

# Mazina'igan

A Chronicle of the Lake Superior Ojibwe

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## Tamarack mining proposal looms in Anishinaabe Country

### Finding environmental balance, corporate accountability

By Hannah Arbuckle  
GLIFWC Outreach Specialist

Climate change is bringing challenges that are forcing people around the world to adapt, innovate, and work together. From world leaders to small communities, people are thinking of ways they can preserve their communities, including efforts to prevent further pollution that accelerates climate change.

An increasingly popular solution in the United States is for consumers to make a switch from driving fossil fueled cars that emit greenhouse gas, to electric vehicles (EV's) which typically have a smaller carbon footprint over their lifetime. While this solution to our transportation dilemma seems promising, there are risks.

An EV's rechargeable battery requires nickel and other metals, metals that are typically mined rather than obtained through recycling.

Heightened demand by the EV industry for these metals means increased mining, an operation known to cause generations-long damage to the environment and interconnected waters. Despite this, industry leaders and politicians are (see Mille Lacs Band, page 8)

The proposed Tamarack nickel mine is a threat to the Mille Lacs Band of Ojibwe—to our fish, manoomin, water, and land—and to broader Minnesota communities.

—Kelly Applegate, Mille Lacs Band of Ojibwe  
Commissioner of Natural Resources



Mille Lacs Band's Brenda Moose relies on annual manoomin harvests from Rice Lake to feed her family throughout the year. Manoomin is a staple food for many Ojibwe people. (S. Moose photo)

## Mino mashkikiwan: miskwaabiimizh

### Good medicine practices: red osier dogwood



The inner green bark of the miskwaabiimizh is shaved off with the back of a knife. This inner bark is then dried, blended, and mixed with other plants to make kinnickinnic. (K. Smith photo)

By Kathy Smith  
GLIFWC Ganawandang Manoomin

Many plant beings are available to harvesters in the springtime, including miskwaabiimizh or red osier dogwood. According to my teachings, I may collect this relative until the first thunders sound off in the sky. Each community as well as individual elders may have other teachings. Petition a knowledge holder in your own community to build up your knowledge.

Ojibwe words like miskwaabiimizh are often very descriptive. According the Ojibwe People's Dictionary, miskwaabiimizh breaks down as: miskw = red, aabi = line, and mizhy = plant. Each plant is a sentient being, standing about eight feet in height at maturity, and varies in width. It has deep green leaves that turn almost purplish to reddish in the fall. The oblong leaves are opposite to one another on the twigs and have veins that run parallel to the leaf margin. Miskwaabiimizh flowers in late May to early June with flat topped groups of small white flowers. It's a good plant for the manidoosag (the little spirits); the insects, butterflies and other little beings.

#### Collecting in a good way

Last year Miles Falck, wildlife section leader, gave teachings to GLIFWC during a field day to collect various mashkiki (medicine) to prepare for this coming year. We (see Good medicine practices, page 7)



After a century of suppression by states, the landmark federal court ruling affirmed the inland property rights of Ojibwe tribes. The bands serve as co-managers on public lands and waters in portions of Wisconsin, Michigan, and Minnesota through the **LCO v. Voigt Decision**.



See ANA Language Preservation & Maintenance Project update, page 12



# Updated 1836 Treaty fishing decree for Great Lakes awaits court approval

By Charlie Otto Rasmussen, Editor

Striking a balance between state-licensed fishers and Indigenous treaty harvesters, an updated fishing agreement would provide a regulatory roadmap into mid-century on Michigan Great Lakes waters. Representatives from the United States, State of Michigan, and four 1836 Treaty tribes hammered out the latest of three historic fishing consent decrees last year, submitting their draft proposal to a federal judge for approval in mid-December.

The new draft agreement—which builds upon decrees formalized in 1985 and 2000—establishes respective fishing zones for tribal commercial fishing and areas limited to sport and subsistence fishing in lakes Superior, Huron, and Michigan. The decades-long interagency effort to restore lake trout populations devastated by the invasion of parasitic sea lamprey has proven successful, making more fish available to everyone.

Bay Mills Indian Community, Grand Traverse Band of Ottawa and Chippewa Indians, Little River Band of Ottawa Indians and Little Traverse Bay Bands of Odawa Indians have all signed onto the recent decree along with state and federal officials. In a crinkle to the proceedings, the fifth and final 1836 Treaty band—Sault Ste Marie Tribe of Chippewa Indians—did not agree. In response, US District Court Judge Paul Maloney granted Sault Tribe time to submit objections to the agreement, which were filed on February 10, 2023.

Longtime Indian law attorney Kathryn Tierney is following developments as counsel to Bay



Mills Indian Community. She said Judge Maloney granted sports fishing and charter boat organizations “friend of the court status,” allowing them the opportunity to lodge objections to the rebooted decree. Sporting groups have said they oppose the use of gillnets by tribal commercial fishermen.

“In the meantime, the 2000 Decree provisions remain in effect, until replaced by a successor Decree—which might include some changes from what was filed last December, based on the court finding that an objection is valid and a modification must be made to the Decree text as a result,” Tierney said.

Judge Maloney scheduled a May 24 hearing to address concerns put forth by Sault Tribe and the parties granted amici to the case.

The draft decree covers Great Lakes waters ceded to the United States in the 1836 Treaty by Anishinaabe and Ottawa bands. Like several other treaties in Ojibwe Country, the tribes held onto property rights like hunting and fishing when they negotiated with federal officials. These are commonly known as treaty rights. For more information see [glifwc.org/FAQ/index.html](http://glifwc.org/FAQ/index.html).

◀ A juvenile herring gull rests atop a radar unit mounted on a tribal commercial fishing tug on Lake Superior. During low visibility conditions or otherwise bad weather, radar helps fishermen navigate on the vast waters of the Great Lakes. Known as *gayaashk* in the Ojibwe language, gulls are noisy companions to commercial fishermen as the large sea birds swarm around tugboats in search of a possible meal. (CO Rasmussen photo)

# Fall harvest mostly steady for Ojibwe off-rez hunters in ‘22

By Travis Bartnick, GLIFWC Wildlife Biologist

During the 2022 off-reservation tribal deer hunt, Ojibwe hunters registered 844 deer in the 1836, 1837, and 1842 Ceded Territories, which was down just slightly compared to the 857 deer harvested in 2021. Early season registrations were a little sluggish in 2022, but not as much as in 2021. Over the 2022 season, about 28% of deer were registered by the end of October, compared to 19% in 2021 and 36% in 2020.

Most of the deer registered over the waawaashkeshi off-reservation hunting season were harvested during the month of November, accounting for 61% of all deer registered. Antlerless deer accounted for 45% and antlered deer accounted for 55% of the total deer registered over the 2022 season. Tribal hunters harvested deer from 35 counties within the 1836, 1837, and 1842 Ceded Territories (Figure 1). This included 22 counties in Wisconsin, eight counties in Michigan, and five counties in Minnesota.

Five counties in Wisconsin accounted for over one-half (54%) of the total off-reservation deer harvest. Those counties included Burnett Co. (17%), Bayfield Co. (15%), Douglas Co. (11%), Vilas (6%) and Sawyer Co. accounting for 5% of the total harvest. The most off-reservation deer registered by tribal members on a single day occurred on November 19, 2022, coinciding with the Wisconsin state gun season opener. Most of the deer were registered using remote registration methods, either by phone or online.

