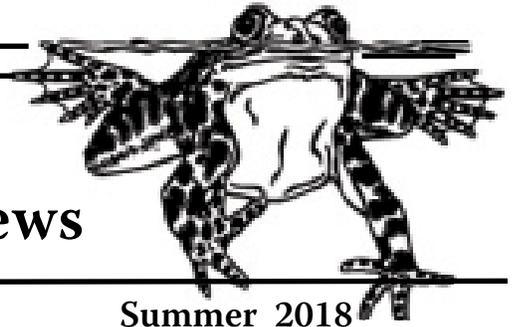


# Water's Edge

## Gratiot Lake Conservancy News



Volume 20

Summer 2018



Photo of a tiger swallowtail by Miriam Pickens

### *GLC's Annual Members Meeting*

Tuesday July 24 at the **Eagle Harbor Community Building**  
(M-26 in Eagle Harbor across from Shoreline Restaurant)

6:45 PM: Reception

7 PM: Business Meeting

7:30 PM: Light refreshments

8:00 PM: presentation by photographer Miriam Pickens:  
"Keweenaw Butterflies"

Miriam Picken's slide/talk, will feature her photos of butterfly species seen in our area. The talk will cover butterfly basics including how butterflies differ from moths, what kinds of flowers butterflies feed on, and their habits. There will be time for questions from the audience following the presentation.

Miriam is a nature photographer and ceramic artist. She serves as a board member of the Copper Country Community Arts Center in Hancock and is a member of the Copper Country Associated Artists in Calumet. Miriam writes the Arts Corner column in the Mining Gazette. She is a keen observer of all things butterfly and author of a field guide, *Butterflies of the Maasto Hiihto Trails, Hancock, MI*.



GLC has a new logo! You will notice the design featuring the lake and surrounding mountains on many of our communications. It will also be on some signs identifying Little Gratiot River Wilderness land on which GLC holds conservation easements. We hope you like the logo, which was designed by Mark McEvers at the Eagle River Studio.

*Nature awaits!  
Explore outside.  
Information inside...*

# GLC is grateful for all donations received. You further our work!

In the last seven months GLC has received Major Gifts or Grants from

*Charles and Janice Anderson*  
*Mary and Michael Bingham (GLC Fund at Keweenaw Community Foundation)*  
*Bonnie and Jim Hay*  
*Leuthold Family Foundation*  
*Carol and Joseph Lizzadro*  
*Joseph Lizzadro Family Foundation*  
*Carmen Sandretto (in memory of Louis Sandretto)*

## *We miss GLC neighbors and members who recently passed away*

Orin Ahlstrom had deep family roots at Gratiot Lake. He was one of the first members of GLC and a supporter of GLC programs even when it became difficult for him to visit the lake.

Paul Freshwater was GLC's first Life Member. In fact, it was he who explained the benefit of adding that membership category to us. An excellent writer and editor himself, Paul was always supportive of our efforts with the *Water's Edge Newsletter*. His good humor and intelligence enriched the many local organizations Paul volunteered for after he and his wife Robertine made Eagle Harbor home after retirement.

Longtime Gratiot Lake resident Ron Sibbald loved fishing... and waterfowl. Ron volunteered for GLC and built a loon nesting platform installed offshore from the GLC nature sanctuary for a few seasons. He was Merganser Grandad of Gratiot Lake who fostered broods of these "fish ducks" in nest boxes placed on his camp's shoreline. Ron shared his knowledge of wildlife husbandry and enthusiasm for all things in nature with everyone he met.

### *Memorial Gifts*

*in Memory of Orin Ahlstrom*  
Christie McGrath

*in Memory of W. Howard Hosking*  
John and Bunny Hosking

*in Memory of*  
*Florence Adele Gratiot and Donald Hartwig Gratiot*  
Julia Ellen Gratiot Peterson  
Ann Katherine Gratiot Rugelis  
Mary Sawyer Gratiot Shultz

*in Memory of Doug Sherk*  
Nancy Sherk

*in Memory of Ron Sibbald*  
Virginia Jamison

### *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  
Gratiot Lake Conservancy  
P.O. Box 310  
Mohawk, MI 49950

Director@GratiotLakeConservancy.org  
phone: 906-337-5476  
[www.GratiotLakeConservancy.org](http://www.GratiotLakeConservancy.org)

