

Water's Edge

Gratiot Lake Conservancy News



Volume 21

Fall 2019

Donation of 198 Acres at Gratiot Lake

In July, Lizzadro Farms Inc. donated additional land to GLC. The 198 acre parcel is indicated on the map below as the gray area in section 4 at the northern tip of the lake. This new GLC land adjoins "Sandy Beach" (the gray area in section 3 below) which was donated to GLC in 2018.

The wooded parcel includes the mouth of Sucker Creek and approximately 3,500 feet of mostly cobble shoreline. Sucker Creek is a high quality feeder stream to Gratiot Lake. Historically, Sucker Creek is known to anglers and eagles alike as a location for springtime smelt and white sucker runs. These fish swim up freshwater streams to breed.

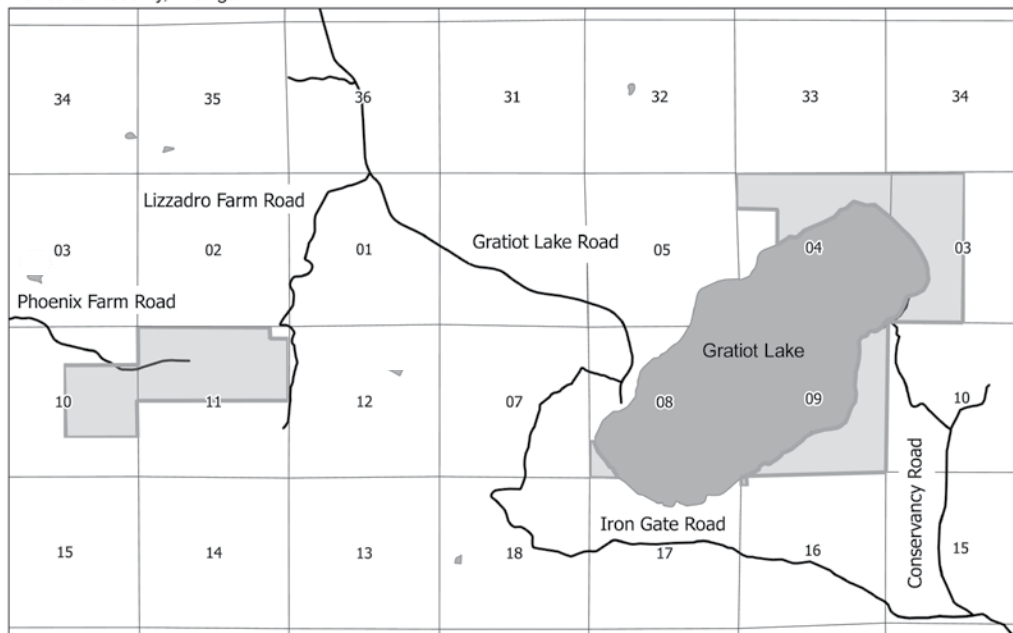
While much of Gratiot Lake is underlain by Jacobsville sandstone, this forested slope steeply rises from the lake on volcanic basalt bedrock. The Keweenaw Fault runs through it, under the tip of Gratiot Lake, and towards Lac LaBelle. The wooded slope meets the narrow shoreline near the lake's deepest hole (over 70' in depth). It is hypothesized that during the last Ice Age a glacier rose as much as two miles above the bedrock here and created the deep "plunge pool" as its melt cascaded and scoured into the basin that is now Gratiot Lake.



Photo by Louis Lizzadro

Gratiot Lake Conservancy - property overview 2019
Keweenaw County, Michigan

0 1 2 miles



*Click Here to
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year-end
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photo by Jim Hay

Thank You!