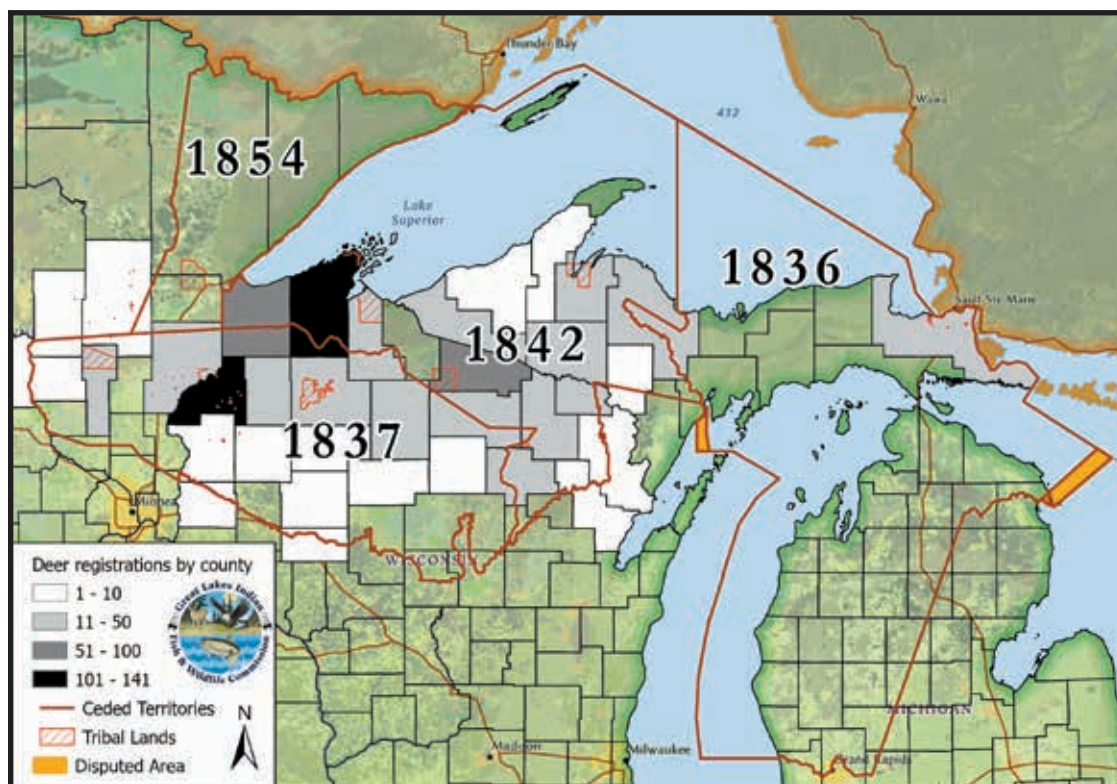


Figure 1. Distribution of waawaashkeshi (deer) registered by GLIFWC-member tribes in the 1836, 1837, and 1842 Ceded Territories during the 2022 off-reservation tribal hunting season, summarized by total deer registered in each county. \*The boundaries are representations and may not be the legally binding boundary.

## 2022 makwa (bear) harvest

Tribal hunters registered a total of 41 bears from the portions of the 1837 and 1842 Ceded Territories in Wisconsin and Michigan during the 2022 season. A total of 38 bears were harvested in Wisconsin from 10 different counties, and three bears were harvested in Michigan from three different counties. Nearly half of all registered bears (46%) were harvested in Bayfield County. Of the 41 registered bears, 27 (66%) were males and 14 (34%) were female.

## 2022 fall mizise (turkey) harvest

During the 2022 fall turkey season, tribal hunters registered a total of 62 turkeys across portions of the 1842 and 1837 Ceded Territories. This included 57 turkeys in the Wisconsin 1837/1842 portion of the Ceded Territories. Five turkeys were registered in the Minnesota 1837 portion of the Ceded Territory while no turkeys were registered in the Michigan 1842 portion of the Ceded Territory.

Of the 62 turkeys that were registered across the Ceded Territories, five were registered in-person, 32 were registered using the online registration system and 25 were registered using the phone remote registration system.



# Ceded Territory news briefs

## Zebra mussels on the move in northwestern Wisconsin

Wapogasset Lake in Polk County is the latest northwestern Wisconsin lake to be invaded by zebra mussels. Their presence was confirmed last fall, when they were found on docks removed from this popular fishing lake. This follows Balsam Lake (Polk County, summer 2022), Middle McKenzie Lake (Burnett and Washburn Counties, 2017) and Big McKenzie Lake (Burnett and Washburn Counties, 2016), and Deer Lake (Polk County, 2016). Many of the lakes in this part of the state are high in plant nutrients including calcium, which zebra mussels need to make their shells.

Zebra mussels feed on tiny plankton (plants and animals drifting in the water column), which form the base of the food chain for larger lake inhabitants including fish. They attach to dock supports, boats, rocks and other hard surfaces, and interfere with boating, swimming, fishing, and other recreation. They also avoid feeding on blue-green “algae,” which may contribute to toxic blooms of these photosynthetic bacteria.

All the more reason to clean your boat, trailer and anything else that’s been in the water, before heading to the next lake. Inspect your boat and trailer for vegetation and debris before launching and when leaving the lake, and remove them if found. Drain all water from the boat, live wells and equipment, and don’t move live fish away from the waterbody. Dispose of leftover minnows away from water or in the trash. (Under Wisconsin law, leftover minnows can be used again ONLY if no lake water, river water or fish have been added to the container.) Following these simple rules will go a long way towards preventing more lakes from being infested! —S. Garske

## PFAS levels in fish spur GLIFWC study

A recent study published in the journal Environmental Research found higher PFAS levels in locally caught freshwater fish across the United States, particularly in fish caught from the Great Lakes, when compared to a variety of storebought commercially-caught fish.

The study sheds new light on the bioaccumulation of PFAS (per- and polyfluoroalkyl) chemicals and drew correlations between PFAS levels observed in fish tissue and human blood serum. These findings generated concern, media reports, discussions, and debate. While fish remains a healthy source of nutrition, increasing detections of PFAS-contaminated waters across the Ceded Territories warrants further investigation to keep us all healthy and safe.

To help us understand the extent of contamination across the Ceded Territories, the risks associated with exposure from fish consumption, and how much fish is safe to eat, GLIFWC is analyzing PFAS levels in walleye fillet samples beginning this spring in conjunction with the Mercury Program for Safe Fish Consumption. PFAS are chemicals widely used in commercial and industrial products, and break down in the environment very slowly over time. —C. Ackley



An intertribal collection of singers opens the February 2 Voigt Intertribal Task Force meeting in Hinckley, Minn. with a song. After a period of rest, the GLIFWC dewe'igan, or drum, returned to its accustomed place at important events in 2023. (CO Rasmussen photo)

# Bringing the GLIFWC drum back into the light

By Bazile Panek  
GLIFWC Tribal Climate Adaptation Menu Coordinator

In the mid-90s, an honored elder from Treaty 3 territory in Canada, Tobasanakwut Kinew-iban, stated in a Voigt Intertribal Task Force meeting that GLIFWC needed to expand our cultural practices by bringing in a pipe and drum to open meetings. The drum was built and has since been used at Voigt, Board of Commissioners, and other events and meetings.

