.02
Total	**0.62**



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Legend

Eurasian watermilfoil (October 1, 2024)

- Highly Scattered
- Scattered
- Dominant
- Highly Dominant
- Surface Matting
- Single or Few Plants
- Clumps of Plants
- Small Plant Colony
- 2025 EWM DASH Site
- 2025 Herbicide Treatment Sites

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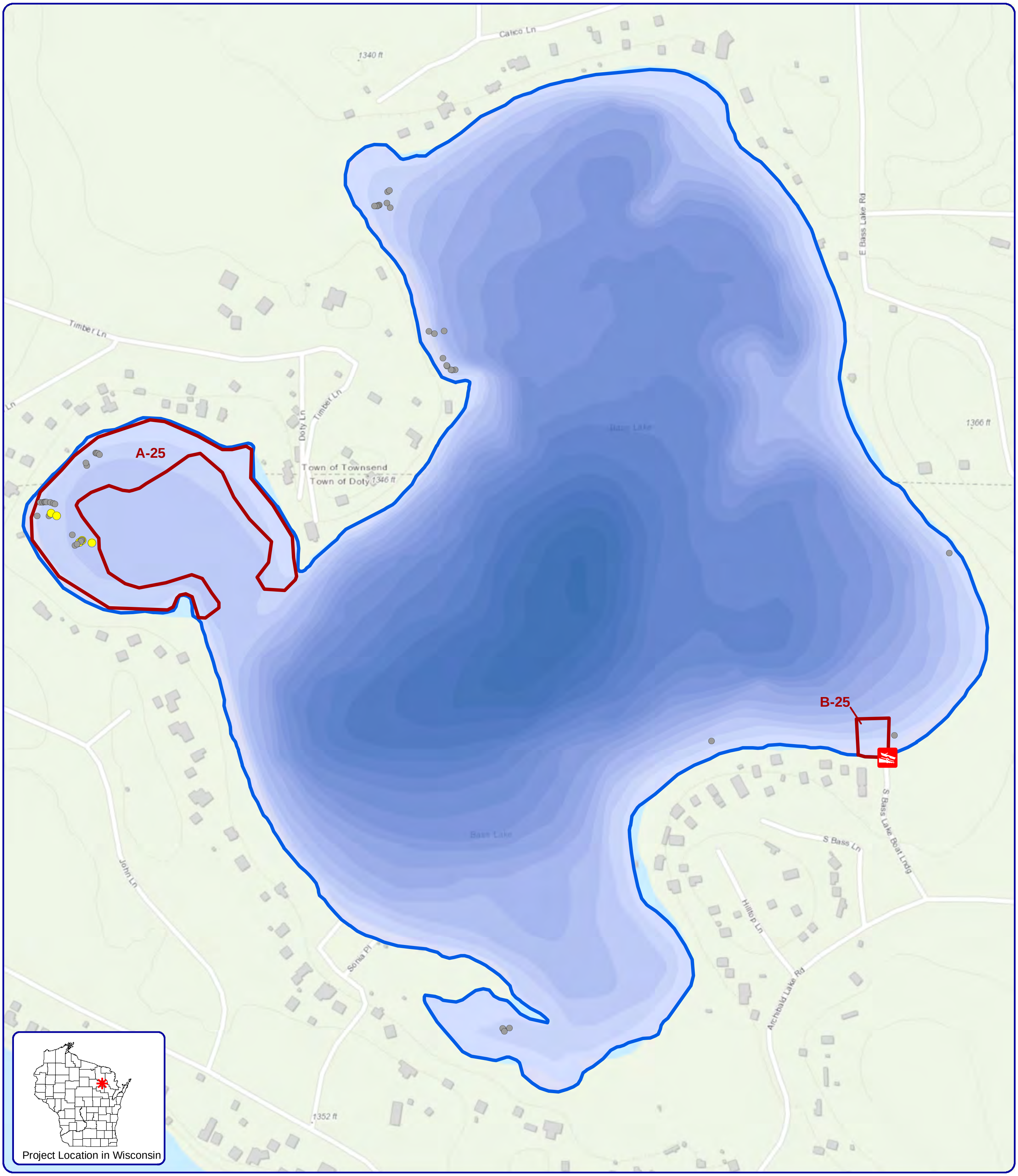
Sources
Roads and Hydro: WDNR
Bathy: WDNR, digitized by Onterra
Aquatic Plants: Onterra, 2024
Basemap: ESRI AGOL
Parcels: WDNR, 2023
Map Date: 6-27-2025 TWH

