

Higgins Lake Property Owners Association

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Website: www.hlpoa.org Email: hlpoa0@gmail.com

Ph.: (989) 275-9181 Fax: (989) 275-9182 Office Hours: M,W & Th from 9 am - 2:00 pm.

To Protect, Preserve and Enhance the Quality of Higgins Lake and Its Surrounding Watershed

In this issue: Reports from the President, Environmental and Riparian Committees

Newsletter

The HLPOA Board pledges:

- To publish newsletters 6 times a year, via email wherever possible, to save costs.
- To share pertinent information with members in a basic and economical format.
- Each issue will feature reports from select committees and brief updates from other committees.

Website Update

Check the HLPOA website, www.hlpoa.org, for the latest news, such as:

- Board Minutes - posted monthly as approved, e.g. October Board Meeting Minutes are approved in November and then available for posting.
- Updates on ongoing business, e.g. legislation, legal, lake levels, etc.
- Reports, documents and correspondence pertaining to ongoing issues and business.
- Environmental information from state and federal organizations.



South Higgins Lake State Park - Photo by Ron Wiltse

From the President - Brad Gibson

Welcome to our updated newsletter platform. This format, with feature articles on numerous issues concerning the lake, will be shared six times a year: February, April, June, August, October and December, via email whenever possible. The June issue will be mailed USPS to all members with the Annual Meeting Package. The December issue (this one) will be mailed USPS to all members and prospective members. There are many important issues being addressed by your board members and it is essential you know what we are working on. Should urgency demand, we will send messages to members electronically. Newsletters and announcements will also be available via our website and Facebook.

All updated information whether it be Board Meeting minutes, financial documents, archived information, or important links are always available at our website, www.hlpoa.org. Also "Like" us on Facebook and you will be sent notices when new information is available on the website.

We are beginning our 81st year as an organization. Our mission to "protect, preserve and enhance the quality of Higgins Lake and its

Membership

As of November 3, 2016, the HLPOA has 503 voting members. Efforts to encourage former members to rejoin and sign up new riparians were spearheaded by the board this summer. **Board members went door-to-door to talk to riparians.**

- 102 are either new members or returning members who rejoined after not joining in 2015 or a few years prior.
- Others indicated they would consider joining next year.

Directories Delivered

The 2016 Directory was available at the Annual Meeting. In an effort to reduce mailing costs, **Board members delivered copies of the directories in person to lake addresses as much as possible.** The remaining directories were mailed.

- ◆ Every effort was made to keep printing costs at a minimum. Coupled with a drive to sell ad space, the directory actually made money - **\$2,747!**

Board Members Attend Local Mtgs

Board Members Herb Weatherly, Dianne Wagner and Chuck Brick attend the monthly meetings of Gerrish Township, Lyon Township, Roscommon County Road Commission and the Roscommon County Board of Commissioners to report to the HLPOA on issues affecting riparians and establish relationships with our elected officials to communicate on a personal level to gain insight.
HLPOA Newsletter

surrounding watershed” is more important than ever. The following is an abbreviated list of accomplishments and projects we are working on.

- Responding to Swimmer’s Itch, the number one concern voiced by members, the HLPOA financed a successful lobbying effort that made our members’ voices heard at the State level to procure funding to combat Swimmer’s Itch, and
- The HLPOA allocated \$16,000 in 2015 to the Higgins Lake Swimmers Itch Organization. This year showed a great improvement in Swimmer’s Itch relief! The effort continues with the support of members like you!
- Screened, recommended, and financially supported key candidates for local political races.
- Monitored and worked with local government entities to promote programs important to riparians.
- Conducted with volunteers, a 30-day water sampling at four locations around the lake. *(See Environmental Report)*
- Sponsored a lakewide algae study. *(See Environmental Report)*
- Working with interested parties (including legal support in some cases) to combat marina expansion and to protect of riparian rights. *(See Riparian Report)*
- Created and distributed a membership directory.
- Continuously working on enhancing our communications with members.