GLC gratefully acknowledges

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hop hornbeam photo by Bonnie Hay

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in Memory of Marilyn Jones
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Gifts in Honor

Bonnie and Jim Hay 50th Anniversary
Jack & Carolyn Meyer family, Dave & Marty Nighswander family, Mary Buchanan family, Grace Whitehurst family

Bonnie and Jim Hay
Angela and Charles Anderson

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in Memory of W. Howard Hosking
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in Memory of Louis Sandretto
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Donors to GLC Fund at Keweenaw Community Foundation

Mary and Michael Bingham
Chevron Foundation (matching)

A message from Bonnie Hay, GLC President and Editor of *Water's Edge Newsletter*

I have served as editor and primary writer of the *Water's Edge Newsletter* since the first issue was printed in the summer of 1999. After many years of publishing both a paper edition and a digital edition, we are going mostly digital (except when members/donors or institutions such as libraries desire a paper copy). This will be a cost savings for GLC and is a the right move for the environment. Besides, the photos look so much more appealing in the full color digital version and hyperlinks make digging deeper into topics easy. **We are transitioning from "Opt in for digital only" to "Opt in to receive a paper copy."**

However, some folks (including myself) actually prefer to read information on paper rather than online. If you are one of those people, you have two options. One is to **"opt in" for paper newsletter** on your membership/donation form or by contacting GLC at director@gratiotlakeconservancy.org. The other option is to download and print the newsletter from the GLC website where it is posted. In fact, all past newsletters can be viewed and downloaded at <https://www.gratiotlakeconservancy.org/archives>

GLC will publish a *Water's Edge Brief* calendar in the spring and a full edition of the *Water's Edge Newsletter* in the fall. I appreciate your comments and suggestions and welcome submissions of articles related to Gratiot Lake. Please note my new GLC email address: bonnie@gratiotlakeconservancy.org. Please add me to your contacts.

Thanks for your continued support of GLC's efforts.



photo by Jim Hay

Some Fruits You May Have Missed

Bonnie Hay

Although delayed by a cold, late spring in the Keweenaw, blooms finally burst forth in abundance and conditions apparently were perfect for pollination. All the berries we love to gather made up for their tardiness in an abundant harvest by August. By September, laden heritage apple trees contributed to great pies, cider, and sauce. However, once I was sated by this familiar edible abundance, some showy fruits not on my radar piqued my interest: hawthorn, cranberry viburnum, and mountain ash. Perhaps you noticed them, too. If you have cooked with any of these fruits, please share your recipe.



Black hawthorn, *Crateagus douglasii* (pictured above) grows along the remnants of the old Phoenix Farm road at Bammert Farm. Black Hawthorns and a red berried hawthorn can be seen at Central Historic Village. Black hawthorn is designated as a special concern species in Michigan. It is more commonly found in the Pacific Northwest. The glossy fruits (called haws) are eaten by ruffed grouse and songbirds. It is a host plant for Gray Hairstreak and Mourning Cloak butterflies. Anishinabe and other Native Americans used the haws both fresh and dried and pressed into cakes. I tried fresh haws in September and found them pulpy and tasteless. However, taste and texture is supposed to improve after frost. Haws are used to make jelly (some compare the result to currant jelly) and many recipes are available online. Hawthorn bark has been used in both Native American and European herbal medicine for a variety of ailments. In modern times Hawthorn is the subject of numerous studies and has been found to have some efficacy in treating cardiovascular disease.

Pictured at right is Highbush Cranberry, *Viburnum opulus* var. *americanum*, (also known as crampbark and mooseberry) sports clusters of translucent cranberry-red berry-like drupes. These fruits are attractive to birds, deer, rodents, and apparently to moose! It is NOT related to the cranberry on our Thanksgiving tables. However, the tart drupes are edible and can be used in sauces and jellies. A tea of the bark has been historically used for stomach and menstrual cramps. It is a showy native shrub that is considered a desirable landscape plant and is the host plant for the Spring Azure butterfly.

Learn more about these and other native plants at the Ladybird Johnson Plant Database
<https://www.wildflower.org/plants/>



Pictured above is Northern mountain ash, (one of many *Sorbus* species) can be seen at both Bammert Farm and Gratiot Lake. It's a small tree (or large shrub) with bright orange clusters of fruit that attract hungry ruffed grouse, cedar waxwings, and other songbirds. The fruit is high in vitamin C and iron. The raw fruit is unpalatable and can cause stomach upset in humans. Cooking neutralizes the poison. It is used to make a rather bitter jelly and to flavor alcoholic beverages. Mountain ash features in folklore as the magical Rowan Tree. In European folklore it helped travelers find their way. It was planted at doorways and gates as a talisman against demons and fairies. In Newfoundland, Finland, and Sweden, mountain ash trees heavily laden with fruit augured a very snowy winter ahead.