**It's that time of year.  
Everything  
is growing...  
including invasive  
plants!**



***HELP with the  
WEEDING***  
at Gratiot Lake Preserve.

***July 11 and July 12***  
contact GLC at 906-337-5476  
[director@GratiotLakeConservancy.org](mailto:director@GratiotLakeConservancy.org)

### *GLC Awards Sandretto Scholarships*

GLC is happy to announce that two 11<sup>th</sup> graders have been awarded *Rita and Jack Sandretto Scholarships* to attend the *Michigan Tech Summer Youth Program Exploration: Aquatic Ecology at Gratiot Lake*. Zachary Hooper of Farmington Hills, MI plans to study ecology in college, and Madeline Webb of Swartz Creek, MI is interested in pursuing the field of natural resources conservation. The Summer Youth Program group will camp at GLC's Noblet Field Station from July 17<sup>th</sup> to July 20<sup>th</sup>.

The tuition scholarships and the salary of instructor Bradley Wells are funded from an education endowment originally established in 2002 by Rita Sandretto in memory of her husband Jack. Rita, who was an avid supporter of environmental education, passed away in 2007.



Botanist Janet Marr points out the amazing pollen catapulting abilities of bunchberry flowers during the botany walk held on June 11. This explosive pollen dispersal is the fastest recorded plant movement.

## *New at Noblets*



Photo by Gina Nicholas

If you visit the GLC Preserve you will notice Noblet Field Station is sporting a newly resingled roof. We hope the additional two sections of dock make the water access easier. If you are out on Gratiot Lake, you will see that the dilapidated red shack that was on GLC land on the west end of the lake has been removed.

### **Finding the GLC Preserve and Noblet Field Station**

There are two ways to get to the Gratiot Lake Conservancy nature sanctuary. That said, depending on weather and season, there might be **no way** to get there.

**By watercraft:** GLC's seasonal dock is in until early fall. We recently added two more sections. Lake bottom near the dock is mostly sand and cobble with occasional rocks. The shallows extend quite a way out, so if you have a powerboat you may need to lift your motor. Kayaks or canoes are welcome to pull ashore anywhere along GLC shoreline. Gratiot Lake has quite a fetch and mountains on the north shore impact winds and waves as well, so watch the forecast.

**By logging road:** It's a 7 mile drive in from the Gay-Lac La Belle Road via logging roads. These dirt roads run through private land (mostly logging company land) and are not maintained by any public entity. This year heavy logging and road use has led to a very difficult access on Iron Gate Road. It may improve later in the summer. Only high carriage 4 wheel drive vehicles are recommended. Taking Iron Gate Road from its other end, at Gratiot Lake Road, is hazardous.

If you are attending events at Gratiot Lake Preserve, carpooling is encouraged. **A map with directions to the GLC Preserve and Noblet Field station and a map of the GLC trails is available for download on the GLC website.**

**Clean-up trash  
along Gratiot Lake shoreline  
Saturday, September 15th**

## Exotic Aquatic Plant Watch Survey and Free Training at Gratiot Lake

Limnologist, Erick Elgin

July 25, 9:30 AM to 11:30 AM

Gratiot Lake Public Boat Access

For about 18 years GLC has participated in Michigan Cooperative Lakes Monitoring Program (CLMP). Since 2006 Dorothy Jamison has been taking readings of lake transparency on average 14 times a year. Every one to two years a water sample from the lake is sent to the state lab to detect the amount of phosphorus present. Overall at Gratiot no major changes have been noted in this monitoring data over the years.

In 2005 and 2006 botanist Janet Marr undertook a comprehensive survey of aquatic vegetation at the lake. The survey revealed that Gratiot Lake was home to good array of beneficial native aquatic plants. As a baseline that survey provides data for comparison in the future. Native aquatic plants provide food and habitat for a healthy community of animals in the lake, including a variety of fish, so the richness and variety of plant species found was a good health indicator for the lake. Janet even discovered one plant that is endangered in Michigan: *Subularia aquatica*, water awlwort. She didn't find any aquatic exotic plant species, but recommended that the lake be monitored from time-to-time for any invasive plants before they become problematic.

