



CRYSTAL WHITECAPS

The Newsletter of the Crystal Lake & Watershed Association

Vol. 8, No. 1

Winter 2012

President's Letter

At the Crystal Lake & Watershed Association, we're dedicated to protecting the quality of the water -- and as hard as we try, we know we can't do it all by ourselves.

That's why I'm so thankful to the many organizations, individuals and government agencies that are working with us to preserve the outstanding water resources we have here in Benzie County.

Here are a few of the many examples that show the spirit of cooperation is alive and growing in our community:

❑ The Benzie Conservation District, and groups representing Platte River, Betsie River, Herring Lakes, Lake Ann, Pearl Lake and others joined with us to form the Benzie Watersheds Coalition as a way of sharing equipment, ideas and expertise. On April 14, many of the coalition members will take part in the Benzie Water Festival in Frankfort.

❑ The Benzie County Drain Commissioner sought and received approval to complete a second phase of improvement to Crystal Lake water level control structure at The Outlet. **CLWA** shared the cost of the first phase in 2011; county funds will complete the second phase this year.

❑ The Grand Traverse Regional Land Conservancy is working with local donors to raise funds for an exciting expansion of the Railroad Point Natural Area -- an effort that has received a major grant from the Michigan Natural Resources Trust Fund.

❑ The Northwest Michigan Council of Governments, the GTRLC, The Conservation Resource Alliance, The Benzie Conservation District and others are working together with **CLWA** on a proposal to write a watershed management plan for the Crystal Lake and Betsie River Watershed.

❑ As we enter 2012, **CLWA** is working closely with the DNR to finalize a lease for a boat-washing station on the site of the new DNR access site. (See story below). We're also in the process of assembling an advisory committee of local stakeholders to ensure the boat-wash meets its goal of welcoming boaters to enjoy Crystal Lake without transporting invasive species.

It is because of you, our members, that **CLWA** is able to play a positive role in the community. We anticipate even more progress in 2012. I hope you will consider using the enclosed response envelope to support our activities. One Hundred Percent of donations received in this appeal will go toward the boat wash, swimmer's itch and invasive species projects.

- Ed Hoogterp, *President*

Boat Launch finished; wash campaign begins

Following a decade of controversy, and two summers of construction, the state boat launch on the south shore of Crystal Lake was completed on Dec. 15.

The end of construction clears the way for the Crystal Lake & Watershed Association to build and operate a boat-washing station on the site, to prevent the spread of invasive species.

CLWA agreed from the start that public access to Crystal Lake should be improved. But we were concerned that the initial plans called for unnecessary amounts of wetland disruption, lake-bottom dredging and hard-surface paving.

As part of a court settlement in 2010, the Department of Natural Resources agreed to several changes that will minimize the environmental impact, and **CLWA** dropped our challenge to the project. The settlement also includes a provision for the **CLWA**-financed boat-washing station.

Throughout the construction project we have worked closely with the state and other stakeholders, approving modifications that allow emergency

vehicle access to the Betsie Valley Trail, and that accommodate a private drain line important to adjacent property owners.

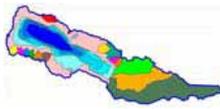


Paving crews finish work on the boat launch site in November.

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SAVE THE DATE: JULY 14, 2012

For a summer evening's celebration at the Crystal Lake Yacht Club, to raise funds for the boat wash at the new boat launch site to help stop the spread of invasive species and preserve our lake. Details regarding this event will be sent in the spring. **Please Save the Date!**



Boat Launch... *Continued from Front Page*

The next step for **CLWA** is to make the boat-washing station a reality. This is extremely important. Scientists have shown that invasive species of plants and animals may stick to recreational boats and “hitch-hike” as boats are moved from one body of water to another.

Washing with high-pressure water before launching is the best way we know to prevent the movement of such destructive invaders as quagga mussels, round gobies, VHS virus and others from Lake Michigan into Crystal Lake.

CLWA will raise funds to build and operate the wash station, and to implement a long-term invasive-species education program. The goal is to have the facility in operation before Memorial Day weekend.