The drum holds a significant place in the cultural heritage of the Ojibwe people. It is a powerful symbol of our traditions and beliefs and has been used for centuries to tell stories and connect with the spirit world. The drum is considered to be a living entity that possesses its own spirit and energy and is treated with the utmost respect and reverence. It’s also considered to be the heartbeat of mother earth.

The drum is central to many of our ceremonies, serving as a powerful tool to bring the physical and spiritual world together. By opening these meetings and events with the drum, we are inviting the spirits to sit alongside us and to create a sense of community by allowing those who sit on the drum to connect with one another and with the spirit world. The sound of the drum is believed to carry our prayers and wishes of the people to the spirit world.

In addition to its role in spiritual practices, the drum is also an important part of our Ojibwe cultural identity. It is a powerful symbol of resilience and resistance, representing the endurance and strength of past, present, and future generations.

The GLIFWC drum was put away to rest for the past few years for various reasons. After much discussion with GLIFWC employees and community members of GLIFWC-member tribes, I was honored to receive the opportunity to carry the GLIFWC Drum. I was offered asemaa and accepted the responsibility. I first began gathering knowledge regarding the history of the GLIFWC Drum and the protocols that come with it. In order to bring more balance to the drum, I requested Kathy Smith, GLIFWC Ganawandang Manoomin and Keweenaw Bay Indian Community tribal member, assist by sharing the kwe teachings with kwe who want to support the drum.

The drum has since come back out at the recent GLIFWC Board of Commissioners and Voigt Intertribal Taskforce meetings. I’m currently in the process of learning the songs that are associated with the drum and gathering cultural knowledge regarding the drum.

Any input, information, or cultural knowledge you can offer regarding the GLIFWC drum is welcomed and appreciated, email [bpanek@glifwc.org](mailto:bpanek@glifwc.org).



# Rise of the Walleye Warrior

Capturing the volatile era following the resumption of off-reservation spearfishing in the Wisconsin Ceded Territory, *Rise of the Walleye Warrior: Lac Courte Oreilles v. Voigt Decision* is the latest release in GLIFWC’s Ogichidaa Storytellers short film series. Nominal adversaries-turned-friends Tom Maulson and George Meyer explain how the *LCO v. Voigt Decision* exposed racial tensions in Wisconsin’s northern lake country.



The federal court ruling, moreover, compelled state authorities to engage with Ojibwe treaty tribes in co-managing natural resources like walleye—a highly valued fish species facing increasing threats from habitat degradation, pollution, and warming water temperatures.

The title is intentionally worded to have a dual meaning—referring to Lac du Flambeau’s Tom Maulson as well as all the spearfishermen who faced off with angry mobs during the 1986-1991 boatlanding spearfishing protest era. The video is also forward-looking. With climate change already altering regional food webs, cooperation between resource management partners is more essential than ever.

Like those Great Lakes treaties between Ojibwe tribes and the United States affirmed in the 1970s, the inland-based 1983 *LCO v. Voigt Decision* importantly affirmed indigenous rights to hunt, fish and gather off-reservation. Find the entire suite of short treaty rights films at [ogichidaa.org/stories](http://ogichidaa.org/stories).

—CO Rasmussen



# Interagency omashkooz work-up a key part of management success

## GLIFWC biologists and technicians gain valuable hands-on time with elk

By Travis Bartnick, GLIFWC Wildlife Biologist

On a seasonably mild mid-January morning, wildlife biologists and technicians from GLIFWC and the Wisconsin Department of Natural Resources (WDNR) met along a dead-end road near the boundary of the Chequamegon-Nicolet National Forest between Clam Lake and the Lac Courte Oreilles reservation in northern Wisconsin. The objective of the morning was to trap and fit new radio tracking collars—or replace existing tracking collars—on up to a dozen omashkooz (elk) that had taken up residence in the area over the past few years.

A couple of weeks prior to this meeting, Wisconsin DNR Elk Biologist Josh Spiegel and his team had placed a large corral trap on the property of a cooperating private landowner adjacent to the national forest.

The corral trap was configured roughly in the shape of a figure-eight, with two main circles separated by a narrower mid-point. The junction between the two main areas of the corral trap had an additional wall that could be pulled



GLIFWC Wildlife Technicians John Wilmer Jr. and Adam Oja and GLIFWC Wildlife Biologist Travis Bartnick take a brief moment to pose for a photo inside of the corral trap as they monitor a cow elk that has been fitted with a new tracking collar. (WDNR photo)



Wildlife biologists and technicians monitor several elk in the corral trap that was used to capture nine elk in January 2023 near the Chequamegon-Nicolet National Forest between Clam Lake, Wisconsin and the Lac Courte Oreilles Reservation in northern Wisconsin. (T. Bartnick photo)

across to split the figure-eight shape into two distinct zones. Spiegel and his crew had been using bait to lure the group of elk into the trap and to get them comfortable with entering and exiting the corral trap with the door open.

The day prior to our arrival, Spiegel and his team triggered the trap doors capturing nine elk within the confines of the 10-foot-high walls which were covered in a dark fabric to prevent the animals from seeing what's going on outside of the trap.

Before the group made their way to the capture site, Spiegel ran through the logistics of safely handling the several hundred-pound members of the deer family, making sure everyone understood their roles and what they were about to do. The group of interagency wildlife biologists and technicians split up into several smaller teams of two-three.

WDNR biologists climbed up on the wall of the corral trap, firing immobilization drugs with a dart gun into four of the nine elk. As the sedative began taking effect, the biologists coaxed the non-darted elk into the other section of the trap area and pulled the wall to separate the two areas of the trap, thereby physically separating the darted elk from the non-darted elk. Then the teams made their way quietly into the section of the corral trap containing the darted elk and immediately began monitoring the vitals of the animals.

Monitoring includes recording the body temperature, breaths per minute, and observing heart beats per minute for each elk at regular intervals throughout the trapping and handling process. As each team monitored the vitals, another team of biologists made their way around and fitted each elk with a radio tracking collar and ear tags with unique identification numbers.

Once the first four elk had been fitted with new collars, they were given a reversal drug, and everyone proceeded to quietly exit the trap. Within minutes the elk were back up on their feet, perhaps a little groggy at first, but it was not long before they started exhibiting normal behavior.

In the meantime, the WDNR biologists proceeded to dart the remaining five elk in the other section of the trap and the teams repeated the process of monitoring vitals and replacing or fitting new collars on the elk. Once the remaining five elk had been worked up and given a reversal drug, everyone except for a couple of biologists quietly left the trapping area and trekked back to where they had parked their trucks a few hundred yards away. Eventually, after some additional monitoring, the elk were released from the trap and made their way back into the forest.

Trapping, handling, and fitting elk with tracking collars has been an important part of monitoring the omashkooz population since reintroduction efforts began near Clam Lake in 1995. Data collected from elk fitted with tracking collars provides valuable information about a wide range of things like elk survival, habitat selection, and can aid in estimating the size of the population. Tracking collars can also be used to help understand when and where cow elk give birth to their calves each spring.

