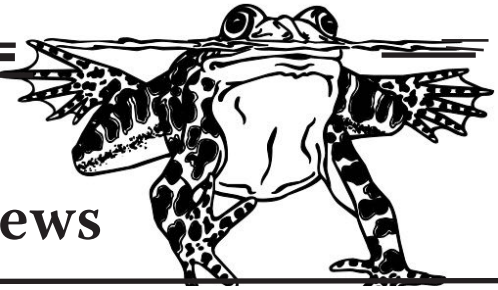


Water's Edge

Gratiot Lake Conservancy News



Volume 22

Fall 2020

Dear Neighbors and Friends,

It is a great comfort for me to spend time in wild places, especially in this year. Nature helps me gain perspective as I witness its beauty and repetitive cycles, its give-and-take order and resilience. In a pandemic what better place to be is there than the great outdoors: walking with a friend, looking out a window at a busy bird, or picking a pail of berries. I hope you have access and opportunity to enjoy nature and feel its power to lift your spirits. GLC shoreline and trails are always open for your exploration.

As you page through this issue you'll see that our current focus on research is yielding results and also offering educational opportunities. Research will remain a primary focus, and we will continue to share progress with you. GLC hopes to offer a virtual program on some aspect of research in 2021.

In this year of changes, Ian Lizzadro-McPherson moved on to other educational and employment opportunities. In August, we were pleased to hire Gina Marie Jarvi as GLC Program Director.

Although in person educational outreach was curtailed this year and will be restricted by COVID-19 in 2021, GLC plans to offer some virtual programs starting this winter, e.g. a nature oriented book club you can participate in from home. Please be sure to check for program updates on offerings and content at www.gratiotlakeconservancy.org. If you are not signed up to receive GLC's MailChimp emails please contact Gina Marie at gmjarviglc@gmail.com and ask to subscribe.

On behalf of the GLC board, I wish to express our gratitude for your generous support that helps to ensure GLC's land stewardship, research, and educational outreach. This work can't be done without you!

Best wishes to you for many opportunities to enjoy nature in the year ahead,

Bonnie

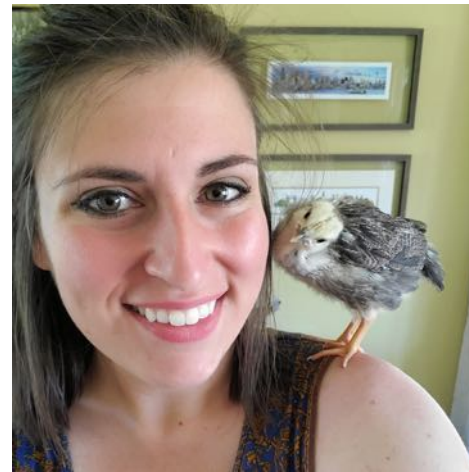
Bonnie Hay

GLC Board President

Editor of *Water's Edge* Newsletter

bonnie@gratiotlakeconservancy.org

Welcome, Gina Marie!



Gina Marie getting a peck on the cheek from one of her chicks.

We are happy to welcome our new program director, Gina Marie Jarvi, to the Gratiot Lake Conservancy team! In order to differentiate her from GLC board member, Gina Nicholas, call Gina Marie by her first and middle names. Gina Marie comes to us with a bachelor's degree in wildlife ecology and management from Michigan Technological University, and four years of experience as a research scientist and field biologist. She is excited to use her skills to develop fun and educational programs for GLC members and the Keweenaw community. In addition, she is working on GLC communications, website, and membership coordination.

In her free time, Gina Marie cares for her homestead on 15 acres in Chassell, MI. She and her family raise chickens and ducks, have a seasonal vegetable, herb, and fruit garden, and manage a modest orchard of heritage apple trees. Gina Marie also enjoys exploring all the nooks and crannies of the Keweenaw, and when time allows, venturing out of Michigan on bigger adventures.

Gina Marie looks forward to meeting you in person when COVID wanes and restrictions are lifted. She can be reached at her Gratiot Lake Conservancy email: gmjarviglc@gmail.com.

