

THE LAKER

NORTH LAKE PROTECTION ASSOCIATION www.northlaker.org JULY 2018

NLPA MISSION: *To protect the ecological, recreational and aesthetic well-being of North Lake.*

NLPA ANNUAL MEETING

August 1, 2018, 7:00 pm
Inverness Country Club
13900 North Territorial
EVERYONE WELCOME!

AGENDA:

1. Review/Approve minutes
2. Treasurer's Report
3. Old Business
 - a. Update on SAD
 - b. Status of Weed Control
 - c. Lily Pad Treatment
 - d. Water quality Testing
4. New Business
 - a. Youth Corp Status
 - b. Other Business
5. Election of Officers

NLPA ANNUAL DUES

*Please support your NLPA by sending your \$10 dues. We have continuing expenses for many of our activities. Please make checks out to NLPA and send to Dick Frendt in the enclosed envelope. **Please include your email address IF YOU DID NOT PROVIDE IT LAST YEAR OR IF IT CHANGED. We will keep it confidential and only use it for important lake notices.***

MUTE SWANS DECLINE

The non-native Mute Swan reduction program initiated by the MI DNR in 2013 has resulted in a 45% decrease compared to the period from 2009 through 2013. About 8,100 Mute Swans remain in the state, a reduction of about 2,000 from last year. A little over 2,000 Mute Swans remain in Southeast Michigan. The DNR goal is to reach a population of less than 2,000 statewide by 2030. North Lake has not requested the reduction program to be implemented here.

CREATE A SHORELINE THAT PLEASES!

Native plants can make a difference

The Clean Lakes Monitoring Program we participate in is promoting protection of native aquatic plants and establishing native shore plants that provide multiple benefits. Aquatic near-shore plants please the fish that use them for spawning and for habitat for juvenile fish. On shore plants and shrubs please the frogs and turtles that live there. And they please you by providing pleasant and colorful landscapes. One flock of lake inhabitants it doesn't please are the Canadian Geese who are shielded from your lawn, another pleasing outcome.

A new video, *Natural Shorelines: Living in Harmony at the Water's Edge*, developed by Tip of the Mitt Watershed Council tells the underwater story of why native aquatic plants are so important to your lake and explains why you might want to share your shore. See page 5 for more tips from the Huron River Watershed Council.

WASHTENAW COUNTY APPROVES RENEWAL OF NORTH LAKE SPECIAL ASSESSMENT DISTRICT

In October, 2017, the county approved a new five year term for our SAD. The rates are the same as they have been since 2008; \$220 for lakefront owners, \$140 for normal lake access owners, and \$70 for North Lake Farms owners. In 2016 and 2017 only 50% of these rates were charged due to savings in the program. The NLPA looks forward to continued success in cost effective treatment of our lake.

PREDATORS PATROL NORTH LAKE

Relics from 300 million years ago live in the water of North Lake and in the air above, attacking prey with astonishing efficiency to satisfy their voracious appetite. Of the order *Ordonta* (which means toothed one in Greek), they can see better and move faster than most creatures. We know them by their common names of dragonfly and damselfly.

They range in size from one half inch to seven inches (Costa Rica) but in prehistoric times grew to as large as 2 feet. There are over 5000 species (162 in Michigan) and they come in every color. Dragonflies have four wings which don't fold together when landed, as damselflies do. That is a major difference between them although damselflies are also smaller and daintier.

Each wing is operated by a separate muscle which allows them to hover and fly in any direction including backward and even upside down. They can fly up to 30 mph and easily catch their dinner. A bee flaps its wings 3000 times a minute, a housefly 1000, but a dragonfly only has to flap its wings about 30 times a minute. Dragonflies were the first creatures on earth to fly. They begin life as larva in the lake eating mosquitoes, tadpoles, other insect larva and even each other. When attacking, they propel

(con't. pg. 2, col. 2)



Ruby Meadowhawk



Calico Pennant



Spotted Skimmer



Blue Damsel fly

themselves rapidly by expelling a jet of water from their rectum! They stay in this stage for up to two years and then crawl out of the water, shed their exoskeleton and take a few hours to a few days to dry out. Then they live from a few weeks to two years in their new body.

