



CRYSTAL WHITECAPS

The Newsletter of the Crystal Lake & Watershed Association

Protecting Crystal Lake Now for Generations to Come.

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Spring 2019

LAKE FRIENDLY WATERFRONTS

Four years ago the CLWA joined with the Michigan Department of Environmental Quality and the Michigan Shoreline Partnership to develop an online tool to help lakefront property owners protect water quality by evaluating and improving the management of their landscape (see *Crystal Whitecaps* 12:1, Spring 2016, p.7). Known as the Michigan Shoreland Stewards, the goal is to increase riparian awareness of the ways that land use impacts the adjacent lake.

The shoreline of Crystal Lake is highly developed, with a wide variety of structures, lot sizes, and road

configurations. Many features date back decades, reflecting practices of the time. If this pristine lake is to continue to be treasured by future generations, those who live around it must adopt ways that care for the water.

Michigan Shoreland Stewards provides a detailed web-based questionnaire that riparians can complete on their own time. It asks about topics such as fertilizer and pesticide use, waste management, impervious surfaces, and vegetation. When completed, it generates a score and provides recommendations for improving the stewardship level. Participation is free.

Factors that attain a high score include a shoreline that preserves animal habitat, vegetation and drainage that prevent fast run-off and erosion, and proper septic installation and maintenance. Natural native plants with deep roots are preferable to grass lawns, as they slow the filtration of nutrients into the lake.

Three Crystal Lake property owners have completed the questionnaire and qualified as "Shoreland Stewards," two at the Gold (highest) level and one at Silver. We highlight their waterfronts below, and encourage others to join them. Glen Lake boasts 89 "Stewards" – do they love their lake more than we do?

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Land management that protects the lake (Michigan Shoreland Stewards)

YOU CAN ASSIST THE CLWA'S SWIMMER'S ITCH RESEARCH AND CONTROL PROGRAM BY REPORTING SIGHTINGS OF MERGANSER BROODS OR NESTS, OR CASES OF SWIMMER'S ITCH. YOU WILL FIND THE LINK ON CLWA'S HOME PAGE, WWW.CRYSTALLAKEWATERSHED.ORG.



PRESIDENT'S MESSAGE

The changing of the seasons is one of the very special aspects of life here at Crystal Lake. It seems like only a few short weeks ago that snowmobiles were on the ice.

As most of you know, swimmer's itch research and control have been a major focus of your Crystal Lake & Watershed Association for the past several years. The trapping and relocation of mergansers in the summer of 2017 led to a much improved season for swimmer's itch in 2018. We are optimistic that the efforts undertaken in 2018 will lead to an even better 2019 season. Please make no mistake, though. This will be an ongoing effort that will require hard work and financial resources.

We completed the 3-year aquatic plant survey led by Dr. Jim Hamp and have found only one aquatic invasive plant, *Eurasian Watermilfoil (EWM)*. We will continue to monitor it. The entire community needs to understand both the risk and potential mechanisms for control and maintenance.

The drone technology that assisted with the aquatic plant survey will be used to conduct a comprehensive shoreline survey. It will give us a baseline for issues like shoreline erosion, algal blooms that might indicate failing septic systems, and a number of other issues that impact lake water quality.

Our Zoning and Land Use Committee has spent a lot of time this winter working with the local Zoning Boards of Appeal and Planning Commissions to encourage enforcement of existing zoning ordinances.

The Water Quality Committee has been managing the lake level monitor to help maintain lake levels, testing the water quality and operating the boat washing station for another busy season.

We are fortunate to have such a dedicated, hard-working Board. If you would like to assist please contact me at info@crystallakewatershed.org.

Dave Wynne, CLWA President

SWIMMER'S ITCH REPORT: 2018 RESULTS & 2019 ACTION

The CLWA's new merganser trapping team, local teachers Tim Reznich and Tom Thorr, captured the first brood of 2019 on June 12. After being web-tagged by Curt Blankespoor of Swimmer's Itch Solutions LLC (SIS), who is providing scientific support, the hen and eight chicks were relocated to a site approved by the Michigan Department of Natural Resources.

Last summer the assistance of the Crystal Lake community was essential to the program, which successfully removed all 16 common merganser broods that appeared on the lake.

ONCE AGAIN, YOU CAN HELP BY REPORTING BROOD SIGHTINGS AND CASES OF SWIMMER'S ITCH AT THE CLWA WEBSITE: www.CrystalLakeWatershed.org.

