Water's Edge

Gratiot Lake Conservancy News

Volume 16 **Fall 2014**

Noblet Field Station Gets a Lift

The sturdy log cabin that now serves as GLC's field station was built in 1948 by U.J. Bert Noblet and his sons from pine, cedar, maple, and hemlock taken from the land surrounding it. The Jacobsville sandstone that was used for the fireplace was brought across the lake by boat as there was no road to the Noblet land at that time.

As a vintage structure in a rather remote location, the cabin requires ongoing attention. When GLC acquired the cabin in 1998 it was in good condition inside, but several logs had to be partially replaced on the sides of the structure that face the lake. A room that had been tacked on the east side was removed and a back porch added. About 10 years ago the cabin was reroofed and more recently the chimney was repaired.

This summer Kenny Svenson replaced a section of the bottom log near the cabin's front door.

In late September, Mark Dudenas and crew worked on the cabin's foundation. They lifted the southeastern corner of the structure and replaced a rotting support beam. Decaying hemlock supports were replaced with cement and block supports on the east side of the cabin. Log cabins were often built with one corner nearly resting on the ground. Improving air circulation by lifting the corner of the structure, removing deteriorated support timbers, shoring up the foundation, and directing runoff away from the cabin with some re-grading will help preserve the structure. Finishing touches to this work will be added next year.

Sentimental Journey

In August, Gladys and U.J. Bert Noblet's granddaughters Mary Noblet Smith, Lynne Noblet Horwitz, and Lori Noblet (in photo above from left to right) revisited the Noblet Field Station. It had been many decades since they had seen the cabin, and they wanted to recapture memories of their happy times spent there as children. Their grandfather, father, and uncles built the cabin in the late 1940's. The photo on page 8 taken in the early 1950's shows their cousin Rick, father Jack, uncle Dick, grandfather U.J. Bert, and uncle Pete on the cabin porch.

Leuthold Grant Received

We are happy to announce the award of a generous grant to GLC of $6,000 from the Steven C. Leuthold Family Foundation. The Leuthold Foundation is Minneapolis based and grants to a myriad of organizations in Minnesota and elsewhere. Grantees are designated by Steven Leuthold and his children. Foundation trustee Kurt Leuthold fell in love with the Keweenaw when he attended Michigan Tech. Through his philanthropy, Kurt has furthered the mission of many conservation and historical groups in the Keweenaw.

It's time to renew for 2015!

CLICK here to download and print a form to mail in.

GLC gratefully acknowledges donors from Nov. 2013 - Nov. 2014

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Nodding bur-marigold, Bidens cernua, on Gratiot Lake western shoreline

We miss a Gratiot Lake neighbor and friend who recently passed away

Peg Wilcox Dimmer Newton was the matriarch of the Wilcox "streetcar" camp which was built in the early 1900's. She enjoyed her time at the lake with husband Gerald, children, and grandchildren and had a wealth of knowledge about the human history of Gratiot Lake.

Grants

Steven C. Leuthold Family Foundation

Donations to GLC Fund
Keweenaw Community Foundation

Michael and Mary Bingham
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Janet Marr (rt.) indicates sedge ID details at GLC's Wetland Plant Workshop

Memorial Gifts

in Memory of Lowell Bollinger

Joanne Bollinger

in Memory of Marilyn and Don Hon

Diane and David Gothard (to all funds)

in Memory of Marilyn Kahl

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in Memory of Albert E. Petermann III

Anne Petermann and Orin Langelle

in Memory of Louis Sandretto

Carmen Sandretto

We miss these longtime GLC members who recently passed away

Lowell Bollinger
Norma Neuswanger

Fascinating Filterers

In an ideal community everybody performs a job which helps the system as a whole to operate efficiently for the benefit of all. In Gratiot Lake's aquatic community there are creatures which serve as water filters while feasting on microorganisms and bits of decaying material. These fascinating filterers help to improve the clarity of the water. Freshwater sponges and freshwater mussels (also known as clams) are two types of filter-feeders living in Gratiot Lake. Their presence helps to improve the quality of water in the lake.