Now CLMP is offering hands on Exotic Aquatic Plant Watch training so that those interested in lake monitoring to protect their lake can learn how to do just that. This program is targeting five plant species that pose the biggest threat to Michigan waters: Eurasian watermilfoil, curly-leaf pondweed, hydrilla, European frog-bit, and starry stonewort.

Because GLC has enrolled in Exotic Aquatic Plant Watch, Erick Elgin who is a water resource educator from the Michigan State University Extension will be coming to teach about and perform an invasive aquatic plant survey. He will provide information on how to identify these five plants and demonstrate a transect survey method by doing the initial survey near the Gratiot Lake public access. If you are interested in helping with lake monitoring for exotic invasive plants and would like to see how it is done, RSVP Bonnie at 906-337-5475 or email [Director@GratiotLakeConservancy.org](mailto:Director@GratiotLakeConservancy.org)

Hydrilla

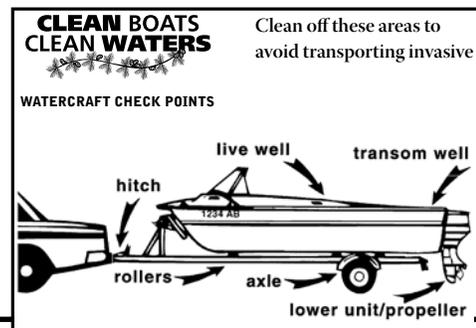


## KISMA Update

Eurasian water milfoil, garlic mustard, spotted knapweed, European marsh thistle, emerald ash borer, glossy buckthorn, and spiny waterflea are all members of an increasingly long list of exotic invasive species creeping into the Keweenaw. GLC is one of the many local partner organizations in the Keweenaw Invasive Species Management Area (KISMA) which was established to help address the insidious spread of these problem species that can upset the balance of local ecosystems.

On July 11<sup>th</sup> and 12<sup>th</sup> the KISMA weed crew will assist volunteers in removing European marsh thistle and some other invasive species identified at the GLC preserve at Gratiot Lake and along Noblet Lane. If you would like to help on one of these days, please contact Bonnie at [director@gratiotlakeconservancy.org](mailto:director@gratiotlakeconservancy.org) or call 906-337-5476. Snacks, water, and tools will be provided!

KISMA and MSU will be bringing a mobile boat wash to various locations again this year. This is an opportunity to learn more about how to insure you don't unwittingly transport invasive plants and animals from one lake to another... and to get a free boat wash done by professionals!



## Love Lakes? Stop Aquatic Hitchhikers!

Get your boat washed by KISMA & MSU

**Thursday, August 16**

**Copper Harbor: 8:00 am to 12:30 pm**

**Eagle Harbor: 1:30 pm to 6:00 pm**

**Friday, August 17**

**Gratiot Lake: 8:00 am to 12:30 pm**

**Lac La Belle: 1:30 pm to 6:00 pm**

**Saturday, August 18**

**Portage Lake in Chassel: 9:00 am to 2:00 pm**

## What's in a Name?

I received an email from Julie Gratiot Peterson. She discovered the GLC website and was excited to learn about the lake which was named for her ancestor Charles Gratiot Jr. Julie wondered whether we pronounced "Gratiot" as "Grashut" like they do in Detroit. She noted that some branches of the Gratiot family pronounce the name differently than others do. Virginia Jamison introduced Julie and her husband Dave to Gratiot Lake in October when they stopped by to visit her and learn about their ancestor's namesake lake.



Pencil sketch of young Charles Gratiot Jr. courtesy of Missouri Historical Society



Charles Gratiot by Thomas Sully West Point Museum Art Collection

Charles Chouteau Gratiot Jr. (1786-1855) was Inspector of the U.S. Military Academy in 1838. He rose from the rank of Lt. Colonel to Brigadier General and served as General in the army of General William Henry Harrison in the War of 1812. During that war he built Fort St. Joseph (renamed Fort Gratiot) in St. Claire County, Michigan.

Charles Gratiot Jr. also served for a time as Chief Engineer in the Michigan Territory. He was commissioned in the Army Corps of Engineers and served in the Army Corps for 32 years, rising to their highest rank of Chief of Engineers. He also worked in the General Land Office. One internet source indicates that a Charles Gratiot was agent for the Lake Superior Copper Company and involved with the Cliff Mine (this has not been confirmed by other records yet).