SIS's final report on the 2018 program strongly supported the preliminary results observed during the summer, reflecting the positive impact of the trapping and relocation method that began in 2017: the number of SI cases was significantly reduced and those that occurred seemed milder in

severity (see *Crystal Whitecaps* 14:2, Fall 2018, p. 3).

A lake-wide collection and analysis of 2,112 *Stagnicola emarginata* snails showed a 65% decrease in infection rate from that found in the complete baseline snail assessment carried out in 2016. Analysis of 40 lake water samples by qPCR technique detected the presence of the species-distinct



The first merganser family of 2019, ready for transport to its new home: "Mom, when are we going to get there?"

parasite *T. stagnicola*, suggesting that common mergansers are the only bird species responsible for swimmer's itch infection on Crystal Lake. Finally, avian schistosome worms were collected from three breeding merganser hens, proving that they carried infection.

The full 2018 report is posted on the CLWA website.

A research program planned for the fall hunting season to study the SI infection rate of migrating birds of species other than the common merganser did not occur, due to the absence of birds during the restricted period.

The CLWA continues to play a leadership role in the 33-member Michigan Swimmer's Itch Partnership, which is seeking renewal of the State appropriations for swimmer's itch control that have been awarded over the past three years.

While all of us expect that the progress made to date will once again be seen in 2019, we know it will be necessary to continue the trapping and relocation of merganser broods into future summers, and that research on the underlying dynamics of SI must seek better understanding.

With the continued support of you, the Crystal Lake community, our lake will bring enjoyment to future generations.



ANNUAL DAY OF LAKE SCIENCE FOR BENZIE 6TH GRADERS

This year's crop of Benzie County sixth graders joined the long tradition of experiencing an October day at Crystal Lake to learn the special features of this invaluable local resource and raise awareness of how to protect its watershed.

Organized by the Crystal Lake & Watershed Association for the last 26 years, the Crystal Lake Walkabout provides the students with interactive demonstrations of what experts and volunteers are doing to monitor the condition of the lake and to solve problems that could affect future enjoyment and economic use.

This year local professionals from the Benzie Conservation District and the NW Michigan Invasive Species Network were joined by Zero Gravity Aerial, a local company working with the CLWA to assist the aquatic plant survey via drone photography.

Jim Hamp, CLWA Invasive Species expert, and Dennis Wiand of ZGA, showed students samples of invasive aquatic plants collected from Crystal Lake during three summers of

surveying the lake. Students were thrilled to see themselves on Dennis's large screen TV, captured by the aerial drone's camera, which they learned helped provide an accurate assessment of the location and spread of invasive plants as we work toward keeping their extent under control. This presentation augmented Jane Perrino's (BCD) presentation on aquatic Invasive species, which illustrated how these plants endanger the health of Crystal Lake if not controlled.

John Ransom (BCD) and Emily Cook (GTCD) engaged students in their areas of expertise: water quality and terrestrial invasive species. John directed the students in collecting, testing, and evaluating water quality explaining how this knowledge of this chemistry helps keep the lake healthy. Emily inspired the students' imaginations by asking them to draw their own invasive species based on what they had learned.

At the Mollineaux Road Boat Wash volunteers Ed Hoogterp and Joel Buzzell presented vital watershed

topics such as swimmer's itch and the role of plants in controlling erosion.

No presentation at the Boat Wash would be complete without students getting to wield the boat sprayer as they wash a volunteer's boat, learning about the ways in which invasives get into the lake by hitchhiking and hiding in boats, kayaks, and other watercraft.

Mother Nature provided beautiful October weather and coho salmon made a timely appearance, jumping up the Outlet dam as they tried to make their way from Lake Michigan to spawn. This exciting event prompted further discussion of the watershed food chain.

I'd like to thank the individuals, companies and volunteer organizations who contributed to make this day a rewarding, educational experience. Our students live in a wonderful, biologically diverse region: sharing it with them through the efforts of our generous volunteer community plants the seeds for future stewards of the lake.

Sue Brown, CLWA Walkabout Chair



Students studying aquatic invasive plants



Chad Herbert teaches proper boat washing



LAKE FRIENDLY WATERFRONTS

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Baker cottage beach with buffer and cleared path

Jill Baker
1316 South Shore East
Gold Level

This traditional cottage has been in the same family since 1910 and demonstrates their concern for water quality and preserving the natural state of the watershed. The house is set well back from the lake and native plants have been permitted to thrive in the large well-shaded open space. A buffer zone of vegetation divides the paved county road from the lake, preventing direct runoff from

the impervious surface. A path leads to a small cleared beach area along the natural shoreline.