Thank you to...

GLC members, donors, and volunteers!

Those who provided refreshments for and helped with GLC's Members Meeting.

Jim Fletcher, Benjamin Hay, Bonnie Hay, Dorothy Jamison Mike LaMielle, Ian Lizzadro-McPherson, and Gratiot Lake landowners who removed 50+ pounds of trash from Gratiot Lake shoreline. Weightiest items removed were tires which continue to be extracted from lake bottom and shoreline. The amount of smoking related trash on shoreline appears to be decreasing. Evidence of fireworks, fishing (lures, bait containers, line), and recreational use (beach toy, food wrappers, cans and bottles) continues to be picked up.

Ben and Jim Hay for proofreading the *Water's Edge Newsletter*.

KISMA weed crew and volunteers who helped with invasive plant removal at Gratiot Lake.

Jim Hay for use of his boat for GLC Geo Tour of the lake and providing nature photos for GLC use.

Those who made GLC programs click in 2019: Zach Gayk for Keweenaw Birds Workshop, Daniel Lizzadro-McPherson for Gratiot Lake Geo-tour, and Rod Chimner for his informative presentation, "A Primer to Wetland Restoration".

John Yunger for bringing Governor's State University students to the Noblet Field Station and GLC Preserve to study aquatic ecology.

Dorothy Jamison for measuring Gratiot Lake water transparency weekly during the summer as part of the Cooperative Lake Monitoring Program (CLMP). Jim and Bonnie Hay for taking CLMP phosphorus measurements and sampling aquatic vegetation as part of the Exotic Aquatic Plant Watch. View the full Gratiot Lake CLMP report at <https://www.gratiotlakeconservancy.org/glc-news> It shows graphs of Gratiot Lake data collected for 19 years. Trend lines show slightly decreased transparency and slightly decreased phosphorus. Neither trend is significant.

Janet Marr for advice on all things botanical.

Jim Tercha for pro-bono work for GLC.

To Gina Nicholas and Louis Lizzadro and the entire GLC Board of Directors and Officers for helping to keep GLC on track.

Joe Lizzadro, retiring president, for over two decades of dedication to furthering the mission and sustainability of

GLC Members Meeting Summary

GLC Annual Members Meeting was held at the Eagle Harbor Community Building on July 23, 2019.

Joe Lizzadro was recognized for his role of Board president since GLC's inception in 1998. Bonnie Hay expressed gratitude on behalf of the Board for his many years of thoughtful guidance and oversight. Although Joe has stepped down from an officer's role, he will continue to be active on the board.

GLC board members are: Bonnie Hay, Joe Lizzadro, John Lizzadro, Sr., William Lytle, Daniel McPherson, and Gina Nicholas. Current officers are Bonnie Hay, president; Louis Lizzadro, vice-president and treasurer; John Lizzadro, Jr. assistant treasurer; and Gina Nicholas, secretary.

Louis Lizzadro provided a brief review of 2018 year end financials. Those that donate time and financial support to help GLC achieve its mission are much appreciated.

Bonnie Hay introduced GLC program director, Ian Lizzadro-McPherson. Ian detailed GLC's stewardship, research, and education programs and thanked volunteers for their efforts. Upcoming programs were announced. After a door prize drawing, the business meeting was adjourned and refreshments served. After refreshments, invited speaker, Professor Rod Chimner presented a program "A Primer to Wetland Restoration."

Donations on GLC website:

www.gratiotlakeconservancy.org/ways-to-contribute

**Download a membership/donation
and send with your check to
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**P.O. Box 310
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Click the "Donate" button at the bottom of the page. It will take you to a GLC PayPal page that allows you to donate directly to GLC either with your credit card or with your PayPal account. Be sure to note your address and any designation for your donation in the "write a note" box below the amount. PayPal will acknowledge the donation via email, and GLC will send you a "Thank You."