Their vision is extraordinary. They have multifaceted eyes, like house flies. But while house flies have about 6,000 facets, dragonflies have 30,000. Nearly their whole head is covered enabling them to see in any direction, including behind them. Human eyes have three opsins—proteins that sense light—giving us a color range of red, green, and blue (one for each opsin). Dragonfly eyes can have four or five opsins, allowing them to perceive the normal color spectrum, along with UV light and the plane of light polarization (the effect you get with polarized sunglasses). This is believed to help them navigate and reduce the sun's glare on a body of water.



Dragonfly emerging from larvae exoskeleton.



Larvae feeding on small fish.

Dragonflies are a great control on the mosquito population. A single dragonfly can eat hundreds of mosquitoes per day. They also eat other flying insects. They capture their prey on the fly, clutching it with their legs and biting with their powerful jaws. They're *fast food* connoisseurs, eating on the fly! One dragon fly was photographed caught in a spider web *eating the spider*. Hundreds of dragonflies of different species will gather in swarms, either for feeding or migration. Little is known about this behavior.

(Con't. Pg. 3, col.1.)

TWO NORTH LAKE INHABITANTS - THE SAME BUT WORLDS APART

Starry Stonewort and Chara are two plant-like algae found in North Lake that look very similar, are of the same genetic family, and yet are different in important ways. Their structure is very similar although the Starry Stonewort is not as symmetrical and grows much taller. The color of Starry Stonewort is a lighter green. These algae are very basic in structure. The Chara "leaves" consist of a single cell visible to the naked eye.



Starry Stonewort



Chara

Chara is a native algae found extensively in North Lake; the 2016 Aquest Lake Management report found it to have the highest occurrence rank in our lake. Starry Stonewort is a non-native species first discovered in Michigan Lakes by Dr. Pullman in 2006. It was the second highest occurrence rank in North Lake in 2016. Both algae are eaten by waterfowl but Chara is a largely beneficial species while Starry is an unwanted cousin in most respects.

(Con't pg. 3. Col. 2)

(Dragonflies – Con't)

Some people think dragonflies will sting or bite humans. They don't have stingers and they rarely bite people, although they will bite if they feel threatened.

Some species are "endangered" and others may be, but there is limited data. Mark O'Brien, U of M Museum of Zoology, Insect Division, Collections Manager, has been coordinating the *Michigan Ordonta Atlas* project which lists sightings on a county by county basis.

If you see a pair of dragonflies linked together in midair, you're privy to some not-so-private procreation. Called the copulation wheel, the mating act works like this: The male grabs the female's head with his end appendage, a hook called "the clasper." Like a lock to a key, notches and grooves in the female's head and the male's clasper fit precisely, ensuring each sex mates only with its own species. The female then curls her abdomen under her, reaching forward with the tip of her abdomen to pick up the sperm from the male's second set of genitals (yes, they have two) under his abdomen. Damselflies do it much the same way, though they most often complete the copulation on vegetation, sometimes flying together in tandem until they find a suitable site. The shape the pair makes when linked like this resembles a heart; some believe it is the original source of the heart's symbolic meaning for love. Some think they're demonic, some claim they sting horses. American Indians revered them and call them "eaters of the wind."

Dragonflies are mythic in every culture. Some believe they're lucky, especially if they land on your head! So the next time you see a dragonfly "eating the wind" or flying with a love mate, give a nod of appreciation to nature's pest control that's so pleasing to the eye.