Please send in your 2017 membership form and dues as soon as you can. Only through vigilance and working together will we be able to protect our beautiful resource. Also, talk to your friends and neighbors and encourage them to join the most active lake association in Michigan.

You will notice an increase in membership dues. Adequate resources are essential to carry out ongoing programs. Please know we take great caution to ensure every dues and donations dollar is efficiently and effectively utilized.

As always, in the best interest of Higgins Lake,

Brad Gibson, HLPOA President

Save the Date - HLPOA Annual Meeting - Saturday, July 15 at Roscommon High School

Have your voice heard, your vote counted.

Representing the HLPOA

- Jim Vondale led the effort with the Michigan Swimmer's Itch Partnership (MSIP) of 24 lakes to successfully obtain a **\$250,000** state appropriation to support swimmer's itch mitigation and research which will be shared with Higgins Lake.
- Charlene Cornell attended the 2016 Michigan Inland Lakes Convention "Science and Leadership: A Formula for Successful Lake Protection and Management" and completed the MSU Extension Introduction to Lakes (Ecology) Course.
- Dave Batchelor presented an "Aquatic Invasive Species" program to the County's Board of Commissioners.
- Jim Vondale led the June 22 conference of swimmer's itch experts from North America held at Roscommon High School and attended by representatives from NA universities and lake associations across Michigan.
- Volunteers Dave Batchelor & Chuck Brick participated in dives to gather core samples from 60' depths for future analysis.

Welcome, Kathleen!

Stop by our office to say hello to our administrative assistant, Kathleen Barger. She recently moved to Roscommon County and was hired by the HLPOA in June of this year. Kathleen has 9 years of experience working for a non-profit organization and we are very happy to have her aboard!

Office Hours are Monday, Tuesday and Thursday from 9am - 2pm.

Membership

Who is the HLPOA? We are . . .

- a bonding of neighbors from 21 miles of shoreline.
- one of the oldest lake associations in Michigan, formed in 1935
- reflected in members such as the Dewey, Nimocks and Mazur families (and others) whose relatives were founding members and in families who are just beginning their lake histories.
- richer for having members from all locations around the lake, some bringing the bounty of experience and others bringing the excitement of fresh eyes and energy, and
- benefited from the depth of varied viewpoints and opportunities to brainstorm ideas as we look to the future.

You have received a **membership envelope** as a property owner with a riparian interest in alignment with the HLPOA's corporate purpose to promote the general welfare of the owners of property on the shores Higgins Lake.

- Annual membership renewal is due by **January 31, 2017**.
- Membership dues are \$90 annually. This is an increase from \$75, the first increase in over a dozen years.
- While the Board accomplished reducing costs from years prior particularly in office, copying and mailing expenses, ongoing expenses, especially related to accounting, lobbying and litigation, have increased significantly.

Environmental Committee Report

- Dave Batchelor

This year the Environmental Committee prepared an Environmental Policy that was approved by the membership at the annual meeting. A lakewide water quality and algae study was conducted which found elevated nearshore concentrations of nitrogen and high densities of benthic (bottom dwelling) algae, predominantly diatoms or "golden algae". Phytoplankton densities in the open lake appeared very low. This information is consistent with previous reports that the nearshore waters of the lake are "hypereutrophic" and that nutrients are entering the lake from the groundwater. Black organic material was present in the nearshore sediments around the lake. This is typically indicative of anaerobic conditions which release nutrients and heavy metals back into the water column. This information raises the question whether the introduction of zebra mussels may have changed the nutrient cycle in the lake thereby causing or contributing to nutrient cycling in the nearshore waters. One thing is clear, the lake is changing and additional information is necessary to better understand and address factors affecting the health of the lake. Information gathering and sharing is vital to building a common understanding of the ecology of the lake and developing policies

and programs to protect the lake, the value of property around the lake and the local economy it supports. To that end a series of Environmental Bulletins is being prepared. The first three are enclosed with this mailing: “Invasive Species”, “Nutrients and Water Quality” and “Shoreline Erosion and Management Practices”. Printing was provided by Ms. Sally Voorheis. Without her generous support these would not have been possible.

