

To preserve and protect Long Lake, its watershed and ecosystems



Long Lake

Preservation Association
Issue 77 • Fall 2025

President's Message

The acorns are raining down on metal docks and making a ricochet sound across the bay. I look up and am sure someone must be there throwing them with such force, but there is no one in the trees. They crunch under our boots with a satisfying sound that you imagine your foot is the pestle to the earth's mortar.

The million shades of yellow ochre create a perfect backdrop for black vertical tree trunks. The woods are wet from rain and early snow, the soybean field bows under the first flurries and the sumac wear a white veil. It is a time of transition and we all adapt.

The deer that we knew are now strangers in different color coats. The mouse begs to come in. The jet-black loons have left their gray-feathered children behind. Slow moths circle our porch light and the shoreline is boatless. It is so quiet. No motors, no people.

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President's Message continued

Colorful beach towels in the linen closet and the swim rafts have lost their shape. We look for socks that have been pushed to the back of the drawer and tug on boots that feel tight on summer feet. And off we go again down an old yet new path.

The LLPA had a busy summer and the many projects we planned were accomplished because of you our volunteers and donors. Thank you all.

Sandy Hovey Campbell, LLPA President

- Thank you for your generous donations that continue to fund our lake scientist, Megan Sorensen.
- We thank the Marsh Family for hosting our summer coffee at Summers on Long.
- The Aquatic Plant Management Plan was approved. The goals of this plan are to preserve the native aquatic plant community while monitoring and managing any invasive plants, along with a completed Rapid Response Plan should any invasive plants be detected in Long Lake. We will continue to educate and inform the lake community. Matt Berg, Research Biologist, completed two surveys of the entire lake in June and again in August.
- Phase One of the phosphorous study was completed this summer and will give us information as to the water quality in the North Basin, and in turn the entire lake. Phase Two is set to take place in summer 2026.
- The Yellow Flag Iris management project was completed around the lake, and we plan to continue to eradicate this harmful invasive plant in order to maintain a healthy shoreline.
- Fish Sticks are naturally inspired habitat structures—anchored trees or clusters of logs—added to the shallow areas on Long Lake. This project occurred last winter and we'd like to thank the volunteers who helped create these excellent woody habitats for our critters.
- Clean Boats Clean Waters (CBCW) is a statewide initiative to reduce the spread of aquatic invasive species (AIS) in our lakes. The program provides equipment at all the public boat landings where you can spray your boat upon entering and leaving long lake. A big thank you to our volunteers Dave and Sharon Hahn who are there to assist boaters and keep our water free from invasive plants.
- Thank you for your donations directed to the Long Lake First Responders. We presented a check for over \$3,000.00 to assist with the purchase of additional AED's (Automated External Defibrillator).

Sandy Hovey Campbell

President – Long Lake Preservation Association

A CLOSE CALL WITH EURASIAN WATERMILFOIL

Recently, Eurasian watermilfoil (EWM) – a highly invasive aquatic plant – was discovered on a boat preparing to launch at the Town Hall landing. Thanks to the vigilance of our Clean Boats, Clean Waters (CBCW) crew, the plant was identified and removed before it could enter the lake. Without their sharp eyes and quick action, Long Lake could be facing an entirely different situation today.

We are pleased to report that our most recent Aquatic Invasive Species (AIS) survey confirmed no EWM is present in Long Lake. This is excellent news, but the incident serves as an important reminder: invasive species can spread quickly and easily, hitchhiking unnoticed on boats, trailers, and fishing gear. Once established, EWM is extremely difficult – and costly – to control, making prevention our best and most effective defense.

The success of this interception highlights the importance of having dedicated CBCW volunteers and staff at our landings. Rain or shine, they serve as the first line of defense for our lake, educating boaters, conducting inspections, and preventing invasive species from gaining a foothold. Their efforts directly protect water quality, native plant and fish communities, and the recreational opportunities that make Long Lake so special.

How you can help protect Long Lake:

- Inspect your boat, trailer, and gear
- Remove any plants or animals you find
- Drain water from bilges, live wells, and motors
- Never transport invasive species

We are also seeking additional CBCW volunteers. Whether you can commit a few hours on weekends or take regular shifts during the summer, your presence at the landings makes a meaningful difference. Training and support are provided, and volunteering is a rewarding way to give back to the lake community while protecting a resource we all value. Contact us at info@longlakellpa.org for more information if you are interested in joining our CBCW team.