These trapping operations are just one of many ways that GLIFWC, the Ojibwe tribes, and the WDNR have worked together through co-management to ensure the elk reintroduction efforts continue to be successful. For more information on the various ways that the reintroduced omashkooz population is monitored in the Ceded Territory in Wisconsin, see the Biboon (winter) 2022-23 issue of the *Mazina'igan*.

### MAZINA'IGAN STAFF: (Pronounced Muh zin ah' igun)

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MAZINA'IGAN (Talking Paper) is a publication of the Great Lakes Indian Fish & Wildlife Commission, which represents eleven Ojibwe tribes in Michigan, Minnesota and Wisconsin.

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Although MAZINA'IGAN enjoys hearing from its readership, there is no "Letters to the Editor" section in the paper, and opinions to be published in the paper are not solicited. Queries as to potential articles relating to off-reservation treaty rights and/or resource management or Ojibwe cultural information can be directed to the editor at the address given above.

For more information see GLIFWC's website [glifwc.org](http://glifwc.org) and our Facebook page.

## On the cover

Wesley Ballinger, Mille Lacs Band Ojibwe, created this artwork recognizing the 40th anniversary of the *Lac Courte Oreilles v. Voigt Decision* drawing from the lithograph poster art tradition. While Ojibwe spears are often fitted with 4-5 tines, Ballinger went big to acknowledge seven generation teachings of the Anishinaabe. The colorful background features the frozen surface of Chief Lake where Mike and Fred Tribble set up their fishing shack just across the Lac Courte Reservation line, drawing citations from a state warden. That 1974 encounter—and subsequent litigation—culminated in the *1983 LCO v. Voigt Decision*, which affirmed the terms negotiated by the Ojibwe headmen in the 1837 and 1842 Treaties.

Essential Ojibwemowin  
omashkooz—elk



# Flyers to 4-leggeds, Waishkey Bay Farm makes room for them all

*By Laura White, Traditional Food Grant Project Manager*

**Brimley, Mich.**—On the edge of a new season, Waishkey Bay Farm is buzzing with activity. The farm is an educational facility of Bay Mills Community College (BMCC) under the land grant department, opening the farm to federal funds that support education, research, and sustainable food production on the Eastern Upper Peninsula property.

Farm Manager, Kat Jacques, and her team are gearing up for another bountiful season. A series of educational classes are underway this spring and continuing into the 2023 growing season.

Jacques said she is grateful to start the third year of the apiary (a collection of beehives). BMCC partnered with entomologist Dr. Adam Ingrao of Bee Wise Farms, LLC who has been instrumental in nurturing the development of the Waishkey Bay hives. Jacques hopes this gives community members



*Tending apiaries at Waishkey Bay Farm provides experiential learning opportunities focusing on beekeeping, honey extraction, and processing; while the honey itself offers a multitude of health benefits. (CO Rasmussen photos)*



opportunities to improve their skills in beekeeping by caring for and supporting the hives.

“We’re really excited to be moving into another branch of education around our apiary, with the addition to classrooms, sets of beekeeping suits,” Jacques said.

Early last fall, BMCC hired Aamoo Amy McCoy, Sustainable Agricultural Educator, to work on creating Indigenous science lesson plans, accessible to anyone to encourage or refresh connections with tribal youth interested in pursuing careers in sustainable agriculture. “My focus is indigenous epistemology and ontology of sustainable agriculture where we have lessons plans that sprout from our own ways of thinking. So, it’s a wider scope and sequence of Anishinaabe ways of knowing and thinking,” Aamoo said. Through sustainable agriculture and food systems everything is connected.

For example, fish fertilizer: staff are using the whole fish and are respecting the whole being, the whole fish. Aamoo said she is eager to work on the apiary curriculum because her community elders gave her the namesake bumblebee, she said, “It’s kind of neat how it came full circle.”

Aamoo is also an Anishinaabe language and culture teacher transitioning into outdoor education. She plans on using her background to make relationships with creation while focusing on food systems.

Among the largest contributions to community nutrition, Waishkey Bay also produces grass-fed beef. From a population of 12, the herd-share program sold seven and three quarters steers to elders in the Bay Mills Indian Community. The remaining four will go to an USDA processing facility. Jacques said that last year was the first time they sent a steer to the USDA processing facility, allowing them to explore different market channels rather than direct-to-consumers at a household level.

“We really want to make an impact. Working with Bay Mills Enterprises and the tribally owned grocery store, we now have multiple ways to sell our beef,” Jacques said. The Waishkey Bay Farm community just welcomed a new herd in winter 2023.

## After the thaw

A visit to the community garden this season will reveal new additions to the Waishkey Bay Farm. The team is planning on building some signage to have bilingual storyboard walks, doubling raised beds capacity, and of course continuing with the gitigaan kits. The kits are a mix of seeds and transplants in groupings to grow ingredients for salsa, pickling, Four Sisters (the fourth is a pollinator to bring the bees and the birds to pollinate the beans and squash), and salad varieties.

Certified Master Canner, Connie M. Watson, community health educator with the Bay Mills Health Center, will continue seasonal canning and food preservation workshops on a regular basis for community members.

Watson also plans to lead workshops with knowledge holders from the community, like Dennis and Levi Carrick during a November waawaashkeshi-wiiaas (venison) workshop. During the workshop, the Carricks demonstrate how to butcher venison and skills on how to wrap meat in freezer paper to get a tight seal. Watson walks folks through the science of pressure canning to ensure the safe preservation of the canned venison.

Recently, the BMCC extension was awarded a \$950,000 five-year Meat and Poultry Processing Project Grant from the USDA National Institute of Food and Agriculture to improve poultry production and add a mobile poultry processing unit. The grant also adds a new position on the team—the farm is looking to find a full-time livestock educator.

For more information on the Waishkey Bay Farm contact Kat Jacques, 906-248-1102 or [kjacques@bmcc.edu](mailto:kjacques@bmcc.edu).



C. Dzwonkowski

*GLIFWC Wardens participated in an Advanced Snowmobile Operations training February 1-2 in Michigan’s Upper Peninsula. Led by Dave Trembruell, US Forest Service, wardens expanded on their knowledge and skills by practicing cutting side hills, operating up and down steep hills, traveling through tight wooded areas, traversing obstacles, and in-depth recovery training to recover snowmobiles stuck in deep snow.*





# Great Lakes fishers learn about processing a safe catch with Seafood HACCP training

By Laurie White, GLIFWC Traditional Food Grant Project Mgr. & Lauren N. Jescovitch, MSU Ext. Educator

In fall 2022, GLIFWC's 25+ year partnership with Michigan State University Extension and Michigan Sea Grant continued through a pair of Seafood HACCP (Seafood Hazard Analysis Critical Control Points) courses offered at two tribal reservations along Lake Superior: Red Cliff near Bayfield, Wisconsin and Bay Mills Indian Community near Brimley, Michigan.

Through many years of cooperative programming, Jim Thannum, GLIFWC's director of planning & development and Dr. Ron Kinnunen, MSU extension agent, fostered a long-lasting relationship based on their commitment to promote and uplift the local state and tribal seafood communities. The duo's expertise and knowledge yield an invaluable asset to the commercial fishing industries in the Great Lakes region.