The Environmental Committee is working on an action plan for 2017 and beyond. The plan focuses on: 1) information and outreach, 2) short and long term lakewide monitoring and 3) developing programs to mitigate the impacts of invasive species, to reduce nutrients levels, and to help riparians address shoreline erosion. Elements of the plan include: making presentations to other lake associations and hosting a Lake Day environmental conference; developing a pilot program to maximize utilization of existing boat wash facilities; and, formulating a comprehensive lakewide monitoring program to document existing conditions and establish a data base to assess trends and upon which recommendations for improving the health of the lake can be made. A number of monitoring components have been suggested in committee, including: nearshore and open water quality sampling, sediment cores and nearshore sediment analysis, benthic macro invertebrate and algae surveys and aerial surveillance to assess the distribution of aquatic macrophytes (rooted plants) populations. This information would provide reliable indicators of water chemistry, define the sediment characteristics and role in the nutrient cycle of the lake, provide an index of primary productivity associated with nutrient levels, and document the diversity of insects and other aquatic life which provide the base of the food chain and give a long term picture of the health of the lake. Long-term, comprehensive lake wide monitoring is vital to protecting the lake for current and future generations.



Cut River - Photo by Ron Wiltse

You can support these efforts by becoming a member if you aren't already, providing input on the environmental action plan being developed, and making a donation to the environmental fund established exclusively to implement environmental program efforts.

The Michigan Swimmer's Itch Partnership - Jim Vondale

The HLPOA board, working closely with the Higgins Lake Swimmer's Itch Organization (HLSIO), has led the effort to develop a partnership of 24 lakes in northern Michigan called the Michigan Swimmer's Itch Partnership (MSIP). The MSIP includes such lake associations as Glen Lake, Crystal Lake, Lake Leelanau, Walloon Lake, Torch Lake, Lake Gogebic and Long Lake. Working together to fight swimmer's itch (SI) brings more influence, resources, ideas and energy for the long term effort needed to be successful.

On June 22, HLPOA, HLSIO and MSIP brought together the leading SI experts from the US and Canada and lake associations across Michigan for a full day conference at Roscommon High School. The experts had gathered during the week at Dragonfly House on Higgins Lake to develop relationships and share information on SI under the sponsorship of SICON LLC. The experts are continuing to work together, including a joint research project between SICON, LLC and Dr. Peter Hanington from the University of Alberta, Canada, on Higgins Lake.

The MSIP, HLPOA and the Higgins Lake Political Action Committee worked cooperatively to secure a \$250,000 state appropriation which will be distributed to Michigan lake associations that implemented science-based swimmer's itch mitigation/control efforts this year, including Higgins Lake. MSIP is working with the

Leelanau Center for Education (LCE) on a long term partnership focusing on SI control, prevention, research and education.

The HLPOA board is committed to a long term fight against SI to significantly improve the quality of Higgins Lake for its members and the entire Higgins Lake community. The HLPOA board is focused on Higgins Lake and the 90% reduction in swimmer's itch in just two years is clear evidence that our collaborative plan is working. The HLPOA board understands that we can achieve even more by working in partnership with others, including the HLSIO, MSIP, leading SI experts and LCE.

Riparian Committee - Jim Vondale

The Riparian Committee was formed in 2015 to help the HLPOA board address member concerns about a broad range of issues important to Higgins Lake riparians including, illegal mooring of boats and marinas and road end violations. Committee members represent a cross section of HLPOA members from various parts of the lake who want to work together to help themselves and others address important riparian issues. Committee members are working together to identify and help the HLPOA board resolve the various riparian issues on the lake, collect and publish relevant riparian information on the HLPOA website, meet with local government leaders to share concerns and seek relief, and provide HLPOA members with information about their rights as riparians and how to report violations to local government officials.