Fund-raising began last summer with a series of “Culinary Celebrations” in which hosts and generous donors contributed more than \$10,000 to the cause. It continues in 2012 with a public fund-raising appeal, and a summer celebration event (See notice on page 1 of this newsletter).

Here are answers to some frequently asked questions about the Crystal Lake boat-washing station:

Q: Why is it needed?

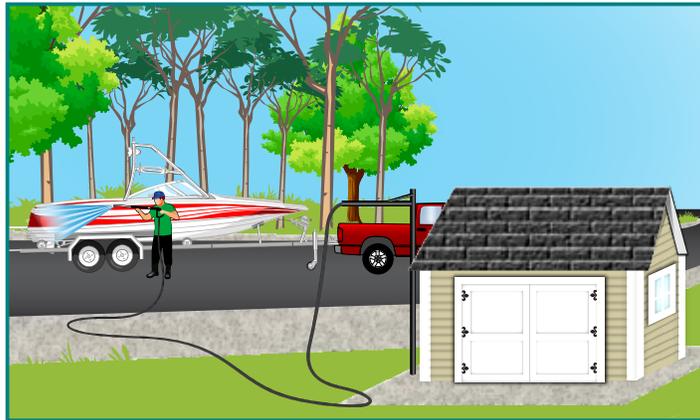
A: Nearly 200 invasive plants and animals are known to survive in Lake Michigan, just a few miles from the new Crystal Lake boat launch. A large and growing number of invasive species are also present in some inland lakes.

Some of these invaders – including fish viruses, zebra and quagga mussels, Eurasian watermilfoil, spiny water fleas and round gobies – have devastating effects on the ecology and the fishery. Adult or larval stages of these species may adhere to boat hulls, survive in live wells, or latch on to fishing and recreational gear, where they can be spread to new bodies of water. Scientific tests show that washing with a high-pressure stream of water is a practical and effective way to remove invasive

species from boats and equipment.

Q: How will the Crystal Lake Boat-Wash station work?

A: Under the agreement with the DNR, the wash station will be located in the upper parking area of the site. It is designed as a self-serve facility. There will be no charge for using the wash station, which will be open through the boating season and staffed by volunteers during busy times. Spray wands, similar to those in a self-serve car wash, will be used to clean vessels and equipment before boaters proceed to the launch ramp.



Q: Who should use the facility?

A: All boats that have been in potentially infested waters in the past 10 days should be washed before being launched in Crystal Lake. Boaters may also choose to wash their vessels after leaving Crystal to prevent the movement of species into other lakes.

Q: How will you get boaters to use the facility?

A: The best model may be the process that persuaded American motorists to use their seat belts. That required three elements:

First, an extensive educational program to make people aware of the problem, and of the benefits of seat belts (or, in our case, boat-washing);

Second, careful design to make the equipment (whether belts or wash-wands) convenient and simple

to use;

And third, laws to provide legal back-up and communicate the seriousness of the issue.

The Crystal Lake facility will combine the best features of existing wash stations in other areas, along with trained volunteers to prevent “back-ups” during busy times. A long-term educational effort will use printed materials, websites and other media to inform the public about the benefits of boat washing.

Finally, **CLWA** is working with local townships to develop an ordinance to ensure that recreational boaters, rental agencies and others make all reasonable efforts to protect Crystal Lake from invasive species.

Q: Will this prevent some people from using Crystal Lake?

A: Absolutely not! The process takes only a few minutes. On lakes with similar facilities, boaters often are able to wash their boats during the time they would be waiting for the launch ramps to clear of other vessels.

The whole purpose of boat washing is to protect the lake so fishermen and boaters can continue enjoying the water for generations to come.

Q: Are there invasive species already in Crystal Lake?

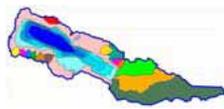
A: Yes, there are some. An aggressive weed called Eurasian watermilfoil exists in several small patches, which are being carefully monitored by the lake association. Also, zebra mussels have been present for several years.

Q: If some are already present, why should we worry about more?

