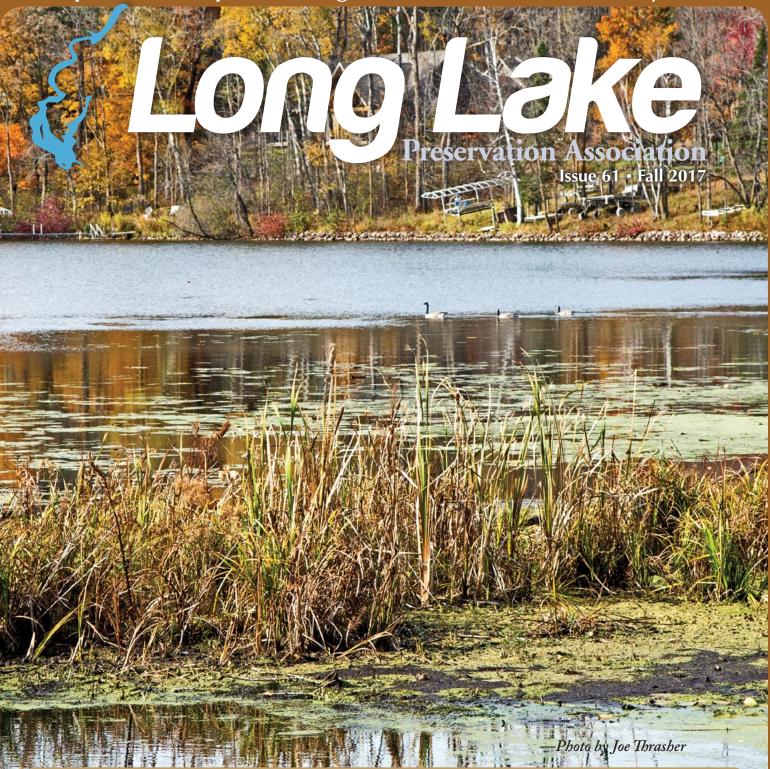
To preserve and protect Long Lake, its watershed and ecosystems



President's Message

It's hard to believe another summer has passed and fall is already upon us. Where does the time go.

Thank you to everyone who has renewed or began their Long Lake Preservation Association membership in 2017. Your commitment every year is critical to the future of the lake we all love and enjoy. Your membership and additional contributions are what allows the LLPA to continue monitoring, educating about and improving the health of our lake.

Your lake association has had another busy summer. Just some of the items your membership dues have allowed us to accomplished so far this year include: surveying the lake for invasive species, clean boats clean waters boat landing monitoring and education, coordinating the summer ice cream social and silent auction, promoting and assisting with Cakes at the Lakes *Continued on Page 2*

Long Lake Preservation Association

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President's Message continued

education programs at Hunt Hill, promoting and monitoring Loon nesting habitat, monitoring and reporting on lake water quality and clarity, starting the process for another fish sticks habitat structure to be placed this winter, building and placing zebra mussel monitors at the public boat landings, working with the county to maintain a safe and efficient lake level, starting on the preparation of the 2018 Long Lake educational/informational calendar. As you can see the board and other volunteers have been busy. We work with the Department of Natural Resources, local government units, local businesses and other environmental organizations to meet the goals and objectives of the LLPA.

If you have not been a member or have let your membership lapse, please consider joining us again in the coming year. Long Lake has about 750 property owners. The LLPA has about 430 individuals, households or businesses paying membership dues in both the current and past year. When you are talking to friends and neighbors please mention the LLPA and all the good it does. If they also enjoy the lake for fishing, boating, other recreation or just enjoying its beauty, please reach out to them and encourage them to join. Membership is not restricted to lakeshore owners; anyone who enjoys the lake should consider joining. Have them visit our web site at www. LongLakeLLPA.org to learn more about us and print out a membership form.

About four years ago the LLPA changed its year end from May 31st to December 31st so memberships now are on a calendar year basis. We are working to get the 2018 calendars prepared and mailed out near the end of December this year. Included in the mailing with the calendar will be the 2018 membership form. Please consider filling out and returning the 2018 membership form when you receive it with the calendar. Also keep in mind the LLPA is a 501c(3) organization so your membership fee and any contributions to the LLPA are deductible for income tax purposes.

We always welcome suggestions on how we can improve our organization and better serve the members of the LLPA. If you have any comments, questions, or want to become actively involved in the LLPA please contact me or any of our board members. Thank you for your continued support and interest in keeping Long Lake healthy for generations to come.