GLC gratefully acknowledges

Donors from Nov. 1 2019 - Oct. 31 2020

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Copper Harbor School Students
view a mole
at GLC's Bammert Farm
Photo by Gina Marie Jarvi



Red Oak Leaf

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in Memory of Charles S. Anderson
Sharon Button
Bonnie and Jim Hay
Herb Marutz

in Memory of Bud and Janet Avery
Betsy Aller

in Memory of Peg Dimmer
Jim and Janelle Cone

in Memory of John F. Flynn (to all funds)
Beth Flynn

*in Memory of Gratiot Lake Neighbors:
Ron Sibbald and Rey and Donna Peck*
Betsy Aller

in Memory of Robert J. Meyers
John Meyers

in Memory of Andrea Sandretto Lane
Bonnie and Jim Hay
Bernard Locatelli
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in Memory of Louis Sandretto (to Education Fund)
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Junia Gratiot Hedberg

In Honor of Florence Adele Gratiot
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In Honor of John Hempstead Gratiot, Jr.
Junia Gratiot Hedberg

In Honor of Sara J. Gratiot
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in Honor of Rachael Grossman
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in Honor of Bonnie and Jim Hay
Joanne Bollinger

in Honor of Virginia Jamison (to Land Fund)
Frank and Cornelia Carlton

in Honor of the Kerby Family
Dale Wills

in Honor of Miriam Lytle on her birthday
Sharon Button

in Honor of James Tercha (Life Membership)
Virginia Jamison

*We miss GLC neighbors and friends who
recently passed away...*

*Charles S. Anderson was introduced to the
Keweenaw when he came to Tech to study geology.
A Life Member, he enjoyed donating rocks (one is
on the mantel at Noblet Field Station) and
intriguing natural history books (used treasures he
loved to find) to GLC... tangeable reminders of his
generous spirit.*

*Andrea Sandretto Lane, a longtime member of
GLC, was raised in the Copper Country and
enjoyed returning to visit from time-to-time. She
loved the natural beauty of the Keweenaw and
was supportive of GLC work in land conservation
and environmental education.*

This Winter's Finch Forecast

by **Gina Marie Jarvi**

Are your bird feeders out? Northern residents may be delighted to see beloved winter visitors at their feeders this year. According to the Finch Research Network, cone crop conditions in from Lake Superior eastward indicate that winter 2020-2021 will be a considerable flight year for a handful of winter irruptives (species whose seasonal movement can be erratic). Tyler Hoar of the Finch Research Network predicts that northern birders can expect to enjoy flights of Purple Finches, Evening Grosbeaks, Common and Hoary Redpolls, Pine Siskins, and Red-breasted Nuthatches this year. Red Crossbills may make an appearance later this winter as the white pine cone crop to the north is depleted, and White-winged Crossbills in the east may head south due to poor spruce cone crops. Pine Grosbeaks and Bohemian Waxwings are not expected to journey south this year in large numbers.

While some of these species are considered year-round residents of the Keweenaw Peninsula, birders may notice them in larger numbers during the winter as northern populations fly south in search of food. Already, we have noticed an increase in Evening Grosbeaks at our feeders this winter compared to last year – as many as 30 at a time – a welcome splash of bold yellow. At the time of this writing (mid-November), the Pine Siskins have begun to trickle in, and Red-breasted Nuthatches have been increasingly common visitors, but the Purple Finches have come and gone.

How does the winter finch forecast work? What began as informal birding advice to friends and fellow birders has developed into a scientific collaboration of birders across northern North America. For years ornithologist and hobby birder Ron Pittaway of Canada had observed the relationship between finches and the trees that serve as their food source. In the 70's and 80's he began informally making predictions about the irruptive behavior of finches based upon his observations of the cone crops of coniferous trees in the forests of Algonquin Provincial Park in Ottawa, Canada. Over the years, his network grew, and he began surveying trusted volunteers about the cone crops in their areas. Based upon these observations, Pittaway – and now his successor, Tyler Hoar – can predict the winter movements of eight irruptive finch species, and three irruptive non-finch song birds. The forecast works best for birders in states and provinces adjacent to Ontario, Canada, but it is worth nothing that irruptive birds will sometimes journey into the deep southern states.

A winter finch forecast can be found at <https://finchnetwork.org/winter-finch-forecast-2020> .



Purple Finch Photo by Jim Hay

What in the world is an irruption?

Defined as a sudden change in population density, irruption is a phenomenon in which the seasonal movements of a species are considered erratic. During “off” years, these animals may not venture very far from their breeding grounds, but in other years, they may suddenly burst away from their breeding grounds in large numbers.