A: For a number of reasons. Here are two of the main concerns:

Quagga mussels now cover much of the bottom of Lake Michigan but have not been seen in Crystal. This cousin of the zebra mussel could devastate the

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Boat Launch... *Continued from Front Page*

ecology of Crystal Lake. While the zebra mussel is adapted to relatively shallow water and stony “substrates,” the quagga lives happily on sand or marl at depths as great as several hundred feet. If introduced into Crystal, it could literally coat the entire lake bottom and forever change the fishery.

And, VHSv, the virus that causes Viral Hemorrhagic Septicemia, is known to exist in some species of great lakes fish and minnows. If accidentally introduced into Crystal, it could result in massive fish kills.

Q: Do other Michigan lakes have boat wash stations?

A: A few. Glen and Higgins lakes are among the popular lakes that already have wash stations. As concerns about invasive species continue to grow, many others are considering such facilities.

Q: What about the cost?

A: The Crystal Lake & Watershed Association estimates that building the wash station will cost some \$40,000. There also will be annual operating and maintenance expenses.

That’s a lot of money. But lake groups in Michigan have learned that preventing the introduction of invasive species is a good investment.

Some lakes are spending hundreds of thousands of dollars each year to manage infestations of Eurasian watermilfoil and

other invaders. It’s much less expensive to keep the invaders from entering the lake in the first place.

Crystal Lake remains one of America’s highest quality lakes for fishing, swimming, and recreational boating. Any damage to the lake would have unacceptable impacts on our economy and quality of life.

Q: Who will pay for the station?

A: The boat wash will be open to all users, free of charge.

The Crystal Lake & Watershed Association is raising private funds to build and operate the facility. Tax deductible contributions may be directed to: **CLWA Boat-Wash Fund**, PO Box 89, Beulah, MI 49617. ☑

Crystal Lake Swimmer’s Itch program expands for 2012

The effort to control swimmer’s itch on Crystal Lake enters a new phase in 2012, as **CLWA** and the Crystal Lake Swimmer’s Itch Partnership embark on a broad strategy of research, action and public education.

Long-term research has identified the common merganser as the primary warm-blooded host of the organism that causes swimmer’s itch. The organism also infects a specific type of freshwater snail as part of a complex life cycle.

A major part of the partnership strategy is to make every effort to break the organism’s life cycle by reducing population of mergansers and snails at certain critical times of the season. Additionally, we will continue our efforts to make preventative products available, and to provide the best available information on how to prevent swimmer’s itch.

Among the activities planned for 2012 are:

☑ “Raking” the shallow lake bottom on popular beaches several times during the summer in an effort to reduce the number of snails that can release the swimmer’s itch parasite into the water. Early evidence from last summer’s raking was promising. More research is needed.

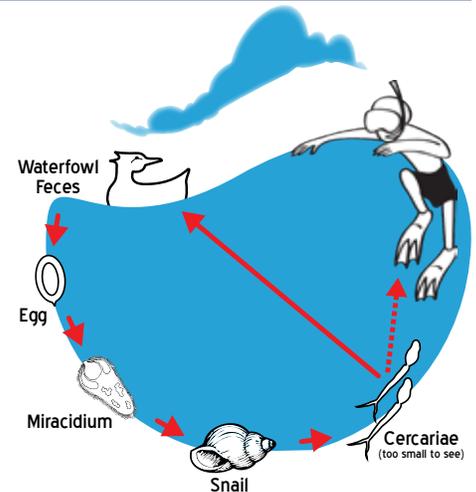
☑ Publishing an all-new brochure in the spring to make the best information available to all lake users.

☑ Using “pyrotechnics” to discourage merganser nesting in early spring. Trained and licensed workers will use “bang shells” and other fireworks to discourage common mergansers from congregating and nesting along Crystal Lake. Research of this method was conducted on Crystal Lake in the 1990s. It is used with some success on several other Northern Michigan lakes. The pyrotechnic work will end before heavy use of the lake begins in May.

Mergansers nest in trees near the shore and then move their broods of ducklings to the lake, where they spend about two months on the water before beginning to fly.