The above article and photos are based on website materials from Smithsonian- mag.com, Listverse.com, Ducksters.com, Insectidentification.org, Mynorth.com and Pinterest.com



Starry Stonewort prefers slightly acidic lake water while Chara prefers alkaline water, but both thrive in North Lake which is on the alkaline side. From 1993 through 2010, Dr. Wally Fusilier performed studies of North Lake and stated that hard water lakes (alkaline) are tougher than soft water lakes because they tie-up phosphorus in calcium phosphate in the deeper sediments of the lake. Chara will often feel stiff because it becomes coated with calcium salts that form on the cell wall. One common salt formed is calcium phosphate. When Chara algae die off the salts sink to the bottom capturing phosphate with it.

Phosphorus appears to be declining in North Lake. The Fusilier studies of phosphorus indicated an average of about 18 micrograms/liter over the years, and our MICORPS sampling has averaged about 12 micrograms/liter. Some of the decline may be due to the sewer system installed in 1996, and some may be due to the zero phosphate content now in lawn fertilizers. But perhaps some portion of the improvement is due to our fine crop of Chara.

Both algae can form dense mats that can crowd out other plants. This sometimes has a positive effect if it prevents Eurasian milfoil from spreading. This may be the case in North Lake where for many years milfoil was our predominate problem but has now been surpassed by Starry Stonewort.

Chara is sometimes called Muskgrass or Skunkweed because of the bad smell that emanates when crushed. Starry Stonewort doesn't stink, but is more of a lake problem; it can reach seven feet or more in height in depths of up to 30 feet and it also grows in shallow water. Chara is usually a foot or so in height and is limited to shallow water. Fish will make beds in Chara but not in dense Starry Stonewort. As noted earlier, Chara has a higher occurrence rate than Starry Stonewort in North Lake, but Starry has nearly three times the lake bio volume of Chara due to its size and structure.

Starry Stonewort is an endangered species in Japan and Great Britain. It seems unfair that Mother Nature doesn't balance this out; we would be happy if she gave them our share. But I guess this is like our grass problem; it grows well over the edges of our drive and walks, but dies out in the middle of our lawn!

Starry Stonewort comes in male and female variety but only the male organism is found in North America; here, it spreads vegetatively by new plants separating from existing plants. Perhaps we could lure the stuff out of the lake with a few well developed female plants in traps. Would that be considered a Venus Trap?

In August, 2016, Dr. Pullman hosted a group led by Dr. John H. Rodgers, PHD of Clemson University, studying the Starry Stonewort situation in Michigan with the hope of finding means of preventing its spread and of its eventual eradication. North Lake was one of the sites visited. Clemson has received a grant to perform this research and Dr. Pullman is a leading expert in the discovery of this invasive species and in its control. We have no means, at the present, of complete eradication but our control efforts have been quite successful. We hope Dr. Rodgers finds success in this endeavor.

So, two plants of the same family in North Lake, one stinks because it smells but is otherwise swell to have around, and one stinks because it doesn't belong and fouls up our natural ecosystem. Sounds like other families I've heard about.

The above is based on data from The 2016 Aquest North Lake Report, the 1993-2010 North Lake Water Quality Studies, USGS.gov, and the Lake and Wetland Ecosystems website.

FACTS OF NATURE (No, not that kind!)

Did you know that a group of skunks is called a *surfeit*? (Which means too much of something, a good name!).

And a group of frogs is called an *army* and a group of owls is called a *parliament*? (And a parliament can send an army to war!)

LAKE LEVEL LOG

2017 began with the lake level high but a steady decline ensued. By the end of the season, the level was near our record low since the weir was installed in 2012.

This year started with a very wet May with the lake 8 inches above the weir, the highest since we began recording levels. As of July 1 the lake had receded 5 inches, but was still at high level.

