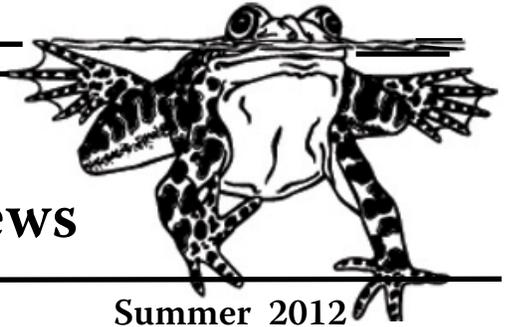

Water's Edge

Gratiot Lake Conservancy News



Volume 14

Summer 2012

GLC's Annual Members Meeting

Eagle Harbor Community Building

Monday, July 30

Business meeting 7 PM

Refreshments 7:30 PM

Natural History/ Photography Slide talk at 8 PM

We hope that you will attend this informative and fun evening. It is a chance to learn about the work GLC does and to visit with neighbors. GLC's Bonnie Hay and photographer Jim Hay will present a show of nature photos. Please invite friends who are not GLC members to attend as well.



photo by Jim Hay

This eagle recently went for a "swim" while going fishing. The eagle floated in the water for a few minutes before flying to a sunny branch to dry off. Eagles do not have oil glands with which they can waterproof their feathers as ducks and geese do.

[Click here to view the GLC Calendar.](#)

Janet Avery Scholarships are available.



photo by Jim Hay

Living by Water: A Shoreline Stewardship Workshop With Mike Schira

**Eagle Harbor Community Building
and nearby creek**

Saturday, June 30, 10 AM – Noon

GLC has invited MSU Extension District Educator Mike Schira to speak about how lakeshore landowners can protect the lakes and rivers they love. Mike will explain how what is done on lake front land can affect water quality and wildlife. Michigan's new phosphorus law and how it impacts lawn maintenance and water quality will be discussed. The group will also visit a nearby stream to explore how stream health can be evaluated by surveying the community of small invertebrate creatures that inhabit it. The public is invited.

GLC welcomes new Life Members

**Janice Anderson, Carol Lizzadro, John Lizzadro,
Joseph Lizzadro, Reva Lizzadro, and Gina Nicholas.**



Please contact GLC to find out how you can become a Life Member!

**We know you have talent! We hope you have the time.
Join others who help Gratiot Lake in so many ways:**

Enjoy feeding a crowd? Bring refreshments for the Members Meeting July 30. Let Bonnie know what you are bringing.

Enjoy carpentry? Mount trail signs on the Bear Paw Path, remount a bat house, make and mount bee or bird houses

Enjoy gardening? Pull invasive plants such as knapweed from the perimeter of Gratiot Lake. Plant some native species.

Enjoy writing? Write an article for the GLC newsletter.

Enjoy watching wildlife? Keep a diary of nature happenings you and others observe at Gratiot Lake. Take photos. From time to time we get reports of various sightings. Would you like to gather and compile this information?

Enjoy boating? Assist Dorothy Jamison with water monitoring and testing.

Enjoy walking on the shoreline? Help with the cleanup of trash on the beach on September 16 (or whenever you have time!)

GLC is grateful for contributions recently made
in memory of these Gratiot Lake friends and neighbors:

Janet Avery

Katherine Brunner

Barbara LaMielle

Ruth Maynard

Sharon D. Moore

Jim Rooks

About *Water's Edge*

Water's Edge is the newsletter of the Gratiot Lake Conservancy. Its purpose is to report Conservancy news, share information about the ecology and history of Gratiot Lake and its environs, and suggest ways to improve stewardship of the lake and its watershed. View *Water's Edge* in color on the GLC website.

Please send questions, comments, or articles to

Bonnie Hay, *Water's Edge* Editor

Gratiot Lake Conservancy

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www.gratiotlakeconservancy.org

Retreat at Gratiot Lake: Connecting More Deeply With Nature and Spirit

Saturday, July 21, 11 AM - 4PM
(Rain date will be Sunday, July 22)



led by
**Sharon Levine
of Creek House
and
GLC's Bonnie Hay**

Enjoy a respite from the usual demands of life:

- Develop skills of careful observation in nature through direct sensory experience.
- Take advantage of what nature presents in the moment.
- Kindle imagination and translate perceptions into stories and images.
- Share the experiences with others.

