



CRYSTAL WHITECAPS

The Newsletter of the Crystal Lake & Watershed Association

Vol. 9, No. 1

Winter 2013

PRESIDENT'S LETTER

Dear Members:

Yes, we are in the midst of Winter in Benzie County. Crystal Lake has frozen completely across even at the West End. All seems quiet and content awaiting the coming of Spring. I'm excited that the **CLWA** is moving forward with our 2013 programs. As you read through this edition of Crystal Whitecaps you will find out what we are doing to protect the waters of Crystal Lake and understand how you can continue to contribute to our success.

A Stakeholders meeting at the Mills Community House in Benzonia on 23 January 2013 marked the official public start of our Betsie River / Crystal Lake Watershed Management Plan. We have the grant monies in place to pursue this excellent opportunity. The Northwest Michigan Council of Governments is responsible for organizing and facilitating the nine-point planning process with financial support from the Michigan

Department of Environmental Quality. In addition to participation with other stakeholders, the **CLWA** will also provide significant contractual work for 5 of the 9 tasks included in the plan. This is a major undertaking and we are fortunate to have the human resources that will truly make this a community-based process that brings local organizations and individuals together to identify issues, establish priorities, and implement actions to protect our watersheds.

The **CLWA** Boat Washing Station at the Crystal Lake MDNR boat launch is scheduled to "go live" this Spring! Generous contributions by our membership and others in 2011 and 2012 made possible this key element for our lake protection strategy. We are detailing our staff training and quality control protocols along with the necessary education and communication materials to support a successful operation. We will use best available practices to keep

aquatic invasive species from the Lake!

As the 2013 water recreation season approaches the **CLWA** remains active in the broad-based Crystal Lake Swimmers' Itch Partnership. The main objective is to break the life-cycle of this unwelcome pest. We are determined to reduce the negative impact of Swimmers' Itch on recreational uses. This effort involves the cooperation of many ardent and generous supporters around the Lake. We want to be one of the most proactive lakes in the control of Swimmers' Itch.

As you read this newsletter, you will recall that our efforts succeed only because you are involved. **CLWA** members provide the drive and funding that make our successes possible. I thank you for your contributions and appreciate the opportunity to serve the interests of the **CLWA** in 2013. 🚩

- Joel Buzzell, *President of your Crystal Lake & Watershed Association*

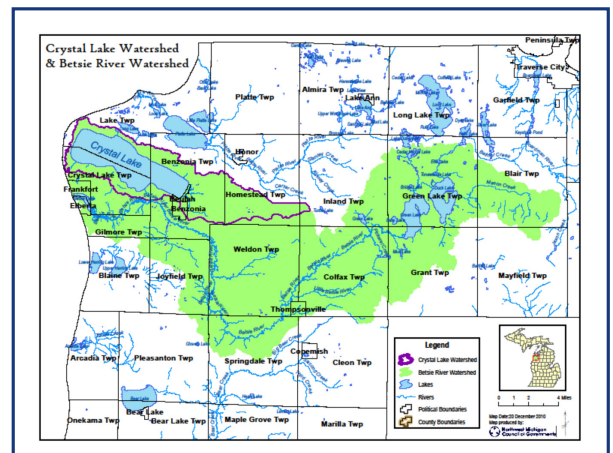
WATERSHED MANAGEMENT PLAN

The **CLWA** is participating in the development of a comprehensive Watershed Management Plan (WMP) for the "Crystal Lake / Betsie River Watershed. This two-year project received funding of \$164,000 from the Michigan Department of Environmental Quality (MDEQ). The WMP is coordinated by the Northwest Michigan Council of Governments (NWMCOG), with a lead role by the **CLWA** in association with the Grand Traverse Regional Land Conservancy (GTRLC), and

other stakeholders, including: the Benzie Conservation District; the Conservation Resource Alliance; the Benzie/Leelanau District Health Department; the Benzie Co. Drain Commission; the Benzie Co. Board of Commissioners; Benzonia, Crystal Lake, and Lake Townships, and other townships; the Green Lake/Betsie River Association, and the Sleeping Bear Dunes National Lakeshore (NPS).

CLWA members with expertise in watershed management planning,

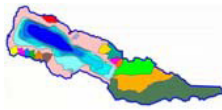
Continued on Page 2



Betsie River / Crystal Lake Watershed ("Note the outline of the "sea monster").