Together, we can ensure that Long Lake remains clean, clear, and beautiful for generations to come. Please take a moment to thank our CBCW team when you see them – they are on the front lines of protecting our waters!



Long Lake Loons: 2025

Article by Byron Crouse

Charles Dickens' frequently quoted phrase, "It was the best of times, it was the worst of times..." certainly applies to the loon experiences on Long Lake this year. By the numbers, this year there were ten territorial pairs of loons on the lake. These are pairs of mature breeding loons looking to establish a nest and raise a family. Eight pairs made eleven nesting attempts, and six pairs hatched a total of eight chicks. Of the eight chicks, four survived to migrate south to their wintering waters in the Gulf of Mexico or off the Atlantic seaboard of Florida. While these outcomes this year are worse than in previous years, they are more typical of the experience of loons on other Wisconsin lakes.



There were 'best of times' as we had ten territorial pairs looking for nesting sites on the lake. During the breeding season, loons are very territorial and protective of their nesting areas. Many of the vocalizations we all love to hear are loons claiming their territories and expressing their willingness to fight to the death to defend their nesting territory.

The nesting loons face challenges during the nesting and chick rearing periods. This year the loons proved how resilient they are. Three nesting pairs lost their nest due to heavy rain washing out their nest or predation destroying their nest and eggs. Despite these losses, these loons renested and two pairs were successful in renesting and raising their chicks to mature juveniles that migrated in the fall.

There were also 'worst of times' this year. Three nesting attempts were lost as noted above. Three other nesting attempts failed as the loons abandoned their nest. These are harder to determine why. In addition to known challenges of black flies harassing nesting loons and driving them off their nest, our LoonWatch observers reported a number of sightings of nesting loons being bothered by eagles circling overhead and people fishing too close to the nest.



Four of the eight chicks were lost this year. One most likely resulted from a boat strike observed by a LoonWatch observer. A loon family and chick were seen in the middle of the lake and three boats racing down the lake went right over the area where the loons were swimming. As the boats continued down the lake, the adults surfaced and frantically called for the chick that was never seen again. The cause of the loss of the other three chicks is less clear. There is a robust eagle population on the lake that could have played a role in the loss of chicks. Other natural risks are also possible, including turtle or large fish attacks. We also know that Highly Pathogenic Avian

Influenza (HPAI) or West Nile disease can kill chicks. In addition, around the state it is being observed that adult loons are having more difficulty feeding chicks and themselves. This is indicated by fewer hatchings with two chicks, and measurements of chicks and adults reveal both are getting smaller resulting in greater mortality over the next year. This is the result of poorer lake conditions, with less water clarity and fewer bait fish, forcing loons, who are visual hunters, to expend more energy to feed their chicks and themselves.

This year there was no nesting on Little Mud Lake. This area has been a very popular and productive area in recent years with loons nesting on Little Mud Lake and after hatching, the family would move through the culvert and raise the chicks on Long Lake. This year the culvert between Little Mud Lake and Long Lake had failed and replaced in July. With the higher water levels on Little Mud Lake before the replacement of the culvert, the nesting there was disrupted. Cooperation between the LoonWatch volunteers and Long Lake township has led to a plan going forward to deal with the culvert and its grate allowing for loons to nest and move to Long Lake while addressing the beaver challenges.

Loons contribute to the ambiance and feeling of nature on Long Lake. Many people appreciate their distinctive calls and plumage. They also can be our ‘canary in the coal mine’ and provide us with another assessment of the quality of Long Lake. The LLPA is actively working to maintain and even improve the quality of the lake and watershed. Clean Boats/Clean Waters monitoring at the landings reduces the risk of invasive aquatic species being introduced into the lake and treatment of Yellow Flag Iris addresses invasive plant found in the lake. In addition, the LLPA is engaged in a formal assessment of the phosphorus status in the lake which determine how to address increased algal growth. We all can help this problem by maintaining a natural buffer zone at the water’s edge and avoid raking/blowing leaf debris into the lake. Maintaining septic systems and limiting fertilizer use also helps minimize algal growth.



