

Ashi-niswi giizisoog (Thirteen Moons)

Ode-imini-giizis

The new Ode-imini-giizis, the Strawberry Moon begins June 3. Other names for this moon are Gitige-giizis, Gardening moon; and Waawano-giizis, Flowering Moon.

We Are Water wrap up!

By **George Knutson**,
MN Green Corps FDL RM

We Are Water MN was hosted by the Fond du Lac Band of Lake Superior Chippewa in partnership with the Great Lakes Aquarium for six weeks, from Mar. 10 until Apr. 23.

As a reminder, *We Are Water MN* is a partnership among state agencies and host sites, formed to tell Minnesota's water stories collaboratively, bringing together personal narratives, historical materials, and scientific information. While it was hosted at the Great Lakes Aquarium, this interactive exhibit showcased our human relationship with

water with special emphasis on water stories from the Fond du Lac community.

We had many goals with this exhibit. One was to create an experience that would enhance people's own relationship with water while also highlighting the importance of the connection between the Fond du Lac Band of Lake Superior Chippewa and water in this place. To accomplish this goal, three things were done: Local content was developed by Fond du Lac Resource Management for the exhibit; Docents staffed the exhibit to answer questions and act as a guide for guests, and various events and activities were held during the timeframe of the exhibit.

How many people saw the exhibit? During the duration of the exhibit, 24,000 people visited the Great Lakes Aquarium. With the exhibit being right in the front lobby, it's safe to say that all 24,000 saw at least part of the exhibit. We have inferred that more than half of the visitors had deeper interactions with the *We Are Water MN* exhibit (e.g. participating in the water story activity).

Besides the physical exhibit at the Great Lakes Aquarium, another way that we engaged people was through various events. The events held were: Opening, River Watch Congress, Paint Nights, Treaty Fishing Forum, Herbal

Concoctions Workshop, Food & Photo Event, Youth Climate Convening, Blue Heron Day, Snowshoe Walks, and Water Body Slam (closing). Each provided an opportunity to engage people in a different way while covering a variety of water related topics. There was great attendance at a majority of the events and participants found each to be informative.

Overall, the six-week exhibit went phenomenally. The Great Lakes Aquarium was a great partner and provided a perfect location. They used their resources to help plan and publicize the exhibit and events. The Minnesota Pollution Control Agency and Minnesota Humanities Center

were also key to the success of the exhibit; assisting with local content creation, logistics, building the exhibit, setting it up, and taking it down. They go through this process over again for each host site. Without them, none of this would be possible. A handful of other partner organizations that were key to the process: American Indian Community Housing Organization, Fond du Lac Tribal and Community College, Large Lakes Observatory, Jay Cooke State Park, and Lake Superior National Estuarine Research Reserve. To everyone who helped make the six weeks impactful; Miigwech!

Invasive Species on the Reservation

and in the Ceded Territories and what Fond du Lac staff is doing and what you can do to help stop their spread!

Kelsey Wenner, FDL RM *Invasive Species Coordinator*

Boozhoo! As we exercised our Ceded Territory rights this spring harvesting oga (walleye) and ginoozhe (northern pike) some of you may have noticed a loud, bright yellow machine spraying hot water on boats and equipment, and if you participated in the harvest you made have been asked to soak your nets by some Fond du Lac staff.

This is all in an effort to prevent the spread of invasive species.

An invasive species is something that is non-native and causes harm in some way, whether it be to the environment, to human health, or to the economy. In many of the lakes we harvest from, they have become infested with an invasive species, and Fond du Lac is doing its part to ensure we do not transfer invasive species from one lake to another as we exercise our rights. The staff you

may or may not have seen at the boat landings running frantically around, are performing what is called a decontamination (pictured). Although this may look like an ordinary cleaning, it is actually much more than that. A decontamination means that your boat or other equipment is deemed free of invasive species, and after your equipment is no longer a risk of transporting species, you are free to move to another body of water, knowing you have done your part to



Justin Zunker, and invasive species specialist, decontaminating a boat at Mille Lacs Lake in Spring 2019. He is looking for zebra mussels and spiny water flea.

Sign up to the 13 Moons listserv for the latest information on workshops and events by emailing thirteenmoons@fdlrez.com Don't forget to check us out on Facebook! 13 Moons Ashi niswi giizisoog

This page addresses culture, ecology, and natural resource management. Thirteen Moons is the Fond du Lac Tribal College Extension Program and is a collaboration of Fond du Lac Tribal and Community College, Fond du Lac Resource Management, funded by the USDA-National Institute of Food and Agriculture.

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prevent the spread of species that can cause devastating harm to a lake.