In addition to Gratiot Lake, Little Gratiot River, Gratiot River, and Fort Gratiot, the following places are named for him: Gratiot Road in Detroit, Gratiot County, Michigan, and Gratiot village, Ohio.

## Visit

***GratiotLakeConservancy.org***  
***for news, calendar, updates.***



Photo by Gina Nicholas

## Birdlife of the Keweenaw Big Day in May

By all accounts (or should I say counts) the May 19<sup>th</sup> session of David Flaspohler's *Birdlife of the Keweenaw* was a success. After an orientation and slide show indoors, the group explored along the north shore of the Keweenaw between Eagle Harbor and Copper Harbor. Fifty-one species were tallied over about 4 hours of observation. Two birds that are rare in the Keweenaw, a red-headed woodpecker and a northern mockingbird, were spotted in Copper Harbor.

Owen Mills who attended the workshop posted the days tally on ebird.org, a great website for learning what birds are observed throughout the world. The direct link to the Birdlife May 19 species checklist is <https://ebird.org/view/checklist/S45832601>

The June 27<sup>th</sup> session of the workshop is fully enrolled. To be wait-listed email [Director@GratiotLakeConservancy.org](mailto:Director@GratiotLakeConservancy.org)

## Thanks to Ben Hay and Jim Hay for newsletter proofreading.



Do you know what this prominent feature shown in the bird's eye (or should I say Google's eye) view of the Keweenaw County landscape is? Turn the page to find out why this little viewed location is so vital to those of us who reside in or visit this area.

## *Sewage Saga*

In early May, a public notice was placed by Western U.P. Health Department and Michigan Department of Environmental Quality in *the Daily Mining Gazette*. There had been an 83,000 gallon overflow of partially treated/diluted wastewater from Keweenaw County's Mt. Horace Greeley wastewater treatment facility located above the Gratiot Lake area. The discharge was due to excessive snow load and seasonal melt. Samples subsequently taken by the DEQ from the lagoon site indicated that bacteria levels present were within the permit limits and not a threat to people or to the environment. This unscheduled release of wastewater was necessary to conserve the integrity of the berms of the lagoons so they would not be eroded. The release was in a location away from drinking water sources or homes and where the very diluted septic waste would quickly be broken down into harmless components by natural decay. But, the public notice got me, and others who live in the general vicinity of the lagoons to think twice.

When those of us who are beyond the age of four flush the toilet, it is mostly a matter of "out of sight out of mind." Unless something starts to back up! However, paying attention to our impact on the ecosystem and what actions ensure the sustainable health of ourselves and our landscape becomes increasingly important as our population and use of the area increases.

The Horace Greeley lagoon facility is permitted by the DEQ to receive our sewage waste in Keweenaw County from areas within a 15 mile radius of the facility. The three lagoons (see photo on page 5) were constructed in 1997 to receive waste piped in from the former Calumet Air Force Station which for a time in 1990's was a young offenders detention facility. The lagoons also were built to receive septage, waste pumped and trucked from cesspits and septic tanks, from homes and restaurants in Keweenaw County. No industrial waste is permitted in these lagoons (of course anything homeowners and restaurants pour down the drain may end up there and subsequently in the wetlands near the lagoons. See page 7 for info about what not to drain into a septic tank).

Septage lagoons are actually the most common type of rural wastewater treatment facility. If maintained properly lagoons are as effective or more effective than the more mechanized wastewater treatment facilities common in urban and suburban areas. Because rural areas have a wealth of land and a dearth of development, they usually have the space to accommodate these large, lined ponds in which natural processes do the work with a fraction of the human management that the mechanical urban and industrial systems require.

Wastewater lagoons rely on biological processes to break down organic waste into environmentally benign material.

Naturally occurring aerobic bacteria consume the organic waste. Algae and wetland plants which colonize the ponds take in nutrients (such as nitrogen and phosphorus) released by decomposition. Wetland plants, algae, and wind action provide the oxygen necessary for aerobic bacteria to digest the septage. Sunlight is also necessary to complete the cycle and helps with the disinfection process. Some solid material, called sludge, accumulates at the bottom of these lagoons. Sludge is composed of undigested material such as fats and grit from the septage input, as well as dead bacteria and dead plant material (mostly in fall). Some sludge is slowly digested by anaerobic (not requiring oxygen) bacteria. The anaerobic bacteria release hydrogen sulfide that bubbles up as the familiar rotten egg smell.

