



CRYSTAL WHITECAPS

The Newsletter of the Crystal Lake & Watershed Association

Protecting Crystal Lake Now for Generations to Come.

Vol. 13, No. 2

Fall 2017

CLWA TAKES TO THE AIR FOR 2017 AQUATIC WEED SURVEY

CLWA's aquatic weed survey team, under the direction of board member Jim Hamp, completed the second phase of operations on Crystal Lake in August 2017, continuing its surface-based examination of the lake bottom around the south and western shoreline. The investigations brought the welcome news that infestations of Eurasian watermilfoil are less extensive in those parts of the lake than they are at the eastern end, which was surveyed in 2016. Drone-based photography conducted by Zero Gravity Aerial supplemented the surface results, enabling inspection of parts of the lake deeper than the ca. 20 feet which are accessible by tossed rake and rope.

This CLWA project is designed as a comprehensive survey of Crystal Lake to update information on established native submerged plants, monitor invasives like Eurasian watermilfoil that are already present, and look for any new species that may have entered Crystal's waters. The overall health of any lake is strongly connected to the type and density of aquatic vegetation that is present. Beneficial plants serve as habitat and food for animal life, contribute oxygen to the water and stabilize sediments, thus contributing to a balanced aquatic ecosystem. Invasives can outcompete and ultimately dominate the ecosystem, thus destroying a healthy balance.

To hear the latest update on the weed survey, please attend the CLWA annual members meeting on Saturday, July 21, 9:30 a.m., at the Congregational Assembly.

The Crystal Lake survey will serve as a baseline against which to measure future changes to the lake. In 2016 the work began at the Crystal Lake Marina on the northeast corner, extended across the Beulah shoreline, and terminated at

the Mollineaux Road DNR boat launch on the southeast shore. As was already known, E. watermilfoil is the most common invasive in Crystal Lake: dense beds of it are well established at the Beulah beach (introduced by decades of launching transient watercraft), and are now growing rapidly in the area of the new DNR launch site.

[For detailed results of the 2016 survey and description of the methodology, see *Crystal Whitecaps* 12:2, Fall 2016.]

The 2017 surface survey team began at the Mollineaux Road boat launch and continued the entire length of the

south shore, ending on the northwest shore beyond the Crystal Lake Yacht Club. Occurrences of E. watermilfoil were sporadic, with some thicker spots near the secondary launch site at the end of Lobb Road. The most common weed in the lake is several species of native *Chara* (stonewort or muskglass), a generally beneficial algae that contributes to water clarity, provides habitat for fish, and a source of food for numerous desirable waterfowl species.

The addition of drone-based aerial photography to the survey brought significant new information that had not

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Surface weed survey 2017: B. Gerhart, D. Wynne, J. Hamp, J. Faulkner



Chara algae, most common native weed in Crystal Lake



Drone photographing Crystal Lake August 2017

SWIMMER'S ITCH? MERGANSER SIGHTINGS? SEE P. 5 FOR HOW TO REPORT THEM!



PRESIDENT'S MESSAGE

As your new president, I am proud to take over the reins of this exceptional organization from Joel Buzzell. Joel is the latest in a line of concerned, involved, and competent leaders. They left big shoes to fill but also a path to follow.

As a summer resident enjoying the beauty of Crystal Lake since 1968 and as full-time residents for the past 3+ years, my wife Jan and I have also come to know and appreciate more fully the warm and caring people here. The beauty of this area is far more than skin deep.

The lakes, and especially Crystal Lake, are what draw us in. Whether it is the swimming, the boating, the fishing, the lazing on the beach, or just drinking in the beauty of stunning sunrises and sunsets everyone recognizes how special our "slice of heaven" is.

Beneath the surface it is different. Fifty years ago there were no zebra mussels, no phragmites, no Eurasian watermilfoil, and no one was reporting swimmer's itch.

As an organization, we are concerned citizens and committed to protecting the beauty and water quality of Crystal Lake and its environment. You will learn more about some of the major initiatives underway to do just that in this issue of *Crystal Whitecaps*. Monitoring, education, and advocacy are at their core.

