To preserve and protect Long Lake, its watershed and ecosystems

Long Lake Preservation Association

Issue 64 • Spring 2019

President's Message

By the time you read this newsletter the lake will be free of ice, and the ducks, cranes and loons will be back for their summer visit!

Some of you may be surprised to receive this newsletter in print form. Last year in the spring newsletter I indicated the LLPA board was switching to e-mail only for future newsletters. However, on the 2019 membership forms about 15% of our members indicated they do not have or do not use e-mail and would like a printed copy. So for now, we will continue printing and mailing newsletters. We hope you find this information educational, timely, and useful; and will share with family and friends in the coming weeks! Current and past newsletters can also be found under the "News section" on our website home and can be downloaded from the site.

The 2019 LLPA calendars were mailed out in early January. If you paid 2018 dues and did not receive a calendar, please let us know and we will mail you one. The calendar included the 2019 membership renewal form. Thank you to everyone who has renewed or began their Long Lake Preservation Association membership in 2019. The strength of our association relies heavily on membership, so if you haven't sent in your 2019 dues yet, please do so at your earliest convenience. The membership form can also be found on our website under the "Membership & Support" tab.

The LLPA annual meeting is scheduled for Saturday, June 1st, 9:00 am at the Boy Scout Camp. One of the items on the agenda this year is a brief discussion on the annual fall draw down of Long Lake. Our Fall 2018 newsletter had an excellent article on the pros and cons of a lake fall draw down. If you want to revisit that article you can access the newsletter on our website. Washburn County manages the dam which controls our lake level. The LLPA does communicate with the county to make recommendations regarding lake levels. We will poll members

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President's Message continued

at the annual meeting to see how many are in favor of continuing the drawdown and how many would prefer no fall draw down. We will share the results with the county for their consideration when controlling the dam. We hope to see you at the annual meeting!

If you haven't visited our website lately, please do. The web address is www.longlakellpa.org. Barb Lang is our new webmaster and has done an excellent job updating the site. The LLPA website is a great resource for upcoming events, photos around the lake, educational materials, copies of past newsletters, and a whole lot more. Please visit our site to see what is new!

We 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. If you would like to help out but do not want to become a board member, consider joining one of the eight committees that serve the LLPA. Thank you for your continued support and interest in keeping Long Lake healthy for generations to come!

— Randy Krautkramer
President, LLPA

What do Kids do at Hunt Hill?

by Nikki Janisin

Hunt Hill's long tradition of day camp programs continues this year and will start on June 24th. These programs are open to kids ages 5-12 and offer a day of nature-focused outdoor fun and learning! In addition, each spring and fall Hunt Hill provides many more educational benefits to hundreds of area youth who visit the nature preserve and learning center for day-long field trips.

During these field trips, each grade level is offered a different set of programs that connect to and enhance classroom learning. In late spring, Hunt Hill hosts the popular Prairie Fling Festival where families can enjoy a day of outdoor fun with live animals, music, activities, artist and community booths, wagon rides and more. This year the Prairie Fling Festival will take place on June 8.

On May 18th Hunt Hill will host a Playscape Party to celebrate the grand opening of the children's nature playscape. The playscape is located behind the farmhouse office and is open during daylight hours. The playscape features natural materials that make up a creek, sandpit, fort, mud kitchen, berm and more. The play area is free for youth and family fun. Lastly, Hunt Hill has 13 miles of trails that are free and open to the public. To learn more about Hunt Hill, check out www.hunthill.org or call 715-635-6543. Office hours are 9am-4pm Monday-Friday.

YES Program

In partnership with LLPA and WCLRA, Hunt Hill has been offering free day-long field trips to schools throughout Washburn County. The YES program stands for Youth Education Stewardship and offers Washburn County youth the opportunity to learn about the importance of our waters and how to become stewards of them. This program helps kids explore the impacts of invasive species, shoreline buffers, water chemistry, stewardship, and aquatic animal collection and identification.