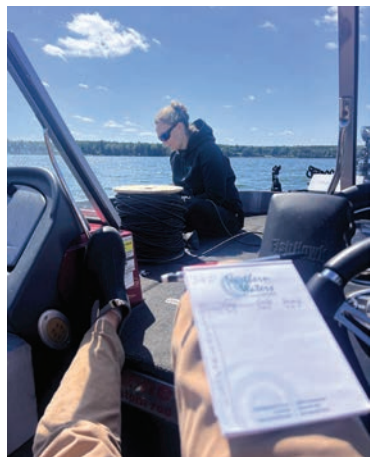
We can also help our loons by getting the lead out of our tackle boxes. One lead split-shot sinker if ingested can kill an adult loon in several weeks. Proper disposal of fishline is also important as line thrown in the lake can become entangled with a loon and prevent the loon from feeding. When boating, be mindful of the waves being generated and not producing large waves pounding the shore and washing out loon nests. It is easy to get used to seeing loons on the lake diving out of the way of speedboats. However, it is recommended that all boaters keep at least a 200-foot distance from loons so as not to disturb them during nesting season or hitting newly hatched chicks that can not dive out of a boats path during the first 2-3 weeks of their life.

I want to end by thanking those that have served as LoonWatch observers. We have twelve volunteers who report on the loon activity on Long Lake. These observations are submitted to LoonWatch, a statewide organization that monitors loons throughout the state. If you would like to be involved, please contact me at bjcrouse@wisc.edu.



LONG LAKE PHOSPHORUS STUDY

Protecting and improving the water quality of Long Lake is one of our top priorities identified in our Comprehensive Lake Management Plan. One of the biggest concerns for many Wisconsin lakes – including ours – is phosphorus. Elevated phosphorus levels can fuel algae blooms, reduce water clarity, and upset the balance of the lake’s ecosystem. To better understand how phosphorus is affecting Long Lake, we began a multi-year monitoring study to guide future management.



Megan Sorensen (NWRPC – Long Lake Science Director) collecting water quality data for the Phosphorus Study.

Phosphorus enters lakes from multiple sources, and understanding these pathways is key to effective management. **External phosphorus loading** includes watershed inputs from runoff from lawns, roads, agricultural fields, and other developed areas surrounding the lake. During rainfall events or snowmelt, phosphorus can be carried by surface water into the lake, where it becomes available for algae and aquatic plants.

In addition, lakes can experience **internal phosphorus loading**, where phosphorus stored in bottom sediments is released back into the water column. This can occur under low-oxygen conditions at the lake bottom or during periods of mixing caused by wind and temperature changes. Once released, this phosphorus is recycled within the lake: it fuels the growth of algae and aquatic plants, some of which die and sink, returning phosphorus to the sediments—creating a cycle that can maintain elevated nutrient levels even when external inputs are reduced.

In 2025, water samples were collected throughout the summer to measure phosphorus concentrations and track how levels change over time. We are applying for a Wisconsin DNR Surface Water Grant for 2026, which will allow us to expand phosphorus monitoring and begin developing targeted management strategies. In 2026, we will continue our water quality monitoring and will be collecting sediment cores from the bottom of the North Basin. These cores will be studied in a lab to measure how much phosphorus is being released from the sediments. The long-term goal is to use sound science to identify the largest phosphorus sources and determine which practices will most effectively reduce nutrient loading to the lake. If most of the phosphorus comes into the lake from external loading in the watershed, we may want to explore best management practices (BMPs) to reduce runoff from shorelands and upstream areas in the watershed. If most of the phosphorus comes from internal loading within the lake, we may want to consider an alum treatment.

Alum (aluminum sulfate) treatments are a proven method for addressing internal phosphorus loading in lakes. When phosphorus from lake sediments is released into the water column, it can fuel algae growth even if external sources are controlled. Alum works by binding with the phosphorus in the sediments and forming a thin, protective layer on the lake bottom. This layer traps the phosphorus, preventing it from re-entering the water and fueling algae blooms. Alum treatments are safe for people, pets, and wildlife when



A Van Dorne Sampler used to collect water samples from the bottom of the lake.

applied properly. The process is carefully planned based on water chemistry, lake depth, and sediment characteristics. Extensive research and practical experience in Wisconsin and across the country show that alum is a reliable and environmentally responsible tool for improving lake water quality.

Watershed and shoreline BMPs focus on controlling runoff from the land surrounding the lake. Erosion control through planting vegetation along roads, driveways, and fields slows water flow and traps soil before it can wash into the lake. Shoreline BMPs help stabilize the lake's edge while filtering nutrients before they enter the water. The Wisconsin Healthy Lakes and Rivers Program encourages the use of native plant buffers along the shoreline, which absorb nutrients, slow runoff, and prevent erosion. Rain gardens and infiltration areas on individual properties allow runoff from yards and driveways to soak into the ground rather than flow directly into the lake.