Among the various results of the Riparian Committee work, the HLPOA board voiced concerns at a Public Meeting at Lyon Township about the proposed creation of a marina at the West Launch on Higgins Lake which was subsequently withdrawn. Recently, the HLPOA board approved joining with riparian neighbors in the filing by Bill Carey of an Administrative Appeal of a decision by the DEQ to authorize a permit on 7/26/2016 for AMVETS on the West Shore of Higgins Lake. **The permit the HLPOA and riparians are appealing reads:**

“SEASONALLY PLACE A DOCK THAT IS 5 FEET WIDE AND 475 FEET LONG, WITH 22 SLIPS FOR PONTOON BOAT HOISTS; TWENTY-TWO FINGER PIERS PLACED BETWEEN PONTOON BOAT HOISTS SHALL BE UP TO 3 FEET WIDE. SEASONALLY PLACE 8 FREE STANDING V-HULL BOAT HOISTS; SIX FINGER PIERS PLACED BETWEEN V-HULL BOAT HOISTS SHALL BE UP TO 3 FEET WIDE.”

That appeal is pending. The HLPOA board has also authorized Mr. Carey to join with riparian neighbors to file an action in the Roscommon County Circuit Court seeking to enforce residential zoning restrictions for the AMVETS property among other relief. Higgins Lake, neighbors and others using the lake will be significantly impacted by the issuance of this permit. **The HLPOA board, working with the Riparian Committee, will be vigilant in protecting the quality of Higgins Lake and the rights of riparians.**

HLSIO Update - Ken Dennings

The second year of a three-year science-based Swimmer's Itch Control Program at Higgins Lake has been completed with remarkable progress in reduction of the host snail infection rate reported by SCICON biologists.

- The metrics reported in 2015 revealed a lake-wide Stagnicola snail infection rate of 3.01%.
- Testing of Stagnicola snails in 2016 from the very same ten locations in Higgins Lake resulted in an infection rate of 0.28%, a **90% reduction**.
- The complete and comprehensive SICON Report for year two of the Higgins Lake Swimmer's Itch Organization's Control Program is available on the HLPOA Website: www.hlpoa.org.
- The significant reduction in the snail infection rate resulted from the successful removal of 145 Common Merganser ducks over this two year period, including the relocation of 15 broods to Lake Huron where the Stagnicola snail is not present.
- The success of the control program will allow the HLSIO Board to begin a transition to a lower cost comprehensive maintenance program for 2017.

The HLSIO is a nonprofit Michigan corporation recognized by the IRS and Michigan Attorney General's Office as a 501 (C)(3) nonprofit organization qualified to accept tax-deductible contributions.

What can you do? Help Wanted

- Become a member of the HLPOA. Your dues provide funding and your voices provide valuable input.
- **Attend the Annual Meeting, July 15**
- Volunteer - the more hands, the easier the tasks. The more minds, the richer the ideas. You do not need to be a full-time resident to help. In this age of electronics, even board members can attend meetings from afar!
- Sometimes volunteers are needed for one-time tasks such as preparing bulk mailings, collating, hostessing, or chasing down a job quote. Can you be "on-call"?
- Do you have an area of special interest? Environmental? Legal? PAC? Join a committee or donate to a fund.
- Do you have an area of expertise? Finance/Accountant? Computer whiz? Graphics? Social Media? **Right now, we could especially use professional tax preparation help and a social media manager!**
- Provide your email address with the HLPOA to reduce mailing costs. We do not share email addresses.

Contact the HLPOA office at
989-275-9181 or hlpoa0@gmail.com



Welcome, David Udy

David Udy is the new supervisor in Gerrish Township. The HLPOA endorsed his candidacy opposing Frank Homola. Mr. Udy has been a strong proponent of the Higgins Lake Swimmer's Itch Organization and the hiring of SICON biologists to implement a three-year, science-based Swimmer's Itch Control Program at Higgins Lake. Mr. Udy also voiced his support in the formation of the Michigan Swimmer's Itch Partnership to share strategies and consolidate efforts toward controlling the infectious cercariae parasite that has invaded many of northern Michigan's inland lakes.