Cakes at the Lake

Summer 2019

Saturday, June 22

Amphibians

Presented by Chris Cold, WI DNR

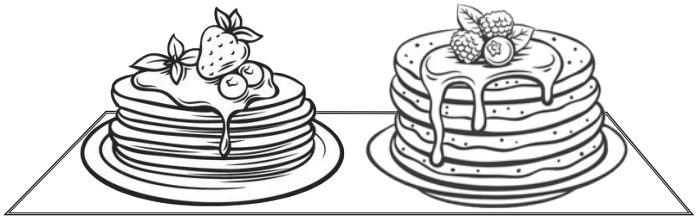
In this session, participants will learn about frog, toad, and salamander identification and habitats. In addition, participants will be able to view a few live amphibians! By the end of this presentation, participants will understand the importance of amphibians as living indicators of environmental health!

Saturday, July 13

Butterflies

Presented by Jim Schwiebert, Beaver Creek Reserve

Learn about the beautiful and colorful insects that call our meadow home!



Saturday, August 10

Uncommon Facts about Common Birds

Presented by Stan Tekiela, Nature Smart

This will be a fun and entertaining presentation including fascinating facts about some of the birds that people love to hate along with some of the more common birds that grace the yard at Hunt Hill. Presenter Stan Tekiela will challenge your preconceived ideas about many common birds, including the European Starling and the American Crow. You may leave this session feeling different about these birds!

Saturday, August 24

Wild Rice

Presented by John Haack, Retired UW Extension

Join us to hear about the fascinating history and unique biology of wild rice, the "food that grows on water." Learn what is involved in processing and preparing this delicious local food!

AVOIDING LIGHT POLLUTION

by Joe Thrasher

In October of 1879 a man performed a simple task which forever changed the way we view the nighttime world.

Thomas Edison flipped a switch.

The rest, as they say, is history!

Yes, history buffs, we realize Edison did not actually invent the electric light bulb, but he did perfect it to commercial usefulness.

Long before artificial light was introduced to Long Lake, the night shone bright with stars, the Moon and planets. It still does, but not without some intrusion by electric competitors. We are the lucky ones, because if we (and our neighbors) keep the outdoor lights off, the clear night sky is an object of awe! In late summer and fall if we keep it really dark with a little effort we can see a completely separate galaxy with the naked eye (Andromeda, light from which takes 2.5 *million years* to reach us). Much of the rest of the world is not so fortunate. According to a 2001 article by the Royal Astronomical Society, as a result of light pollution two thirds of the U.S. population has lost the ability to see the Milky Way with the naked eye (and that was 18 years ago)[1]. Here, on a moonless night the Milky Way practically shouts at us with brightness.

Excessive and unnecessary outdoor lighting can ruin all that for anyone living nearby. We can, with proper training or equipment, keep our dogs off the neighbors' lawns. Not so for light; once on/released it is the ultimate trespasser. Excessive outdoor lighting not only interferes with our own ability to enjoy the wonders of rural darkness, but selfishly interferes with enjoyment of that rural darkness by others as well.

In addition, outdoor lighting has adverse ecological ramifications, largely because plants and animals (including us) have evolved in a 24-hour cycle of light and darkness, and live by them. As noted in the May 2016 issue of the *Journal of Ecology,* "The rapid spread of outdoor electric lighting across the globe over the past century has caused an unprecedented disruption to these natural light cycles"[2]. "This darkness interruption has dangerous and disruptive side effects for insects, birds, reptiles, amphibians, and humans. The effects extend to migration, navigation, plant blooming as well as when trees lose their leaves. All activities are affected by the period of light and not temperature"[3].

This can hit home at our shoreline. Amphibians, perhaps because they sense light levels 100 times dimmer than humans,[4] and which are primarily nocturnal, can be particularly affected. Frogs stop their mating calls (that is what frog choruses are, mating calls) in the presence of unnatural night light, reducing their reproductive capacity.[5]

Plants are also affected, since they too evolved in day-night cycles."[M]any species of plants and animals rely on the length of the night to indicate the proper season for budding & flowering, mating, molting, and other life cycle activities[6].