Thomas Getz and Margaret Burrows-Getz
13 South Shore West
Gold Level

This 1920s cottage sits on a very large lot with over 200 feet of lake frontage – so how the land is maintained has a big impact on the lake. Most of the property remains wooded and the house is set well back from the water, reached by a dirt driveway: only a very

small percentage of the lot is covered with an impervious surface. A buffer of tall plants and hedges on both sides of the road dividing the house from the beach provides privacy, as well as controlling erosion and pavement runoff and filtering excess nutrients. Less than ten percent of the waterfront is cleared for lake access, the rest remaining in a natural state that provides habitat for wildlife. The owners have never fertilized the property and the septic system has been kept up to date with a drain field at a distance behind the cottage.



Baker cottage at 1316 South Shore East



Vegetation in front of Burrows-Getz cottage



Burrows-Getz cottage beach



LAKE FRIENDLY WATERFRONTS

Steve Stephens
7579 Crystal Drive
Silver Level

In contrast to the other Crystal Lake Stewards, the Stephens property is a six year old year-round home built on a small, constricted lot. It shows what can be achieved with careful professional planning and an Englishman's garden sensibility. Originally a lawn extended all the

way to the lake, which attracted geese that disturbed the owners' enjoyment of watching fireworks and sunsets. Waste from geese can also filter contaminants into the lake. The turf lawn also promoted shoreline erosion, which led to the installation of rock riprap.

Designed with the help of Carolyn Thayer, a Certified Natural Shoreline Professional and owner of Designs in

Bloom, the new landscape illustrates many of the principles governing Shoreland Stewards: a lakeside buffer zone and well-drained beds of native plants, avoidance of pesticides and herbicides, and limited turf grass. There is no sand beach at all. While the paved driveway appears to represent an extensive impervious surface, it is in fact constructed of permeable pavers on an underlying layered base, which permits drainage.



Stephens waterfront (foreground)



Stephens home with Shoreland Steward sign at 7579 Crystal Drive

For complete information and access to the Shoreland Stewards survey, go to: www.mishorelandstewards.org. Also accessible at the CLWA website www.CrystalLakeWatershed.org.

Other Resources:

Michigan Natural Shoreline Partnership
www.mishorelinepartnership.org/

Guidance on native plants suitable for shorelines, information on bio-engineering to control shoreline erosion, listing of Michigan Certified Natural Shoreline Professionals who are trained in green landscaping technologies (and training program for contractors to attain this certification).

“Managing Shoreline Property to Protect Water Quality” (Michigan State University Extension Bulletin WQ-52)

www.canr.msu.edu/michiganlakes/uploads/files/msue_managing%20shoreline%20property.pdf



MICHIGAN STRENGTHENS BOAT CLEANING LAWS

On March 21, 2019, a new Michigan boating law went into effect, the latest stride in decades of effort to prevent the introduction of invasive species into Michigan lakes. An amendment to the Natural Resources and Environmental Protection Act (Act 451 of 1994), it adds numerous requirements for boaters, who under the previous law had only to remove any plants attached to their boats or trailers.

[Full text of the new law is available at the CLWA website, CrystalLakeWatershed.org]

Now boaters are required to do all the following **before transporting any watercraft over land**:

- Remove all drain plugs from bilges, ballast tanks, and live wells
- Drain all water from any live wells and bilges
- Ensure that the watercraft, trailer, and any conveyance used to transport the watercraft are free of aquatic organisms (plants and animals)
- Dispose of unused bait in the trash, not in the lake

Note that “watercraft” refers to canoes, kayaks, paddle boards, and any other means of water transport.

Concerns about aquatic invasive species have grown in recent years, as the Michigan Department of Natural Resources began an active program of constructing public boat launches to improve public access. Boats traveling among different water bodies can carry invasive hitchhikers from one to another. The CLWA became involved in the issue in the early 2000s, when the DNR proposed a large access site on Crystal Lake.

After a decade of debate, the CLWA reached an agreement with the DNR to construct and operate a boat washing station at the new public access site located off Mollineaux Road. After opening the wash in 2013, the CLWA oversaw passage in 2014 of new boat washing ordinances in the townships of Benzonia, Crystal Lake, Lake, and the village of Beulah (see *Crystal Whitecaps* 11:1, Summer 2015, p. 1; and 13:2, Fall 2017, p. 3).