North Basin algae bloom in September 2025 (Photo credit: Jeff Linkenheld).

By combining careful monitoring, targeted management strategies, and community-based actions, Long Lake can be protected and its water quality improved for years to come. Utilizing this phosphorus study to understand both external and internal sources of phosphorus allows us to take the right approach – whether that means implementing watershed and shoreline BMPs to reduce runoff, or considering in-lake treatments such as alum to address internal loading. With continued support from lake residents, volunteers, and partners, and guided by the data from our ongoing studies, we can ensure that Long Lake remains clean, clear, and vibrant, sustaining its ecological health and recreational value for generations to enjoy.

Preserving the Beauty of Long Lake: A Historic Land Purchase for the Future

The Long Lake Preservation Association (LLPA) is thrilled to share exciting news that strengthens our shared commitment to protecting the natural beauty and ecological health of Long Lake. Tomahawk Scout Camp, a cherished neighbor and steward of this lake for over 70 years, has recently completed a historic land purchase that will ensure the preservation of this special place for generations to come.



Since 1953, when the Boy Scouts purchased the original property from Axel Nielsen, Tomahawk Scout Camp has been a focal point of life on Long Lake. Over the decades, thousands of Scouts have camped along its shores, learning outdoor skills, building friendships, and developing a lifelong appreciation for nature. What began as a simple campground has grown into a world-class outdoor adventure destination, offering programs like ATV and horseback riding, mountain biking, high ropes courses, zip lines, welding, and blacksmithing—all while maintaining a deep respect for the land and water that make these experiences possible.

Preserving the Beauty of Long Lake: continued

Throughout its history, Tomahawk has taken deliberate steps to protect the lake and surrounding wilderness. Past acquisitions, such as the Roseboom Farm in the 1990s and the Rindsig Farm in the mid-2000s, have helped safeguard the peninsula from development. Today, we celebrate the most significant step yet: the purchase of 247 acres, including a full mile of pristine shoreline on Long Lake's peninsula.

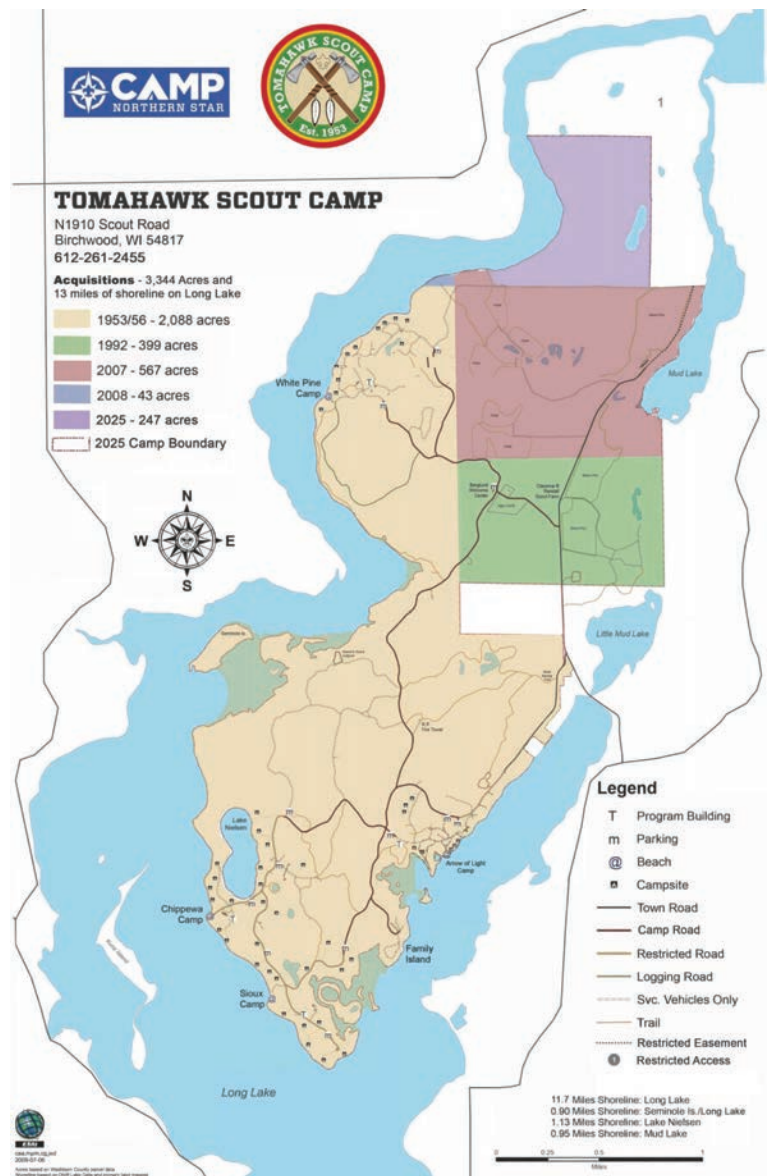
This incredible achievement was made possible through the generosity of the Anderson Foundation, a longtime supporter of Scouting, and the cooperation of the Nessen and Kula families, who previously owned the land. While Jack Nessen retains a portion of the northern peninsula, that land will soon enter a conservation management plan with the state, ensuring it remains undeveloped and sustainably managed for the next 25 years.