During that time, nearly all the ducklings become infected with the swimmer’s itch parasite. Through their feces, they then pass the parasite on to the next generation of snails.

Reducing the number of mergansers nesting on the lake is a step toward breaking the life-cycle of the schistosome parasite.

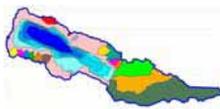


Swimmer’s Itch life cycle.

While mergansers are almost certainly the main warm-blooded hosts of the parasite in this region, it is known that seagulls, geese, and some other birds can also be infected with some species of the parasite.

We have indications in recent years that more than one species may be involved. The partnership is seeking permits to capture and necropsy several birds in order to investigate this possibility.

Be sure to watch for more information in the spring newsletter. ☑



Innovative Water Quality Monitoring

The **CLWA** proposal, "Proactive Water Quality Monitoring, Crystal Lake Watershed, Benzie County", submitted to MDNRE in response to the Clean Michigan Initiative – Clean Water Fund GAP FY 2011 did not receive funding. Issues of Concern targeting Water Quality Monitoring (with a secondary component targeting Beach Monitoring) remain relevant, however, and will continue to be considered during the development of a Watershed

Management Plan. These efforts will allow us to better assess the impact of future developments, management of lake water levels, control of nutrient and sediment runoffs, and minimization of the impacts of invasive species.

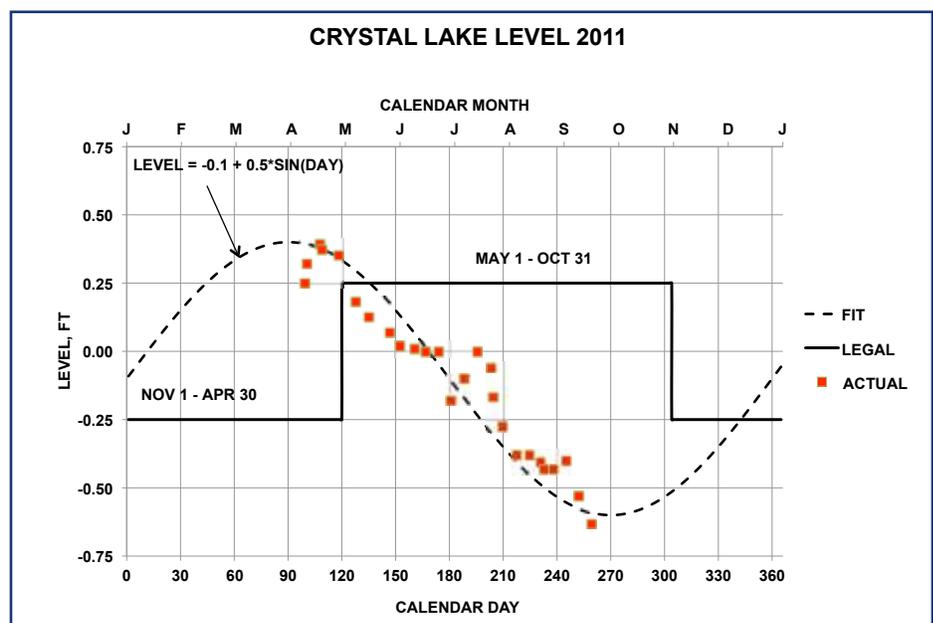
The **CLWA** has also entered into a cooperative agreement with the Benzie Conservation District for support services for water quality monitoring. Several vertical profiles in the deepwater of Crystal Lake were made using our Hydrolab H20 multiprobe. In addition, a water sample was taken close to the MDNR boat launch during dredging

this past summer. Compared to a water sample taken in mid-lake, the water qualities were similar except for higher turbidity and suspended solids at the launch. This condition dissipated after dredging was completed.

A separate proposal, "Benzie Watersheds Monitoring Project" has been submitted by the BCD to the Grand Traverse Band of Ottawa and Chippewa Indians for equipment, training, and lab analyses for water quality monitoring by members of the Benzie County Water Quality Coalition (including the **CLWA** and other lake & stream groups).