Some of the invasive species we countered this year include: Zebra mussels (pictured), which are small invertebrates that filter feed phytoplankton out of the water column. Just one zebra mussel has the potential to filter out an entire liter of phytoplankton a day. I know this doesn't seem like much, but when you multiply that by the hundreds of thousands of zebra mussels that are estimated to be in Mille Lacs Lake, it adds up pretty quickly.

In lakes that have been infested with zebra mussels for long amounts of time, the overall clarity of the lake has increased by over 10 feet, such

as in Pike Lake in Duluth, Minn. Some of you may think, I want better clarity, why is that a bad thing? However, many fish, including ogaa and ginoozhe depend on phytoplankton to keep the water murky so they can better hide both to be the hunter, and avoid being hunted. So in essence, zebra mussels are taking away critical fish habitat that the species we harvest depend on to survive. Zebra mussels can also cause issues to humans by clogging their boat intake valves, plugging water intakes and drainages for cities, cutting people's feet with the sharpness of their shells, and overcrowding and killing our native mussels.

Spiny water flea (pictured page 20) are another

concerning invader that we were combating this spring both in Mille Lacs and Vermilion lakes. Spiny water flea is an invasive type of zooplankton that rarely gets over 15 mm long. So how can something so small cause so much damage? It comes from their fish hook-like tail barbs that can choke small fry (baby fish) as they attempt to eat them. Spiny water fleas are also ferocious predators, being

able to swim, unlike other planktons, allowing them to more easily predate on our native zooplankton that our fry depend on for survival.



Rusty crayfish. Photo credit: Steve Schainost, Nebraska Game and Parks Commission

They also have the advantage of being able to clone themselves, so one female may produce up to 10 offspring approximately every two weeks! Because of this, spiny water flea can easily become one of the most dominate types

of zooplankton in a lake system each fall. So pair spiny water flea depleting the zooplankton

for the fry along with a depletion of habitat from the zebra mussels, and we have an environment that is much harder for fish to survive in!

Rusty crayfish (pictured) are an invader we are concerned about getting into our manoomin (wild rice) producing lakes. We currently know them to be in Lake Vermilion, Lake Superior, and possibly parts of the St. Louis River. Rusty crayfish essentially act as lawn mowers to lake bottom vegetation, and have devastating effects on vegetative habitats where they invade. In a study conducted by the 1854 Treaty Authority, it was shown that given no other option, rusty crayfish have the capacity to completely eradicate manoomin from an existing area. Luckily for us, rusty crayfish taste great when boiled and served with lots of butter. So the Fond du Lac team is constantly surveying for these invasive crayfish, and if we ever find them where they are causing harm, we can have a community crayfish boil and protect the manoomin at the same time!

Eurasian watermilfoil (pictured page 20) is an invasive type of plant that can quickly take over lake systems if even just one fragment is moved to a new lake. It forms very dense mats of vegetation that will choke out other plant species, including potentially manoomin, and degrades fish habitat. It also greatly impedes our ability to use and enjoy the water. Eurasian watermilfoil was observed this year in Green and Sturgeon Lake, and equipment was decontaminated before being



Zebra mussels collected on a native mussel. Photo credit: MN DNR

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able to move to another area.

There are several other invasive species, both aquatic and terrestrial that threaten the Reservation and the Ceded Territories, and the list is too extensive to list all of them in this article. However, as we are fighting to protect our wetlands from a number of threats, it is important to recognize we are also trying to protect them from invasive species. Some of the main invasives threatening our wetlands on the Reservation and in the St. Louis River Estuary include:

Invasive Phragmites (pictured), also known as common reed, is a type of grass that is utilized by sewage companies as filter for contaminants, but is highly invasive in wetland and riparian areas.

So far, on the Reservation, we only have three known locations of invasive phragmites

that our staff is monitoring and controlling if they are causing harm. However, in the St. Louis River estuary, there are over 100 occurrences of invasive phragmites that several organizations in the area, including Fond du Lac, GLIFWC, the 1854 Treaty Authority, and Community Action Duluth that are working on controlling. In Wisconsin and Michigan, invasive

phragmites have destroyed property value, caused massive wild fire damage, wetland damage, and destruction of habitat for native wetland wildlife. Minnesota is trying very hard to stop this plant from causing the amount of damage it has in other states. If you would like to know more, there is an open house about invasive phragmites on June 6th at 5:30 p.m. at Pier B Resort.



Spiny water flea collected on fishing line. Photo credit: Jeff Gunderson, MN Sea Grant

Emerald Ash Borer (pictured) is an invasive insect that bores into the ash trees, limiting their ability to transport nutrients, resulting in the eventual death of the tree. The closest known location of emerald ash borer is in Duluth, Minn. Ash trees comprise a large amount of our wetland tree species on the Reservation and serve as “sink” soaking up water in wetland areas to keep the water

table in balance. The water table is what keeps some of the lakes on the Reservation at the correct levels for growing manoomin. If the water table fluctuates too much, it can either drown or dry out manoomin waters. One threat emerald ash borer brings to our wetlands is greatly reducing the ash trees which moderate the water table, and thus raising the water levels

too high to support manoomin growth. The loss of ash trees would also be a devastating cultural loss to Fond du Lac as they have been historically used and still used in the making of baskets, lacrosse sticks, and snowshoes.