What does this mean for Long Lake? It means more of what we all love: clean water, healthy fish habitat, and breathtaking natural vistas. It means that when you look across the lake, you'll continue to see towering pines, wildlife, and the occasional glow of a campfire—not lights, lawns, or docks. Tomahawk has no plans for major development on this newly acquired land beyond maintaining roads, trails, and possibly a small outpost campsite. The focus remains on conservation and responsible stewardship.

"This purchase is about more than land—it's about legacy," said Brian Halloran, Tomahawk Scout Camp Director. "For over 70 years, Scouts have learned the value of conservation on these shores. Now, thanks to this acquisition, we can ensure that future generations will experience the same unspoiled beauty of Long Lake that we all cherish today."

Long Lake is a treasure because of the collective efforts of those who care for it—our neighbors, the LLPA, Hunt Hill, and Tomahawk Scout Camp. Together, we've ensured that this lake remains one of the cleanest in the region, thanks in part to its location at the top of the watershed and the shared commitment to sustainable practices.

This latest acquisition marks the end of a 35 year campaign to safeguard the Long Lake peninsula from development, and now with it, we can look to the future with confidence. The Long Lake peninsula will remain a sanctuary of natural beauty, a place where Scouts and lake residents alike can enjoy the peace and wonder of the Northwoods for decades to come.



Happenings at Hunt Hill

Article by Sage Dunham

Hunt Hill Nature Center is wrapping up another excellent year! This year, we offered 53 different public programs, including Youth Day Camps, Little Explorers, Citizen Science programs, Two-Day Adult Workshops, WI Master Naturalist Training, Beasts & Beer, Soup Lunch, Cakes at the Lake, and more! In addition to our public programs, we also hosted 38 school field trips, welcoming a total of 1,838 school-aged children to the preserve.

We're already looking forward to 2026 and all of the fun programs we have planned! During the colder months, we invite you to join us for our **Soup Lunch** series, held on the third Tuesday of each month from January through April. Warm up with a bowl of soup while enjoying camaraderie and conversation at Hunt Hill. Each month features a different guest speaker, along with a delicious lunch of soup, crackers, cheese, and dessert provided by Hunt Hill. Speakers and topics will be announced on our website.

In the summer months, drop by Hunt Hill for **Cakes at the Lake** — an all-you-care-to-eat pancake breakfast followed by a free nature program sponsored by the Long Lake Preservation Association. This year's topics and dates include:

- **June 27:** Dragonflies & Damselflies with Matt Berg
- **July 18:** Hooked! Fun Facts about Your Favorite WI Fish with Ruth King
- **August 8:** Bumblebees with Susan Carpenter

This is just a glimpse of the many programs and activities Hunt Hill offers in the Long Lake area! Hunt Hill's property is open to the public year-round, featuring over seven miles of trails and nearly 600 acres of preserved habitat to explore.

For more information, please visit our website at www.hunthill.org or stop by our office at **N2384 Hunt Hill Rd.**



Field trip students learn to fish.

Wake Boat Studies Update

In recent years the growing presence of wake enhanced boats used for forms of riding the waves they generate, usually called “wakesurfing,” has created some controversy, here and elsewhere. There are anecdotal claims of boats rocking, shorelines eroding and lake bed being disrupted as a result of wake boat operation. In Wisconsin an entire organization has been formed to promote regulation of them (Last Wilderness Alliance, <https://lastwildernessalliance.org>). It is visually obvious that the waves these boats generate when in surf mode are greater than those of any other boats around, but the real effect they may have on the environment is a matter of science, not conjecture.