Lake Level

The level of Crystal Lake (measured weekly by the Benzie County Drain Commission) varied only slightly from the regulated levels [Summer (May 1 - Oct 31) 600.25 feet; Winter (Nov 1 - Apr 30) 599.75 feet] intended for summer recreational use reducing winter shoreline erosion. The Spring of 2011 began with the Outlet plugged with sand and an unusually high water level which gradually was lowered. Modification of the Outlet Dam with new equipment in 2011 now allows better control of the lake level. The **CLWA** contributed to this project which was implemented by the Benzie County Drain Commission following a design by Luedtke Engineering. Graphs of historical lake levels are posted online at http://www.clwa.us/water_quality.htm#LakeLevelMonitoring.



Watershed Management Plan

CLWA and other groups are again cooperating on a 2012 grant proposal to fund a Watershed Management Plan (WMP) for the Crystal Lake/Betsie River Watershed. A 2011 proposal did not receive funding. The application is led

by the Northwest Michigan Council of Governments (NWMCOG), in association with the **CLWA** and 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, the Conservation Resource Alliance, the Green Lake/Betsie River Association, and the Sleeping Bear Dunes National Lakeshore (NPS). A new proposal responsive to suggested changes has been recently submitted. We are optimistic that our reproposal will receive funding for a multi-year project beginning in 2012.

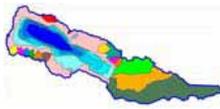
Historic Map Rediscovered

The rediscovery of a map drawn for Archibald Jones is confirmed by Florence Bixby, former Curator, and Lou Yock, current Curator, Benzie Area Historical Museum. This map, "Map Showing Sources and Courses of the Platte and Betsie Rivers, Benzie County,

Together with Some of the Obstructions and Proposed Improvements for the Benzie County River Improvement Co., Benzonia, MI" was drawn by B.C. Hubbell, ca. 1873. It has been digitally scanned by Steve Loveless (State of the Art Framing & Gallery, Beulah, MI) and is now undergoing restoration.

The details within this very accurate map substantiate "proposed

improvements", which were alluded to in written accounts of the time. The routes of two proposed canals were possibly chosen by a combination of factors: access to the interior of Benzie County, prevailing contours of existing water courses, directness of routes, and absence of vegetation requiring extensive land clearing.



Archibald Jones Day (200TH Birthday Party!)

The second annual Archibald Jones Day was held Saturday, August 27, 2011, in downtown Beulah, to celebrate the “man who pulled the plug at Crystal Lake”. This festival commemorated the epochal event of 1873 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. This year we celebrated the 200th birthday of Archibald Jones (b. 14 Sep 1811, Petersburg, Rensselaer, NY). A special lecture on the “Tragedy/Comedy” of Crystal Lake and the Role of Archibald Jones was presented by Stacy L. Daniels on Friday, August 26th at the Darcy Library in Beulah, followed by a popularized version by Steve Elrick on Saturday, August 27th. The festivities included 1870’s-period games for children, music (including the original ballad, ‘Mistake by the Lake’ by “Doc” Stewart), food for all, and a reenactment

of the “Tragedy”. Special awards of one share of stock in the Benzie County River Improvement Company (BCRIC) were presented to Barbara Bartlett (Archibald Jones’ great great granddaughter), the Case Family (accepted by Elizabeth Case), Joe Evancho, Harold and Linda Saffron, and Florence Bixby.

(*) Early in the morning of August 23, 1873, in an ill-fated attempt to create a navigable channel between Crystal Lake and Lake Michigan, Archibald Jones’ Benzie County River Improvement Company inadvertently caused the level of Crystal Lake to be lowered by 20 feet! This tumultuous event resulted in Crystal Lake losing 25% of its water volume (76,000,000,000 gallons), and reducing its surface area by 25% (3,093 Acres)! Crystal Lake is still the 9th largest inland lake in Michigan with a surface area of 9,854 A and a volume of 242,000,000,000 gallons of water! The event most probably occurred as a result of the whitecaps of Crystal Lake washing out a temporary dam intended to be part of a slack-water canal with locks. While unsuccessful from a navigational standpoint, the drawdown created a 21-mile perimeter of sandy beach and prime recreational area around Crystal



Barbara Bartlett receives a replica stock certificate from the Benzie County River Improvement Co.