This does not mean, of course, that we should try to function outdoors in total darkness. No one wants to trip over a skunk on the way from garage to house, or climb stairs from the dock with no guiding light. But we do not need glaring dusk to dawn mercury vapor security lights to avoid such problems. A common-sense approach can supply needed light without creating light pollution. As a general guideline, the International Dark Sky Society recommends that lighting:

- Only be on when needed
- Only light the area that needs it
- Be no brighter than necessary
- Minimize blue light emissions
- Be fully shielded (pointing downward)[7]

More specifically, several model outdoor lighting ordinances have been drafted for use by county and local governments, including one published by the University of Wisconsin-Extension in 2003.[8] Some of its requirements, found in numerous actual ordinances, include:

- Outdoor lights shall be placed so as not to cause glare across property boundaries
- Fixtures may not allow light above the horizontal
- Flood lights shall not be pointed more than 45 degrees above straight down
- Lights on or designed to illuminate docks shall be shielded to prevent direct visibility of the lamp more than 50 feet from the dock, and shall be turned off when not necessary for safety or security

In 2005 the Town of Long Lake adopted a similar ordinance, Ordinance 2005-7, which incorporates many of the provisions of the UW-Extension model, including dock light provisions.[9] Notably, it also requires security lighting be put on motion sensors.[10]

Compliance with such ordinances where they exist, or just plain respect for neighbors and nighttime critters where they don't, is not difficult. The hardware is out there and readily available. The link at note vii below shows examples of "good" and "bad" lighting choices. A brief DNR publication does the same with specific reference to shorelands.[11]

It is even possible to illuminate flags without obtrusive light pollution; an internet search for "solar lighted flagpoles" will reveal numerous choices of poles which light the flag, and little else, from above, with the lamps pointing down. While hardware approved by the International Dark Sky Society is not exclusive, items bearing its seal of approval are dark sky friendly.

It has been observed that this is one form of pollution avoidance that doesn't cost, it pays. "Unlike other forms of pollution, the elimination of light pollution in all its forms actually saves money. Quality lighting costs less than bad lighting and everyone wins when lighting is done right. All of us live under the sky, and all of us need quality exterior lighting. Careless use of exterior lighting damages the nighttime environment for everyone… ."[12]

So the next clear night, flip that switch to off. Step outside and say hello to a star.

Avoiding Light Pollution continued

Sources:

[1] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2627884/

[2] https://besjournals.onlinelibrary.wiley.com/doi/10.1111/1365 2745.12551

[3] https://kids.niehs.nih.gov/topics/natural-world/wildlife/ecology lighting/index htm, by the National Institute of Environmental Health Sciences

[4] https://www.nps.gov/articles/nocturnal_earthnight.htm

[5] https://openi.nlm.nih.gov/detailedresult?img=PMC2627884_ehp-117 a20f5&req=4

[6] Note iii, supra.

[7] https://www.darksky.org/our-work/lighting/lighting-for-citizens lighting-basics/

[8] https://darkskywisconsin.extension.wisc.edu/files/2015/11/WI-Model Ext-Lighting-Ordinance-0812.pdf

[9] https://townoflonglake.com/wp-content/uploads/2016/05/Mar-08 2005-2005-7-Outdoor-lighting-requirements.pdf

[10] In fairness to our Town of Long Lake readers, some Town officials have questioned whether this ordinance is any longer enforceable in view of an intervening state statute removing the right of counties to take certain zoning actions in shoreland zoning districts. This question presents detailed legal issues well beyond the scope of this article. Suffice it to say Ordinance 2005-7 is still "on the books."

[11] https://dnr.wi.gov/topic/ShorelandZoning/documents shorelandlighting.pdf

[12] Note viii, supra.

BOAT CLEANING & DECONTAMINATION STATIONS

The zebra mussel invasion is a reality, it just hasn't hit Long Lake yet. As of last fall the numbers of zebra mussels found in Big and Middle McKenzie Lakes are on the rise. Those lakes are only 20 miles from Long Lake. Our 2017 Spring and Fall newsletters included articles on the impact zebra mussels can have on a lake. If you want to review those, our past newsletters can be found on our website.

In February 2018 Burnett and Washburn Counties passed Decontamination Ordinances. The Washburn County ordinance sections 46-47 thru 46-50 states "If a decontamination station is available for use at a public or private access, the boater shall decontaminate per posted directions using the station provided". With this ordinance in place the county can enforce the use of these cleaning stations. Since we do not have zebra mussels in Long Lake it is important to have boaters use the stations before and after they put into Long Lake so they don't bring invasive species into our lake. To date, 14 lakes in these 2 counties, including Long Lake have installed the cleaning stations.