Sincere thanks to . . .

- Jack Cornell, former HLPOA Treasurer, for volunteering time to prepare our monthly and YTD financial reports He has also worked very closely with our Auditor, RF Murray & Co., assisting them in their preparation of the 2015 Calendar Year Financial Audit.
- Sally Voorheis for donating printing of Environmental Brochures
- Marlo Peck for donating printing
- The Jay Trucks Retirement Account for a generous charitable gift
- Ann & Art Schauer for a donation to honor Wayne & Mickey Hall's 90th birthday celebration
- Larry & Judy Beckert and Dave & Mary Hall for generous gifts to the Environmental Fund
- Kim Kane, Nick & Martha Dewey, Dave & Mary Hall, Francis & Cathy Fitzgerald, and Edwin & Suzanne Voss for generous gifts to the Legal Fund
- Francis & Cathy Fitzgerald for a generous gift to the General Fund

2016 - 2017 HLPOA Board: President - Brad Gibson, Vice President - Charlene Cornell, Secretary - Herb Weatherly, Treasurer - Chuck Brick. Directors: Dave Batchelor, Bill Case, Ken Dennings, Bob Hoffman, Bob McKellar, Jim Vondale, Dianne Wagner. Administrative Assistant - Kathleen Barger

Did you receive this newsletter via USPS? Would you consider providing an email address to receive the newsletter and save printing and mailing costs? The HLPOA does not share email lists. Email addresses, phone numbers and addresses appear in the Directory only with the member's permission.



Environmental Policy

The Higgins Lake Property Owners Association supports:

1. Maintaining the legal lake level established in 1926 as amended in 1982.
2. A comprehensive, science-based lake wide program to better understand and control Swimmer's Itch.
3. Efforts to reduce nutrient levels in Higgins Lake, including: the proper and frequent servicing and maintenance of septic systems, the use of phosphate free detergents, the preservation and restoration of shrubs and trees along the shoreline to utilize nutrients and reduce sedimentation, minimizing the use of lawn fertilizers near the lake and promoting green belts around the lake.
4. Sustainable development and land use practices, including: sound watershed management planning, the conservation of land around the lake and in the watershed, the preservation of old growth trees and plantings of trees that benefit wildlife, zoning regulations to maintain property values and ensure building densities which do not exceed the environment's capability to assimilate.
5. Efforts to reduce the impact of toxic substances in the lake, including: reducing hydrocarbon emissions from watercraft, reducing or eliminating the nearshore or in-the-water application of pesticides, herbicides and chemicals that are persistent and or become concentrated in the food chain (bioaccumulation).

The HLPOA does not support any activity that is unlawful or any regulated activity which is conducted without the necessary local, state and federal permits or that is conducted in violation of such permits.

Invasive Species

What are they?

Invasive species are plants and animals that are not native to a given location. Once introduced and established, they can spread rapidly and damage ecosystems by choking out native species, destroying habitat, transmitting parasites and releasing toxins.

The zebra mussel (*Dreissena polymorpha*) is a good example of an invasive species that has altered the biological community structure, affected the transfer of nutrients and virtually eliminated native freshwater clams in Higgins Lake.

What to do?

Here are some things you can do to help:
CLEAN boats, trailers and equipment.
DRAIN live wells and bilges of all water.
DRY boats, trailers, waders and equipment.
DISPOSE of unwanted bait, nonnative fish and aquatic plants in the trash.
DON'T PURCHASE invasive plants or animals that are restricted or prohibited in Michigan.
DON'T TRANSPORT or release invasive species into lakes, streams or ponds.
Report your finding to the Michigan Department of Environmental Quality by contacting:
www.michigan.gov/invasives
or the HPLPOA office at
www.hlpoa.org/contact-us

Donations for further environmental studies can be sent to the HLPOA, P.O. Box 55, Roscommon, MI 48653.