Lake where ~ 1,100 cottages and the Village of Beulah are now located. The “Tragedy”/“Comedy” of Crystal Lake is forever preserved in the exposed terrace of sandy beach, the perimeter roads and trails, the deep water sediments, and the outwash plain along the outlet. 🌿

CLWA Annual Meeting

The Annual Meeting of the **CLWA** was held Saturday, July 16, 2011, 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: Rick Cosaro, Richard Cassard, and Jana Way. Re-elected Board members include: Wanda Shreiner and Bill Beck. Alan & Joann Applehof were presented the Crystal Circle Award for their many years of meritorious services to the **CLWA** and its predecessors.

Remarks by President Ed Hoogterp and Committee updates were followed by a special program, on the Emerald Ash Borer by Dr. David L. Roberts, Senior Academic Specialist, College of Agriculture and Natural Resources (CANR), Michigan State University, who has studied the EAB since 2002. 🌿



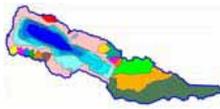
Membership Chair Wanda Shreiner and President Ed Hoogterp present the Crystal Circle designation to Alan and Joanne Appelhof.

Tank Hill Forest Stewardship Plan

The emerald ash borer (EAB), an invasive species, is a major threat to local ash trees (*Fraxinus* spp). The magnitude of its potential impact is being compared to the Chestnut Blight and Dutch Elm Disease. It was accidentally introduced into the U.S. and first sighted in 2002 in the Detroit area, and reached Benzie County in 2005.

The EAB beetle lays its eggs on the outside of the bark in late summer. The larvae then hatch and bore in S-shaped patterns to feed on the inside bark (phloem) used to transport sugars from the leaves to the roots. As this process continues, the branches begin to lose their leaves and eventually the tree dies. The larvae remain within the tree for 1-3 years feeding on the inner bark. In the late spring, the larvae emerge as mature beetles leaving a distinctive “D-Shaped” exit hole.

Precipitous mortality of ash trees on Tank Hill overlooking Frankfort is occurring due to invasion of emerald ash borer (EAB). Impending mortality is also expected from a developing infestation of beech bark disease (BBD). The City of Frankfort Tree Board has contracted with Paul Gerhart to coordinate a project involving harvesting of dead or dying trees to provide revenue to replant young seedlings and saplings, and to install deer protection devices. Paul was a 2011 summer intern for the **CLWA**. He is completing a Power Point report of his internship projects for presentation to CLWA members and the public in 2012. 🌿



Crystal Lake "Walkabout" - Fall 2011

The Crystal Lake "Walkabout" was held on Tuesday, October 4, 2011, 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" Interpretive Sites that represent different facets of the Crystal Lake Watershed, where they interact with environmental professionals from the cosponsoring organizations. The "Walkabout" has now been expanded to include twelve different Interpretive Sites.

Railroad Point Natural Area Expansion

This past summer the Grand Traverse Regional Land Conservancy engaged with many area residents and visitors by hosting several events which provided opportunities to visit and learn about the largest public natural area on Crystal Lake. Railroad Point Natural Area currently boasts 66 beautiful acres and our Regional Land Conservancy is working with the community to expand the protected natural area to over 200 acres.

The expansion includes additional Crystal Lake shoreline, uplands and wetlands, open fields and mature

The Sites visited this Fall included: Crystal Lake at the Beulah Beach; the Sediment Basin on Cold Creek; The Crystal Lake Outlet; and the Railroad Point Natural Area.