— Randy Krautkramer President, LLPA

It was the perfect combination of a gorgeous day on Long Lake, free ice cream and families and friends bidding on generously donated auction items. Long Lake Preservation Association held their annual Ice Cream Social at Reel 'em Inn and would like to thank the generosity of Mary Kupper for hosting this event. LLPA provided information about lake stewardship, aquatic invasive species and loons as part of their mission to maintain, protect and enhance the quality of the lake and its surroundings.

While licking drips of raspberry truffle ice cream, residents and visitors to Long Lake were able to shop for LLPA gear and clothing, bid on a variety of silent auction items and view information regarding the health of the lake.

The Long Lake Preservation Association would like to thank the generosity of the following businesses

Kitchen Kleen Potatoes Perlicks's Yeoman Vodka Janice Hovey- Metatorusz Jewelry Dahl's Home Store Lehman's Supper Club Joe Thrasher Photography Milwaukee Brewers Lincolnwood Resort Long Lake Bait and Tackle Dave's Outboard The Roost Maureen Bergh – SOMO Totes Green Bay Packers DHH Designs Randy Krautkramer – Packer Tickets Village Dell Gift Basket Barb Sabatke Minnesota Twins Bill Lennox Butternut Hills Caroline Hagman – Cozy Moon Jewelry Eastside Campground

Long Lake Water Levels

For many of us there was a mystery about lake levels, why and when it changes, what is caused by Mother Nature and what is caused by man.

The water level is not managed by the LLPA but rather is managed by the Washburn County Highway department with guidance from the DNR and state regulations. But being an interested party the LLPA understands the impact the water level has on wildlife, fisheries and riparian users. So in September 2015 the LLPA established a committee involving LLPA board members, the Washburn County Highway Commissioner and two DNR specialists to take some of the mystery about lake levels and to propose more specific guidelines for all to follow.

Our Goals (not in any particular order): 1. Protect the wildlife users of the water, 2. Protect homeowner shorelines, 3. Protect fisheries and 4. Allow riparian's and interested parties to benefit the most from lake use.

The LLPA role is to monitor, assist, consult and to advise the Washburn County Highway Committee.

Our lake level, as most water bodies around the world, is measured in feet above sea level (FASL) and we established three main Water Level Categories with five specific Water Level Target Ranges.

Three Water Level Categories:

- Spring Ice Melt
- Boating Season
- Fall Draw Down

Five Water Level Targets

- **Spring Target =** 1223.6 FASL (no ice within sight of Lincolnwood Resort)
- Boating Season (until initiation of Fall Draw Down)

Target - 1223.2 FASL (try to stay above, rainfall may be insufficient)

Minimum - 1223.0 FASL (2.4" below boating season Target)

Maximum - 1223.5 FASL (3.6" above boating season Target)

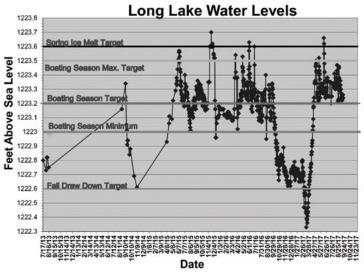
• Fall Draw Down:

Fall Draw Down Target = 1222.6 FASL (7.2" below boating Target)

The reasoning for the fall draw down is that it minimizes winter shoreline damage, keeps aquatic life from freezing out that hibernate below the lake bed and supports the spring fish spawning. It is best that the fall draw down is completed around October 15th so as to stabilize the water level for the hibernating turtles and frogs. If the water level drops below the level the turtles and frogs have hibernated at they will freeze out and die. These lake level ranges allow a maximum 6.0" variation during the boating season and maximum of 12.0" variation from the spring ice melt to completion of the fall draw down.

If necessary 1.5" of lake water level can be discharged from the dam in a 24hr period, i.e. 4.5" lake level reduction in 3 days or 10.5" reduction in one week so it is always better to have a reserve as it is easier to let water out than to try to replenish it. There is also a required minimum outflow of 448 gallons of lake water per minute through the dam to support the Brill River and downstream environmental needs.

At this point the program seems to be working well and the County has been helpful to the process so the LLPA sincerely thanks them for their cooperation. We will continue to monitor this program and are open to adjust the target levels if needed.