In the Spring 2025 Newsletter we presented a map, based on a combination of state law and the results of various studies, suggesting the areas of the lake where wake boat operation was “least likely” to result in “substantial” negative environmental impact. It was made clear that this was not an invention of LLPA, merely an assembly of existing Wisconsin law and recommendations of others based on their studies. We also pointed out that research was ongoing, and recommendations could change.

One of the studies then existing was Phase One of research by the St. Anthony Falls Laboratory of the University of Minnesota College of Science and Engineering. This was part of the Healthy Waters Initiative commenced by a crowdfunding campaign in 2020. The results of Phase One, dealing with the lateral effects of the artificially enhanced waves produced by wake boats, was published in February, 2022. The technical details of the boats involved, the near shore and underwater sensing devices and techniques involved in each Phase are well beyond the scope of this newsletter; the combined Phase One and Two reports total about 250 pages (those reports, incidentally, each underwent independent technical reviews by separate outside panels of experts). Here we can merely report the highlights.

Phase One revealed that at a distance of 500 feet from a reference point a wake boat operating with maximum displacement would produce the same wave height as a typical boat on plane at 200 feet, and would produce greater wave power until 600 feet distant. It concluded that “Under typical wakesurfing conditions, wakesurf boats required distances greater than 500 ft. to attenuate wake wave characteristics...to levels equivalent” to other boats on plane at 200 feet.

Phase Two of the study, published in July 2025, dealt with the vertical effect of wake-enhancing operation. While most boats produce a propwash which basically points backwards from the boat, the very design of wakeboats requires the propeller have a significant downward slant, meaning the propwash will reach to some depth, potentially disrupting vegetation and re-suspending nutrient containing sediments which have precipitated to the bottom. Excessive nutrients, of course, promote the growth of excessive aquatic vegetation and algae. These effects were found, resulting in the recommendation that wake boats in wake mode be operated in not less than 20 feet of water, which confirms the operational depth recommended in the Spring newsletter.

Because the Phase Two field work was performed in the autumn, after the fall turnover had been completed, the effect of wakeboat propwash on the thermocline could not be studied. The thermocline is a summertime phenomenon in deeper lakes where, at a certain level, temperature begins to decrease rapidly with increasing depth (and so do levels of dissolved oxygen, until often reaching near zero). It forms as summer warms the upper waters and collapses, or “turns over,” as the surface cools in autumn and the two thermal layers again mix. In between these events there is little or no mixing of water between the warmer and cooler layers. As an example, in August of this year at Long Lake water test Site D, north of the entrance to the dam, the

thermocline started at 25 feet and temperature dropped 14 degrees F in the next five feet, while dissolved oxygen dropped from 6.77 parts per million (adequate for any fish in the lake) to near depletion!

Whether propwash from wakeboats could disrupt this thermal barrier is unknown, but note that the Site D thermocline was only five feet below the recommended depth to prevent the disruption of bottom sediments, and the thermocline is composed of mere water, not solid bottom. Whether disruption would be detrimental is something yet to be studied, and further study is recommended in the Phase Two report. We will monitor for further information, and keep you informed.

LONG LAKE WAKE ZONES

Long Lake is a place we all share. To ensure the healthiest lake possible please be mindful of your boat's impact on the shoreline, lake floor, and other boaters.