The three lagoons are connected. Waste is usually dumped in the lagoon at highest elevation (an East to West flow on Mt. Horace Greeley)... lagoon #1 or sometimes in lagoon #2 the next in line. Eventually, the cleaner, clarified water progresses through the series to lagoon #3. Clarified water is gradually discharged via a pipe outlet (which is manually opened and closed) from lagoon #3 into a wetland area which is part of the Buffalo Creek watershed (and subsequently the Eagle River watershed). The effluent must be tested to be within limits of allowed fecal bacteria and checked for a number of other factors (phosphorus, biological oxygen demand, dissolved oxygen, ammonia nitrogen, pH, suspended solids) before wastewater is released via the pipe.

The lagoons also all have overflow outlets. These outlets that are below the top of the berm, are used to release wastewater from the top of the basin when levels within a basin become high enough to threaten the integrity of the berm. This is what happened during snowmelt this year. When this type of overflow occurs there are subsequent tests done to determine if bacteria levels in the outflow are within acceptable guidelines. So far, treated wastewater released from the Mt. Horace Greeley lagoons is well below the bacterial levels allowed to flow into streams and wetlands. You wouldn't want to drink the outflow or perhaps swim in it, but according to the DEQ it is a negligible amount of bacteria in terms of what the receiving stream can accommodate without impairment. In May, testing was done that indicated the outflow was very diluted by snowmelt and would not jeopardize the stream and wetland. The DEQ made available to me some monitoring results for recent years of the Mt. Horace Greeley wastewater discharges. All results listed were within limits set by the DEQ for these discharges into the wetlands. Most were very low numbers, which is reassuring.

Every 5 years the operating permit application for this wastewater treatment facility must be resubmitted by Keweenaw County to the DEQ. A permit application must be submitted again in 2019. The Mt. Horace Greeley facility is currently approved for up to about 360,000 gallons of septage to be added per year.

The other wastewater facility in Keweenaw County is operated by Grant Township and is located in Copper Harbor off of HWY 41 on a spit of land between Fort Wilken's Lake Fanny Hoe campsites and Lake Superior. This facility, which is a bit older than the Horace Greeley facility, has two wastewater lagoons. Due to a lesser amount of land at that facility, less area to hold waste, and the facility's close proximity to Lake Superior, the Copper Harbor wastewater facility has additional mechanical aeration, uses added polymers to help solids fall out faster, and treats wastewater with a disinfection process involving ultraviolet light.

Unfortunately, one of the lagoon liners at the Copper Harbor facility failed in early March. This liner failure leaked 400,000 gallons of diluted wastewater into the surrounding area. Keweenaw County Board recently approved the temporary use of the Mt. Horace Greeley lagoons to take Copper Harbor septage while the repair is done on the Copper Harbor lagoon. In order to bring down the levels in the Horace Greeley lagoons to accommodate this additional septage, about 10 million gallons of diluted wastewater will be released.

## Do Your Part, Be SepticSmart:

### Protect It and Inspect It:

**Do:**

- Have your system inspected (in general) every three years by a licensed contractor and have the tank pumped, when necessary, generally every three to five years.

### Think at the Sink:

**Don't:**

- Pour cooking grease or oil down the sink or toilet.
- Rinse coffee grounds into the sink.
- Pour household chemicals down the sink or flush them.

**Do:**

- Eliminate or limit the use of a garbage disposal.
- Properly dispose of coffee grounds & food.
- Put grease in a container to harden before discarding in the trash.

### Don't Overload the Commode:

**Don't:**

- Flush non-degradable products or chemicals, such as feminine hygiene products, condoms, dental floss, diapers, cigarette butts, cat litter, paper towels, pharmaceuticals.

**Do:**

- Dispose of these items in the trash can!

### Shield Your Field:

**Don't:**

- Park or drive on your drainfield. The weight can damage the drain lines.
- Plant trees or shrubs too close to your drainfield, roots can grow into your system and clog it.

**Do:**

- Consult a septic service professional to advise you of the proper distance for planting trees and shrubs, depending on your septic tank location.

### Don't Strain Your Drain:

**Don't**

- Concentrate your water use by using your dishwasher, shower, washing machine, and toilet at the same time. All that extra water can really strain your septic system.