While these laws and ordinances apply to all watercraft, many secondary launch sites exist on Crystal Lake where no boat washing facilities are available, such as public beaches at Beulah and Bellows and numerous road ends. Fortunately, mobile boat washes have stepped into this gap: Michigan State University has operated a Mobile Boat Wash program for several years, which is available state-wide for free.

Benzie County now has two mobile boat washes, thanks to the Aquatic Invasive Species Pathways Project of the Benzie Conservation District (BCD) coordinated by Jane Perrino. In its first two years, this program has washed over 1,000 boats!

For all the groups promoting boat washing – CLWA, BCD, Michigan Department of Environment, Great Lakes, and Energy (EGLE) – education is the most important factor. Conversations, demonstrations, handouts, videos, public events, all are used to explain how the arrival of invasive species can destroy a lake’s water quality and ruin its fitness for recreation and wildlife habitat.

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Attendant Sandy Askam on duty at CLWA boat washing station at DNR Crystal Lake Boating Access Site on Mollineaux Road



Aquatic Invasive Species Pathways Project washing kayaks



LAKE PROTECTION FROM THE SKY

The CLWA once again will be flying a drone over Crystal Lake in mid-July. As previously, it has contracted with Dennis Wiand of Zero Gravity Aerial as the pilot. Following on the success of the aquatic plant survey carried out in 2016-2018 (see *Crystal Whitecaps* 13:2, Fall 2017, p. 1; 14:2, Fall 2018, p. 4), this year's survey will be recording the state of the entire shoreline, approximately 21 miles.

The plant survey showed where aquatic invasives are established in the lake, and the extent of their infestation. The shoreline survey will serve as a baseline for the current condition of the shoreline and make it possible to identify future threats. The use of land in the watershed

has a direct impact on the lake itself: fertilizer use, drain pipes, seawalls, impervious surfaces, improper septic treatment, denuding of vegetation and other practices contribute excessive nutrients, can cause erosion and other pollution to the water. The high resolution video can be geo-tagged to denote potential problem areas. Surveys in subsequent years will show changes that threaten the lake.

Glen Lake conducted a similar survey in 2017. Rob Karner, watershed biologist for the Glen Lake Association, will be speaking at the CLWA annual meeting on July 20 to describe this work and how the results have benefited their lake. All are welcome to attend!



Zero Gravity Aerial drone flying at 2018 Walkabout

MICHIGAN STRENGTHENS BOAT CLEANING LAWS

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For four years the CLWA has collaborated with the BCD and the NW Michigan Invasive Species Network to host one of the state-wide

education and outreach events (79 in 2019) that mark Aquatic Invasive Species Awareness Week at the beginning of July. And the attendant

at the CLWA boat wash is always happy to show boaters what to look for and point out all the nooks and crannies where invasives can hide.



Jane Perrino at Landing Blitz in Beulah, 2018



CLWA board members Bruce Gerhart, Jim Hamp, and Dave Wynne, with Benzie Conservation District mobile boat wash unit at Landing Blitz 2018



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CRYSTAL WHITECAPS

is published twice a year and is a benefit of membership in the Crystal Lake & Watershed Association. Back issues and membership information are available on the CLWA website:

crystallakewatershed.org/education/newsletter

CLWA ANNUAL MEMBERS MEETING 2019

All are welcome to come and hear updates on the swimmer's itch control program and other CLWA current activities, and see a presentation on the aerial shoreline survey planned for 2019

SATURDAY
JULY 20 AT 9:30 A.M.
CONGREGATIONAL SUMMER ASSEMBLY
COMMUNITY BUILDING



CLWA Past Presidents Ed Hoogterp, Joel Buzzell, and Bob Appleford at Frankfort 4th of July parade

MEET THE CLWA!

The CLWA will be participating in these local events during the summer of 2019. Please visit our booth and say hello! Let us know what's on your mind. Information on protecting our watershed will be available. CLWA T-shirts, hats, and watershed maps will be for sale.

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| June 29 | "Landing Blitz" at the Beulah Public Beach boat launch, 11 a.m. to 2 p.m. |
| July 24 | Congregational Summer Assembly Arts and Crafts Fair, 10 a.m. – 4 p.m. |
| August 3 | Beulah Sidewalk Sale and Community Showcase, 10 a.m. to 4 p.m. |
| August 16-17 | Frankfort Art Fair |