Please take a minute to review the list of your Crystal Lake & Watershed board members. They are a multi-talented,

dedicated group who give up their time year-around and especially in the summer to a cause that is dear to them: Crystal Lake and her watershed. Alone they cannot do everything necessary to achieve our goals. We need your help. There are two things you can do right now to be of assistance:

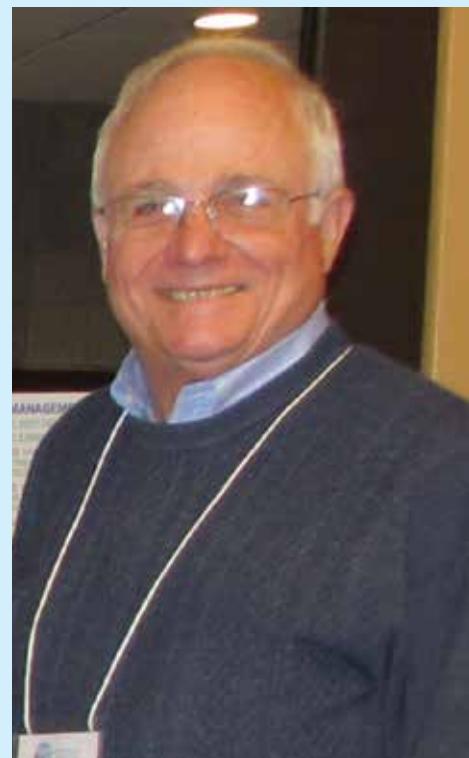
- ☒ Review your Membership Directory. If your neighbors do not appear on our membership list, please encourage them to join. Your one-on-one appeal will carry more weight than any we can make. Our membership dollars go to support the ongoing work of preserving and protecting our precious lake. The more members we have the more effective we can be.
- ☒ Join a Committee. There is plenty of work to go around. Pick your passion: water quality (monitoring, swimmer's itch, invasive species), shoreline stewardship (lake level and shoreline erosion), or education and communications. Contact the Chairperson of that Committee and ask what you can do to help. Any time you can share will be valuable to our efforts.

Our membership and Committees have been instrumental in minimizing the impact of the Mollineaux Road Boat Launch and in combating swimmer's itch. In fact, your Association has been among the leaders in addressing this statewide problem. We are a charter member of the Michigan Swimmer's Itch Partnership. However, even more

action is needed to protect what we all enjoy but that many of us have taken for granted.

Please encourage your friends and neighbors to join and – more important – take an active role in protecting Crystal Lake. Do not hesitate to ask what we are doing to protect your lake... and what you can do to help.

Dave Wynne
CLWA President



CLWA President Dave Wynne

CLWA TAKES TO THE AIR FOR 2017 AQUATIC WEED SURVEY

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previously been detected. The drone was able to photograph all the area surface surveyed in 2016 and much of the south shore, showing that the milfoil and other vegetation extended into deeper water than had been assumed and that more milfoil was present.

In the summer of 2018 Zero Gravity Aerial will complete the photography of the

remaining western half of Crystal, and the surface survey team will finish the small part of the north shore that remains. After the data is fully analyzed, appropriate treatment strategies must be identified.

The CLWA Aquatic Weed Survey is being conducted under the auspices of the Michigan Cooperative Lakes Monitoring Program and is intended to update a

study done in 2008. The identification and control of invasive species has been a long-time concern of the CLWA, leading to the construction of the boat washing station at the Mollineaux Road launch site in 2013.





BOAT WASHING EXPANDING IN NORTHWEST MICHIGAN

Citizens and visitors to Michigan's inland lakes are becoming increasingly aware of the importance of boat washing to prevent the spread of harmful invasive species. Organizations and governments throughout the state are now active in educating the boating public as well as providing more accessible opportunities to carry out proper watercraft cleaning.

The Crystal Lake & Watershed Association was one of the pioneers, reaching an agreement in 2010 with the Michigan

Department of Natural Resources to construct and operate a boat washing facility at the new Crystal Lake Boating Access Site at M-115 and Mollineaux Road on the southeast shore (see *Crystal Whitecaps* 11:1, Summer 2015). In retrospect, the years of intense debate and litigation that preceded the boat wash's opening in 2015, served to raise awareness of the need to balance the desire for public access with concerns for the effect on the lake that an influx of transient boats would bring.

The CLWA boat wash is heavily used, continuing to operate with paid staff from May through September and available for self-service at all other times, until closed down for freezing temperatures.

For the second year the CLWA teamed up with the Northwest Michigan Invasive Species Network and the Benzie Conservation District to host a "Landing Blitz" educational event at the boat wash during the 4th of July weekend.