So you may be asking yourself, what can you do to help? The biggest management effort with invasive species is PREVENTION, and asking communities from all around the globe to help prevent further spread of invasive species. This can be as simple as brushing off your shoes and tires when moving from one location to another. This is also cleaning, draining, and drying your boat for a minimum of five days or getting an official boat decontamination, before moving from one body of water to the next. It also involves not moving wood of any kind from one area to another, unless it has been heat treated and certified to be certain it is free of any invasives.

If you want to learn more and get more involved, you can become a first detector, where you would learn to identify invasive species and how to report them if you find them. You can also contact Kelsey Wenner, the invasive species coordinator at (218) 878-7147 or kelseywenner@fdlrez.com. The invasive species program is working on setting up identification and reporting workshops for the Fond du Lac community, and they are happy to help with any invasive species questions, issues, or concerns you may have. Miigwech.



Emerald Ash borer larvae, adult, and gallery. Photo credits to David Cappaert, Michigan State University, and Eric R. Day, Virginia Polytechnic Institute



Invasive Phragmites patch. Photo Credit: Univeristy of Minnesota Aquatic Invasive Species Research Center



Eurasian watermilfoil infestation at Cayuga Lake, NY. Photo credit Robert L. Johnson; Cornell University

Ashi-niswi giizisoog Ojibwemowin Page

Anishinaabemowin Lessons

Basic Ojibwe words and phrases:

Double Vowel Chart

This is how to pronounce Ojibwe words.
All consonants sound the same as in English.

“Zh”- sounds like the “su” in measure
“a”- sounds like the “u” in sun

“aa”- sounds like the “a” in father
“i”- sounds like the “i” in sit
“ii”- sounds like the “ee” in feet
“o”- sounds like the “o” in go
“oo”- sounds like the “oo” in food
“e”- sounds like the “ay” in stay

Sentences

I like the taste of apple cider. Niminopidaan iwe mishiiminaaboo.
Those flowers you brought me smell good," the woman told her husband.
"Gichi-minomaagwadoon ini waabigwaniin gaa-piidamawiyin," odinaan
iniw onaabeman a'a ikwe.
I put honey in tea. Aamoo-ziinzibaakwad nindagonaan imaa nitiing.
Don't get friendly with the bear. He's too dangerous. Gego beshwaji'aaken
awe makwa; onzaam naniizaanizi.
Does that taste sweet? Wiishkobipogwad ina iwe.
Credit the Sentences and Puzzle <http://ojibwe.lib.umn.edu/>

Ashi-niswi giizisoog BIGADA'WAA WORD SEARCH

Find the Ojibwe words in the puzzle below

R F G H D M I B R N F Z Z I N R F A L G
 G T S Y T R I Z A E B Z T A G T F H G I
 H Y V C O T N V K A F F W J E X L Z M Q
 M L P Y V B A E F G S G F R K A B A Y A
 Q R S M D V W Q T H I I S G K G L N E M
 O Y B G M A G N T I J C M F G Z Q K M Q
 Z D O F J W I T Z S A Q L I A U I I A K
 N P E J H P B I K X A R Y A N N U A W O
 W C N P F Y A Q N W B E G K A A E N I Z
 X G K R J G A K U S N I O A C L A Y N N
 N N K N H R K T F J B A N K C W O N Z I
 L G X I W A H R B A T I W H I X A J W W
 U R O N A Z S T G W M P V G X K H G A A
 I H I F K O A A N I X W V U I C R M A M
 X Y T U P W A B S V U U F Z Z B O W N D
 G T U D A K B A M A W I N Z W A A D A N
 Z D N N Y P A G G A M I Q T K T E A A W
 M S I Q J B U J U E K Q F P I Z B N W E
 M P Y A D L O Z N I W A G A A J B B S T
 V O C N I I B I N F R I K B V R A E A Q

Mawinzwaan	Berries picked
Aagawinzo	s/he conceals the source of berries being picked
Baasiminaan	A dried berry
Baasiminaanike	s/he dries berries
Mawinzo	s/he picks berries
Mawinzwaadan	Pick it (fruit or berries)
Makak	A basket
Ziigwan	It is spring
Niibin	It is summer
Baashkaabigwanii	It blossoms
Waabigwan	A flower
Zaagibagaa	It buds, the leaves come out