Map 3
Bass Lake
Oconto County, Wisconsin

2025 EWM Manual Removal Strategy/DASH



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Sources
Basemap: ESRI
Hydro and Bathy: WDNR, Digitized by Onterra
Aquatic Plants: Onterra, 2025
Map Date: September 26, 2025 - RMF

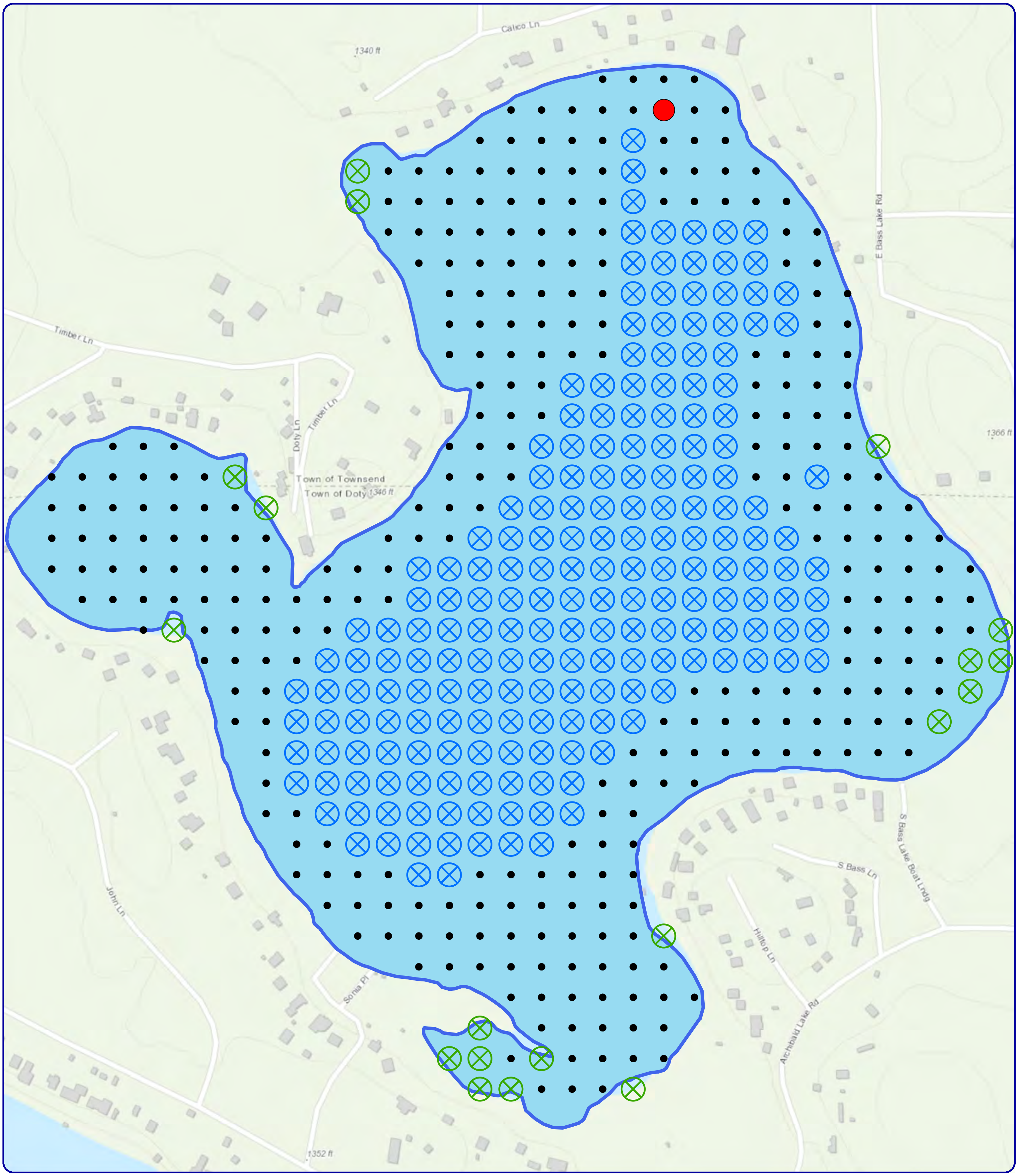
Legend

EWM Survey Results (September 8, 2025)