In some species it is thought that irruption is closely tied to and can be predicted by the abundance of the food source during the breeding season and/or the winter season. For instance, outbreaks of spruce budworm have been a boon to Purple Finches and Evening Grosbeaks in their boreal breeding habitats, which may influence their erratic migratory patterns. For other finch species, winter cone crops rated at “poor” to “fair” may help indicate an irruptive year. Without a bumper cone crop to sustain the birds over winter, they are forced to move in search of food, resulting in an abundance of these birds at feeders south of their breeding range.

Perhaps one of the most famous irruptive birds is the Snowy Owl, which can move as far south as Florida during a major irruption year. Like the Purple Finch and the Evening Grosbeak, the Snowy Owl appears to be influenced by the abundance of food during the breeding season. An abundance of lemmings – a Snowy Owl's favorite food – may lead to more offspring successfully fledging from their natal nests. When the snow flies, lemmings and other rodents may be suddenly harder to find, forcing the inexperienced hunters to venture out looking for easier, less competitive hunting grounds.



Redpoll photo by Alex Galt

Thank you!

GLC members, donors, and volunteers!

Gina Marie Jarvi, Sigrid Resh, and John Yunger who provided articles for this newsletter.

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

KISMA weed crew (See article on page 6).

Jim Hay, Dorothy Jamison, Gina Marie Jarvi, Gina Nicholas, and Mark Salo for providing photos for GLC use.

Those pursuing research which will further our understanding of Gratiot Lake ecology and environs including Zach Gayk, Zach Merrill and undergrad assistants from Michigan Tech, John Yunger and students from Governor's State University, Dan Lizzadro-McPherson, and Mark Salo.

Dorothy Jamison for measuring Gratiot Lake water transparency weekly during the summer as part of the Cooperative Lake Monitoring Program (CLMP). This was the 20th year of CLMP at Gratiot Lake. Although Michigan funding was lost for updating the Mlcorps.net website and processing of samples (such as phosphorus) this year, Dorothy continued to record the transparency sampling data. Thankfully, funding is restored for 2021, then the 2020 record will be reported and on view at <https://micorps.net/>.

Janet Marr for advice on all things botanical.

Jim Tercha for pro-bono work for GLC.

To officers Bonnie Hay, Gina Nicholas, Louis Lizzadro and the entire GLC Board of Directors for helping to keep GLC on track.

Cleaner Beach Thanks to Volunteers

This year, Gratiot Lake Conservancy again hosted a September shoreline clean-up of Gratiot Lake in partnership with the *Alliance for the Great Lakes Adopt-a-Beach* program. Because of COVID-19, we opted to keep the attendance small this year, and invited GLC members and residents to sign up to clean up portions of the shoreline solo or in pairs or trios. We are grateful to Mary and Mike Bingham, Ella and Gerri Budynsky, Bonnie and Jim Hay, Dorothy Jamison, Gina Marie Jarvi, Herb Marutz, and other lake residents for their efforts in cleaning up Gratiot Lake's shoreline!

Volunteers picked up over 20 pounds of trash from the shoreline this year, including fireworks, cigarette filters, food wrappers, live bait containers, and other various small pieces of plastic. Larger items included pieces of rusted scrap metal, and even a tire. With lake levels high this year, some areas of the shoreline were not accessible, but we are happy with the amount of trash removed from the shoreline. We look forward to hosting another clean-up in 2021.

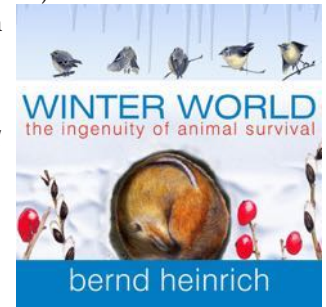
GLC Book Club

We are excited to invite you to the new GLC book club! We will be meeting via Zoom once per quarter (January, April, July, and October, exact dates TBD) to discuss the selected book. Discussions will last from 45 minutes to an hour.

Our first book will be *Winter World: The Ingenuity of Animal Survival* by Bernd Heinrich.

Heinrich is a prolific nature writer and professor emeritus of biology at the University of Vermont. His scientific research – usually focused on physiological, ecological, and behavioral adaptations in nature – inspires his writing. In *Winter World*, Heinrich reflects on the adaptations that animals must employ in order to survive harsh winters. We hope that you will cozy up with this book this winter, and join us in January for a Zoom discussion.

Please email Gina Marie at gmjarviglc@gmail.com to join GLC's book club. You will receive information – such as Zoom meeting dates and invites – when it is available.