Higgins Lake Property Owners Association



Environmental Bulletin No.1 Invasive Species

Prepared by the HLPOA Environmental
Committee, September 2016

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What To Look For

Starry stonewort (*Nitellopsis obtuse*) is a species of large algae native to Europe and western Asia. It has become established in one-fifth of Houghton Lake.



The round goby (*Neogobius melanostomus*) is a bottom-dwelling fish native to central Eurasia. A large population has become established in the Great Lakes and inland lakes. It can be spread by the sale and use of minnows for fishing bait.



Eurasian milfoil (*Myriophyllum spicatum*) is native to Europe, Asia and N. Africa and was introduced to the US between 1880 and 1940s. It crowds out native species and destroys habitat.



Zebra mussels (*Dreissena polymorpha*) are native to Russia. They filter phytoplankton (algae) from the water and have virtually eliminated freshwater clams from Higgins Lake. It is believed they affect nutrient cycling and algal community structures in lakes. There is hope in a new bacterial control that doesn't affect other aquatic life.



The Asian clam (*Corbicula fluminea*) is a small (less than 1 inch), yellow to brown clam with concentric rings. They are found on or in the lake sediments.



Watch List - Prohibited in Michigan
(*Potamopyrgus antipodarum*) The New Zealand mud snail is prohibited in Michigan but has recently been found in the East Branch AuSable River. It poses a serious threat to freshwater rivers, lakes and streams.



Report this species to: Seth Herbst, DNR 517-284-6223 herbst1@michigan.gov
Bill Keiper, DEQ keiperw@michigan.gov
and the HLPOA Office 989-275-9181.

Environmental Policy

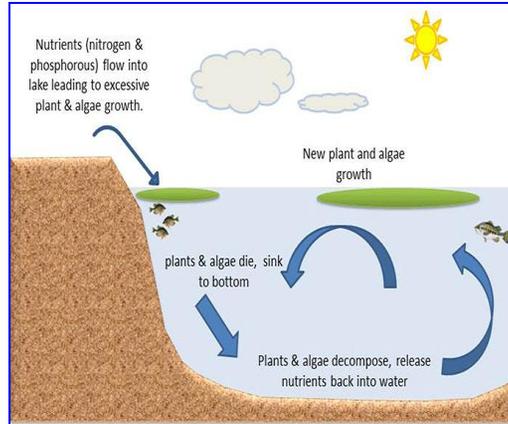
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Nutrients

Phosphorus and nitrogen are the primary essential nutrients for aquatic life. In a process known as photosynthesis, rooted aquatic plants (macrophytes) and algae synthesize nutrients into biomass (primary production) that supports the food web of lakes and streams (Figure 1).



Total phosphorus monitoring in Higgins Lake indicates the open lake is oligotrophic (low in nutrients)¹. In contrast, the nearshore waters have been reported to be hyper-eutrophic (excessively high total-P levels)². Septic tank leachate is reportedly believed to be the source of these high nutrient levels.

¹ Cooperative Lake Monitoring Program Results
<https://micorps.net/lake-monitoring/individual-lake-reports/>

² [Investigating the Influences of Septic Systems on Near-Shore Water Quality and Swimmer's Itch in Higgins Lake, MI](#)

Higgins Lake Property Owners Association



Environmental Bulletin No.2

Nutrients and Water Quality

Prepared by the HLPOA Environmental
Committee, September 2016

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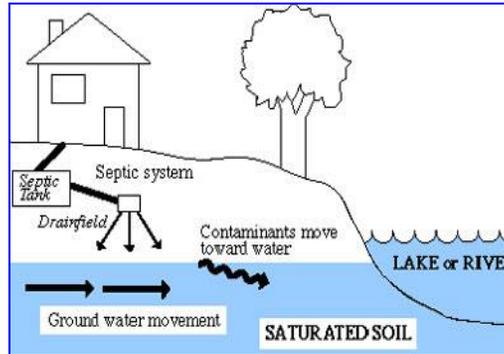
HLPOA Monitoring