Note: Crystal Whitecaps, The Newsletter of the Crystal Lake & Watershed Association (**CLWA**) is published twice each calendar year. Starting in 2013, the former Fall/Winter and Spring/Summer issues will become the Winter and Summer issues, resp. The **CLWA** Directory, announcements for special events, membership appeals, and occasional white papers are distributed separately.

"Protecting the integrity of Crystal Lake, Benzie County, now and for the future."



WATERSHED MANAGEMENT PLAN... *Continued from Front Page*

environmental engineering, quality systems management, and geographical information systems will donate ~240 hours of in-kind services in their areas of expertise. Program Coordinator, Ron Edwards: engineering knowledge, organization leadership, volunteer management; Past-president, current Land Use and Zoning Committee Chair, Ed Hoogterp (consultant): organization and communication, group focus and scheduling. Dr. Stacy L. Daniels, Education and Communications Committee Chair, environmental engineering, water quality monitoring, and watershed history. 📌

The WMP involves nine tasks following guidelines established by MDEQ and U.S. EPA.

Task 1: Grant Administration.

Task 2: Creation of Steering Committee and Watershed Protection Committee.

Task 3: Completing a Watershed Profile.

Task 4: Compile Watershed Concerns and Pollutants Sources and Causes.

Task 5: Environmental Monitoring.

Task 6: Identify and Analyze Existing Projects, Programs, Master Plans and Zoning.

Task 7: Prioritize issues and concerns; develop goals, objectives, actions, and strategy.

Task 8: Develop a Sustainable Watershed Stewardship Educational Component.

Task 9: Complete the Betsie River / Crystal Lake Watershed Management Plan.

BOATING ACCESS SITE (MDNR) & Boat Washing Facility (CLWA)

Thanks to the hard work of Ed Hoogterp and his helpers, the **CLWA** Boat Washing Station at the MDNR boating Access Site on Mollineaux Road will become fully operational on 23 May 2013. We plan to test systems and train staff in early May with weekend operations commencing by the middle of the month. The wash pad and building are in place. Well and electric services are installed and the wash equipment is

ready to provide treatment of vehicles, trailers, and boats. Signage should be complete by early spring and printed materials prepared for distribution by staffers to boaters.

Staffing will be a combination of volunteers and paid staff who will be working hard to provide the public relations needed to make the operation a success. Ron Edwards, our new Program Coordinator, will be overseeing the site

operation, staffing, training, scheduling, signage, and handout materials. Ron is looking for volunteers for some of the busier usage times (weekends and holidays). If you are interested in supporting this worthwhile effort to protect Crystal Lake contact Ron at ronedwards48@yahoo.com or by mobile telephone at 248-758-8958. 📌



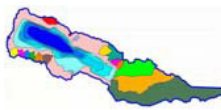
The MDNR Boating Access Site (at lakeshore).



Students try their hand at boat washing, in a demonstration set up for the 2012 Walkabout. Permanent equipment in place for the 2013 boating season.

MEMBERSHIP DEVELOPMENT

Membership involvement is the key to the success of the **CLWA**. Crystal Lake is a wonderful place that provides us all with many enjoyable opportunities. Our watershed community is a place for families to gather together and participate in myriad recreational activities. A small effort from each of us helps to protect the lake and its watershed. We ask that you actively help us build the **CLWA** in 2013 by encouraging your friends and neighbors to become members. Don't forget to renew your membership! We also encourage gift memberships to others whom you believe will benefit from our programs, active research, and educational opportunities offered by the **CLWA**. 📌




CLWA PROGRAM COORDINATOR

Ron Edwards began work as the new **CLWA** Program Coordinator on 1 October 2012. This newly created position is designed to provide support for **CLWA** activities and initiatives to protect the integrity of Crystal Lake and its Watershed and to sustain our unique resource. Ron is working closely with the President and with Committee chairs to insure that our activities and initiatives are carried out in

an effective and timely manner.

Ron brings to the **CLWA** a wealth of experience in program and personnel management, mechanical and design engineering, and an excellent record of volunteerism and community involvement. In addition he is actively involved with local zoning, building, and planning departments. He and his wife, Michelle, live on the north shore of Crystal Lake on property originally purchased by his Great-Great-Grandfather in 1903. Ron is up to the challenge as we begin

work on the combined Betsie River / Crystal Lake Watershed Management Plan, continue to conduct water quality monitoring efforts, and coordinate activities of our summer interns, develop an active membership, and build our communication and community educational programs. Expect to see Ron out and about supporting our efforts and insuring that your **CLWA** continues the effective work that you have come to expect. 