Participants are advised to wear comfortable clothing suitable for being out-of-doors and shoes suitable for moderate walking. We will be picnicking so bring a bag lunch and plenty of drinking water. The group will carpool to the GLC Noblet Field Station and nature sanctuary at Gratiot Lake. Noblet Field Station is a rustic cabin located off old dirt roads. High carriage all wheel or 4 wheel drive vehicles are advised.

Pre-registration is required (limited enrollment). Register early to reserve your place in this workshop as it has an enrollment limit. \$50.00 Fee (\$45.00 for GLC members) For an enrollment form and more information visit the retreat page on the GLC website.

The retreat is a collaboration between Creek House and GLC. For additional information about Creek House, please call Sharon Levine at 906-482-3361.

**View the GLC Calendar at
www.gratiotlakeconservancy.org**

Sketching the Landscape in Watercolor

Marilynn Brandenburger, Instructor

Saturday, July 14 and Sunday, July 15

10 AM to 4 PM

Landscape painting is challenging; so is watercolor. Gain success in both by practicing skies, land, and water separately in small studies, then build to larger sketches. Learn how to simplify what you see, create dynamic compositions and mix harmonious colors. Our subjects will include landscape elements such as clouds, trees, buildings and reflections.

Participants will work from photos and from real life by getting out to paint the lovely scenery in and around Eagle Harbor as weather permits. This year the group will meet at the Eagle Harbor Community Building (M-26 across from the Shoreline Motel) and outdoor locations in the vicinity.

Advance registration required (limited enrollment). Enrollment is \$100 (\$85 GLC members). For an enrollment form, a list of supplies to bring, and a list of supplies which will be available for purchase from Marilynn, [visit the workshop page at:www.gratiotlakeconservancy.org/BrandenburgWkshop2012.htm](http://www.gratiotlakeconservancy.org/BrandenburgWkshop2012.htm)



photo by Al Brandenburger



photo by Bonnie Hay

Marilynn demonstrates how to develop an artist's perspective of the landscape at last year's GLC watercolor workshop.

To apply for a Janet Avery Scholarship to attend a workshop, please email GLC your contact information and describe how you might use what you learn.

Keweenaw Invasive Species Management

How you can help!

By Janet Marr



photo by S. Garske GLIFWC

Japanese Knotweed

Although the Copper Country is home to many plant species that are not native to our area, only a small percentage of those are really considered invasive. The best way to address invasive plant threats is to detect new infestations early on when populations are small and when control efforts can be successful. Left unnoticed and unchecked, invasive species can take over natural areas crowding out native species, affect wildlife and insects, be extremely costly to control, and even cause harm to humans. Garlic mustard, Japanese and giant knotweed, glossy buckthorn, and the non-native



Garlic Mustard



strain of Phragmites are a few of the most notable green invaders in the Keweenaw.

The US Forest Service (Ottawa National Forest) has provided \$19,000 of Great Lakes Restoration Initiative funding to help develop the Keweenaw Invasive Species Management Area (KISMA). The overall objective of KISMA will be to prevent, contain, and control non-native invasive species. KISMA is a partnership of federal, state, and local government agencies, tribes, other interested groups, and individuals coordinating the efforts to address the threat of invasive species across land ownership boundaries in Houghton, Keweenaw, and Baraga Counties. The Houghton Keweenaw Conservation District (HKCD) is the KISMA fiscal manager and Janet Marr, the KISMA contract botanist for HKCD. GLC director Bonnie Hay has joined the KISMA steering committee.

Gratiot Lake Conservancy is a valuable KISMA partner! How can you as a GLC member help KISMA in their invasive plants control efforts in the Copper Country?

Volunteer in one or more of the following ways:

- Assist KISMA by looking for new infestations of invasive species and reporting locations.
- Help in control sessions this summer and in garlic mustard pulls next May.
- Host a KISMA (and GLC) invasive species information table at local fairs, markets, festivals, and the like.
- Post and hand out flyers of upcoming KISMA events.

For more information about KISMA, invasive plants, or volunteering contact Janet at jkmarr@mtu.edu or call 906-337-5529.

Links to invasive species info are on GLC's Links page :
<http://www.gratiotlakeconservancy.org/links.htm>

View these mining related links at the GLC website:

KeweenawNow has excellent coverage including video from a presentation given to the Keweenaw Peninsula Chamber of Commerce in February by Ross Grunwald, Vice-President of exploration for Highland Resources
<http://keweenawnow.blogspot.com/search?q=mine+keweenaw>

A technical report prepared in September of 2011 detailing *Highland Resources* exploration intentions can be downloaded (large file) at <http://www.highlandresources.ca/i/pdf/NI-43-101-Final-Report.pdf>

An online copy of the May 24 New York Times article "A Mining Rush in the Upper Peninsula" by Kathy Lambert is available at www.nytimes.com/2012/05/25/business/in-mining-some-michigan-towns-see-hope.html?_r=1

Mining Again in the Keweenaw

Land ownership in the Keweenaw Peninsula is often what is termed a split estate. Owners of the surface rights are often not those who own the rights to what lays underground. And what lays underground along the Keweenaw Fault line is often copper.