The HLPOA sampled nutrients (ortho-P, nitrate-N and ammonia-N) and benthic algae at 11 locations in the nearshore waters of Higgins Lake in 2016. Algae samples were collected from the lake bottom along with water samples at each site. These data were compared to snail density data obtained by SICON, LLC at each location. The results show that the nearshore waters contain high levels of nitrate and ammonia and support extensive algal growth on the bottom. The source of nutrients is indicated to be from the groundwater and/or recycling of nutrients in the lake. The two sites having the highest algal densities, except for the control site, also had the highest snail densities. The predominant snail species is *Stagnicola sp.*, the one that transmits swimmers itch. Further studies are being planned and your support would help this initiative.

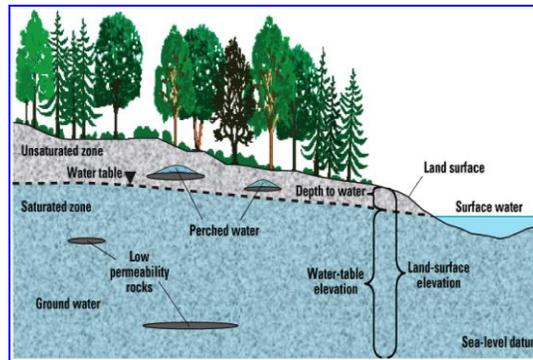
What can you do to help?

1. Do not clear native shoreline vegetation and trees as they stabilize the bank from erosion and utilize nutrients before entering the lake.
2. Landscape for water quality and wildlife by leaving a buffer zone along the shoreline and planting native shrubs and trees instead of grass.
3. [Except for new lawns - first year only, or required testing showing soil deficiency, the use of lawn fertilizer containing phosphorus is prohibited in Roscommon County.](#) Never use fertilizers containing phosphorus next to or near the lake because it promotes the growth of algae and aquatic plants.
4. Inspect and maintain septic tank systems by pumping at least every 2 years; or, more often depending on specifications and use.

Properly designed, installed and maintained septic tank systems function well in removing solids but water soluble nutrients are released from the dry well or drain field and soak into the soil (Figure 1).



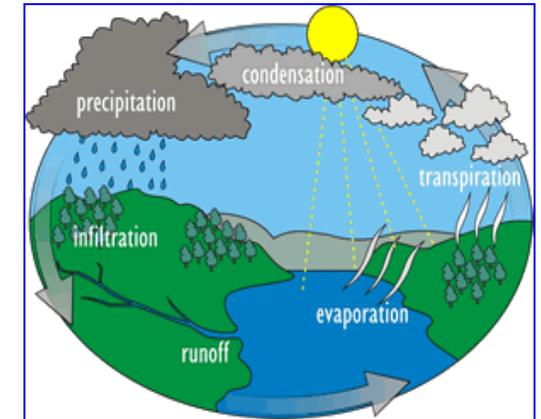
Soils adsorb nutrients like a sponge absorbs water. When soils become saturated after decades of use the water soluble nutrients move into the groundwater table and the lake.



The surface of Higgins Lake is at the level of the groundwater connected to it (Figure 2). Perched water tables can flow into the lake from artesian springs like the ones that form the creek entering the lake between the North State Park and the RAM Center.

The Hydrologic Cycle

The water environment is a living breathing system comprised of the atmosphere, surface water and groundwater. The movement or cycling of water between components is called the hydrologic cycle (Figure 3).



The hydrologic cycle affects the level of the groundwater, the lake level and is directly tied to precipitation patterns. Forests and plants release moisture into the air via evapo-transportation but also reduce the evaporation of moisture from the soil. Wetlands store water and recharge the groundwater table, filtering sediments and pollutants in the process. The groundwater carries clean water into our rivers and lakes.

Understanding this process and preserving forests and wetlands around the lake is essential to helping maintain the “water balance” that is vital to protect the health and future of Higgins Lake.

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Shoreline Erosion

Shoreline erosion is a natural process affecting different areas of a lake differently. Factors which contribute to erosion include: location, water level, wind, waves, ice push, soil type, slope and runoff. Engineers have determined that wind-driven waves are the main factor in determining severity¹.