The fossil record shows that sponges have been around for over a half billion years. Most of us are familiar with the large, colorful sponges of tropical coral reefs, but are unaware of their drab cousins that live in freshwater systems including Gratiot Lake.

Sponges allow water to flow freely through pores covering the surface of their bodies, hence the name of their phylum, Porifera. As the water passes through its body, the sponge ingests tiny organisms and decaying material floating along. Except for the thin skin covering the outside of the body of the sponge and the skin lining its channels, most of the sponge body is a gelatinous mass with cells moving freely around and performing a variety of tasks.

Although sponges reproduce sexually, they also effectively regenerate from fragments. In the autumn many freshwater sponges produce "survival pods" called gemmules from their own tissues that encapsulate and break free. Gemmules easily survive freezing and assure next year's sponges. When spring arrives, the gemmules come to life and grow into full blown sponges. Gemmules can survive many years of drought or can be carried by wind to a more suitable watery home. Sponges also disperse to new locations when gemmules hitch a ride on the feet of waterfowl.

Freshwater sponges are easily overlooked. Search for creamy, tan, or slightly green blobs attached to twigs and rocks in the water. Sponges can be tiny or coat large surfaces.

The presence of native mussels in lakes and streams is generally a sign of good water quality. You will likely notice empty clamshells on the shore and see clams embedded in the lake bottom near shore. There are meandering underwater trails in the sand or silt where the clam has moved along to a presumably better location using its one foot.

photo by Meral Jackson

If you pick up an empty shell you will see there are two halves (bivalve) often still joined at the hinge. The outside of the shell has rings. The age of the mussel can be estimated by counting the rings- roughly a ring a year. Depending on species and habitat, mussels can live from 10 to 100+ years! You may also notice a pearly coating with an opalescent sheen inside the shell called "nacre."

When you see a mussel partially embedded in the lake bottom, the end poking out is sucking in water and microorganisms. Inside the mantle of the mussel, gills filter out the edible microorganisms and decaying material and absorb dissolved oxygen as the water passes over them.

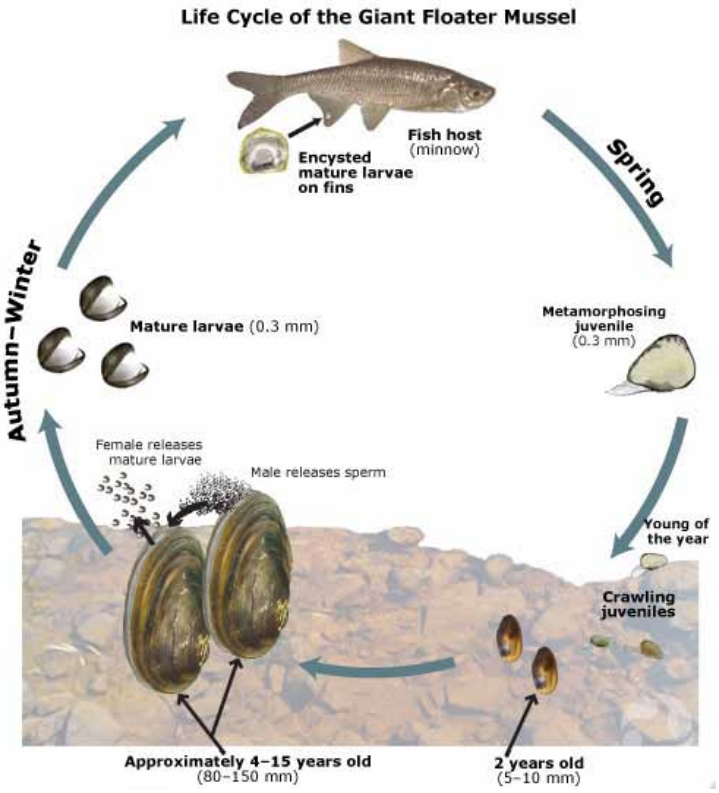

Illustration above by Jackie Madill, Frenchman River Biodiversity Project, courtesy of Canada Museum of Nature.