SHORELINE PROTECTION

A healthy natural shoreline means a healthy lake. How can we who live around the shoreline protect and lake and its watershed? The U.S. EPA conducted a comprehensive survey of more than 1,000 lakes that were selected to be representative of about 50,000 lakes nationwide (*). "Poor habitat condition along the lakeshore is the most significant stressor in lakes. In fact, the study finds that poor biological health is three times more likely in lakes with poor lakeshore habitat than in lakes with good habitat. This finding declares that it is we who live along the shores of our lakes who are the most responsible for either degrading or protecting those lakes. It is our responsibility to learn how to keep Crystal Lake healthy. (*)

The survey included 29 Michigan lakes chosen randomly on a statistical-basis. MDEQ chose an additional 21 for a total of 50 to allow for state-based assessment. www.michigan.gov/deq/0,4561,7-135-3313_3686_3731-195537--,00.html

What is a healthy lake? What causes the degradation of a lake? How should I landscape in order to protect the lake? What do I do about erosion at the shoreline? What should I think about when constructing a new building or putting in a new driveway? "Natural Shoreline Landscapes on Michigan's Inland Lakes," a workshop conducted by the Benzie Conservation District several times each summer answers these questions based on sound science. The shore-water interface is a critical zone where events occur that lead to degraded or enhanced protection. All things we do where the shore meets the water are

critical to lake health.

Many inspiring, aesthetically appealing ideas for planning and designing a natural shoreline landscape are presented. The workshop is the "how to" for those who want to take part in assuring that Crystal Lake remains healthy. All who live along Crystal Lake, or any of our lakes, are encouraged to attend this workshop and then apply what they learn to their little piece of paradise along the lakeshore, so as to protect it for future generations.


Stay tuned for dates and times for the 2013 summer workshops based on a publication of the Michigan Natural Shoreline Partnership (sites.google.com/site/mishorelinepartnership) available at the Benzie Conservation District, 280 S. Benzie Blvd., Beulah, MI 49617. 

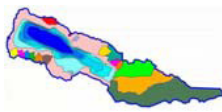
WATER QUALITY MONITORING

For several years, the **CLWA** has owned and operated an instrumental system of sensors (Hydrolab® H20 datasonde; SVR3 datalogger and special cable) capable of simultaneously measuring vertical profiles of six parameters of water quality (depth, temperature, dissolved oxygen, pH, conductivity, oxidation-reduction potential, and turbidity) in the deepwaters, nearshore regions, and tributaries of Crystal Lake. The **CLWA** has now acquired two additional

systems (Hydrolab® DS4A datasondes) at no cost from the South Florida Water Management District thanks to our former water quality coordinator, Paul Murphy (NPS). These two units have undergone retrofitting by Hydrotech (Plano TX), and have now been field tested.

The **CLWA** has extended its cooperative agreement with the Benzie Conservation District for support services for water quality monitoring. Several vertical profiles in the deepwater of Crystal Lake were taken using our Hydrolab® H20 multiprobe in 2012 and will continue in 2013. These analyses will

be augmented by assessment of water samples taken offshore of the new MDNR boat launch. With the recent creation of the Benzie Lakes Coalition (Crystal L., Herring L's, Platte L's, Ann L., Pearl L., and others) there are demonstrated needs for related contractual work through the BCD with other lakes. In addition, remote deployments of our Hydrolab sondes in conjunction with other devices (lake level, weather, water quality) at fixed stations on Cold Creek or near the Outlet become real possibilities. 



AQUATIC INVASIVE SPECIES

In addition to preventing the introduction of new AIS into Crystal Lake, the **CLWA** is considering the control of AIS already existing in Crystal Lake, specifically limited patches of Eurasian watermilfoil that are present but do not yet pose a serious problem for boaters. The **CLWA** has submitted a preproposal in response to an RFP by the National Fish and Wildlife Foundation for their program, Sustain Our Great Lakes 2013. Our project, "Control of Invasive Species in Crystal Lake, Benzie Co., MI", will delineate invasive species within the spatial confines of boating access sites by GPS/GIS measurement and mapping of AIS with implementation of suitable controls to improve fish habitat. A previous proposal for funding under the National Fish Habitat Action Plan lost out to intense competition. We may also consider an independent **CLWA** study. 📄

CLWA ANNUAL MEETING

The Annual Meeting of the **CLWA** was held Saturday, July 21, 2012, 9:00 AM – 11:00 AM at the CSA Meeting Hall, 2128 Pilgrim Highway (M-22). A short business meeting was followed by elections of officers and Board members. New Board members include: Phil Downs, Alan Marble, and Peter Payette. A special presentation was made to outgoing President, Ed Hoogterp, for his capable leadership as the **CLWA** transitions into a new era of responsiveness and planning efforts.