Gratiot Lake on eBird

Zach Gayk conducted a summer breeding birds survey on the GLC preserve and has posted lists of his bird tally on *Cornell Lab of Ornithology's* ebird.org. Zach invites others to post their birding lists and sightings of birds at Gratiot Lake and on GLC preserve on ebird as well. The direct link to the "Gratiot Lake Conservancy" hotspot is <https://ebird.org/hotspot/L12049931>

New to eBird? Learn more about how to use it and sign up at <https://ebird.org/home>



Copper Harbor School visits Bammert Farm.
Photo by Gina Marie Jarvi

Thumping Thistle

Excerpts from KISMA 2020 Partner Update
by Sigrid Resh, KISMA Coordinator

This was our fourth year managing invasive European marsh thistle at Gratiot Lake. Working at the beaver pond is always a treat, with plenty of flies and mosquitoes. Management of this species involves removing the stem and roots, and clipping off all the flower heads into bags for disposal. It is also important to remove any remaining rosettes. This is yet another site where visible progress is being made (4 semi-filled bags of thistle flowers compared to 7 filled bags in 2017!). The density of stems at this site was significantly reduced from years past, and the crew was done bagging the flower heads by early afternoon. We hope to continue managing this wetland area and make even more progress. An added bonus of working at this site is cooling off in the lake after a day of hard work!

Editors note: Besides European thistle, the KISMA crew worked at many other Keweenaw sites removing invasives such as Japanese and giant knotweed, garlic mustard, spotted knapweed, wild parsnip, and buckthorn. GLC, a partner organization in KISMA, is very grateful for the help of the KISMA weed crew who this year worked under especially challenging conditions in oppressively hot weather.

Noisy Neighbors Nest Again by Bonnie Hay



For six years, bald eagle pairs turned up their beaks at the old eagle nest tree that had been occupied for almost two decades on the Northwest corner of Gratiot Lake. For some reason, the real estate looked more enticing this year and a new nest was built in that old nest tree. This pair successfully raised two young (which my husband Jim never tired of photographing). Because this nest is near my home, we had a good opportunity to both see and hear these noisy, robust youngsters as they matured.

Because Bald Eagles are an Endangered Species Act success story and are no longer on that list, eaglets are no longer routinely banded at Gratiot Lake. So, there was no way to be certain of their sexes (females are larger than males). One thing was evident, the two appeared to enjoy each other's company and remained glued to each other long after they fledged and flew. [Click here to see recent](#) photos of this year's eaglets. [Click here to view Jim Hay's archive](#) of eagle photos, videos, and accounts.

Fall 2020 Water's Edge



KISMA Crew members August, Carly, Laura, Sienna, and Sage with bags of thistle at the Gratiot Lake beaver pond.

The 2020 KISMA invasive species crew was composed of five amazing part-time and two occasional employees: Laura, the crew supervisor, who is a Michigan Tech forestry alum (you may also recognize her from Rhythm and biking the Keweenaw trails); Sienna, who will be graduating this fall (applied ecology major); Carly, who will be starting her second year in wildlife ecology and management; and August, who will be starting his second year in applied ecology. Lindsey, who was part of the KISMA Crew since 2017, is now working on her master's degree on biocontrol of invasive species, but continued to lend her expertise with the KISMA Crew when her research allowed. When more hands-on-deck were needed, Maria Velat and Sage Resh Chimner, both Houghton High School students, joined in as they did last year.

Free Webinar on Hemlock Woolly Adelgid

KISMA provided information about free webinars offered by the Michigan Department of Natural Resources. These "NotMISpecies" webinars will resume on January 22 with a program about Hemlock woolly adelgid. Hemlock woolly adelgid is a significant invasive forest pest that is responsible for killing hundreds of thousands of eastern hemlock trees in the eastern United States. This webinar will be led by Drew Rayner, coordinator of the West Michigan Cooperative Invasive Species Management Area.