Mussels spend part of their early life attached to the gills of fish. In this stage they are called glochidia. Some mussels even have physical features that serve to attract fish so that glochidia can catch a ride. At least one species of mussel actually snaps its shell shut temporarily on the nose of curious fish while its glochidia have a chance to inhabit the fish gills. In a matter of weeks the tiny clams drop off at a new home. Although glochidia are parasites on fish, they are not harmful to the fish.

photo by Meral Jackson

We had an in depth (pun intended) look at the mussels of Gratiot Lake in August when biologists Joe Rathbun and Renee Sherman-Mulcrone led a freshwater mussels workshop at the Noblet Field Station. We learned that seven species of mussels have been identified in the lakes and rivers of the Keweenaw Peninsula. These mussels have intriguing names: Elktoe, Cylindrical Papershell, Giant Floater, Strange Floater, Eastern Elliptio, Slippershell, and Fatmucket.

Part of the workshop included getting our feet wet and doing a mini survey of mussels offshore from the field station. After a powerpoint presentation indoors and a pleasant lunch in the sun, we doffed our hipwaders and headed into the lake. An example of perfectly bad timing, a cold squall blew in from the north and we slogged through blustery winds, heavy mist, and choppy waters to find our quarry.

We found two species: Giant Floater and Eastern Elliptio. The Giant Floater has a very thin shell and no "teeth" on its shell. The Eastern Elliptio has an outer coating to its shell that is dark in color, and it has "teeth." The teeth, little ridges inside the hinge of the shell, are not for chewing food—they help the two shell halves line up and lock together more precisely.

These same species were identified in waters offshore from GLC Preserve in 1999 by Amber Kenny under the tutelage of nature educator Mike Scheiwe.

Full color *Water's Edge Newsletters*, articles, program information, photos, video clips, and more at
www.gratiotlakeconservancy.org

Avery Scholarships Awarded

Carrie DeWolf, a biology student at Northern Michigan University, was awarded a *Janet M. Avery Scholarship* to attend the *Freshwater Mussels Workshop*. Carrie is pictured at left using a waterscope during the workshop.

Three *Janet M. Avery Scholarships* were awarded for the *Wetland Plant Identification Workshop*. Recipients were:

- Rose Schwartz, a postgrad student in Applied Ecology at Michigan Tech University,
- Erin Johnston, Lake Superior Program Director of the Keweenaw Bay Indian Community (KBIC) Natural Resources Department,
- and Deanna Hadden, a KBIC plant technician.

Conservation Progress in Bete Grise Watershed

This year the Houghton Keweenaw Conservation District and partners celebrated the 10 year anniversary of the creation of the Bete Grise Preserve and dedicated new lands added to the Preserve from 2012-2014. Special guest at the August 19, 2014 Dedication was U.S. Senator Carl Levin. More complete coverage of the Dedication is available at www.keweenawnow.blogspot.com/2014/09/by-michele-bourdieu-u.htm

Bete Grise Wetlands, Pt. Isabelle, Oliver Bay, and the Mouth of the Liitle Gratiot River were all added from 2012-2014 and doubled the size of the Preserve to approximately 4,000 acres. The Little Gratiot River is a direct link between Gratiot Lake Conservancy lands at the source of the Little Gratiot at Gratiot Lake, and Lake Superior via Lac La Belle. This connection makes Gratiot Lake part of the Bete Grise Bay watershed. The Little Gratiot River is known for its smelt run into La La Belle.

Jackson Park, a very small park owned by Keweenaw County near the Gay Lac La Belle Road Bridge, is now surrounded by 67 protected acres open to the public all year for passive recreation. The river forms a marshy delta at its mouth and provides great habitat for many species of birds, fish, and mammals. In the photo above, Avery Scholarship recipient Erin Johnston is examining asters, joe-pye weed, and sedges in this area during GLC's Wetland Plant ID Workshop.