Remarks by President Ed Hoogterp and Committee updates were followed by a program update on activities to assess and control Swimmer's Itch in Crystal Lake (See following article). 📄

SWIMMERS ITCH

The Crystal Lake Swimmer's Itch Partnership (CLSIP) had a productive year in 2012 and is working on enhanced plans for this coming summer. Reports from around the lake, including Beulah Beach and the Congregational Summer Assembly, indicated Swimmer's Itch (SI) was present in the Lake last summer, but at a possibly reduced rate from 2011. The most severe outbreaks were reported in June and early July, with fewer incidents reported later in the summer. The Swimmer's Itch Partnership represents individuals, municipalities, and organizations from around the lake, with **CLWA** acting as funding agent. The Partnership employs a broad strategy that includes public education, research, and direct action to impact the waterfowl (primarily common mergansers, the namesake bird of Benzie County) and freshwater snails that are alternate hosts for the microscopic organisms (cercariae) that cause Swimmer's Itch in humans.

CLWA member Al Flory headed a definitive study in 2012 to assess the effectiveness of a commercial product, Swimmer's Itch Guard, which is advertised as a "preventative crème" for Swimmer's Itch. Al has a professional background in medical device testing. He and **CLWA** intern Shelby Riggle enlisted help from

more than 60 volunteers, each of whom agreed to swim in Crystal Lake at least five times after applying the test product and a control crème. Each volunteer kept a log to document his/her experience. The data are now being analyzed with assistance of a statistician from Grand Valley State University, and will be reported this year. Preliminary results indicate the product may offer some benefit.

During the summer of 2012, several beaches were selected for study of the efficacy of scarification, or "beach raking" which mechanically disturbs the snail habitat. Certain species of freshwater snails serve as hosts for the organisms that cause Swimmer's Itch. Scientific studies in Canada indicate that disturbing snail habitat near beaches may reduce the incidence of Swimmer's Itch without the potential negative environmental impact from the use of toxic chemicals. Our method of "beach raking," entails using a boat to slowly drag a harrow made of chain-link fence across the lake bottom at several beach areas. The raking takes place several times each summer. It is intended to disrupt snail habitat and also disperse snail eggs and food sources into the water column, where they may be consumed by minnows. The raking has taken place only selected areas, leaving most of the lakeshore untouched. **CLWA** interns conducted snail surveys before

and after the raking, as part of our research to determine whether the program was effective. Correlating the effort and the snail count data will require a significant sample of data over several years. We thank Jim Rogers for volunteering in 2012 to perform the raking duties at our select swimming holes. Jim gave freely of his time and his equipment to perform this task three different times this summer. We also are working with the CSA to collect SI infection data, which works together to verify that our efforts are being properly focused on solutions. We're grateful to the CSA lifeguards who have stepped up to provide extremely valuable incidence reports on SI.

The Swimmer's Itch Partnership has also promoted the use of pyrotechnics in spring and legal hunting during the fall waterfowl season in an effort to reduce the numbers of common mergansers residing on Crystal Lake. An expanded informational brochure is in the works for this coming summer. Lakefront owners are reminded that mergansers often roost on unused docks, swim rafts, and boat canopies where their feces can wash into the lake and infect snails, and thereby increase numbers of the itch-causing organism in swim areas. Several strategies including "gull sweeps" are also available to discourage birds from roosting on docks. 📄

To the People of Benzie County: That sure was a nice party that the folks from Beulah and the visitors to Crystal Lake put on last Saturday at Archibald Jones Day (25 Aug 2012). Seeing that old map of mine unveiled brought tears to my eyes. I'm most gratified that William Milliron found the map in the attic of John Bailey's house, and donated it to the Benzie Area Historical Museum. My thanks to the curators, Lou Yock and Florence Bixby (Ret.), for rediscovering and restoring it.