- Highly Scattered *(None)*
- Scattered *(None)*
- Dominant *(None)*
- Highly Dominant *(None)*
- Surface Matting *(None)*
- Single or Few Plants
- Clumps of Plants
- Small Plant Colony *(None)*
- 2025 Herbicide Treatment Site

Map 4
Bass Lake
Oconto County, Wisconsin

Late-Season 2025 Eurasian Watermilfoil Survey Results



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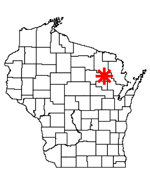
Sources:
Basemap: ESRI AGOL
Bathymetry: WDNR, digitized by Onterra
Aquatic Plants: Onterra, 2025

Map Date: 8-4-2025 TWH



Project Location in Wisconsin

Legend
- Sampled
- Too Deep
- Nonnavigable
- EWM Present

Map 5
Bass Lake
Oconto County, Wisconsin

2025 Point-Intercept Survey Results: Eurasian Watermilfoil

A

APPENDIX A

Bass Lake 2025 Herbicide Concentration Monitoring Plan

Bass Lake, Oconto County (WBIC: 417900)
2025 Herbicide Sample Plan
Onterra, LLC

Bass Lake, located in Oconto County, is a 145-acre seepage lake that has a maximum depth of approximately 40 feet. Florpyrauxifen-benzyl (ProcellaCOR™) is proposed to be applied to 6.4 acres in early-summer 2025 to control Eurasian watermilfoil. Herbicide concentration sampling will be conducted to monitor the herbicide concentrations in the days and weeks following the application. Water samples will need to be collected at the sites and depths listed below. Coordinates are in decimal degrees. Locations of each sampling site are displayed with green circles on the image below.

Bass Lake Herbicide Sample Sites					
Site Label	**Site Description**	**Station ID**	**Latitude**	**Longitude**	**Sample Depth**
B1	Application Area A-25	10060070	45.277437	-88.627113	Integrated (0-6 feet)
B2	Center of West Bay	10060071	45.276633	-88.626221	Integrated (0-6 feet)
B3	Deep Hole	433354	45.276418	-88.61948	Integrated (0-6 feet)

Please note that a single sample is to be collected before the treatment as a 'blank' for the lab analysis. Please collect the pre-treatment sample the day before treatment occurs. After the herbicide application is completed, additional samples will need to be collected at specific time intervals throughout the project and are listed in the table below. Sample collection intervals are listed either as Hours After Treatment (HAT) or Days After Treatment (DAT). Direct communication between the water sample collector and the herbicide applicator is necessary to ensure the collector is prepared to begin three hours after treatment is completed. If a sample cannot be collected at the interval listed below, please collect the sample as soon as possible and record the change.

Sampling Interval Matrix (X indicates sample to be collected)			
	Sampling Sites		
Interval	**Bas1**	**Bas2**	**Bas3**
Pre-Treatment			X
3 HAT	X	X	
6 HAT	X	X	
9 HAT	X	X	X
24 HAT	X	X	X
3 DAT	X	X	X
5 DAT	X	X	X
7 DAT	X	X	X
14 DAT	X	X	X
21 DAT			X
35 DAT			X
HAT = Hours After Treatment DAT = Days After Treatment			

All water samples will be collected using a six-foot integrated sampler (Photo 1). A video tutorial demonstrating the proper sample collection methodology is available on Onterra's YouTube web page: click here. Please review the *water sample handling instructions* provided by the Wisconsin State Lab of Hygiene for detailed instructions of the sample collection procedure.

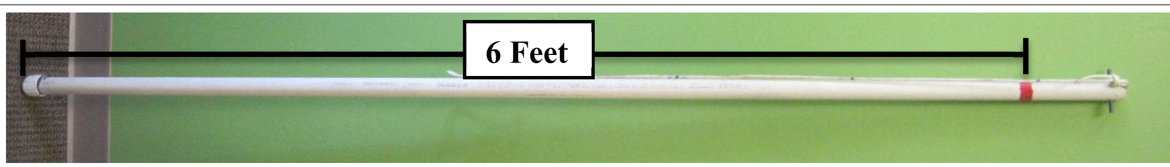


Photo 1. 6-foot Integrated sampling device constructed of PVC tubing.

Onterra will provide all the necessary supplies, equipment, and training to the volunteer(s) collecting the samples. Onterra has a limited supply of handheld GPS units and six-foot integrated sampler devices available to loan out for the duration of the sampling upon request. All other materials, including sampling bottles with labels, a composite water collection bottle and sampling data sheets will be provided.