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CLWA past presidents Bob Appleford and Ed Hoogterp, whose leadership made the boat wash a reality



Emily Cook, NW Michigan Invasive Species Network, discussing boat washing at Landing Blitz, July 1, 2017



Boat wash manager Gary Herbert at work, July 2017



A PIVOTAL SUMMER FOR SWIMMER'S ITCH

After more than a decade of experimentation and slow progress, the CLWA expects that the summer of 2017 will prove to be a turning point in the battle to control swimmer's itch on Crystal Lake.

As reported previously (*Crystal Whitecaps* 13:1, Spring 2017, p.3), a new program was implemented that focused on trapping broods of common mergansers and relocating them to other bodies of water that do not harbor the swimmer's itch parasite. Research has demonstrated that the swimmer's itch life cycle depends on the presence of two distinct hosts, one avian and one snail species. By removing one link in this cycle – the avian host (common merganser) – the incidence of SI can be reduced.

The success of this method has been shown by results on Higgins Lake, which began using the technique in 2015. By 2017, the snail infection rate there had

been reduced 98 percent. (The best available metric for assessing the level of SI infestation is by testing snails for the presence of SI infection.) The infection rate of snails was measured on Crystal Lake in 2016, data which will serve as a baseline for comparison when snails are tested again in order to gauge the success of the control program.



Jim Vondale, MISIP co-chair (Higgins Lake); Sen. David Hildenbrand, chair of Appropriations committee; Joel Buzzell, MISIP co-chair (past president of CLWA), in Lansing, September 27, 2017

CLWA contracted with Swimmer's Itch Solutions LLC ("SIS"), headed by Curt Blankepoor, to carry out the program. Over the course of the summer his team captured and relocated 14 merganser broods (including 116 ducklings), believed to be all that were present on the lake. The birds were transferred to sites on Suttons Bay and Lake Huron, where swimmer's itch is not present. This reduction in the

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BOAT WASHING EXPANDING IN NORTHWEST MICHIGAN

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Good news for area lakes was the award to the Benzie Conservation District from the Michigan Invasive Species Grant Program for two years of their Aquatic Invasive Species Pathways Project. Jane Perrino, past CLWA intern, manages the project. The funding has enabled the purchase of a mobile boat washing unit (a second one should arrive in 2018) and is supporting educational boat washing activities at public boat launches throughout Benzie, Leelanau and Manistee counties.

A major event for the AIS Pathways Project was washing about 81 visiting boats that participated in the 88th annual Western Michigan Yachting Association Regatta at the Crystal Lake Yacht Club on August 2-5, 2017. Since these large events are a regular occurrence at the CLYC, the support and commitment of the Club's Commodore and crews are a vital factor in preserving Crystal Lake's quality.

Much progress has been made, but major concerns remain regarding the numerous secondary launch sites around Crystal Lake, many of them at undeveloped road ends. For many casual boaters, these locations are convenient. Only intensified education will convince all users of the need to make the extra effort to insure that only clean boats enter Crystal's waters.



Jane Perrino, Benzie Conservation District, with AIS Pathways Project mobile boat wash unit



Pathways Project team washing boats at Crystal Lake Yacht Club, August 2017



Boats launching at South Shore Road and Lobb Road, August 2017



A PIVOTAL SUMMER FOR SWIMMER'S ITCH

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merganser population is expected to result in a lower infection rate in 2018.

Several elements of the program were designed to contribute needed research to further understanding of swimmer's itch. The relocated hens were banded and the relocated ducklings were web-tagged: this will provide information about merganser nesting habits and the important question of whether chicks return to their birth lake. The hypothesis is that if they are removed from Crystal Lake before old enough to fly, they will instead "imprint" on the location to which they are transferred and return there for future nesting.

SIS's scientific collecting permit also allowed it to kill a small number of

birds for study. Of the eight breeding hens examined, only one proved to be uninfected by swimmer's itch parasites. The full 2017 report on SIS's work is available on the CLWA website.

The Crystal Lake community provided invaluable assistance to the project by reporting sightings of mergansers and cases of swimmer's itch to a special SIS website. This site, linked to the CLWA home page (www.CrystalLakeWatershed.org), will be active again in 2018. Nesting behavior will be seen in May and broods should begin to appear by early June.