You did a right smart job in telling the facts about the Benzie Co. River Improvement Co. (BCRP 8/15/2012). The stock certificate is the one signed by me, as President, and by Sampson P. Jaquith, as Secretary. The Co. was all nice and legal even though we filed the Articles of Association only a week before the dam failed (16 Aug 1873 and 23 Aug 1873, resp.). John Bailey's house was down River Road a mite further west from mine that I bought from Rev. Jas. B. Walker (*) in 1872 (BCRP 04 Aug 2010). Mine is still there closer to town catawampus from the old Congregational Church (now the BAHS Museum). John was on my Co's Board of Directors. I think he squirreled the map away thinking it might come in handy if anyone ever thought about digging more canals around Crystal Lake. John was my surveyor, and after I left town he platted Crystal City & Beulah View Resort so the city fellers and their lady folks could come upnorth and enjoy it.

We used the map to promote the improvements planned by my Company: (1) creating water-lots on Crystal Lake, (2) building a slack-water canal between Betsy River and Crystal Lake, (3) removing obstructions in the Betsy River, and (4) building a steamboat for transportation of passengers and freight. I thought young Buel Case Hubbell did a most respectable job in drafting the map to show the routes of the two canals. I heard tell later on in 1894, when Crystal Lake was at its lowest level since 1873, he tried to claim 160 Acres of lake bottom land on Crystal Lake as a homestead in front of a neighbor. Back then we all thought we owned a piece of sandy beach.

Those Beulah Boosters did things up right nicely this year with all those prettifications down at the waterfront. I think I'll take credit for creating all that beach out yonder off of Cold Brook Creek so that they could site Beulah down there in the first place. It would have been tough to build a Village in the middle of a cedar swamp. I only hope that the cantankerous carrying-on's about riparian rights and claiming exposed beach in front of our neighbors has quieted down. Just don't try to pull my plug again and lower the lake some more, or the lid will fly off and the kettle will boil over again. The question is now so well-established here that no one gives it a second thought, except the host of tourists that comes in here in summer and think that because the beach is unfenced and open it is anybody's spoil. As 'twas said back then (BB 3/12/1914), "It takes a lawyer to get some nutriment out of barren beach, but sometimes they fail."

I sincerely appreciate having the record set straight that I knew all along what I was doing in plannin' and diggin' canawls to and from Crystal Lake. I've been pulling on my own boot straps ever since seeing how things were done right and wrong along the Erie Canal when I was a young'n. Back then there weren't many engineers that had a lot of book learnin' - we all were taught by doin'. Experience is a strict teacher, and you listen to what she has to say - just don't make the same mistake twice!

If it weren't for those consarned pesky whitecap waves blowin' up in the middle of the night and awashin' out my temporary dam, you'd still be hearing canal boat horns and enjoying riding on the Crystal Lake Canal down the Outlet to the Betsey River to Frankfort-on-the-Lake! It was a gut-wrenching feeling to watch those waves "pull my plug", rather than me pulling the plug myself, as was falsely concluded by some folks. (As to digging that other canal and reversing the course of the Platte River into Crystal Lake? Well, I must admit that project was perhaps a bit overly optimistic. I'm glad John Bailey and I realized in time that the water flowed th' other way, or Crystal Lake might have lost even more water.)

I told the judge when he asked why my paddleboat would not float on the Betsey:

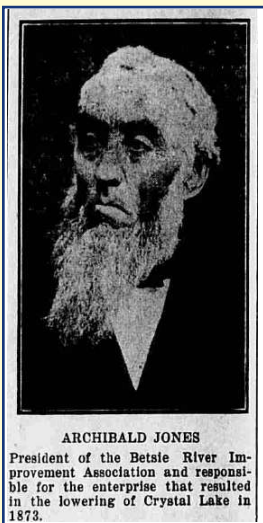
"THE BOTTOM OF THE RIVER IS TOO CLOSE TO THE TOP OF THE WATER !"

Of course, in hindsight, I should have said:

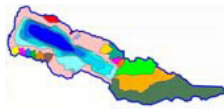
"THE TOP OF CRYSTAL LAKE WAS TOO FAR ABOVE THE BEACH !"