If you have any questions, please reach out to one of the contacts listed below.

Project specifics, logistics and sampling methods	**Shipping**
Todd Hanke Aquatic Ecologist, Onterra, LLC thanke@onterra-eco.com Office (920) 338-8860	**Wisconsin State Lab of Hygiene (608)-224-6271**

FPB in Water Sample Handling Instructions

Sampling Kit Components

The florpyrauxifen-benzyl (FPB) sampling kits provided by the Wisconsin State Lab of Hygiene (WSLH) include:

- Cardboard box with Styrofoam cooler inside used to ship samples and supplies. This Styrofoam cooler will be re-used to ship samples back to the lab. *If placing a large request for sampling kits, supplies maybe be shipped in a larger cooler or in multiple coolers.*
- 30 mL amber vials containing 1 mL of 1:50 Formic Acid:H_2O as a preservative. Vials will have a Globally Harmonized System (GHS) and a sample label. There will be one amber vial for each sample taken with a couple extra in case any break during transit. See link to the Safety Data Sheet (SDS) for the formic acid: https://www.slh.wisc.edu/formic-acid-2-sds-2025/.
- 20 mL clear glass vials. There will be one clear glass vial for each sample taken with a couple extra in case any break during transit.
- Styrofoam vial holder(s).
- Large, plastic bag; this bag will be used to contain the samples and ice for return shipping.
- Zip tie(s) to secure the large plastic bag using a 'goose neck' (instructions below).
- WSLH Sampling Data Sheet(s) in a Ziploc bag; these sheets will be completed in the field when samples are collected.
- Orange address sticker.

The picture below is representative of the contents to be included in the FPB sampling kit (disregard the PFAS text on the Styrofoam cooler lid): cardboard box with Styrofoam cooler inside, WSLH Sampling Data Sheet in Ziploc bag, vials with black and white caps, Styrofoam vial holder, and (yellow) zip ties.

Sampling Instructions

All samples, including the pre-treatment blank, should be taken using the integrated sampling steps outlined below. This method uses an integrated sampler and a composite water collection bottle.

Sampling will include one pre-treatment sample followed by those included in the sampling plan reviewed and approved by the regional DNR Biologist. The pre-treatment blank serves as a baseline for lake water before any herbicide application and must be collected the day prior to the FPB treatment. While the pre-treatment blank can be taken anywhere on the lake, it is typically collected at one of the designated sampling sites or at the lake's "deep hole" location.

1. Locate the WSLH Sampling Data Sheet(s) provided by the WSLH in the Ziploc bag.
   a. <u>It is important to use a separate WSLH Sampling Data Sheet for each sampling interval that you monitor</u> (i.e., there will be multiple sites on one data sheet).
   b. The pre-treatment blank will use its own WSLH Sampling Data Sheet.
   c. On each WSLH Sampling Data Sheet the Lake Name, County, Account Number, DNR User ID, Grant Number, WBIC, and test requested (e.g., FPB) will be prepopulated by DNR/WSLH personnel.
   d. The person taking the sample should fill out the Collector Name and Phone Number, and all information requested in the table on the bottom portion of the sampling sheet. Specifically, in each row, write the Site Name, SWIMS Station ID, Hours After Treatment (HAT), Sample Depth, Date, Time, Water Temperature (in Celsius), and Wind Direction and Speed.

2. Upon arrival to each sampling site, rinse the integrated sampler and composite water collection bottle three times with lake water before each sample collection.

3. Take the water sample from the opposite side of the boat as you rinsed. Slowly lower the integrated sampler vertically so that it is 6 feet deep (which is typically marked with a line on the integrated sampler). After reaching a depth of 6-foot, slowly pull the sampler up vertically. If the sampling location is shallower than 6 feet, lower the sampler into the water column so that it remains at least 1 foot above the lake sediment bottom.

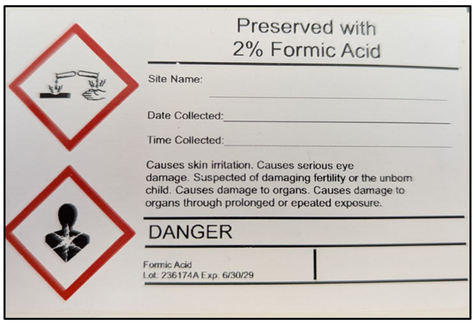
4. Empty the contents of the integrated sampler into the composite water collection bottle by pushing the ball valve end against the bar installed across the mouth of the bottle – this pops the ball valve up and releases water from the integrated sampler.