Much of the current progress in combating swimmer's itch is due to CLWA's collaboration with the Michigan Swimmer's Itch Partnership (MISIP.org),

a coalition of 24 lake association that is bringing national experts together for collaboration, sponsoring research, helping to disseminate information, and enlisting awareness and support from the State of Michigan. Thanks to their efforts, and the support of state senators such as David Hildenbrand, Jim Stamas, Wayne Schimidt and Darwin Booher, the State appropriated \$250,000 for swimmer's itch in both 2017 and 2018. The CLWA has been granted a portion of these funds to help defray the costs of its local program. It is hoped that the knowledge from ongoing research will lead to lower future costs and sustainable solutions to the problem of swimmer's itch.

The Swimmer's Itch Lifecycle



Life cycle of the swimmer's itch parasite



Swimmer's Itch Solutions LLC team setting up merganser trap



Randy DeJong of SIS examining merganser for cercariae



Trapped merganser hen ready for relocation



Banding merganser hen and web-tagging chick

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



ROADS, RAINS AND DRAINS AROUND CRYSTAL LAKE

The shoreline roads around Crystal Lake are undeniably vital – offering views of the area's exceptional scenery and convenient access to hundreds of cottages. They provide recreation for walkers, cyclists, baby strollers, and dogs. On the other hand, transportation infrastructure this close to the water can be a significant source of water pollution.

So, which do you want? Good roads, or clean water?

CLWA and the Benzie County Road Commission are determined to see that we never have to make that choice.

Crystal Lake's roadways present some unique problems for road crews. Cottages along shoreline roads such as South Shore, Crystal Drive and Crystal Avenue are constructed in a very tight space between the lake water on one side and tall bluffs on the other. In these areas, the square footage of "impervious surfaces" such as roofs and pavement limits the amount of space where water can sink into the ground.

Contractors sometimes seek a Road Commission permit to install a culvert under the road in an effort to reduce ponding of water on a homeowner's lawn, especially after a cottage has been enlarged or new outbuilding constructed. The Road Commission usually approves such work, because water building up adjacent to the road – or actually under the pavement – can lead to deterioration and expensive repairs.

Unfortunately, what seems like a simple solution for the road is not always good for the lake. A direct culvert provides a quick pathway for fertilizer, oil, road salt and other pollutants to enter the lake.

CLWA members have expressed concerns about several new culverts constructed in recent summers to direct water under roads and directly into the lake. CLWA believes that in most cases stormwater from residential properties can be handled through careful planning and the installation of such strategies as rain gardens, native perennial plantings and permeable driveway surfaces.

In late June members of the CLWA Zoning and Land Use committee met with Benzie County Road Commission Manager Matt Skeels to discuss ways that we can protect both the roads and the lake. The committee agreed to help the road agency educate our members about road maintenance issues and right-of-way considerations; Mr. Skeels committed to developing a system to inform the committee of future work plans. This should give CLWA an opportunity to discuss alternatives with contractors, when appropriate, and to point out potential issues to the Road Commission.

The right-of-way on most county roads extends 33 feet each way from the center of the road – which generally means 20 feet or more beyond the edge of the pavement. The Road Commission usually has a right to remove anything in this strip, if necessary to maintain the road or protect sight lines. Property owners are required to get a permit before installing fences, trees, decks or other obstructions in that zone.

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Newly installed drainage culvert under South Shore Road



BEULAH FRIENDS LIGHT UP THE LAKE



Ben Brotherton, AJ Duggan, and Danielle Duggan with luminaries

One of the special qualities of Crystal Lake is its history of families who return for generation after generation. One of these is the Duggans of Beulah, who have instilled a love of the lake even in the youngest members of the family.

Inspired by the local community activism of his grandmother, Joan Duggan, an avid Beulah Booster, 16-year-old AJ Duggan organized "Crystal Lights," a fund raising event which took place on July 4, 2017. Through hard work and hours of help from friends and family, AJ sold luminary bags with LED candles to lakeside neighbors, who then lit and floated them in the lake at nightfall on July 4. Enhanced by glassy calm water that evening, it was a beautiful sight along the Beulah beach. "Crystal Lights" T shirts were also sold. An anonymous donor paid the expenses and AJ donated all the proceeds to the CLWA.