The "Walkabout" is supported by the dedicated teachers and administrators of Benzie County schools who provide their inquisitive students as participants. Special thanks are extended to the Fall 2011 Site Interpreters: Ed Hoogterp, Jim Laarman, Eddie Ellsworth, and Jana Way, Crystal Lake & Watershed Association; Marie Scott, Sleeping Bear Dunes National Lakeshore; Sarah Naperala and Mike Okma, Grand Traverse Regional Land Conservancy; Liz Padalino, NW Cooperative Weed Management; Mike Jones, Benzie Conservation District; and Doug Gibson, Benzie Central schools. Dr. Stacy L. Daniels of the Crystal Lake & Watershed Association (CLWA) is the "Walkabout" Coordinator.

This year (2011) represents the 19th year of the Crystal Lake "Walkabout". Since 1993, this successful program has been presented to more than 5,000 students, residents, and visitors to the

forests, which showcases an incredible diverse habitat from the Crystal Lake to the Betsie River. Thanks to donations and pledges, along with The Michigan Natural Resources Trust Fund grant, the Conservancy's fundraising need to complete this project is \$321,000, just 21% of the total project cost.

One of the most notable improvements to Railroad Point Natural Area this summer was the creation of a new 1.5 mile sustainable trail that twists and turns following the natural contours of the bluff and opens to a beautiful view of Crystal Lake. This trail was constructed in memory of Mary Margaret Johnson; whose husband Walt supports the expansion of Railroad Point Natural Area and public access. The Mary Margaret



"Walkabout" reflection

Crystal Lake Watershed. It is offered three times each year: Spring (5/6th grades), Fall (7/8th grades), and Summer (general public).

Each participant in the Fall program receives a commemorative "Walkabout" T-shirt with a colorful map of the Crystal Lake Watershed, and a copy of the "Walkabout" Interpretive Manual (available online at www.clwa.us/educ_comm.htm#EDUCATION).

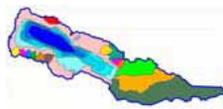
Additional "Walkabout" T-shirts, Crystal Lake Watershed maps, and Interpretive Manuals are available for purchase from the CLWA, 231/882-4001, PO Box 89, Beulah, MI 49617. <http://www.clwa.us/watershedware.htm>. 📧

Johnson Trail is accessible year-round from the Railroad Point Natural Area parking lot off Mollineaux Rd.

The Conservancy is leading the effort to steward the new trail and would appreciate hearing from anyone interested in volunteering their time. Additionally, if you are interested in supporting the Railroad Point Natural Area expansion project, you can contact the Conservancy at 929-7911, or donate online at www.gtrlc.org. The CLWA Board of Directors strongly supports this project, as the expansion will help protect water quality while adding to all of our enjoyment of the watershed. Your contribution of time and/or money is greatly valued! 📧

CLWA Website: www.CLWA.us

A committee of Joel Buzzell, Rick Casaro, Stacy Daniels, and Jim Stamm have been reviewing the current CLWA webpage with considerations being made for possible revision of its organization and adoption of newer communication techniques.



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." " (**CLWA** Bylaws)

The **CLWA** is a nonprofit 501(c)(3) organization that support a comprehensive program of activities affecting students, riparian owners, and

visitors in the Crystal Lake Watershed. The **CLWA** encourages members to contact local and state government on local issues of critical importance to the sustainable development of the Crystal Lake Watershed. Our newsletters and webpages describe recent and ongoing activities. Please contact the **CLWA** at 231-882-4001 or at clwa@clwa.us if you would you like to participate as a volunteer or serve on a Committee!

BOARD OF DIRECTORS

CLWA Board members participated in an orientation program (on land), followed by a cruise (at sea) during September to acquaint new members with past activities and to discuss future issues and concerns. Sandra O'Neal coordinated the program. Roger and Heather Perry hosted the orientation

workshops and social hour. Julie and Peter McKnight served as captain and first mate for the informational pontoon cruise around the lake.