After a delay in programming due to COVID-19 restrictions, the need for in-person training was evident with an above average enrollment of 30 participants. Of these participants, six of the eleven GLIFWC member tribes were represented as well as Oneida Nation, Grand Traverse Band, Little River Band, and Indian Health Services.

While training in Bayfield, Red Cliff Fish Company invited students to tour their facility and participate in hands-on practical exercises in their new processing facility. Students learned about standard Sanitation Operating Procedures (SSOPs) and prepared a proper bleach solution by using testing equipment under these standards. Next, they learned how to use a salometer and calculate the required water phase salt (WPS) content to make a brine for the amount of fish a facility is planning to smoke. Also, participants worked on thermometer calibration through boiling points and freezing points. This outing helped trainees determine where critical control points may occur in their processing steps and experience a hands-on approach to potential corrective actions in their future HACCP plans.

Seafood HACCP is a federal food safety training required by the U.S. Food and Drug Administration for seafood processors. This is a preventative, process control system, which requires seafood processors to plan for and anticipate potential problems in their production, identify the sources of hazards and their associated critical control points, and take corrective action to eliminate or reduce any risks. This is done through careful examination of the production process from raw material handling, to processing, packaging, storage and distribution. The



Participants present on their group's HACCP plan case study during the Bayfield, Wis., training session. (L. Jescovitch photo)

goal of Seafood HACCP is to ensure the safety of seafood products throughout the supply chain for the safety of the consumer.

To determine if you need a Seafood HACCP plan, check out this dichotomous key for Michigan regulations from a previous article called, *When do you need Seafood HACCP certification?* available on the *MSU.edu* website. The training is a 2-3 day certification course that focuses on seafood safety and developing plans to make sure seafood processors provide a safe, clean, and healthy product. To read more about Seafood HACCP, you can visit the Seafood HACCP Alliance website ([afdo.org/training/sha](http://afdo.org/training/sha)).

*Editor's note: Article authors White and Jescovitch also participated in the autumn 2022 safety classes, developing the expertise to continue HACCP training for commercial fishers far into the future. Michigan Sea Grant helps to foster economic growth and protect Michigan's coastal, Great Lakes resources through education, research, and outreach. A collaborative effort of the University of Michigan and Michigan State University and MSU Extension, Michigan Sea Grant is part of the NOAA-National Sea Grant network of 34 university-based programs.*

# Spring fishing: A safe eating guide Ogaawag & maazhiginoozhe

With spearing season rapidly approaching, remember to check out GLIFWC's Mercury Maps to help you make informed decisions about safe fish consumption.

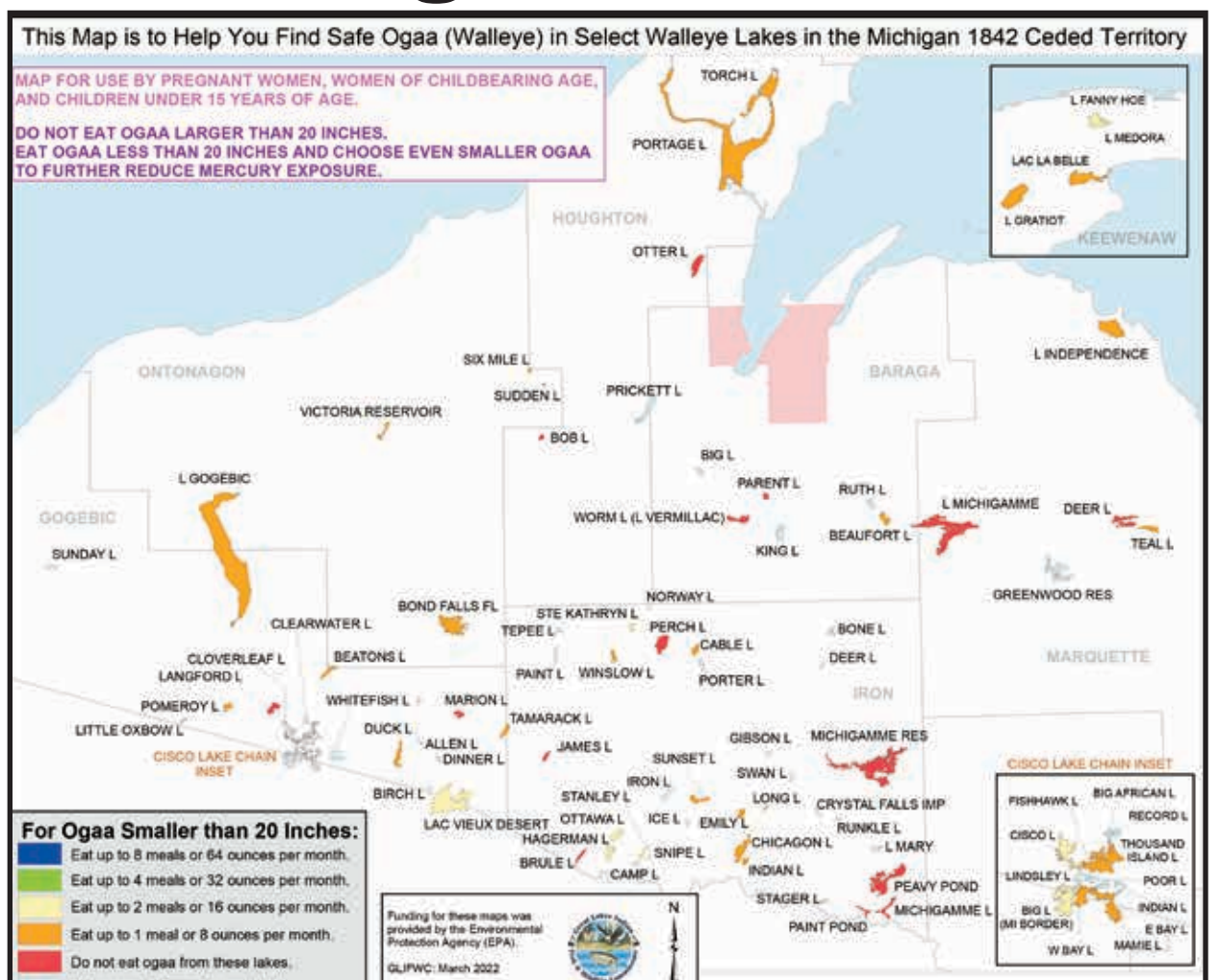
Spring spearing and netting are an integral part of the Anishinaabe bimaadiziwin (tribal lifeway). Tribal members reaffirm their off-reservation treaty harvest rights while providing their families and communities with a tasty and healthy food. But, as with any species of fish, ogaawag (walleyes) and maazhiginoozhe (muskellunge) contain mercury.

To limit exposure to mercury, choose lakes with lower mercury levels to harvest from. Refer to GLIFWC's Mercury Maps for the safe number of oga meals per month you can safely enjoy from that lake. Ogaawag less than 20 inches and other species of fish lower on the food chain, such as asaawe (yellow perch), tend to have lower mercury levels.

To learn the safe number of maazhiginoozhe meals you can safely eat per month from a particular lake, refer to GLIFWC's online Interactive Mercury Map and maazhiginoozhe Safe Eating Guide. Choosing maazhiginoozhe under 46" inches, and from lakes with lower mercury levels can help you safely enjoy your catch.