Tiny Beetle Aids Invasive Control

Lindsey Dolinski



Purple Loosestrife
photo by
CindyRoche,Bugwood.org

Purple loosestrife (*Lythrum salicaria*) a perennial wetland plant that is native to Asia and Europe has established itself as an invasive species throughout much the Midwest and has made inroads into the Keweenaw Peninsula. This attractive yet invasive plant thrives in a variety of wetland soil conditions, allowing it to crowd out native species, thus drastically altering wetland plant communities and ultimately creating unsuitable habitat for fish and other wildlife.

Since 2017, the Keweenaw Invasive Species Management Area (KISMA) has been targeting this wetland invader using weapons so small, you could hold them

between your fingertips. These tiny but powerful weapons are known as *Galerucella californiensis* and *G. pusilla*, most commonly referred to as purple loosestrife leaf-eating beetles or biocontrol beetles. These critters eat away at the leaves of purple loosestrife, inhibiting the plant's ability to carry out crucial biological processes, and ultimately reducing its ability to produce seeds, thus limiting the plant's spread. These beetles are host specific, meaning they will not target desirable native species. Each summer, KISMA returns to a site in the Western UP where the beetles have established to collect and rear them for release in Baraga, Houghton, and Keweenaw counties.

In spring of 2019, KISMA received funding from the United States Forest Service through Great Lakes Restoration Initiative (USFS GLRI) for a purple loosestrife control project. This new funding will allow KISMA to treat all reported purple loosestrife infestations in Baraga, Houghton, and Keweenaw counties via a combination of leaf-eating beetles, manual root stock removal, and herbicide application, with the help of partners. The funding will also enable KISMA to conduct pre- and post-treatment monitoring for purple loosestrife, native plant species, and leaf-eating beetles to determine the efficacy of these treatments and native plant regeneration. You can aid in this effort by reporting the purple loosestrife infestations you come across within Baraga, Houghton, and Keweenaw counties. For more information on how to identify this species and to report purple loosestrife in your area, please use the Michigan Invasive Species Information Network website <https://www.misin.msu.edu/report/misin/?project=misin> or contact KISMA directly with the GPS location or just map showing the location. Sigrid Resh, KISMA Coordinator, kisma.up@gmail.com Lindsey Dolinski, KISMA Outreach Specialist, lfidolins@mtu.edu

Editor's note: Although purple loosestrife was identified at the public boat access to Gratiot Lake in 2015 and eliminated quickly due to volunteer efforts, it could reoccur. If observed please notify KISMA and GLC.



Photo by Ian Lizzadro-McPherson

KISMA Coordinator Sigrid Resh, KISMA Outreach Specialist Lindsey Dolinski, and the KISMA weed crew are pictured celebrating after a day at the GLC Preserve removing invasive European marsh thistle and other invasive plants. The amount of invasive thistle in the GLC beaver pond area was dramatically reduced after this third year of removal efforts. GLC volunteers lent a hand in this transformation.

To give to the GLC Fund at the
Keweenaw Community Foundation.

keweenawcommunityfoundation.org/funds/gratiot-lake-conservancy/
add "Gratiot Lake Conservancy Fund" on the "Designate a
Specific Fund" box under the donation amount.

Or, make a check out to "Keweenaw Community Foundation"
(indicate "for Gratiot Lake Conservancy Fund" in the subject
line). Mail to: Keweenaw Community Foundation
236 Quincy Street
Hancock, MI 49930

**We are Going Digital
with the *Water's Edge* Newsletter.**
Prefer a paper copy?

Email: Director@GratiotLakeConservancy.org
OR indicate your preference on
your membership renewal.



Photo by Ian Lizzadro-McPherson

The Mystery of the Calling Warblers

Zach Gayk

“The air seemed at times fairly alive with invisible birds as the calls rang out, now sharply and near at hand, and now faintly and far away. Almost human many of them seemed, too, and it was not difficult to imagine that they expressed a whole range of emotions from anxiety and fear up to good-fellowship and joy.”