CLWA MEMBERSHIP

Membership in the Crystal Lake & Watershed Association includes: Crystal Whitecaps, The **CLWA** Newsletter; the Annual **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. ☑

Summer Interns 2011

Our three interns providing assistance at various **CLWA** events and also conducted sampling of Swimmer's Itch. Paul Gerhart, a student of Forestry and Applied Ecology at Michigan Technological University, conducted a study of the ecological impacts of emerald ash borer and beech bark disease in the Rail Road Point Nature Preserve. He is finishing his degree at MTU in 2012 and is now coordinating the Tank Hill Forest Stewardship Plan for the City of Frankfort. Jessica Schaub, now a senior at Frankfort High School, plans to pursue a career in nursing and play college softball. Laura Bailey, is now pursuing a degree in Environmental Engineering at Michigan State University. ☑



Summer interns Laura Bailey, Paul Gerhart and Jessica Schaub join "Archibald Jones" for a Fourth of July Parade.

Never More Than Six Miles From Water (Addendum)

In the Spring/Summer issue of Crystal Whitecaps, it was reported that, "The apparent horizon (where the sky meets the earth) is a bit over 6 miles. Roger Dewey, a former Navy man, commented that the horizon distance is actually only 3.0 mi (quoted from The American Practical Navigator by Bowditch). Therefore an observer looking out over Crystal Lake on a clear day at a height of 5 feet could see the shoreline across the Lake for a distance of about 3 miles (width 1.41 – 2.46 mi, avg. 1.90 mi), but would have to be atop a ladder, or a tree, or a three-story building, at a height of ~36 feet to see the shoreline all the way down the Lake (8.11 miles). ☑

Other Plaudits & Congrats

- ☑ Alan & Joann Applehof for their many years of meritorious services to the **CLWA** and **CLWF**.
- ☑ Retiring Board members **Doug Gibson** and **Jim Hooker**.
- ☑ **Alan Flory** for continuing research of snail parasites.
- ☑ **Pat Terry** for welding work on **CLWA** snail-research apparatus.
- ☑ **Grand Traverse Regional Community Foundation** for financial support of 2011 summer interns.
- ☑ **MDNR&Contractor Jaran Construction** for completing the Boat Launch project.

- ☑ **Hosts and participants in the 2011 Crystal Culinary Celebrations**, which together raised \$10,000 for the Boat-Wash Fund.
- ☑ **Bob Crossman**, Asst. Drain Commissioner, for his dedication in measuring the level of Crystal Lake.
- ☑ **Terry Money**, Drain Commissioner, for instigating a new control structure at the Outlet Dam.
- ☑ **Luedtke Engineering** for design and installation of the new control structure at the Outlet Dam.

- ☑ **Florence Bixby**, and **Lou Yock**, of the **Benzie Area Historical Museum**, for rediscovering Archibald Jones' 1873 map.
- ☑ **Steve Loveless**, **State of the Art Framing & Gallery**, for scanning Archie's map, and for framing copies of stock certificates of the Benzie County River Improvement Company.
- ☑ The staff at **Bookwear by Field Crafts** for all their support for the Crystal Lake "Walkabout".
- ☑ The staff at **BaySide Printing** for their support in printing newsletters, flyers, announcements, etc.



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• 2012 CALENDAR OF EVENTS •

CLWA

May 19Board Meeting
 Jun 16Board Meeting
 JulSummer "Walkabout"
 Jul 14....Summer Celebration Event
 Jul 21 Annual Meeting
 Aug 18Board Meeting
 Sep 15.....Board Meeting
 Oct Fall "Walkabout"

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

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

LOCAL

Jun 16Frankfort Crafts Fair
 Jul 4Parades & Fireworks – Beulah/Frankfort
 Jul 4 Firecracker 5K Race - Beulah
 Jul 07Beulah Art Fair
 Jul 21Elberta Art & Crafts Fair
 Jul 21Port City Run
 Jul 16..... Art & Crafts Fair - Elberta
 Jul 25..... CSA Arts & Crafts Fair
 Aug 3.....Ecology Day - CSA
 Aug 11Crystal Lake Team Marathon
 Aug 17-18..... Frankfort Art Fair
 Aug 25Archibald Jones Day
 Oct 7Betsie Valley Run – Crystal Mountain
 Oct 6-7.....Fall Festival - Beulah
 Oct 13-14.....Fall Festival - Frankfort

For updated event lists visit

CLWA.us • Benzie.org • Frankfort-Elberta.com