And a special "thank you" goes to…

- Sara Klemm and Marsha Raley (pictured above) who dug out invasive purple loosestrife that was spreading near the public access to Gratiot Lake and removed invasive marsh thistle from wetlands near the Bear Paw Path at GLC Preserve.
- Marsha and Ben Kilpela and their son Drew who sawed through many fallen trees obstructing the trail on the old Phoenix Farm Road which passes through Bammert Farm. Marsha and her family did service on the land that was farmed and logged by her ancestor, Jonas Bammert, in the 1800's.
- Dorothy Jamison who has taken weekly measurements of the water transparency from June until mid-September for nine years. The transparency readings taken at the deepest point in Gratiot Lake along with a late summer phosphorus sampling have been underway at Gratiot since 2000 as part of Michigan's Cooperative Lake Monitoring Program (CLMP). Data is logged online at the Michigan Clean Water Corps website micorps.org. Data on over 200 lakes and a number of streams can be viewed there, as well as information on how to monitor and protect Michigan's inland waterbodies. The trend line of summer mean transparency over the years tested has, despite some ups and downs from year to year, remained at around 17 feet of depth. This stable trend is a good sign for the lake health. A data chart is on the GLC website at **www.gratiotlakeconservancy.org/wmpage.htm**
- Mike LaMielle who transformed a wide slab of long eye hard maple donated by Virginia Jameson into an additional memorial plaque which will be installed at the Noblet Field Station next year. Both the original and this plaque were fashioned from an old maple tree which fell over Virginia's driveway at Gratiot Lake.
- Bill Bingham who worked on Iron Gate Road to make it passable this summer. It made road access to the south shore of Gratiot possible after the heavy snowmelt and a very wet spring.

Gimme Shelter

"Amber," "Jake," and "As it Were" now have a new home designed and constructed by Kenny Svenson (pictured above). GLC's canoes "Amber" and "Jake" were named after the first two students to study under the tutelage of Headwater's naturalists Raven and Mike Scheiwe at GLC's Noblet Field Station. Amber Kenny surveyed freshwater clams in Gratiot Lake and the Little Gratiot River, and budding ornithologist Jake Musser studied warblers. These canoes have weathered a lot in 15 years, as they have spent summers exposed to the elements on the ground. With this summer's donation by Lisken VanPelt Dus of her beloved childhood canoe "As it Were" to the GLC fleet, the construction of a boat shed to house the canoes was in order.

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Highland Copper 543S Update

At the end of August Highland Copper Company issued an "Initial Resource Estimate" for the 543S deposit located near Gratiot Lake and filed a "543S Technical Report" on October 10. This initial estimate of 543S potential is based on 262 diamond drill holes which probed 45,608 meters of depth overall. Both documents can be viewed on the company's "News" page at **www.highlandcopper.com/s/news.asp.** Select "2014" in the sidebar. The company has had some management changes and is currently focused on exploring locations outside of Keweenaw County. It is investigating the mineral resources and feasibility of refining ore at White Pine in Ontonagon County, and has purchased Copperwood Mine in Gogebic County.

FOLK provides an analysis of Highland Copper Company's recent developments at **www.folkminingeducation.info/highland-copper-update-september-20-2014/**

Radar Probes Keweenaw Bird and Bat Migration

For four years the U.S. Fish and Wildlife Service (USFWS) Avian Radar Project has installed mobile radar units at various locations near Great Lakes shoreline. These units along with acoustic monitors placed nearby are tracking birds and bats as they migrate.

Two out of the four great migration pathways in North America pass through the Great Lakes basin. Great Lakes shorelines are where the most stopover habitat is located. Even if the migrants continue inland from over the lake to other habitat, they must travel through the area along the shoreline. These shoreline areas are critically important to migrants.

The purpose of the Avian Radar Project is to find when, where, at what altitude, and under what conditions bats and birds migrate. The data collected will help the USFWS better advise about wind energy development—identifying when and where wind turbines present high risk to these migrants. The mobile radar units are stationed within a few miles of shoreline in off-the-beaten-path locations. Because of the expense and vulnerability of the equipment, the exact location of the units is not publicized. From early September to mid-November one of the avian radar units and acoustic monitors was placed in Keweenaw County.