By the way, it is interesting to note that in 1883 the Wisconsin Minnesota Light and Power Company who owned the Long Lake dam allowed for a 12 foot variation in the water level and in 1913 when the Railroad Commission was given jurisdiction over the dam they dictated that the water level variation should be limited to 12 inches. When the Wisconsin Minnesota Light and Power Company failed to comply the Railroad Commission went to court and in 1915 it became law that the lake level should not vary more than 12 inches with the proviso "in cases of flood due to rain or rapidly melting snow the maximum level may for a period not to exceed 24 hours be raised three inches". The Washburn County Highway department was given jurisdiction over the dam sometime in the 1960's and this law is still in effect today.

—Randy Poznansky

Zebramussel Update

In the last newsletter we reported on the October 2016 finding of Zebra Mussels in nearby Big McKenzie Lake. A total of nine were found at that time, and this Spring two more were found attached to a boat lift before it was returned to the water. Because all specimens appeared to be no more than a year old, it was not known if they had an opportunity to reproduce, but this Spring a single larva, known as a veliger, was detected microscopically (DNR photo at center), and since then quite a few more have been located.

Zebra Mussels are an invasive species which has the potential to be extremely damaging, largely because they are incredibly prolific. A single female can lay up to one million

eggs per spawning season, and even at a survival rate of only two to five percent the population can mushroom. They tend to attach to hard surfaces, and when the population grows enough they clog water intakes and boat motors, attach themselves to native mussels, and shells of the dead wash ashore in great masses, cutting the feet of anyone attempting to wade there. Perhaps most significantly they out-compete native species for food.

Not all lakes are suitable for them, as they do require a source of calcium in the water. Unfortunately, Long Lake has plenty of it for them, and is at risk.

Zebra Mussels originated in Eurasia, where predators kept them in check. But they eventually migrated through European river and canal systems, and reached the United States Great lakes in the 1980's attached to the hulls and in the bilge water of ocean going ships. They can likewise move from lake to lake attached to boats and trailers, and via microscopic larva in live wells. Here they have few natural enemies, and hence their rapid reproduction. Carp are known to feed on them, but introduction of carp for that purpose would be a definite leap from the frying pan to the fire. Some success has been reported treating infested water with a form of dead bacteria which disrupt their digestive system, as well as with a copper based product, but those techniques are far from proven yet, and can be extremely expensive.

The best defense against them is, obviously, to keep them out of the lake, period. That is why it is so important to follow the rules about not transporting water from lake to lake. In their larval form Zebras are microscopic, so visual inspection alone is not enough. Drain everything.

> LLPA has continued Clean Boats Clean Water inspections at major landings. Additionally, because early detection gives at least some hope of control we have built Plexiglas devices known as collector plates and suspended them from docks at landings, the idea being that if they are present they will attach. Thus far all inspections have been negative.

This fall we ask all lake owners to carefully inspect their own docks and lifts upon removal from the water. Zebra Mussels are not much larger than a thumbnail, or smaller,

and have brown and tan stripes. Don't just visually inspect, but rub dock and lift legs with a bare hand. If tiny mussels are present it will feel gritty. If something suspicious is found, contact Lisa Burns of the Washburn County Land and Water Conservation Department, 715-468-0906, or any LLPA Board member. Do not worry about it being a false alarm; it is much better to go to a false alarm than to miss the real thing.

— Joe Thrasher

BASS/WALLEYE INTERACTIONS

by Larry Damman

Retired Fish Biologist (Reprinted with permission of the author and Washburn County Lakes and Rivers Association) Lately there has been a lot of debate among anglers and management professionals about whether largemouth bass are detrimental to walleye populations. The idea that largemouth bass

and walleye are fierce competitors is not new. Lakes where walleyes reproduce naturally always have relatively low largemouth populations. In the past it was clear that walleye could be destructive to bass populations. In the 50's and 60's walleyes were stocked into all the bass lakes where walleye had never existed before. Most of the stockings simply failed. In some cases, stocked walleye survived and started to reproduce. As with natural walleye lakes, wherever stocked walleye reproduced the native largemouth population decreased, often to the point of near extinction. Bass Patterson and Shell Lake are local examples.

Community interactions like bass/walleye encompass the struggle to survive and thrive. Fish populations are always in a state of flux as the community adopts to local weather patterns, new specie introductions, water level changes, and even management practices like stocking or size and bag limits. Community interactions assure that net biological productivity is maintained even as individual prey and predator species go up or down with changing conditions.