If you have used or visited any of the four major boat landings on Long Lake after October of last year, you should have noticed the new decontamination stations. The cleaning stations consist of a 4x8' sign, cleaning brush, hook to remove weeds, goggles and a one gallon sprayer. The sprayer contains a bleach solution consisting of 2 tablespoons of bleach per 1 gallon of water. Once mixed the potency diminishes after 3 days. The Chamber and LLPA volunteers will be refreshing and keeping the sprayers filled as needed during the boating season. If you want to volunteer to help, please contact one of the LLPA board members.

The LLPA and the Long Lake Chamber joined forces to provide the manpower to construct the stations. Two of the signs were purchased and provided by a WDNR grant through the County Land and Water Conservation Departments with the cost of the other two signs and all the construction materials paid for jointly by the LLPA and Chamber. Decontaminating your equipment helps reduce the chances of spreading aquatic invasive species like zebra mussel larvae that are not visible to the naked eye. We simply ask you to spray all your boating equipment down prior to moving into and from a lake.

Decontamination is especially important when boats or other watercraft are coming in from other bodies of water that may contain invasive species. We know being diligent in using this process consistently will add minimal time in launching your watercraft, but we hope everyone complies and promotes compliance for the long term preservation of our lake. Have a great boating season!

Sources:

https://dnr.wi.gov/topic/invasives/fact/zebra.html

http://www.startribune.com/lakes-with-zebra-mussels-are-goners-lock-the-trouble-there/422144543/

https://dnr.wi.gov/topic/Invasives/prevention.html

Did you know that **Wood Ticks** don't like **Wood Chips** (and some plants)**?**

By Mitchel Block, UW-Stevens Point Student (reprinted from Lake Tides, Vol. 43, No. 3 Summer/Fall 2018)

The weather might be cooling off a bit as kids go back to school: Halloween items start appearing on the shelves of stores, and you start thinking about making chili and that pumpkin spice latte. But beware, the weather is still plenty warm for an atrocious arachnid waiting right outside your door, ready to suck your blood...the tick!

These tiny pests are hosts to all sorts of bad bacteria and diseases,including Lyme's disease. Since 1980, over 38,000 cases of Lyme's disease have been reported in Wisconsin, and an estimated 75% of those cases were contracted right in residential backyards. Ticks aren't easy to stop either. They can easily survive through the frigid Wisconsin winters and can even survive underwater for over two weeks!

So, what can stop these pesky parasites from finding their way into your backyard? Well, it turns out simple wood chips are able to do the trick. Amazingly, ticks are afraid of getting lost in the wood chips and dehydrating, so they avoid them altogether! A strip of wood chips just a few feet wide is enough to create an impassable barrier that stops ticks in their tracks. Wood chips aren't the only strange way of stopping the bothersome blood suckers. Plants like lavender, sage, or chrysanthemum, or strips of cedar mulch with cedar oil have also all been suggested to prevent the spread of ticks.

THIRD FISH STICKS PROJECT COMPLETE!

By Joe Thrasher

In February LLPA, in conjunction with Camp Tomahawk Scout Reservation, completed a third Fish Sticks project. Previous projects were done in 2015 and 2018.

Fish Sticks is a habitat replacement program where bundles of four to five trees are sunk perpendicular to the shoreline in areas of fairly steep drop off. These bundles are assembled on the ice in winter, and sink upon ice out. As reported in prior newsletters and on the LLPA web site, trees which naturally fall into lakes provide excellent habitat, not only for fish, but for numerous species lower in the food web. Once under water, the trees that create the habitat last for a long, long time. As lakes are developed, these natural habitats naturally occur less as fewer trees are left to fall and/or are removed after falling. Man-made Fish Sticks with natural resources make up for that loss.

The first two projects are located along the Scout shoreline opposite from Hank's Landing on Todd Road. The newest is near the Scout Lodge on the "thumb" of the lake, near

the tall flag pole. Thus far the projects have been funded by LLPA, with Camp Tomahawk supplying the trees. A subsequent project is planned for next year, tentatively to be located near the most recent project. LLPA has recently been awarded a DNR Healthy Lakes Project grant to significantly defray the costs involved.