The oga Mercury Maps are distributed to member tribes and are available at tribal registration stations and other springtime events. The maazhiginoozhe Interactive Mercury Map and Safe Eating Guide, along with copies of the oga Mercury Maps, and additional information on safe fish consumption, can be found at: [glifwc.org/Mercury/index.html](http://glifwc.org/Mercury/index.html).

—H. Arbuckle





# Partnerships ignite new conversations about ishkode management



*By Jenny Van Sickle, GLIFWC Outreach Specialist*

Over a decade of collaboration among researchers, tribal communities, state, and federal land managers put *Nimaawanji' idimin giiwitaashkodeng*: “We are all gathering around the fire” into motion. Damon Panek, Fond du Lac Band wildland fire operations specialist, and Evan Larson, professor at UW-Platteville, welcomed a crowd (in person and virtual) of nearly 200 people to January’s River Talk at the Lake Superior Estuarium to provide the public with an update on their work to return fire (ishkode) management to regional landscapes.

“This project is focused on understanding local history, people, fire, and how they interacted on Wisconsin and Minnesota Points,” said Larson.

GLIFWC Traditional Ecological Knowledge Outreach Specialist Melonee Montano, a Red Cliff tribal member and University of Minnesota graduate student is co-leading the fire initiative. Montano recalled fond memories of hearing fire stories from family members and elders. She stressed the importance of telling an accurate history of Indigenous experiences and the consequences of native people being “forcibly separated from fire” is just one of the many stories that need to be told.

More broadly, the greater scientific community argued that historic wildland fires were caused by lightning strikes. But, according to dendrochronology studies, fire prevalence dropped to almost nothing after the treaty era. Montano joked that “lightning didn’t stop striking as soon as the treaties were signed.” Federal laws like the Nelson Act of 1889 heavily criminalized any use of fire. Tree samples show evidence of fire every 4-6 years further demonstrating that the pre-treaty era wildland fires were human caused and intentional.

The presentation also highlighted the work of four Fond du Lac Tribal Community College (FDLTCC) student interns who took turns presenting to the crowd before they were joined by a group of gidakiimanaaniwigamig science camp elementary students who also took part in the tree ring data study.

FDLTCC students Ashla Ojibway, Mocha Reynolds, and Valerie Zhaawendaagozikwe, were joined on the project by Emily Lockling, who is studying at the University of Minnesota Duluth. Ashla Ojibway, an Environmental Science Major, said, “to be a part of this project was a dream. As soon as I got the ok I was in, I called my dad, I cried.”

Vern Northrup, a Fond du Lac tribal member and retired BIA Wildland Fire Operations Specialist is excited about the momentum this work is gaining. “For over 100 years, the loudest message about fire is that it’s one dimensional and primarily dangerous,” said Northrup. He explained that species like red pine are fire dependent and returning fire to the landscape is vital to restoring strong pine stands and blueberry harvests. Northrup also points out that we know bald eagles prefer to nest in red pines and reintroducing fire can protect that resource as well as reduce the threat of unchecked forest fuels and wildfire.

“Applying fire to a landscape can be done skillfully, safely, and effectively. We know how to do this,” said Northrup.

Larson acknowledged that disciplines like geology and archaeology are finally catching up to Indigenous teachings. He reminded the audience that the forest across this region is intentional and is the result of people and their management. Panek agreed and added, “The developing forest of today is more homogenous and changing species and that is a serious concern particularly when considering reserved treaty resources and rights.”

One example is that traditional canoe building depends on the *pitch*, or waterproof resin, that pine trees produce following a fire. Chief Osaugie, a renowned canoe builder, lived on Wisconsin Point.



*Melonee Montano, GLIFWC’s Traditional Ecological Knowledge outreach specialist and Red Cliff member explains the historic relationship of ishkode (fire) within Native families. Montano also stressed the importance of Indigenous knowledge in fire restoration initiatives to encourage diverse and healthy ecosystems. (JVS photo)*

Panek encourages everyone to remember that fire has 100’s of uses and benefits, especially during discussions about invasive species, vegetation management, or forestry policies.

Nimaawanji’ idimin giiwitaashkodeng: “We are all gathering around the fire” is possible thanks to support from Wisconsin Sea Grant. This River Talk can be viewed [youtube.com/watch?v=7JX2CrlfuTc](https://www.youtube.com/watch?v=7JX2CrlfuTc).



*Bazile Panek, GLIFWC’s Tribal Climate Adaptation Menu coordinator motions to tree samples on display at the Lake Superior Estuarium on Barker’s Island in Superior, Wisconsin. (JVS photo)*

## Good medicine practices

(continued from page 1)

start the process of collecting the elements needed to make kinnickinnic during *ziigwan* (spring). Kinnickinnic, at its base, is *miskwaabiimizh*. Many other plant relatives can be used in this mixture, depending on what your preferences are but *miskwaabiimizh* is essential.

When collecting *miskwaabiimizh* in *ziigwan*, we first sit with the medicines and let them know what our intentions are. We introduce ourselves and put *ase-maa* out as an offering. We only collect what we need. The red bark will peel off easily in warmer temperatures and the inner green bark is what we use for the *ginignige*. We shave off the inner green bark with the back of a knife. This inner bark is then dried, blended, and mixed with other plants to make kinnickinnic to be used used in our ceremonies during *niibin* (summer).

### Seasons of *miskwaabiimizh*

In *dagwaagin* (fall), the fruit is inedible due to being low in sugar, but its small white berries are available later in the year for the birds and animals. The *waawaashkeshi* (deer) and the *waabooz* (rabbit) really impact this shrub because of heavy browsing, so sometimes it is harder to find long branches.

*Miskwaabiimizh* loves to have its feet wet and does best in wet to mesic soil areas. During *ziigwan*, the inside of the new stems turn green and remain so into *niibin*. Through the seasons this plant relative is very noticeable along roadsides, particularly in *biboon* (winter) when the distinguished bark can turn deep, vibrant red, a striking contrast against the white background of the snow. The older the plant is, the darker the bark becomes, while younger stems that shoot up from the roots are a brighter red color. What really makes this plant relative turn this vibrant red? The red color of the stems is caused by anthocyanins. There is a process that our plant relatives go through as less sunlight and temperatures drop in the fall.

We have many stories about *Nanaboozhoo* and how he named the beings on *Anishinaabe Akiing*. Each story has meaning and a life lesson. I have heard the stories of *Nanaboozhoo* and how *miskwaabiimizh* got its red bark. It is too long of a story to share here, but you can find a storyteller or elder and ask them to share. In *ziigwan*, the *Anishinaabe* are beginning to plan for the events that are yet to come, thinking ahead to ceremony and thinking about the harvest season ahead.

There are many more uses of this relative. It is known for its hardening properties as it dries out, utilized in the basket weaving, providing rims of birch bark containers, and making traditional dreamcatchers. If the stems dry out before you use them, you can resoak them for a few days. We must use our natural gifts that have been gifted to us. As we collect and process our medicines, we have much gratitude for the work that is ahead of us. Let’s honor those of the second order of creation, the plants beings, and use them with good intentions.