Anglers tend to think of these interactions in terms of direct predation. If walleye are in decline it must be because something is eating too many walleye fingerlings. Since largemouth bass numbers have increased it seems obvious who is eating the walleye. Still, why did bass populations increase across northern Wisconsin in the first place?

Wisconsin has a wide diversity of game fish species. We fall within the northern range limits of the sunfish family which includes largemouth bass and the southern limits of "near arctic" species like northern pike and walleye. It should be no surprise that a long period of warmer weather with fewer weeks of ice cover would favor bass over a neararctic species like walleye. Studies of largemouth and other sunfishes in northern states strongly link reproductive success to the size fingerlings reach by fall. Largemouth fingerlings have been getting several extra weeks to grow before winter sets in. Higher recruitment rates will shift community balance.

The other side of the equation is management. Back in the 1980's anglers were becoming more interested in catching bigger fish. To address changing public expectations, DNR formed bass and walleye committees to propose regulation changes. The bass committee finished its work first and minimum size limits went into effect statewide in1989. I was skeptical that size limits would have much effect. Bass anglers already practiced total catch and release. I was wrong. Surveys showed increases in largemouth bass numbers over historical averages the first year of the regulation. Numbers continued to increase in subsequent years. Apparently panfish and pike fisherman had been keeping more bass than I thought.

Changing walleye regulations took an extra year. Walleye lakes were placed into size limit categories based on their level of natural reproduction. The regulations were only somewhat more conservative than previous ones so the response was not very noticeable. Of course timing can be everything. Had the walleye regulations come first it might have helped keep bass populations in walleye lakes in check a little longer. Still 25 years of high bass recruitment would have pushed community balance toward bass over time.

Bottom line is that largemouth bass and walleye are fierce competitors and up to now, nature, angler harvest preferences and management efforts have favored largemouth.

One surprise in all this is smallmouth bass and walleye have turned out to be compatible and even complimentary species. Efforts to harvest down largemouth on traditional walleye waters would do well to maintain protection for smallmouth bass.



Bogs are unique wetland environments that can be found in different parts of the world. One such location is in our backyards at Hunt Hill Audubon Sanctuary, located near Long Lake.

So, What is a Wetland?

Wetlands are found between places that are always wet (lakes and rivers) and always dry (uplands). All wetlands have the same three characteristics: water for at least part of the year, soils that formed under wet conditions and plants that are adapted to grow in water or wet soil. Due to a complex geologic and glacial history, Wisconsin is home to many types of wetlands (depending on the classification system, there can be over 30 types).

The three general categories of wetlands can be summed up as:

Swamp: wetland dominated by woody vegetation

Marsh: wetland dominated by herbaceous aquatic plants

Bog/Fen: wetland dominated by mats of sphagnum moss

So What IS a Bog?

Bogs formed in the wake of the retreating glacier, around 12,000 years ago. As the glacier melted, huge chunks of ice were buried in the glacial till (sand, dirt, gravel) that was released as the ice melted. When the ice blocks melted, they left behind steep-sided holes, known as kettle holes. Some of these holes would retain the water and due to a lack of nutrients and the acidic conditions, sphagnum moss was one of the few plants that thrived. The root systems of leatherleaf, sedges and sphagnum moss allowed these plants to grow on top of the water to create a floating mat.

COOL FACTS ABOUT BOGS:

Bogs have a mat of plants that float on the water. Primary plants include: sphagnum moss, plants of the heath family (blueberry, cranberry, leatherleaf, Labrador tea, etc.), sedges, tamarack and black spruce.

The thick mat prohibits oxygen below the surface, so the bog lacks bacteria, making it a sterile environment!

Due to its sterility and absorbency, sphagnum moss had been used in WWII for gauze and before that as diaper material in certain Native American tribes.

Because of the lack of bacteria, the bog is also a location of preservation. Ancient books, barrels of fat, and even people have been found perfectly preserved. The most famous bog person is the Tollund Man, found in 1950. He was over 2,000 years old, but still had whiskers on his face, the fiber rope around his neck and researchers were even able to identify his last meal!

With a lack of nutrients, only specialized plants can survive in the bog. Some of the unique plants include: a variety of orchids and carnivorous plants like the sundew and pitcher plant.