The Keweenaw mining boom occurred in the latter half of the 1800's. Over 11 billion pounds of copper were extracted between 1845 and the 1970's in Houghton and Keweenaw Counties. Local mines shut down over fifty years ago, and re-start attempts here have been unsuccessful.

In the early 1990's Great Lakes Minerals, Inc. obtained a lease on the 534S deposit about a mile north of Gratiot Lake. Permits were obtained to exploit that copper chalcocite deposit. Clearing and coring at the mine site were underway. State funds were used to widen and pave the Gratiot Lake Road all the way to the lake to accommodate the heavy ore laden trucks which would haul the crude ore to White Pine Mill 100 miles away.

A local group, AWAKE was formed by Gratiot Lake residents Janet and Bud Avery. AWAKE and others were concerned about the potential environmental impact this mine might have. The laws regulating mining are archaic, dating back to the 1800's, and extractive industries receive a pass on environmental protections more stringently applied to other industries. AWAKE advocated for an independent, unbiased environmental impact assessment to be undertaken to assure that strict water, air and noise pollution standards would be upheld, and for substantial funds to be set aside by the mining company for ecological remediation.

In the end, the 534S deposit was not mined. The closure of the White Pine Mill and the fall in the price of copper had made it economically unviable.

Investors again see copper extraction here as a potentially worthwhile investment. In fact, it is receiving international interest. On May 24 an article on the resurgence of mining ventures in the Upper Peninsula was published in the *New York Times*. It mentioned a Canadian company, Highland Resources (locally known as Keweenaw Copper Company) which is investing \$11.5 million in a three year joint venture to develop copper mines in Keweenaw.

Highland Resources is beginning exploration with the 534S site and at G-2, a deposit between Mount Houghton and Smith Fishery Road near Bete Grise. Most of the mineral rights are owned by BRP LLC (a joint venture between Natural Resource Partners and International Paper). At 534S deep drilling will begin this summer. This is likely to be an around-the-clock activity involving disposal of sludge. At the G-2, coring will begin this year, to be followed next year by drilling.

In Michigan, mineral rights holders have priority over

surface rights holders. However, entities that develop mineral rights and destroy surface features are required to remediate back to a "baseline" condition when mining is completed... in essence to "restore" the land and waters. If there is no other baseline, the mining venture is required to develop one and their baseline becomes the legally enforceable standard. Clearly, it is prudent to establish an independent and in depth baseline rather than to leave it to the mining company to establish remediation standards.

Both the 543S (and Gratiot Lake) and the G-2 are in the Bete Grise Bay watershed, and 543S is also in close proximity to the headwaters of the Tobacco River watershed. Watershed management plans begin with detailed baseline assessment of the land and waters. The Houghton Keweenaw Conservation District (HKCD) is qualified to develop such plans and has done so for the Eagle River and Pilgrim River watersheds. Unfortunately, although HKCD is exploring funding for the development of a Bete Grise watershed management plan, no plan yet exists.

However, since mining exploration has already begun, the need for baseline studies on the Bete Grise watershed and the Tobacco River watershed cannot wait. Fortunately, many of the baseline measurements which would be part of a watershed management plan can be obtained separately.

Therefore, the following activities have been initiated :

- The Department of Environmental Quality and the Natural Resources Conservation Service have offered some pro bono support with technical issues such as testing protocols.
- Baseline measurements include collection of stream measurements including flow and temperature. Water monitoring devices called hobos have been donated, and the DNR Fisheries Division is programming them. Copper Country Trout Unlimited (CCTU) volunteers will place the hobos at 10 sites throughout the potentially impacted watersheds. The hobos will measure data for the full season. This information will be downloaded in the Fall for a complete record and future analysis.
- Another part of a baseline is documenting the living organisms in a body of water. DNR, MTU and CCTU are providing fish shocking and macro invertebrate collecting equipment and will be doing this work at the 10 sites with CCTU volunteers.