*God bless, Yrs. Truly
A. Jones*

P.S. I see you found that old picture of me staring at the camera (BB 16 Jul 1931). My beard was itching something fierce, but I had to hold real still, and that made me look a bit stern, but patriarchal. The woodblock print was nice too.



(*) I was living in Marengo, IL, in the early 1870's when Harrison Houk of nearby Irving Park, IL, introduced me by chance to Dr. Walker (BB 10/04/1923), who told me lots of great things about Crystal Lake. Otherwise I'd probably never thought of coming way up north to Benzie Co. and have the whitecaps of Crystal Lake "PULL MY PLUG" !



ARCHIBALD JONES DAY

Archibald Jones Day is held annually to celebrate the “man who pulled the plug at Crystal Lake”. This festival commemorates the lowering of Crystal Lake in August 1873, an epochal event in our local heritage which greatly influenced the

future development of Crystal Lake and Benzie County. It is cosponsored by the **CLWA**, the Beulah Boosters, the Darcy Library, the Crystal Lake Community Business Association, the Friends of the Benzonia Library, and the Benzie Area Historical Society. It is held the last Saturday before Labor Day.

The 3rd Annual Archibald Jones Day with activities, fun, and games from the 1870’s; entertainment, food, and music was held on Saturday, August 25, 2012. The program included the telling of “The Story of Archibald Jones” by Steve Elrick, a Re-enactment of the “Tragedy” /

“Comedy” (the “pulling of the plug”; the singing of the “Mistake by the Lake” (The Ballad of Archibald Jones), and a lecture: “Archibald Jones and the Benzie County River Improvement Company (BCRIC): Implications in the ‘Tragedy/Comedy’ of Crystal Lake”, by Dr. Stacy L. Daniels at the Darcy Library.

Honorary stock certificates in the Benzie County River Improvement Company were awarded to: William Milliron, Beverley (Bailey) Sporck, The Hubbell Family, and Harold R. Bruning for their contributions to our local history. 🚩

The highlight in 2012 was the unveiling of this recently restored and historically significant document:



“Map Showing Sources & Courses of the Platte & Betsey Rivers, Benzie County, Together with Some of the Obstructions and Proposed Improvements, drawn for the Benzie County River Improvement Co., by Buel C. Hubbell, Draftsman, Benzonia, Mich.”, ca. 1873.

- Betsie River (South route)*
- Platte River (North route)*
- Lake Michigan (West route)*
(Hypothetical, never proposed)

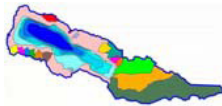
THE CRYSTAL LAKE & WATERSHED ASSOCIATION

“The purpose of the **CLWA** is to protect and promote the natural qualities of Crystal Lake (Benzie Co., MI) and its surrounding Watershed. The goal of the **CLWA** is to preserve for future generations the beauty and recreational resources of Crystal Lake and its Watershed. To these ends, the **CLWA** will engage in water quality monitoring, educational programs, promotion of harmonious land development, and promotion of the safe use of Crystal Lake. It will conduct other such activities as needed to advocate and ensure the continued aesthetic beauty and environmental integrity of the Lake and its Watershed.” (**CLWA** Bylaws)

The **CLWA** (a 501(c)(3) nonprofit organization) supports a comprehensive program of activities affecting students, riparian owners, and visitors in the Crystal Lake Watershed, Benzie Co., MI. The **CLWA** is comprised of an Executive

Committee; four standing committees: Water Quality; Education & Communication; Zoning & Land Use; and Financial Development; and ad hoc committees on Public Access, Shoreline Stewardship, Finance, Swimmers Itch & Invasive Species, and Long-Range Planning. Please contact the **CLWA** if you would you like to participate on a Committee!

Membership in the Crystal Lake & Watershed Association includes: Crystal Whitecaps, The **CLWA** Newsletter; the webpage at www.CLWA.us, the **CLWA** Membership Directory; progress reports on Crystal Lake Watershed activities and issues; and an active voice in the protection of the Crystal Lake Watershed. **CLWA** memberships are \$35 per year. Gifts to the 2020 Vision Fund are for stewardship projects, scientific studies, and educational programs; and those to the Endowment Fund are for future needs. Please contact the **CLWA** with your concerns and comments. 🚩



Crystal Lake “Walkabout” 20th Anniversary

The Crystal Lake “Walkabout” was held on Tuesday, October 2, 2012, for 180 students from the 7th grade classes of Benzie Central and Frankfort/Elberta Schools. The enthusiastic participants encountered a crisp fall morning to visit four Interpretive Sites to learn about the many facets of the Crystal Lake Watershed (*).