5. Gently mix the water in the composite water collection bottle. Then, carefully pour it into the 20mL **clear** glass vial until it is half full. Swirl the water around the vial gently and then return the rinse water to the lake. Repeat this rinsing process three times at the sampling site.

6. Gently mix the water in the composite bottle once more, then pour it into the 20 mL **clear** glass vial to fill it up all the way.

7. Pour the water in the 20 mL **clear** glass vial into the 30 mL **amber** vial. Cap the **amber** vial securely and invert it twice to ensure the preservative is properly mixed.
    a. Samples collected in the **amber** vials should be temporarily stored in a cooler with ice and then refrigerated until shipped.
    b. Transferring the water from the clear vial into the amber vial prevents overfilling and losing the premeasured preservative.

8. Using a permanent marker, write the name of sampling site and sampling interval (e.g., 9 HAT), followed by the date the sample was collected (MM/DD/YY) and the collection time (e.g., 18:35) on the GHS label of the **amber** vial. See example of GHS label below.



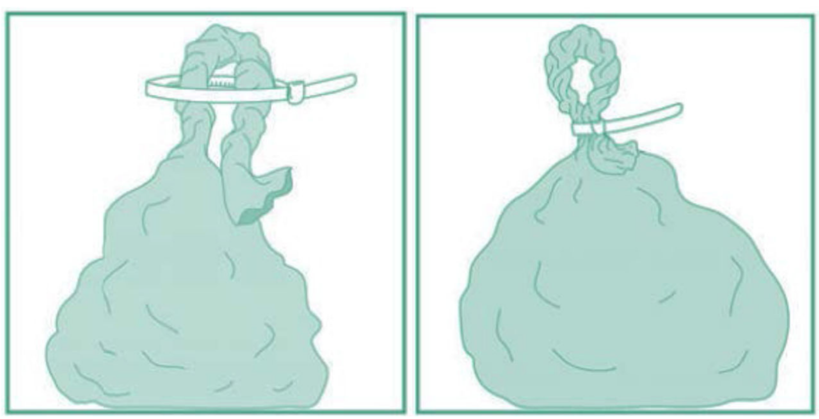
9. Once all sampling is complete, the vials and field sheets need to be prepared to be shipped back to the lab.
    a. Place the large, plastic bag in the Styrofoam cooler.
    b. Ensure samples are tightly capped and place them in the Styrofoam vial holder and then in the large, plastic bag.
    c. Add plenty of wet ice to the large, plastic bag and close it. Then, tie the top of the bag into a gooseneck, and secure with the zip tie so the ice water does not leak out. **See the back of the field sheet for how to properly gooseneck the bag.**
    d. Place the completed field sheets in the Ziploc bag and place on top of the samples in the **amber** vials. Discard any remaining 20 mL **clear** vials.

10. On the outside of the cardboard box, there is a sticker labeled “Packed on Ice”. Mark the type of sample you are returning to the lab.

11. Ship the samples using overnight delivery (e.g., Speedy, UPS, or FedEx) to the address on the orange sticker in the sampling kit.
    e. Samples should not be shipped on a Friday, but rather refrigerated and shipped on the following Monday.
    f. Alternatively, samples can be dropped off in person Monday – Friday, 7:45am to 4:30pm to the WSLH front office; see orange sticker for address.
    g. Contact the lab at (608) 224-6271 with any questions.

How to securely tie the 'goose-neck' method

When the bag is filled (or two thirds) twist the excess at the top of the bag, double over and hold the twist firmly …



Pass the zip tie over the twisted neck of the bag and tighten the fastening to create an effective seal.

Lake Name:	**Bass**	**WSLH Sampling Data Sheet**
County:	**Oconto**	

Account number: 555632	**Sample Matrix:**	Surface Water (SU)
DNR User ID: NORDIB	**Project:**	HerbicideMonitoring
Grant Number: AIRR30625		
WBIC: 417900	**Collector Name:**	
	Phone Number:	
Test Requested: FPB		

Site Name	Station ID	Time Since Treatment	Sample Depth	Date	Time (24:00)	Water Temp in C	Wind Direction and Speed

B

APPENDIX B

APM, LLC 2025 Bass Lake Herbicide Treatment Summary Report & Professional HWM Harvesting Summary Report