Finally, help is needed to purchase water chemistry kits and standard chemical analysis (including metals). These kits and the analysis by Whitewater Associates, an independent lab, will provide other important baseline data. Ten kits can be purchased for \$2000. Donations towards this purchase can be mailed to HKCD, 600 E. Lakeshore Drive Suite #2, Houghton, MI 49931. Please make the check out to "Houghton Keweenaw Conservation District" and note "donation for purchase of watersheds baseline test kits."

Beginners Workshop on Dragonflies and Damselflies

Bob Marr, Instructor

Saturday, August 11, 10 AM to 4 PM

Want to learn more about the Odonata (dragonflies and damselflies) of the Keweenaw? Amateur odonatist Bob Marr will lead a one day workshop on the identification of these “winged dragons” and “neon toothpicks.”



photo by Jim Hay

Bob Marr will provide an overview of the life cycle, ecology, morphology, and behavior of odonata followed by field identification. There will be a break for lunch and then more field observation.

Participants will be encouraged (but not required) to net insects for study and release. Insect nets and magnifying lenses will be provided for those without their own equipment. Whether or not you wish to net specimens, by all means bring your camera as there will be plenty of opportunities for pictures!

This workshop has netted the following interesting odonata species: Northern Spreadwing, Eastern Forktail, Tule Bluet, Hagans Bluet, Canada Darner, Black Shouldered Spinylegs, Black-tipped Darner, and White-Faced Meadowhawk. Bob has also found Dusky Clubtails, Stream Cruisers, Calico Pennants, and Common Baskettails. (Editor's note: I am NOT making up these names. These names are better than what I could make up.)

Field guides will be available for reference at the workshop. If you wish to bring a field guide, we recommend *Dragonflies of the North Woods* by Kurt Mead and *Damselflies of the North Woods* by Bob Dubois.

Advance reservations are required. Reserve early for this limited enrollment field trip. Although geared towards adults, this workshop is fun for children with an interest in natural history age 11 and older accompanied by an adult. The fee is \$20 (\$15 for GLC members.) Directions to the meeting location will be sent after registration. For the Enrollment form and more information go to the [workshop's webpage at http://www.gratiotlakeconservancy.org/DragonflyWorkshop2012.htm](http://www.gratiotlakeconservancy.org/DragonflyWorkshop2012.htm)

In the case of unsuitable weather (rain, cold), the workshop will be held the following day, August 12th.

Summer 2012 Water's Edge

Odonata (A.K.A. Dragonfly/Damselfly) Fun Facts

Some ancestors of modern odonata had wingspans over two feet. Their fossil record goes back 300,000,000 years!

They live as larva underwater sometimes for years.

The larva eat the young of mosquitoes, blackflies, and horse flies as well as larger prey such as small tadpoles and fish!

Odonata larva shed their skin up to 17 times as they grow. In their last molt they crawl out of the water and metamorphose into winged adults.

Adult odonata eyes have up to 30,000 lenses. They see ultraviolet light and detect patterns in polarized light. No wonder they are more efficient fly catchers than we are!

Males engage in aerial dogfights to defend territory.

Mating dragonflies grasp one another and form a wheel, attached from head to tail. They can fly for hours in this configuration!

Dragonflies can cruise at 35 MPH and are able to fly backwards. They are nature's most adroit masters of flight.

They can fly across 100's of miles of open water.

Aeronautical engineers (including N.A.S.A.) study their sophisticated aerobatics and wing structure to discover ways to improve our own flight technology.



Photo by Jim Hay

Twelve-spotted Skimmer (*Libellula pulchella*). These large showy dragonflies can often be seen perched on vegetation on lake and stream edges. On cool mornings they face the sun and lift their abdomens to catch more rays.

Click Here to Donate to GLC!

Testing Gratiot's Water

With the help of volunteers, GLC has been collecting data on the clarity and phosphorus levels of Gratiot Lake water since 2000. Gratiot Lake is one of 225 (out of over 11,000) Michigan inland lakes participating in the Cooperative Lakes Monitoring Program (CLMP). The average of the water clarity (secchi disk) readings taken and the additional total phosphorus reading taken in late August provide baseline statistics useful in assessing lake water quality trends.