The Crystal Lake “Walkabout” is a continuing educational program to teach students, property owners, and visitors about the Crystal Lake Watershed (*) using a “hands-on” approach of observational monitoring and environmental exploring. The program focuses on hydrology – how water moves about the watershed - but also addresses water quality, invasive species, ecology, geology, land use and zoning, wells and septic tanks, green belts, sustainable development, watershed management, and local history.

Participants “walk about” a selection of Interpretive Sites each representing different facets of the Crystal Lake Watershed, where they interact with environmental professionals from the cosponsoring organizations. The “Walkabout” has now been expanded to consider fourteen different Interpretive

Sites. The Sites visited in Fall 2012 included: Crystal Lake at the Beulah Beach; the MDNR Boating Access Site, the Betsie Lake Utilities Authority, and the U.S. Coast Guard – Station Frankfort.

The “Walkabout” is supported by dedicated teachers and administrators of Benzie County schools who provide their inquisitive students as participants. Special thanks are extended to the Fall 2012 Site Interpreters: Ed Hoogterp, Jana Way, and Alan Marble, Crystal Lake & Watershed Association; Mike Jones, Benzie Conservation District; Jill Fejszes, NW Cooperative Weed Management; Doug Gibson, Benzie Central Schools; the BLUA staff, and the crew of USCG – Station Frankfort. Dr. Stacy L. Daniels of the **CLWA** has been the Coordinator of the “Walkabout” since its inception.

2012 was the 20th year of the “Walkabout”! Since 1993, this successful program has been presented on occasion to ~5,000 students, residents, and visitors to the Crystal Lake Watershed 2-3 times each year: Spring (5/6th grades), Fall (7/8th grades), and/or Summer (general public).

Each participant receives a commemorative “Walkabout” T-shirt with a colorful map of the Crystal Lake Watershed, and (in the Fall) a copy of the “Walkabout” Interpretive Manual

(available online at clwa.us/educ_comm.htm#EDUCATION). Additional “Walkabout” T-shirts, Crystal Lake Watershed maps, and Interpretive Manuals are available for purchase from the **CLWA**, 231/882-4001, PO Box 89, Beulah, MI 49617. clwa.us/watershedware.htm

(*) The Crystal Lake Watershed contains a myriad of diverse, hydrologically intertwined ecologies and unique environmental niches: active sand dunes, forested heights, wetlands, tributaries, and a large deep inland lake connected to Lake Michigan. It encompasses Crystal Lake, an immense body of pristine water of exceptional clarity, with a mixed sandy and rocky near shore, a sandy shoreline, a deep marl bottom, and a high-ridged vista. It is our responsibility to respect, maintain, and preserve the integrity of our Watershed for the generations that follow us. This Interpretive Manual for the Crystal Lake “Walkabout” is hereby dedicated toward that goal. It is hoped that it provides both interpretation and guidance for responsible stewardship by students, visitors, and property owners. 🌿

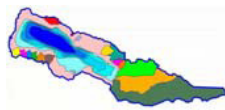
BENTHIC INVERTEBRATES AND STREAM HABITAT

The **CLWA** also supported the efforts of the Benzie Conservation District, who conducted an independent survey of portions of the upper reaches of the Betsie River Watershed for stream habitat and benthic invertebrates (bottom-dwelling organisms) funded by the MDEQ similar to a study done by the CLWF for the three branches of Cold Creek in 2003. 🌿

VILLAGE OF BEULAH BEACHFRONT IMPROVEMENTS

If you have not had the opportunity to cruise by the newly completed Beulah Public Beach remember to do so soon. And stop by the local businesses for some good food and shopping. One of the main efforts in the beach front improvements has been to reduce sediment runoff from village streets into the Lake. Several small settling ponds constructed from large boulders are designed to collect the runoff and filter it through the sand. Previously, storm drains from the streets ran directly into the lake. The large settling pond on Cold Creek continues to collect sediment upstream from Beulah. 🌿





HUMAN IMPACTS ON CRYSTAL LAKE

Stacy L. Daniels presented a talk, "Human Impacts upon Crystal Lake (Benzie Co.): Past, Present, and Future", at the 8th MlCorps Volunteer Monitoring Conference, Ralph A. MacMullan Conference Center, Higgins Lake, MI, Oct. 30, 2012. clwa.us/PDF/HumanImpactsCrystalLake.pdf [htm#LakeLevelMonitoring](https://twitter.com/LakeLevelMonitoring)



CLWA Interns Noah Hahn and Shelby Riggle sampling for snail hosts of Swimmer's Itch.