Bass Lake EWM Management Report 2025

PO Box 1134 Minocqua, WI 54548

Bass Lake EWM Management Summary

- Bass Lake is a 145 acre lake in Oconto County, WI that has an invasive population of Eurasian Watermilfoil (EWM)

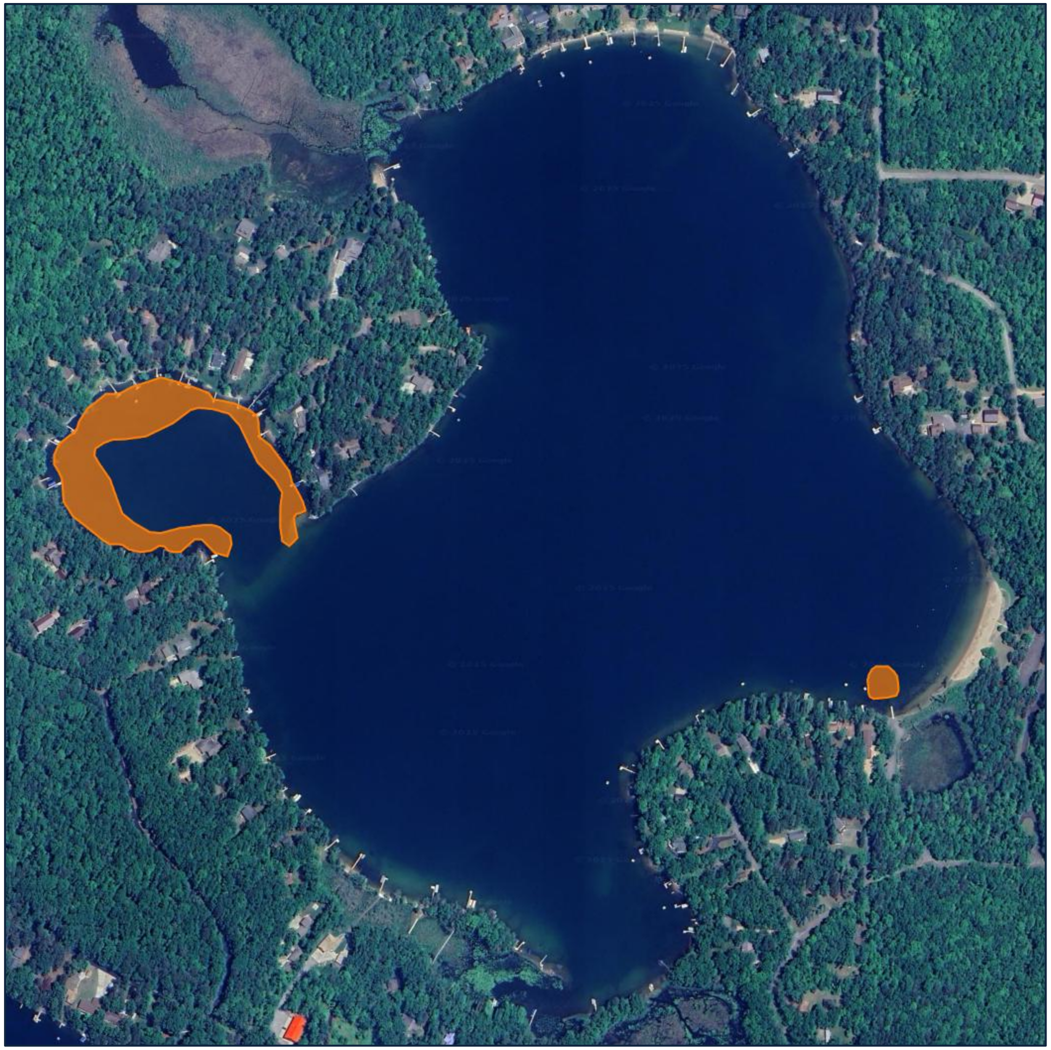
- In 2025 the Bass Lake Improvement Association (BLIA) partnered with Aquatic Plant Management LLC (APM) to address the EWM population by conducting herbicide treatment of the EWM population with ProcellaCOR, Diver Assisted Suction Harvesting (DASH), and Hand Harvesting

- On June 17th, APM treated a total of 6.4 acres at two sites on the lake with ProcellaCOR under ideal treatment conditions

- On July 31st and August 1st , APM followed up the treatment with DASH and Hand Harvesting at 6 other sites and harvested a total of 8.5 cubic feet of EWM