As can be seen in the photo above, the Avian Radar Unit has two long rotating radar antenna bars like radar used on large boats. Radar waves emitted are reflected back when they encounter a solid object. Algorithms have been developed to distinguish birds and bats from such things as insects, planes, and rain. Images reveal the path of flight, duration of flight, and altitude of migrants passing through the radar beams. The data is automatically stored for later analysis.

The horizontal radar with about a two-mile range scans across the landscape and shows the direction in which the individual birds and bats are flying. The large range also allows the radar to stretch out over the water (when positioned inland about 0.75 miles) to compare what is happening there with what is happening inland.

The vertical radar, sampling perpendicular to the ground in a cone of increasing diameter, takes a cross section of the airspace and provides standardized counts as well as information on how high migrants are flying. The shorter range of about one mile increases the resolution of the radar to better determine the flight altitude of migrants.

Small acoustical monitoring devices are placed in the vicinity of the radar unit. These devices pick up the calls of bats and birds passing overhead. More information on the Avian Radar Project can be found at http://www.fws.gov/radar/

Did you know?

Fat is normally only 3 to 5% of most birds' body mass. However, before migrating, birds bulk up. This gorging behavior is called hyperphagia.

Some birds nearly double their weight before embarking by storing excess calories as fat. A ruby – throated hummingbird can store enough fat to fuel a 24 hour non-stop 600 mile flight over the Gulf of Mexico!

Birds migrate at speeds up to 50 miles per hour.

Songbirds tend to migrate at night in part using the darkness to avoid predators such as hawks.

Raptors, cranes, ducks and geese often migrate during the day. Many take advantage of thermal air currents.

Birds' visual flight map aids are landforms, the location of the sun, and the position of certain stars and patterns of stars at night. It is thought that these visual cues are learned in the first year.

Birds have magnetite grains above their nostrils. It is believed this mineral helps birds navigate using the Earth's magnetic field.

Estimates suggest only 50% of birds flying south in the fall survive to return to breed the following spring. Many succumb to predation, habitat loss, adverse weather, and collisions with buildings, wind turbines, communication towers, and power lines.

Editor Bonnie Hay is grateful to proofreaders and all contributors to this newsletter of photos and articles: Ben Hay, Jim Hay, Meral Jackson, Louis Lizzadro, and the Noblet Family.

GLC Members Meeting

About 80 people attended GLC's Annual Members Meeting on July 24th at the Eagle Harbor Community Building. The evening included the election of directors, the treasurer's report by Louis Lizzadro, a slide presentation on GLC's programs and membership report by executive director Bonnie Hay, and a Bammert Farm report by Gina Nicholas. After recognition of volunteers and refreshments, biologist Bill Scullon presented an informative slide talk on Upper Peninsula bats.

Bill, who is the Michigan Department of Natural Resources field coordinator for statewide bat conservation efforts talked about the 9 bat species which live in the UP. Little brown bats, big brown bats, eastern pipistrelle bats, and northern long-eared bats hibernate in Upper Peninsula mines. These hibernating species are particularly at risk from exposure to often fatal white-nose syndrome which was identified in Keweenaw bat hibernacula this spring. Check on the GLC website for video clips of Bill Scullon's talk.

Bonnie Hay (at far left) guides group along the Path to the Little Gratiot River during the August Open House at Noblet Field Station.

Photo donated by Bert and Gladys Noblet's granddaughters picturing their grandfather, father, uncles, and cousin on the cabin porch. See page 1.

Sustain GLC's future by contributing to the
Gratiot Lake Conservancy Fund
at the Keweenaw Community Foundation.
A fund donation form is on the GLC website.
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Conservancy members receive a biannual newsletter, notice of special events, and an invitation to the Annual Members Meeting. Some GLC programs that have fees are discounted for members.

Your support is always welcome!

Click here to download a GLC donation form. **The form and check may be mailed to GLC, P.O. Box 310, Mohawk, MI 49950. The membership year is from January 1 to December 31st, but you may donate at any time.**

Donors of $100 or more receive a gift of notecards with photos taken at Gratiot Lake.

Click to see samples of the photos!