The NotMISpecies webinar information is on the MDNR website at https://www.michigan.gov/dnr/0,4570,7-350-79119_11859_103208---Y,00.html

It's time to renew for 2021!
[Click here to download a form.](#)

Mammal Report

by John Yunger, Governors State University

Since 2015, we have been sampling small mammal populations on Gratiot Lake Conservancy land using mark-&-recapture technique. Carnivore surveys began a year earlier using remote sensing cameras. This work has revealed 15 species representing hundreds of different individuals. The small mammals appear to fluctuate asynchronously. Deer mice are one species that has been consistently very common during the past five years. Red squirrels and chipmunks are always present. You may have noticed this past summer, after

Photo by Jim Hay



a walk in the woods, that chipmunks were very common, the most numerous since 2015. Both species of North American flying squirrels have been recorded at the site, neither being common. However, this may be a sampling issue. Flying squirrels spend much of their time in trees, and are best enumerated with elevated traps to obtain a good estimate of densities. Historically, southern flying squirrels did not occur this far north in the Upper Peninsula. They are now the most common of the two species at GLC. The northern flying squirrel unfortunately has only been recorded once. Similar range shifts are being observed for many species, not just mammals. The range of northern species is shifting north due to either warming temperatures or competition with southern species expanding their ranges northward. Similarly, the grey squirrel has only been observed once at GLC, this past September.

Of particular interest is the red-backed vole. In conjunction with work at GLC, trapping, cameras, scat surveys, and visual observations are done on Rabbit or Traverse Island in Lake Superior. The only mammal consistently recorded on the island is this vole species. Unlike the mainland, their numbers are relatively constant and very high, often an order of magnitude greater than at GLC. Future work will hopefully help partition the roles of competition and predation in limiting mainland red-back vole abundance.

At least two species of shrews occur at GLC: the northern short-tailed shrew and the masked shrew. Interestingly, short-tailed shrews (Family Soricidae) are one of the few

venomous mammal species in the world. I suspect other soricids are also around Gratiot Lake, such the arctic shrew, least shrew, or American water shrew. Working with shrews generally requires the use of pitfall catch and release trap. We would like to find out the role these diminutive creatures play in mammalian communities at GLC.

We have a couple of gray fox and long-tailed weasel images captured by remote cameras, and one live capture of a long-tailed weasel. These species are not common. On the other hand, raccoons appear periodically on remote cameras along with a couple of wolf images. The two most common carnivores at GLC are black bear and American (pine) marten. Black bear appear regularly on the remote cameras, once 45 minutes after departing the site. They appear to be most common in the lowland, cedar swamp areas. American marten are also common. Mark-&-recapture work found 4 to 12 individuals in a 0.32-km area; this is one of the highest densities reported in ecological literature. This number suggests that the marten are the primary predator of the small mammals. Several other species of mammals, such as coyote, red fox, fisher, porcupines, and least chipmunks, occur in more disturbed locations adjacent to GLC land.

This past summer, working in conjunction with the College of DuPage, we initiated work using drones and thermal imaging. Although this technology is still untested for wildlife, it has the possibility for monitoring large, remote locations.

Two professors and a graduate student at Michigan Tech will also be collaborating with future endeavors. Kristin Brzeski, a conservation geneticist, will be using tissues samples from the small mammals to investigate population genetics in the Keweenaw. Of particular interest is the isolation and genetic divergence of the island vole population from the mainland population. Wildlife biologist Jared Wolfe and graduate student Breanna Gusick will be assessing variation in small mammal community structure and vital rates at the regional scale. This will involve relating data from the GLC site with other locations throughout the Keweenaw and possibly the western Upper Peninsula.



*Click Here to make a
year-end
Gift to GLC!*



photo by Gina Nicholas

Zachary Merrill (left) is assisted by Michigan Tech undergrads Molly Milosch (center) and David Kromholz (on right) in tree age research at GLC. Eastern Hemlock trees like the one pictured are very long lived. By extracting tree core samples, the age of these trees can be ascertained. To learn more about Zachary's tree ring research read "Trees Don't Lie" on Michigan Tech's Unscripted Research Blog <https://www.mtu.edu/unscripted/stories/2020/march/trees-dont-lie.html> or visit Zachary's *Great Lakes Dendrochronology* page on Facebook.

Stocking Stuffer: GLC Membership



As part of Keweenaw Community Forest Company's land stewardship and documentation at GLC, Mark Salo installed ten wildlife cameras. The cameras have been triggered by a number of furry or feathered residents. Photos like the one above of a fox at a frozen beaver dam provide information about species present. Visit www.gratiotlakeconservancy.org/glc-news to view more wildlife selfies.



Little Gratiot River looking towards Gratiot Lake

photo by Gina Nicholas

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

Help Support GLC's Mission!

Conservancy members/donors receive an annual newsletter and notices of special events, and an invitation to the Annual Members Meeting. GLC programs fees are discounted for members.

Family membership begins with only a \$15 donation per year.

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

<https://www.gratiotlakeconservancy.org/ways-to-contribute>

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