Committed volunteerism is what enables the CLWA to fulfill its mission of preserving Crystal Lake for generations to come. We are grateful to AJ for his creativity and inspirational initiative on our behalf.

ROADS, RAINS AND DRAINS AROUND CRYSTAL LAKE

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This gets complicated around Crystal Lake, of course, since many older cottages were built on what is now road right-of-way. Mr. Skeels said the Commission takes that into account when considering, for example, a request for plantings along the foundation of houses within the right of way.

Here are some suggestions for protecting the lake while making life easier for the road crews:

- ☒ Make sure the road shoulder is clear of obstructions. This is especially important in the winter, when plow operators are unable to see landscape elements such as rocks, fences or railroad ties that may be too close to the road.
- ☒ If there's space on the property, consider developing a rain garden to capture runoff from roof drains or hills before the water reaches the roadway.

☒ Store docks, swim rafts and other summer equipment well off the right-of-way. Snowplows can throw snow and ice a considerable distance. The Road Commission is not liable for damage to items stored in the right-of-way.

☒ Check out the work done at Bellows Park on South Shore Road. The project provides examples of attractive landscaping that reduces impervious surfaces and allows water to sink into the ground, rather than rushing into the lake. [See *Crystal Whitecaps* 13:1, Spring 2017, pp. 6-7.]

The Road Commission has permit forms and instruction sheets for work planned within the right of way. Contact them at (231) 325-3051, or: Benzie Road Commission, 11318 Main Street, P.O. Box 68, Honor, MI 49640.

Ed Hoogterp
CLWA Zoning and Land Use Committee



Drainage culvert emptying into Crystal Lake



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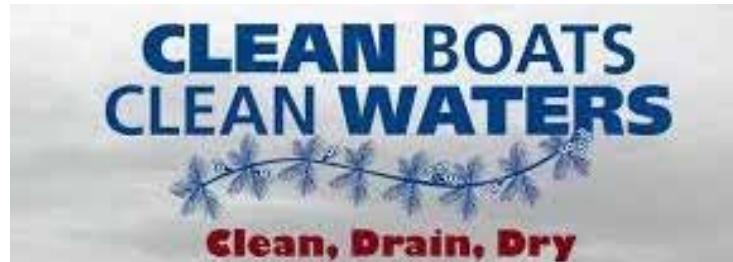
Joel Buzzell

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CALL FOR NOMINATIONS TO THE CLWA BOARD OF DIRECTORS

The CLWA is an all-volunteer organization and welcomes new members to its board and committees. It looks for individuals from throughout the watershed area – special skills are helpful, but most important are enthusiasm and willingness to pitch in for the many tasks that help the CLWA preserve and protect crystal lake.

If you would like to recommend yourself or someone you know, please contact the chair of this year's nominating committee, Bruce Gerhart, at bvgerhart@gmail.com. For information on terms and duties, see the bylaws posted on the CLWA website www.crystallakewatershed.org.



CLWA ANNUAL MEETING 2017

The annual members meeting of the CLWA was held on Saturday, July 22, from 9:30 to 11:00 a.m. at the Congregational Summer Assembly Community Building, with about 80 members and other interested persons attending. President Joel Buzzell surveyed the accomplishments of the past year, with particular emphasis on the first phase of Jim Hamp's survey of aquatic weeds in Crystal Lake. Treasurer David Appleford reported that 2016 was a challenging year for the organization, with two extraordinary expenses that were incurred, but thanks to a surplus in 2015, the effect on CLWA reserves was manageable. Hugh Walton and Ellen Herscher reviewed the major CLWA projects for the year (other than swimmer's itch control). The featured program was a presentation by Curt Blakespoor of Swimmer's Itch Solutions LLC, who has contracted with the CLWA to carry out a swimmer's itch control program on Crystal Lake this summer. He provided background to the problem and described the work he is doing to trap and relocate mergansers.

The following officers and board members were elected:

Re-elected Vice President: David Wynne (2017-2019)

Elected Treasurer: Ronald Ahrns (2017-2019)

New board members: Barry Hahn, Rory Heckman (2017-2020); Barbara Leonard, Tim Reznich (2017-2018)

Re-elected board members: Rick Cosaro, Charles (Chuck) King IV, Tom Kucera (2017-2020)

Full minutes of the meeting are available on the CLWA website CrystalLakeWatershed.org.

CLWA thanks the Assembly for the use of its facility!

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