You can also learn more from a great reference book: *Plants Used by the Ojibwa* published GLIFWC ([tinyurl.com/bdfbkd28](https://www.tinyurl.com/bdfbkd28)).

For more information on the remaining Sea Grant Speaker Series, visit [tinyurl.com/bp9nb44k](https://www.tinyurl.com/bp9nb44k)

# Mille Lacs Band: Nickel mines are consistent polluters

(continued from page 1)

scrambling to place their bets on mining heavy metals to support the new electric vehicle industry.

Close to home, Tamarack, Minnesota is at the center of an international endeavor to mine nickel and other heavy metals for powering batteries used in EVs. The mine is proposed by Talon Metals cooperation, headquartered in the British Virgin Islands, in a joint effort with the multinational company Rio Tinto. The project's goal, as stated on Talon's project website, is to provide a domestic source of nickel that could be used in the electric vehicle industry. The base metals company hopes to turn Tamarack into the nation's largest producer of nickel.

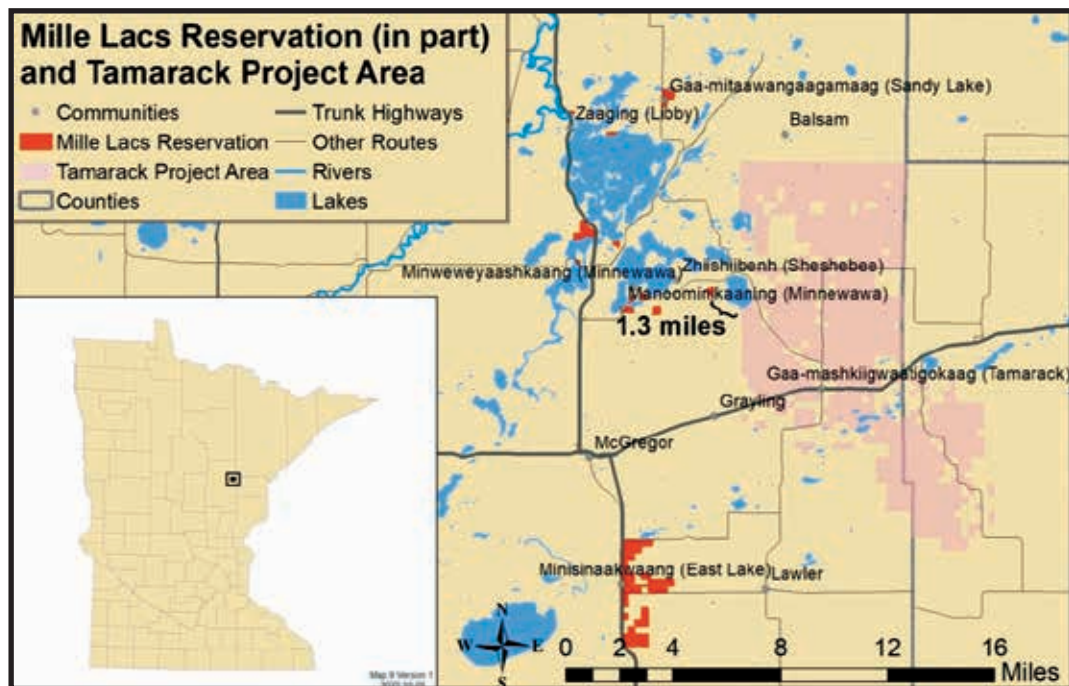
Located only 1.3 miles away from the proposed mine site are homes of Mille Lacs Band of Ojibwe community members, and Round Lake, where Talon has identified additional mining opportunities along its shores.

Streams, rivers, lakes, and wetlands are in abundance here, flowing into the St. Croix and Mississippi watersheds. Mille Lacs Band Anishinaabeg rely heavily on the health of its surrounding waters to continue cultural practices, subsistence living, and exercise of treaty-reserved rights.

Since manoomin (wild rice) is deeply integrated into Anishinaabe practices, culture, and stories, mining is of particular concern. Pollution caused by mining has historically severely impacted wild rice beds.

Mille Lacs Band leaders continue to express great concern. Threats against the land and its surrounding waters are a direct threat to the Anishinaabe culture and pursuit of mino-bimaadiziwin, the good life, for current and future generations.

"The proposed Tamarack nickel mine is a threat to the Mille Lacs Band of Ojibwe—to our fish, manoomin, water, and land—and to broader Minnesota communities," said Mille Lacs Band of Ojibwe Commissioner of Natural Resources Kelly Applegate. "Nickel mines have a consistent track record of pollution. Talon has not provided the public with details to support its claims that



The Tamarack Mine is a proposed nickel mine, brought forward by Talon Metals Corp. The proposed site is located in Tamarack, Minnesota, just 1.3 miles from the homes of members of the Mille Lacs Band of Ojibwe community and from Round Lake. (courtesy Mille Lacs Band of Ojibwe)

it will engage in responsible mining practices. We believe that we can advance a green economy and sustainable future without relying on practices that threaten one of our world's most precious resources: water."

As the Tamarack mining proposal continues to be pursued, questions around environmental justice, infringement of treaty rights, and the health of our interconnected waters come into play.

Despite assurances from company officials, Applegate said Talon has not provided any data to back up its claims of responsible mining. The Mille Lacs Band continues to make clear that other options are available to source nickel used for EV's. Metal recycling is an option that produces fewer emissions than mining, and has had success in China, Japan, and Europe. The nature of mining heavy metals can produce waste that, when mixed with water, creates sulfuric acid, a chemical comparable to battery acid.

The proposed mine sits on a wet landscape with a web of interconnected waterways under and surrounding it. It's not difficult to see how this type of mining could turn toxic quickly if operations do not run as optimistically as envisioned by Talon.

## Ship it out west?

In an effort to curb concerns over environmental contamination, the Department of Energy awarded Talon a \$114 million grant to assist in moving its minerals processing facilities to North Dakota once ore is extracted from the Tamarack mine. Even with this proposition, there is continued pushback on the proposal, as the operations of a heavy metals mine still threaten the Band's cultural practices and surrounding environment.

"Talon Metals' announcement that it plans to move nickel processing to North Dakota does not eliminate our continuing concerns about the impact that a nickel mine, including its extraction and transportation activities, will have on our Band's cultural practices, environment, and our surrounding communities," Applegate said. "Mining is an incredibly invasive process that uses large amounts of water in mining and processing. There is still a risk that dust from the tailings could fall off the transportation trucks or train cars, which will be passing over saturated wetlands."

Talon Metals has already begun drilling core samples via mineral leases on 31,000 acres in Aitkin County, Minnesota. The details of the mining plans must be submitted to the State of Minnesota for environmental review which can take years.

In the meantime, Talon has announced its intention to begin mining operations by 2026. Tesla Inc. has made an agreement with Talon to use 165 million pounds of nickel concentrate from the Tamarack mine for the production of EV's if the mine is operational by 2026.

President Joe Biden signed the \$114 million grant for shipping the ore to North Dakota which will be provided for the project through the Bipartisan Infrastructure Law. With domestic, international, and political support, the money flowing into the project could make it easier for risks associated with mining to get swept under the rug.