This quote by Wisconsin naturalist Orrin Libby in 1899 may be the first published account focused on understanding the nocturnal calls of migratory birds in North America. In the 120 years since he wrote these words it would be natural to think that our understanding of how birds communicate during migration should have significantly progressed. Despite much interest from scientists and birders, however, the mystery of how and why birds communicate during migration remains unsolved.

The most common birds to call in migration are the warblers. Each spring approximately 47 species of warblers leave their tropical wintering grounds to travel north and breed in the temperate forests of North America. But how do tiny warblers weighing about as much as a quarter migrate thousands of miles from Central and South America to their verdant forest breeding grounds: the calls they make on the wing may be essential.

All warblers normally migrate at night, which is thought to be a way to utilize more stable atmospheric conditions, cooler temperatures to prevent overheating, and increased predator avoidance in the dark. Safety in numbers is important, and birds migrating over dangerous water bodies like Lake Superior need a way to keep together and make sure they are going the same way as flock-mates in the dark night sky. One way warblers might do this is by regularly uttering flight calls – short, one-syllable notes produced every few seconds while migrating to stay in touch with each other.

Although these flight calls sound like a faint insect chirp to most people, each warbler species actually has a unique call.

To the trained observer, some species’ calls sound very different, whereas other species sound nearly identical. If not all warbler calls sound alike, does that mean not every species communicates together in migration? Why would some groups of species sound similar even though many species sound distinct? The answer is: no one knows. Exactly which of the 47 species answer each other in the wild, and exactly what information is encoded in the calls remains unknown. This mystery is the subject of my current research as a PhD student at the University of Windsor, Ontario.

I am working with Dan Mennill, an expert on bird vocalizations, to understand what has driven the evolution of similar warbler flight calls across species, to develop methods for triangulating the locations of calling of warblers as they migrate overhead along the coast of the Keweenaw Peninsula, and finally to use recordings of calling flocks of warblers to reconstruct which species call and answer each other. All of my research is aimed at helping to solve the ultimate mystery of why warblers regularly call during migration, instead of passing overhead unnoticed in the nighttime gloom. We have recently uncovered exciting results, which we think make progress towards understanding how migrants use these calls. I hope to be able to share the details soon!



Redstart Warbler Photo by Jim Hay

Exploring Ecology at Gratiot

GLC Rita and Jack Sandretto Scholarships were awarded to Calumet High School juniors, Serenity Snyder and Lila Frantti to attend Michigan Tech's Summer Youth Program Exploration: Aquatic Ecology at Gratiot Lake. They were part of a group of eight students who camped at GLC's Noblet Field Station in July. Under the guidance of Sean Wesley, the group studied the ecology of Gratiot Lake and other wetland areas, surveyed the plant and animal community, and analyzed the chemistry of the water.

Besides providing the scholarships and lodging, GLC donates one instructor's salary for this annual collaborative environmental program. Most of this year's participants expressed an interest in pursuing a career in ecology or environmental science.

Here are some student comments:

"We did a partial survey of Gratiot Lake's water health and plant life. We found that Gratiot Lake is extremely healthy according to water quality... It was awesome that I got to pursue my ecological science interest, and expand my knowledge!"

"My favorite part of the program was

*...catching crayfish."
...canoeing and exploring."
...staring at the lake. It was fun to go off grid."
...learning about the ecology."
...fishing and taking out the fish stomach contents because it was something I've never done before."
...connecting with nature."
...boating across the lake to get water samples."*



Rita and Jack Sandretto Scholarship recipients Serenity Snyder (l.) and Lila Frantti (r.)
Photo by Ian Lizzadro-McPherson

Archive of *Water's Edge* Newsletters, articles, program information, photos, and more at
www.GratiotLakeConservancy.org



photo by Bonnie Hoy

Help Support GLC's Mission!

Conservancy members/donors receive newsletters, notice of special events, and an invitation to the Annual Members Meeting. Membership is \$15.

GLC programs fees are discounted for members.

Join at any time. Renewals are due at year end.

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