Areas subject to erosion or where erosion is occurring require protection. In many cases, the best management practice for shoreline erosion is simply retaining the natural characteristics of your property. Clearing shoreline trees, shrubs and native vegetation and increasing runoff will increase erosion.

Protecting your shoreline...



A landscaped shoreline can be beautiful, will minimize erosion, provide wildlife habitat and reduce nutrients entering the lake.

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¹ www.mishorelinepartnership.org/shoreline-erosion-control.html

Higgins Lake Property Owners Association



Environmental Bulletin No.3

Shoreline Erosion and Management Practices

Prepared by the HLPOA Environmental
Committee, September 2016

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Soft-armor using plant materials and structures designed to withstand wave and ice action is appropriate anywhere there are adequate soil, sunlight and water conditions for plants to grow. Figure 1.



The use of coconut or other natural fiber material and erosion control blankets such as jute, coir (coconut husk fiber) and wood-fiber blankets are useful on slopes for holding soil in place and helping establish vegetation.

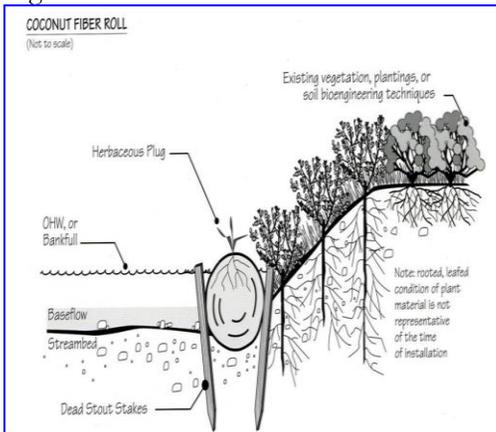


Figure 2. Cross section of erosion control blanket and coconut fiber log.

Hard armor Rip-rap is the placement of large rocks in the water and up the slope along the shoreline. Figure 3.



Riprap should be lined with geotextile fabric to prevent soil loss behind rocks and “slumping” of the slope.

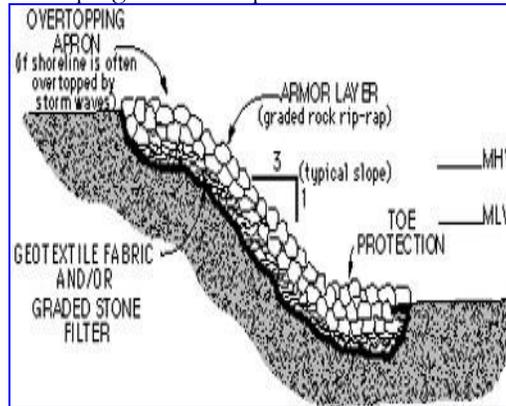


Figure 4. Rip rap/geo-fiber cross section.

A listing of plant materials suitable for soil bioengineering is available from the [USDA/NRCS Plant Materials Technical Note – No. 1](http://www.usda.gov/nrcs/technical/note-no-1/) and Landscaping for Water Quality is available from the MDEQ http://www.michigan.gov/documents/deq/wrd-nps-landscape4wq_401217_7.pdf



Figure 5. “Joint planting” between rocks for a softer look and greater stability.

Cost Estimates

The costs vary by what solution is needed. A homeowner can expect to spend an estimated \$45 - \$70 per linear foot on materials². Visit Michigan Natural Shoreline Partnership for more information and reference materials.

Regulatory Requirements

Dredging or filling and placement of a structure on bottomlands is prohibited without a permit from the Michigan Department of Environmental Quality. Permit fees are \$100 for minor projects and \$50 for activities covered under a general permit.

For more information contact the local MDEQ, WRD Cadillac field office: deq-wrd-district-cadillac@michigan.gov or visit the Inland Lake and Streams Permits page of the www.michigan.gov/deq

² www.mishorelinepartnership.org