**Do:**

- Stagger the use of water-generating appliances. This can be helpful especially if your system has not been pumped in a long time.
- Become more water efficient by fixing plumbing leaks and consider installing bathroom and kitchen faucet aerators and water-efficient products.



Photo by Jim Hay

### Assistance with information in this article

Randy Conroy,  
DEQ Water Resources Division,  
Marquette MI  
906-236-1362  
[conroyr@michigan.gov](mailto:conroyr@michigan.gov)

Tanya Rule R.S., Director, Environmental Health and Sanitation, Western UP Health Dept,  
Hancock MI  
906-482-7382 Ext. 176  
<http://www.wupdhd.org/>

### Resources on the Web:

EPA tutorial on YouTube "Overview of Lagoon System Management"  
<https://youtu.be/kUUTUQB-Rm4>

MiWaters website  
View and download documents and public notices pertaining to DEQ water resources and events impacting surface waters throughout the state, including specific wastewater lagoons location, certification, and permitting. Spills, pollution and any unauthorized activities effecting wetlands and water resources can also be reported  
<https://miwaters.deq.state.mi.us>

For more SepticSmart tips, visit: [www.epa.gov/septicmart](http://www.epa.gov/septicmart)

## GLC Calendar

Updates: [GratiotLakeConservancy.org/CurrentCalendar.htm](http://GratiotLakeConservancy.org/CurrentCalendar.htm)

June 27: Birdlife of the Keweenaw Workshop. Fully enrolled. R.S.V.P. to be waitlisted.

July 11 and/or 12: Assist KISMA weed crew in removal of invasive plants on GLC sanctuary. R.S.V.P.

July 17- July20: Michigan Tech Summer Youth Program Aquatic Ecology Exploration in residence at Noblet Field Station

July 24, 6:45 pm to 9 pm: GLC Annual Members Meeting at Eagle Harbor Community Building.

July 25, 9:30 am to 11:30 am: Exotic Aquatic Plant Watch training at Gratiot Lake. R.S.V.P.

August 18, 9:30 am to 1:30 pm : a Geo Tour at Gratiot Lake. This is a free event but R.S.V.P is required. Space is limited so reserve early.

September 8, 10 am to 1 pm: Visit GLC's Bammert Farm. Enjoy the last blooms of summer, look for mushrooms, and see remnants of local history. No fee. R.S.V.P. for details.

September 15, 10 am to 12 pm: Shoreline Clean-up at Gratiot. Meet at the public boat access at Gratiot Lake.

September date-to-be-determined: Field trip to tour a small mammal survey site on GLC land.

For more info or to R.S.V.P.:

Bonnie at [Director@GratiotLakeConservancy.org](mailto:Director@GratiotLakeConservancy.org) or 906-337-5476.  
Please provide your name and contact information.



### *Geo Tour at Gratiot Lake*

Saturday, August 18<sup>th</sup> (raindate August 19)  
9:30 AM to 1:30 PM

Join geologist and GLC Boardmember Daniel Lizzadro-McPherson on a pontoon boat ride to explore what the big picture of the Gratiot Lake landscape reveals about its geological history. Then visit the Gratiot Lake Conservancy land to identify shoreline pebbles and boulders. Bring a bag lunch to picnic at the Noblet Field Station. Daniel has done work on Keweenaw GeoHeritage, fieldwork on the Keweenaw fault to enhance the USGS EdMAP, and is a GIS analyst at Michigan Tech's Great Lakes Research Center.

This event is free of charge but space is limited. R.S.V.P. is required, so reserve early for a chance at a spot. Contact Bonnie at [Director@GratiotLakeConservancy.org](mailto:Director@GratiotLakeConservancy.org) or call 906-337-5476. Be sure to share your contact information including email address and phone numbers so that details can be shared with you. Your reservation will be confirmed via email.

Download the *Water's Edge Newsletter* in full color at  
[www.GratiotLakeConservancy.org/CurrentWatersEdge.pdf](http://www.GratiotLakeConservancy.org/CurrentWatersEdge.pdf)

### Become a GLC Member!

Membership is \$15 a year.

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. Memberships renew at year end.

*GLC Membership and Donation please click here.*  
[www.gratiotlakeconservancy.org/join.htm](http://www.gratiotlakeconservancy.org/join.htm)



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

[Click here to see photos!](#)