SUMMER INTERNSHIP

The **CLWA** is actively seeking an intern to facilitate our Watershed Management Planning process, assist with our boat washing program, and implement Swimmers Itch data collection and research activities. If you or someone you know is interested in applying for this position please contact Joel Buzzell joelbuzzell@gmail.com.



CLWA Interns Madison Lutzke, Noah Hahn, Shelby Riggle, with Stacy Daniels

SUMMER EMPLOYMENT OPPORTUNITY

(Mid-May through September 30)

Seasonal employees to help administer the **CLWA** Invasive Species Prevention Program at DNR Boat Wash Facility at the MDEQ Public Boating Access.

Responsibilities: boat washing, engine flushing, promotion of Invasive Species Prevention Education.

Interested? Know anyone who might be a really good candidate for this work. Call Ron at 248.758.8958 or ronedwards@yahoo.com Competitive compensation.

LAKE LEVEL

The level of Crystal Lake (measured weekly by the Benzie County Drain Commission) is regulated at two legal levels [Summer (May 1 - Oct 31) 600.25 feet, for recreational use; Winter (Nov 1 - Apr 30) 599.75 feet, to reduce winter shoreline erosion]. The Spring of 2012 began with the Outlet flowing free and with a sufficient quantity of water that carried through the dryer summer months until the level was lowered in late fall. The new level control devices installed at the Outlet Dam in 2011 allow for improved water management. The **CLWA** contributed to this project which was implemented by the Benzie County Drain Commission following a design by Luedke Engineering. Graphs of historical lake levels are posted at our website. clwa.us/water_quality.htm#LakeLevelMonitoring



CLWA 4th of July Float ("Which Way to the Bay?"): Shelby Riggle, Cassie Ford, "Archie" (Stacy Daniels), Noah Hahn, Madison Lutzke. + Archie's helpers, Tommy, Drew, & Brock Cavanaugh

Other Plaudits & Congrats

- ✔ **Molly Appleford** and **Heather Perry**, who made our "Mexican Fiesta" fundraiser a success.
- ✔ Retiring Board members: **Jim Laarman**, **Julianne McNight**, and **Sandra O'Neal** for their services.
- ✔ **Terry Money**, retiring Drain Commissioner and **Bob Crossman** (dec), Asst. Drain Commissioner, for dedicated measuring of the level of Crystal Lake.
- ✔ New Drain Commissioner **Christy L. Andersen**
- ✔ **CLWA** 2012 Summer Interns: **Madison Lutzke**, **Noah Hahn**, **Shelby Riggle**, **Cassie Ford**



CRYSTAL LAKE & WATERSHED ASSOCIATION
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- Hugh Walton
- Jana Way

Past President

- Bob Appleford
- Ed Hoogterp

Program Coordinator

Ron Edwards

| CLWA | LOCAL |
|------------------------------|---|
| April 20Board Meeting | Jun 01Frankfort Crafts Fair |
| May 18Board Meeting | Jul 04.....Parades & Fireworks – Beulah/Frankfort |
| June 15Board Meeting | Jul 04..... Firecracker 5K Race - Beulah |
| JulySummer “Walkabout” | Jul 06.....Beulah Art Fair |
| Jul 20 Annual Meeting | Jul 20.....Elberta Art & Crafts Fair |
| Aug 24Board Meeting | Jul 20.....Port City Run |
| Sep 21Board Meeting | Jul 24..... CSA Arts & Crafts Fair |
| Oct Fall “Walkabout” | Aug 10Crystal Lake Team Marathon |
| | Aug 16-17 Frankfort Art Fair |
| | Aug 24Archibald Jones Day |
| | Oct 6.....Betsie Valley Run – Crystal Mountain |
| | Oct 5-6.....Fall Festival - Beulah |
| | Oct 12Fall Festival - Frankfort |

Dates for **CLWA** events subject to change.

Schedules for **CLWA** Board Meetings to be communicated by email.

For updated event lists visit
CLWA.us • Benzie.org • Frankfort-Elberta.com