Lakes 101

By Kim Becken, UWEX Lakes
Forward by Susan Knight, UW-Center for Limnology, Trout Lake Station

Lakes 101 is a recurring section of Lake Tides *is meant to help explain the basics of lake related topics. If you are curious about a lake issue or water related topic, let us know and we will explore it in a future issue (uwexlakes@uwsp.edu or 715-346-4744). You can also connect with us on Facebook by typing "Wisconsin Lakes Partnership" into the search box at http://www.facebook.com.*

Topic: Lake Nutrients

Too much of a good thing almost always leads to problems. This is especially true when it comes to nutrients and lakes. Lakes need some nutrients, such as nitrogen and phosphorus, or they would be as bare as water-filled bathtubs. Nutrients are necessary for algae and plants, which in turn fuel the entire lake food web from tiny zooplankton to feisty crayfish, and from baby fish to trophy muskies. But with too many nutrients, and especially too much phosphorus, the algae multiply so fast that the lake's tiny herbivores, the zooplankton, cannot keep up and the lake turns a not-so-tempting green.

Limiting Nutrients

When a nutrient is missing or in short supply it is considered a limiting nutrient. Phosphorus and nitrogen are usually considered limiting nutrients because plants require a large amount of them to grow. With that said, phosphorus and nitrogen play a huge role in the amount of biological activity in a lake. In Wisconsin lakes, phosphorus is usually the element in shortest supply. But when increases in phosphorus concentration occur too fast, the plants can't keep up. This leads to an increase in algae. Higher levels of algae reduce water clarity and result in lower oxygen levels when this organic matter ultimately decomposes. Nitrogen is also an essential element for algae and plants, and together with phosphorus can influence the mix of algal and plant species.

Phosphorus

Total phosphorus is often a key driver of biological productivity in a lake. Phosphorus concentrations are shown in the diagram below with measures of algal concentrations (Secchi depth and Chlorophyll) based on research that relates all of these to a lake's trophic condition. If they are much different than expected, other factors may also be influencing lake biology. Lake total phosphorus concentrations can vary over time: from year-to-year and within years. In deep lakes, the overturn sample can often predict summer conditions. Shallow lakes that do not stratify in the spring (meaning they do not separate into distinct layers) often have higher phosphorus concentrations during the summer.

***A lake's trophic condition is a snapshot of its water quality, nutrients and clarity during its aging process. See "Lakes 101" in last winter's* Lake Tides.**

An overturn sample is taken during lake turnover, which is the seasonal movement of water in a lake when previously separate layers of water mix.

Nitrogen

Total nitrogen is composed of different forms of nitrogen including nitrate, ammonia and organic nitrogen. The normal or acceptable range is 0.30-0.60 mg/l. If the nitrogen concentrations are very low relative to the phosphorus, nitrogen may be a more important contributor to lake productivity. The concentrations of these nutrients reflect the sources of water, how long the water stays in one place and the time of year.

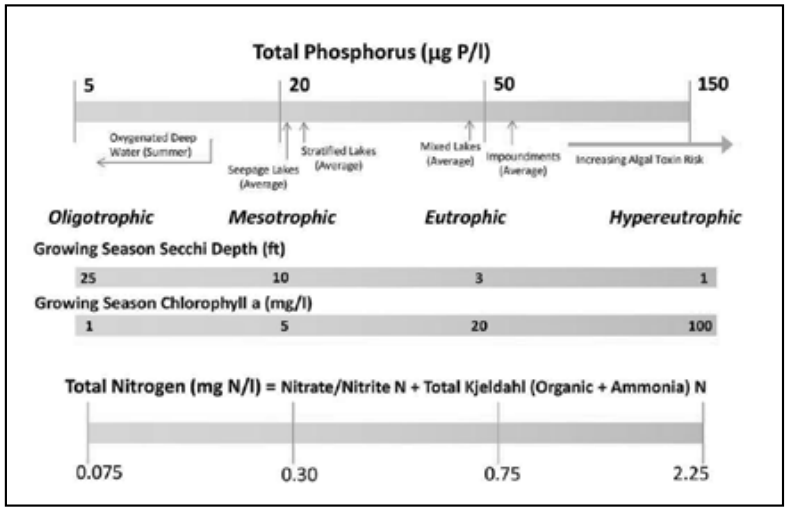


Diagram created by the Water & Environmental Analysis Laboratory at the University of Wisconsin-Stevens Point.

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