Dorothy Jamison is the Gratiot Lake lead volunteer water monitor. Water clarity readings are taken 11 to 15 times a season by lowering a black and white painted secchi disc into the lake's deepest waters in order to see at what depth it returns to view when reeled in. Phosphorus levels are determined through analysis of lake water samples collected, frozen, and shipped to the DNR for analysis at the end of August. Water clarity and summer phosphorus results become part of a statewide database at the MI Corps website. Yearly reports which include data from Gratiot and other Michigan inland lakes can be accessed on their website at <http://www.micorps.net/lakereports.html>

In addition, Larry Anderson analyzed data collected since the 1970's in occasional state samplings of Gratiot water for various chemical parameters. He's done some interesting graphing combining that data with the data GLC has been collecting, to look for any trends. [You can view some of Larry's graphs on the GLC website and also find links to other information on lake monitoring and its significance.](#)

On June 30th Mike Schira, the MSU District Educator for our area, will be speaking at the Eagle Harbor Community Building about how to improve lake water quality. He will give tips about good stewardship of lakeshore and riverside land such as reduction of phosphorus and nitrogen, techniques to control runoff and erosion, and safe use of chemicals near water.

Visit the Gratiot Lake Conservancy web site to view current and archived issues of *Water's Edge Newsletter* (in full color), articles, complete calendar, photos, video clips, and links to more !
www.gratiotlakeconservancy.org

Mosquito Mystery Solved

For many years I had been puzzled as to why our upstairs bathroom was the mosquito magnet of Gratiot Lake. They lay in wait in there to attack us in our most vulnerable state. The critters appeared to be crawling out of the sink drain. Despite the evidence before my eyes, I could not believe that they were actually breeding in there as my husband asserted. How could mosquitoes breed in a septic tank, I thought, and, if they are, why aren't they coming out of other drains.

We taped the sink overflow opening and kept the stopper firmly closed and only opened the bathroom door when absolutely necessary... but mosquitoes seemed to emerge spontaneously none-the-less. We had a swatter ever at the ready.

I finally googled "mosquito breeding sink drain" and learned that our problem is not unique. In sinks that have overflow outlets, enough water can become trapped and stand in those outlets to provide a nursery for mosquito larvae! From egg to larva to pupa to adult only takes 8 to 15 days for a mosquito.

The solution: pour white vinegar into the water overflow every week or so. Let it sit at least 20 minutes before running water. The added acidity kills the larvae. I guess a permanent fix would be to replace the sink with one without an overflow opening.



photo by Bonnie Hay

Sam surveys the outlet to Gratiot Lake, the Little Gratiot River, from the Jamison boat. There are a series of beaver dams along this river creating wetlands. The dams also effect lake water levels and slow the "flushing" of lake water.





photo by Jim Hay

A parent offers a morsel of food to one of the two eaglets sharing the massive nest at Gratiot Lake. Eagle and other local wildlife photos will be shown at the GLC meeting on July 30. See new Gratiot Lake eaglet photos on the GLC website.

Noted at Gratiot Lake

Ice was out on the lake around March 21, about a month earlier than usual.

Flowering of many plants is two to three weeks ahead of schedule.

Butterflies of many species (especially Tiger Swallowtails as pictured below) are abundant. Unfortunately, wood ticks are numerous, too.

Mergansers nested in Ron Sibbald's wood duck nest box.

Lake level is still high, but not as high as last year in June.

Tips for Avoiding Swimmer's Itch

1. Don't feed waterfowl or encourage them to come up to the shore. Ducks and geese are the desired hosts to the swimmers itch parasite in one stage of its complicated life cycle.
2. When swimming, towel off immediately after you leave the water. The tiny parasite takes time to embed and toweling off rather than air drying sometimes deters it. Showering after swimming may help too.
3. Don't sit, wade, or swim for long periods in the shallows during a swimmer's itch outbreak—particularly when winds are blowing towards the shore. The parasite usually inhabits snail territory in shallow water for part of its life and most easily attaches to humans there.
4. Some swimmers have had success avoiding the parasite by using a barrier cream or oil before entering the water. A commercial product, *Swimmers Itch Guard*, is available at www.SwimmersitchGuard.com. Although GLC does not endorse this product, we thought you might like to know about it.

There were occurrences of swimmer's itch in Gratiot Lake (and some other areas in the Keweenaw) last summer. The parasite can stimulate allergic reactions in people. Infestations come and go and may be very local. Please notify GLC if you notice an outbreak in Gratiot Lake.

Don't miss these articles inside!
Keweenaw Invasive Species Management: page 4
Mining Again in the Keweenaw: page 5

Join our 140 Member Families. Support GLC !

Gratiot Lake Conservancy members receive a biannual newsletter, notice of special events, and an invitation to the Annual Members Meeting. Most GLC programs that have fees are discounted for members.

[Download and print a membership/donation form here.](#)

Membership is only \$15! The membership year is from January 1 to December 31st, but you may join at any time.

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

[Click here to see samples of the photos!](#)