- The BLIA should continue to use an Integrated Pest Management (IPM) approach when evaluating different tools to actively manage its EWM population

ProcellaCOR Treatment Summary



Treatment Overview

- APM treated Bass Lake **with ProcellaCOR at 2 sites** on June 17th
- The treatment occurred over a **~1 hour period** from 5:02 am to 6:06 am
- Ambient air temperature was 65.7 degrees with a **west wind** averaging 1.0 miles per hour at the beginning of treatment, and the water temperature was 65.1 degrees

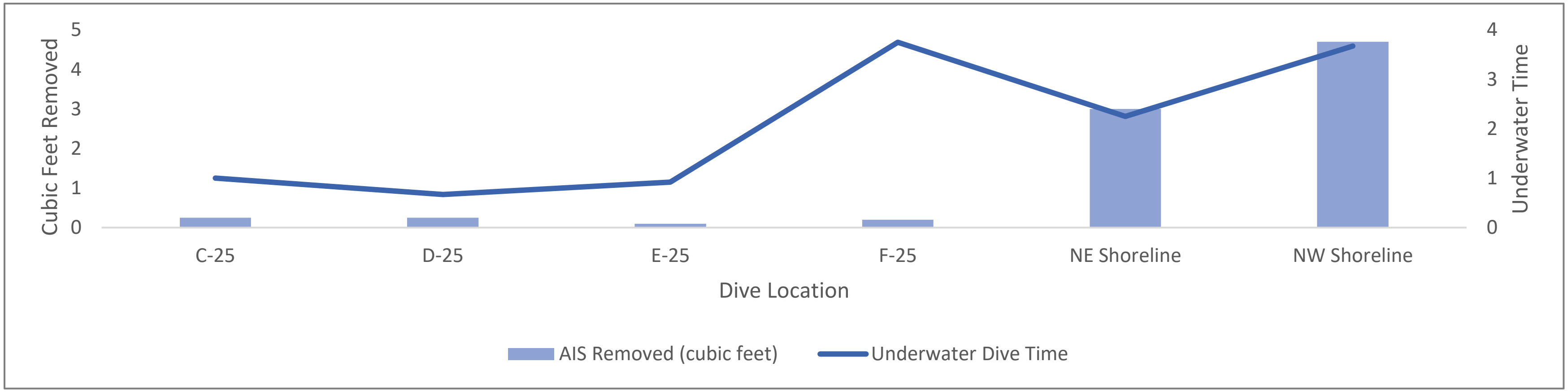
Site Name	Treated Acres	PDUs
A-25	6.0	135
B-25	0.4	16
Total	**6.4**	**151**