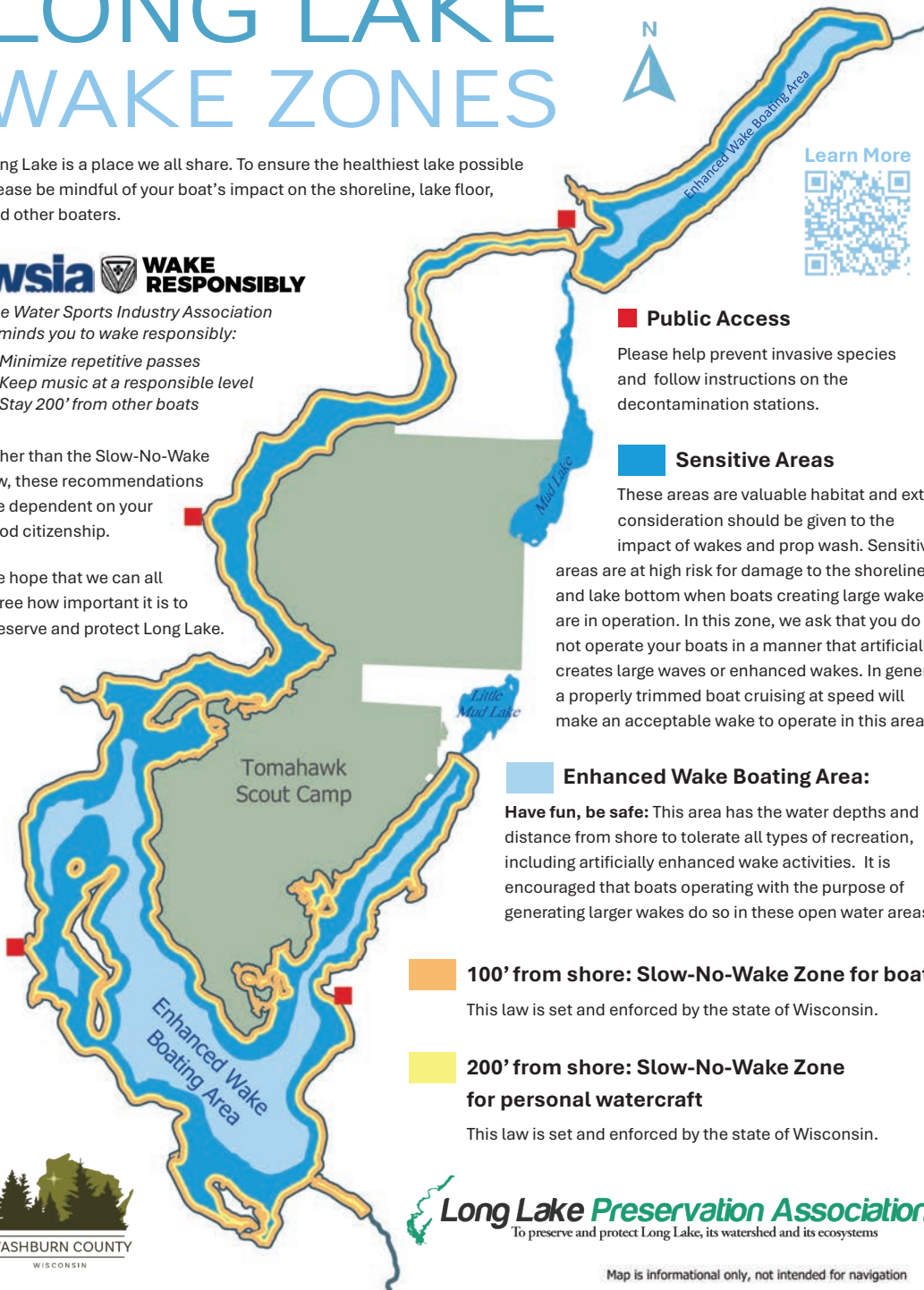
The Water Sports Industry Association reminds you to wake responsibly:

1. Minimize repetitive passes
2. Keep music at a responsible level
3. Stay 200' from other boats

Other than the Slow-No-Wake law, these recommendations are dependent on your good citizenship.

We hope that we can all agree how important it is to preserve and protect Long Lake.

Learn More



Public Access

Please help prevent invasive species and follow instructions on the decontamination stations.

Sensitive Areas

These areas are valuable habitat and extra consideration should be given to the impact of wakes and prop wash. Sensitive areas are at high risk for damage to the shoreline and lake bottom when boats creating large wakes are in operation. In this zone, we ask that you do not operate your boats in a manner that artificially creates large waves or enhanced wakes. In general, a properly trimmed boat cruising at speed will make an acceptable wake to operate in this area.

Enhanced Wake Boating Area:

Have fun, be safe: This area has the water depths and distance from shore to tolerate all types of recreation, including artificially enhanced wake activities. It is encouraged that boats operating with the purpose of generating larger wakes do so in these open water areas.

100' from shore: Slow-No-Wake Zone for boats

This law is set and enforced by the state of Wisconsin.

200' from shore: Slow-No-Wake Zone for personal watercraft

This law is set and enforced by the state of Wisconsin.



Map is informational only, not intended for navigation



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— Photo by Joe Thrasher