PROGRAM CONTINUES

For the past five years, we treated Lily Pad problems at requested docks. Under our DEQ permit we can treat a 20 foot wide access from your dock to the open water in the lake. This is done on a case by case basis. We currently have 35 lakefronts enrolled in the program. *If you want an access cleared to your dock, you must send a written request, along with a photo of your dock with home/access in the background for identification purposes.* We want to treat your dock area, not your neighbor's. Send your Lily Pad request, by **August 1**, to:

Richard Frendt, President NLPA
7837 Stonehenge Valley Dr.
Gregory, MI 48137

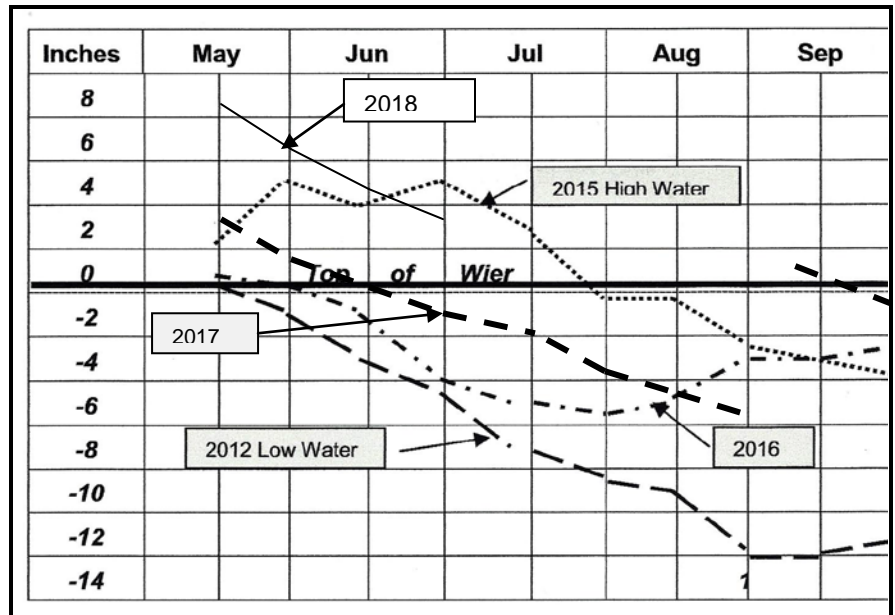
If you had your dock area treated in 2017, do not send a request this year. We will continue to treat your dock area assuming problems persist and the treatment is determined to be effective.

NEW SIGN AT BOAT LAUNCH

The NLPA Board approved a sign that has been placed at the boat launch. Most of the invasive weed issues found in our lake have come via visiting boats that carry fragments of the weed to our lake where it pushes out native plants and chokes the lake if left untreated. We want to avoid new threats that are out there (there are many) by asking boaters to show a little care by cleaning their boats before they come to North Lake. Thanks to Charlie Taylor for leading this project and Kent Thiel for helping with the installation. (photo pg 6)

FIREWORKS DAZZLE!

The sky was filled with rapid-fire displays; another sensational show by Dave Steinbach and his crew.



AQUEST LAKE REPORT

The following is excerpted from the June 17, 2018 North Lake Field Report by Douglas Pullman of Aquest Corp. An initial lake survey was performed on May 30 by Dr. Pullman, North Lake representatives Dave Pruess and Paul Lammers, Jeff Knox of Aquatic Services, and Jonathon Palukas of Washtenaw County. Small areas of the lake and canals were treated based on that inspection. This detailed follow up survey by Dr. Pullman calls for no further treatments until conditions change. This is very unusual; we normally have at least one major treatment during the early summer.

Aquest North Lake Field Report 17 June, 2018

Key Points

- Ebrid milfoil was exhibiting extreme symptoms of a disease referred to as "Park Lake Bronzing Disease". The scattered clumps of milfoil observed on May 30 were still present, but obviously not growing. Some of the diseased plants had green tips, but did not show any other signs of vigor. The ebrid milfoil found on May 30t was treated with a species specific herbicide mixture nearly two weeks prior to this survey. Only barren ebrid watermilfoil stems were present in the treated area. The canal areas were nearly devoid of any aquatic plant growth.
- Curryleaf Pondweed was not conspicuous in any part of the lake. It has collapsed earlier than expected.
- Native pondweed production was observed throughout the lake. Growth was considered to be good and beneficial, although some might consider it to be an isolated nuisance. Native pondweeds have not produced nuisance conditions in previous years. Treatment of nuisance native pondweed production is constrained by MDEQ policy.
- Starrystonewort rhizoids and bulbites (seed-like structures) were observed to cover most of the lake bottom on 30 May. It appeared to be actively growing and may grow to nuisance levels near the DNR boat launch. Lake residents are encouraged to observe the growth of this pernicious weed and report any nuisance conditions.