The bog is an incredible and fragile environment. For the preservation of these special places, and your protection, we discourage walking on a bog. However, those interested in seeing this unique environment, can visit Hunt Hill and see the bog from an elevated platform. This trail and others are open to the public dawn to dusk and free of charge. Trail maps can be found online at www.hunthill.org and in the kiosks onsite. To learn more about the bog, or get a personalized tour, contact Hunt Hill at 715-635-6543 or info@hunthill.org

—Nikki Janisin



Long Lake Preservation Association • Fall 2017

Hunt Hill Audubon Sanctuary is Taking Flight!

Hunt Hill has been protecting pristine Wisconsin land and waters since it was donated to the National Audubon Society (NAS) in 1954. But even before, Frances Hunt Andrews and her family had a great appreciation for the protection of wild places. When Frances donated the Hunt Hill property, she stated that 'It is good to live with large and old trees,' and requested that 'the wild fauna- and flora, too – live their natural lives.' Today, Hunt Hill Audubon Sanctuary protects nearly 600 acres of pristine Wisconsin lands and waters. Within a short walk of the main property, visitors can experience glacial lakes, old growth and cutover forest, prairie, marsh, bogs and even a small creek. People are encouraged to visit and explore the thirteen miles of trails that are open to the public and free of charge at Hunt Hill.

In 1986, NAS closed the camp and talked of selling the property. That's when a group of people started the Friends of Hunt Hill Audubon Sanctuary (FOHHAS) and saved the camp. Since 1990, the volunteer board of directors has worked hard to create a nature sanctuary that respects the natural environment while also developing high quality educational programs. In December of 2016, after 26 successful years of operating the camp, NAS donated the camp to FOHHAS! We are excited to announce that the camp is now owned and managed locally by FOHHAS.

It is because of Hunt Hill's strong educational programming and diverse natural property that we have formed a long standing partnership with LLPA. One wonderful partnership has been the Youth Education Stewardship (YES) program which funds water education for schools around Long Lake and Washburn County. The program, currently supported by LLPA and Washburn County Lakes and Rivers Association, fully funds classes to spend the day at Hunt Hill discovering aspects of lake health, invasive species, stewardship and more. To achieve the goals of preservation and education, our nonprofit must find ways to raise funds each year. Although Hunt Hill hosts a wide variety of programs and welcome thousands of people each year to these programs, program income covers less than 40% of total expenses. Hunt Hill is fortunate to receive support through memberships, donations and foundation support to cover the difference. With this additional support, we can continue to offer programs below cost so they are affordable for area families, schools, other organizations and the community.

Recognizing the success and impact Hunt Hill has had on our region, a local couple has stepped forward with a Matching Gift Challenge. FOHHAS is excited to announce that the Clevelands have offered to match every dollar we raise, up to ONE MILLION DOLLARS, to establish an endowment for FOHHAS. This endowment will create a more stable financial base for Hunt Hill and the income generated off the principal will help with costs of operating Hunt Hill, as well as facility improvements, program growth and more. Raising one million dollars is a very big task and FOHHAS has until the end of 2019 to raise the funds. We are turning to our members, neighbors, friends and community to request support. Every dollar donated turns into two!

If you appreciate the protection of wild places and accessibility to and education concerning them, give to the Million Dollar Match today and your donation will be doubled.

If you would like to support the campaign, attend a program, or just learn more about Hunt Hill, you can find information at WWW.HUNTHILL.ORG, call Nikki at 715-635-6543 or stop out to say hello. The office is located in the farmhouse and the address is N2384 Hunt Hill Rd. Sarona, WI 54870. Thank you.

—Nikki Janisin

POINT INTERCEPT SURVEY Update

In the last newsletter we reported on an all-lake plant survey which had been conducted last August for comparison with one conducted in 2011. We now have the results, which are largely favorable.

Plant diversity as measured by the Simpson's Diversity Index remained the same, and high. Not only is plant diversity some measure of a lake's health generally, but a high diversity lake is more resistant to invasion by non-native species.

The Floristic Quality Index, intended to measure the impact of human development on a lake, did drop two points, to 42.9. This is still more than double the median FQI for this region, so we are in pretty good shape by comparison.

A good omen is the drop in Filamentous Algae, the green slimy stuff that floats around in gobs and which is considered an indication of too many nutrients in the water. It had what the biologist conducting the survey described as a near significant drop in the number of points at which it was located, and a highly significant decline in density where it was located. In 2011 that same biologist reported that the stuff was found almost exclusively in front of developed lots not employing good shoreline management practices. In other words, please quit mowing to the shoreline.

— Joe Thrasher



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