Bass Lake EWM Removal Summary

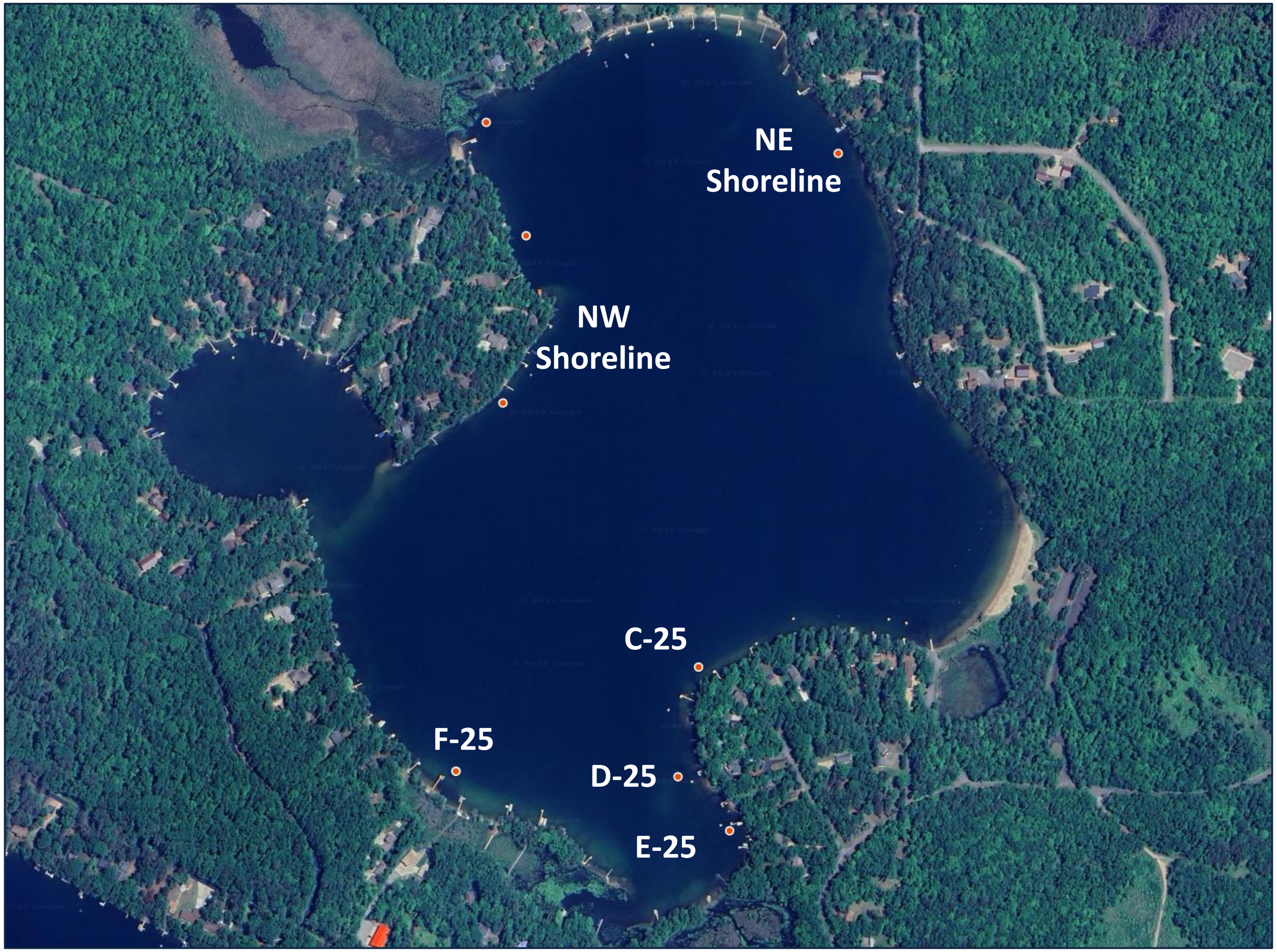
Dive Highlights

- The dive team started at the 4 sites identified by Onterra for DASH and found only single or few instances of plants
- The team observed some root crowns missing the stalks of the plants in these areas
- After removing less than a cubic feet from the DASH sites, the team shifted to hand harvest the NW and NE shorelines where they removed 7.7 cubic feet of EWM
- The team observed and removed many fragments that were resting on the lake bed in these areas

Date	Weather Conditions	Water Temp (F)	Underwater Dive Time (hrs)	AIS Removed (cubic ft)
7/31/2025	Partly Cloudy	75	6.3	0.8
8/1/2025	Sunny	75	5.9	7.7
Grand Total			**12.3**	**8.5**



Map of Bass Lake Dive Sites



Detailed Diving Activities

Date	Dive Location	Latitude	Longitude	Underwater Dive Time (hrs)	AIS Removed (cubic ft)	AIS Density	Avg Water Depth (ft)	Native Species	Native By-Catch	Substrate Type
7/31/2025	F-25	45.27292	-88.62366	0.50	0.1	Single or Few	6.0	None	0.0	Organic/Sand
7/31/2025	C-25	45.27406	-88.61989	1.00	0.3	Single or Few	4.0	Grasses	0.1	Organic/Sand
7/31/2025	D-25	45.27286	-88.62021	0.67	0.3	Single or Few	5.5	Grasses	0.1	Organic/Sand
7/31/2025	E-25	45.27227	-88.61941	0.92	0.1	Single or Few	7.5	Grasses	0.0	Organic/Sand
7/31/2025	F-25	45.27292	-88.62366	3.25	0.1	Single or Few	6.0	Grasses	0.1	Organic/Sand
8/1/2025	NE Shoreline	45.27968	-88.61772	2.25	3.0	Scattered	7.0	Charophytes	0.3	Organic/Sand
8/1/2025	NW Shoreline	45.28002	-88.62319	1.75	4.5	Clumps	5.0	Grasses	1.5	Organic
8/1/2025	NW Shoreline	45.27878	-88.62257	1.00	0.1	Single or Few	8.0	Charophytes	0.1	Organic/Sand
8/1/2025	NW Shoreline	45.27695	-88.62293	0.92	0.1	Single or Few	3.0	Charophytes	0.1	Organic/Sand
Total	**9**			**12.26**	**8.5**					