THE PARADE OF BOATS HITS HIGH NOTES

The Boat Parade was a step-up in the quality of the entries this year with Old Ironsides (the Walthers of Lake Shore Drive) taking top honors. There were many great boats and lots of fun for boaters and the watchers. Thanks to Scott & Kim Broekhuizen for organizing this event.

Plant and maintain a shoreline buffer

Plant or maintain a vegetated buffer of trees, shrubs, taller grasses and wildflowers between the shoreline and upland areas.

PLANT A RAIN GARDEN:

Rain gardens are attractive landscaping features that capture, hold and soak in runoff from storms. They are specifically designed for areas where rain water habitually pools or to which it is deliberately channeled. Their loose, deep soils and deep-rooted native plants absorb water and filter pollutants.

HARVEST RAIN WATER:

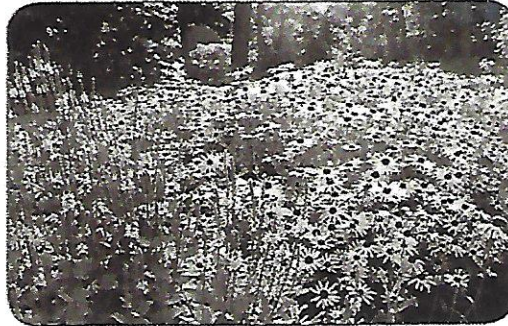
Install a rain barrel which will collect runoff from rooftops when it rains or direct downspouts into garden areas.

MINIMIZE PAVEMENT:

Instead of impervious surfaces, use porous landscaping materials, such as brick paving stones, sand or gravel beds and mulched areas, allowing spaces where water can infiltrate around and through the materials.

The Michigan Native Plant Producers Association lists nurseries that grow and sell Michigan native plants and seeds, including trees, shrubs, wildflowers, grasses, and ferns. mnpa.org

The Washtenaw County Water Resources Commissioner's Office offers free rain garden design and implementation help. For the do-it-yourselfer, its website is loaded with photos, site designs and plant lists. ewashtenaw.org/raingardens



USE DEEP-ROOTED MICHIGAN NATIVE

PLANTS: There are many benefits to landscaping ANYWHERE IN YOUR YARD with native plants.

They are adapted to local soil and climate conditions and once established will require less watering and fertilizing. They naturally resist pests and diseases, eliminating the need for harmful pesticides.

Their deep extensive root systems help stabilize soils against erosion, promote infiltration of water, and filter pollutants and sediment from runoff. They attract wildlife, such as butterflies, dragonflies and humming birds and will discourage nuisance species like Canada Geese.

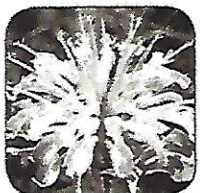
PLANT A SHORELINE BUFFER.

A shoreline buffer is a wide band of trees, shrubs and other MICHIGAN NATIVE PLANTS (see tip #1) along creeks, lakes and rivers that trap runoff before it gets into the waterways. As polluted runoff seeps through the buffer area, the plants filter out pollutants and sediment, reduce and regulate the water flow, and moderate water temperatures. Select areas can be cleared for visual and pedestrian access, using winding paths and stepped levels of plantings.

Start simple: Stop mowing to the water's edge and allow a no-mow zone to grow between the yard and the shoreline or streambank. Native plant seeds that have been dormant in the soil will germinate and start to grow on their own.

The Huron River Watershed Council has more information on shoreline buffers. hrwc.org

Below: These native plants are a great choice to minimize runoff.



Bergamot



Black-eyed Susan



New England Aster



Purple Coneflower



Above: The deep roots of native plants absorb more pollutants than turf grass and help prevent shoreline erosion. Small areas of lawn upland of the buffer provide places for recreation. Photo by Jim Brueck

LAKE WEED TREATMENT REPORT

– Dave Pruess and Paul Lammers

Note: Dave and Paul have been doing weed surveys of North lake for many years. This report brings our own perspective on the condition of the lake and coupled with the Aquest Report on page 4 provides a comprehensive assessment of the weed situation in North Lake. Thanks Guys!

This past year's winter was colder and lasted longer which seemed to affect the weed growth in North Lake. Historically, the most problematic weed problem in our lake has been Eurasian Milfoil. This invasive and prolific submersed plant generally had grown in bunches in relatively shallow areas and, if untreated, would reach the water's surface to the extent that it would impede boat traffic. As boats cut through these weeds, cut-off stems would replant in other areas of the lake, compounding the problem. In an early June, inspection of the lake was conducted which included NLPA representatives, our professional adviser Dr. Doug Pullman from Aquest Corporation, our assessment district coordinator Jonathon Pelukas from Washtenaw County, and our weed applicator Jeff Knox of Aquatic Services. Surprisingly, the Eurasian Milfoil was found mostly in single strands in shallow parts of the lake except the southeast area where heavy concentrations already had grown to the water's surface. Large bunches of algae bloom were also noted on the water's surface and in the channels extending from the lake. As a result, Aquatic Services conducted a modest weed treatment in mid-June for this southeast area milfoil growth and in the aforementioned channels. Overall, Dr. Pullman stated the weed situation in North Lake has probably been the best of any surrounding lakes. He also stated that the milfoil may have become diseased, perhaps from previous treatment and die off was possible. In addition, he felt the algae bloom would disappear as the weather warmed up. This did occur.

In late June, Dave Pruess and Paul Lammers conducted another weed survey where they found the milfoil had turned brown with just some traces of green and the southeast section was now almost free of milfoil. It is possible for this weed to revitalize later in the summer and if that is the case, treatment will be conducted. In the survey, the algae bloom had dissipated and even the curly leaf pondweed, the long stemmed leafed plant that grows in bunches, had turned brown and seemed to be dying off. Wild celery was noted in shallow areas but that, too, was brownish in color. However, a major plant which is actually an algae, starry stonewort which looks like a green brillo pad and has grown in large bunches covering most shallow areas of the lake, was now a grave problem. It had grown close to the water's surface in many areas where boat motors had developed tracks through these weeded areas to get to their docks. Treatment for this weed took place soon after the July 4th week.

Water Shield and Water Lilly growth was about the same as past years. There are legal issues as per treatment of these plants. As in past years, if these plants are a problem, a 20 foot area leading to your dock can be treated. If you requested treatment previously, this process will take place each subsequent year. Richard Frendt, our NLPA president, has the list of past requests and is the person to contact for this treatment.

As you can note, the weed growth in North Lake seems to be different each year. From all indicators, weed control efforts for our lake have been quite successful. If you have concerns or suggestions for improvement, please contact Dave or Paul. We are thankful for the professional services provided by our professional advisors, coordinators and applicator for their assistance in making our summer experiences more pleasurable.

THANK YOU, THANK YOU, THANK YOU, THANK YOU!!!

Thanks again to my great partner, Mary Lou, for her talents and expertise in this Laker edition. And thanks to all the volunteers who make the NLPA possible.



Kent Thiel erecting the sign. Photo by Charlie Taylor.

WEBSITE UPDATE

Do you want to learn more about our lake, read the latest news, or browse old editions of The Laker? It's all on the website at **Northlaker.org**. You can check the lake treatment schedule by clicking the *Aquatic Services, Inc.* link. Our application contractor updates the schedule often, as dates change due to weather and other conditions. If you have news or photos you would like to share, contact our webmaster Mary Lou Frendt or email them to nlpaemails@gmail.com.

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