Efforts to keep decisionmakers informed so they can fully account for and protect treaty rights, cultural practices, and ensure environmental justice, are anticipated to continue over the next several years. Many state, federal and tribal government officials will be involved in evaluating the project.

The intricately connected watersheds, lakes, rivers, and streams make this an issue that is bigger than the borders of the proposed site. Water does not know boundaries, and some say it has a life of its own. Water pollution that results from heavy metals mining for EVs will undoubtedly affect all who come in contact with it through our interconnected waters.

As the Anishinaabe teaching says, "Bimaadiziwin Nibi," water is life, and there is no better time to share this teaching with the rest of the world.

## MS Assistantship in Fisheries Conservation (Online) University of Illinois

**Project:** Stress response & mortality of caught-and-released ogaa (walleye)

**Salary:** Approximately \$24,000 per year, benefits, tuition waiver

**Start Date:** April 1, 2023 (flexible)

**Last Date to Apply:** Until filled

**Description:** We are seeking a highly motivated MS students to join our research team in the Department of Natural Resources and Environmental Sciences at the University of Illinois to quantify the stress response in caught-and-released ogaa as well as post-release mortality. This project will be in collaboration with GLIFWC, Wisconsin Department of Natural Resources (DNR) Office of Applied Sciences, and Minnesota DNR Fisheries Research.

The research project has several objectives 1) evaluate the post-release mortality of ogaa in two lake classes across a range of temperatures in the summer, and 2) compare the mortality of fish caught on live bait and artificial bait, and 3) quantify the stress response and recovery of caught-and-released fish. Work will consist of both laboratory experiments and field studies and involve both behavioral and physiological responses. Results will inform policy on conservation practices to enhance and protect freshwater fisheries.

The successful student will be interacting and collaborating with people from Wisconsin's Ojibwe tribes. Thus one component of the degree program will include, with the assistance of advisors, the development and implementation of a cross-cultural experiential learning module that will focus on working with a multicultural team.

**Qualifications—Minimum Qualifications:** Minimum qualifications include a Bachelor's degree in a related field and respect for indigenous interests and culture. Experience with fish handling, fish care in a laboratory setting, or fisheries techniques in a field setting. Excellent writing and verbal communication skills, a strong work ethic, and the ability to both work independently and contribute to a research team. Experience planning and coordinating field teams is an asset.

**Desired Experience:** Demonstrated ability to conduct research independently. Research productivity, experience conducting statistical analyses, and experience communicating scientific findings through oral and written communication are important. Valid driver's license is also required.

**Field work start date:** Spring 2023

**University start date:** Fall 2023

**To apply:** Send an email to Cory Suski ([suski@illinois.edu](mailto:suski@illinois.edu)) and Aaron Shultz ([ashultz2@illinois.edu](mailto:ashultz2@illinois.edu)) with a letter expressing your interests and qualifications relative to the position, a resume/CV highlighting your training and experience, an unofficial copy of prior transcripts, and contact details for two references. The selected candidate will then need to submit an application to the Natural Resources and Environmental Sciences online graduate program. This application requires a minimum GPA of 3.0. GRE scores are not required.





# Updated climate vulnerability assessment draws from scientific, traditional knowledge

## *Aanji bimaadiziimagak o'ow aki—The GLIFWC Climate Change Vulnerability Assessment*

By Hannah Panci  
GLIFWC Climate Change Scientist

The GLIFWC Climate Change Program announces the release of its climate change vulnerability assessment for the Ceded Territories. Entitled *Aanji bimaadiziimagak o'ow aki*, which roughly translates to “the world is changing.” This second version updates and expands the interim 2018 version.

The assessment incorporates both Traditional and Scientific Ecological Knowledge to examine climate change impacts on 66 culturally important beings chosen by individuals from our member tribes. Highlights from the 340-page assessment include a section on projected climate change impacts to the Ceded Territories, which includes personal accounts of impacts on cultural practices and lifeways from tribal members in the Ceded Territories, and a section of “being pages” in which both TEK and SEK are used to examine the vulnerability of each of the chosen beings in depth.

The assessment is meant as a resource for GLIFWC’s member tribes and their tribal and non-tribal partners, to help them prepare for upcoming changes and to help them care for those who take care of us.

Work on the assessment began in 2015 when the Climate Change Program formed and continued slowly but steadily until early 2023. It represents a collaborative effort among previous and current climate change staff from the GLIFWC Biological Services and Intergovernmental Affairs divisions.

Throughout the project, climate change staff were deeply honored to receive knowledge from elders and knowledge holders in a series of interviews with each GLIFWC member tribe until Covid-19 largely put interviews for the project on hold. Interviewees shared climate change impacts on all orders of beings as well as on their lifeways and very existence from all corners of the Ceded Territories.

The assessment begins with a teaching shared by Moka’ang Giizis-Rising Sun Joe Rose Sr., a Mashkii-ziibing elder lost to Covid-19, who explains that we are currently in the age of the Seventh Fire, standing at a “fork in the road,” and our future depends on “which path humankind chooses as to what’s going to happen when the next new age is ushered in.” To support the member tribes in their climate adaptation leadership in the region and to steer us in the direction of the more natural path Rose described, GLIFWC climate change staff will next embark on a Ceded Territory Adaptation Plan.

Later this year, we will begin a series of workshops with the member tribes utilizing the vulnerability assessment and the Tribal Adaptation Menu to craft a culturally driven plan to guide climate adaptation in the region based on Ojibwe values and priorities.

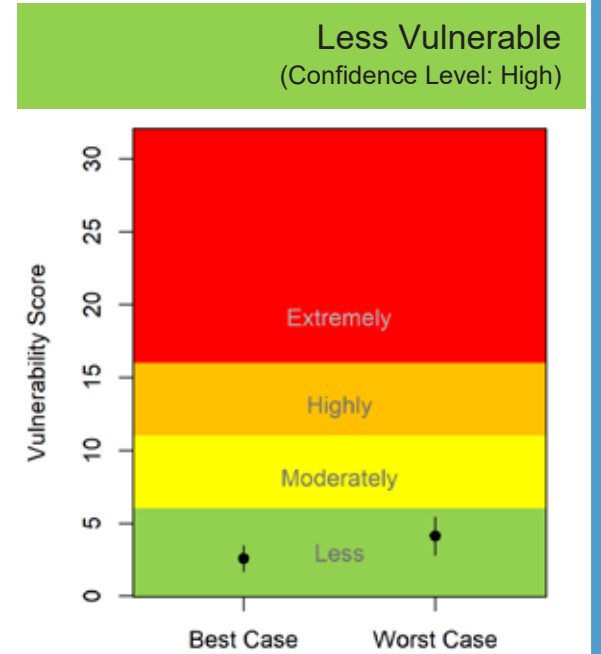
For an example of a page from the assessment, see the miskwaabiimizh (red osier dogwood). The assessment will be available as a hardcopy and pdf online. To learn more about this project or other climate-change related work, contact the climate change staff at [climate@glifwc.org](mailto:climate@glifwc.org).



Range map of miskwaabiimizh.

### Miskwaabiimizh

Miskwaabiimizhiig (plural) / Red-osier dogwood / *Cornus sericea*



Climate change vulnerability scores for miskwaabiimizh on a scale of 0 (lowest vulnerability) to 32 (highest vulnerability). Dots indicate average score; lines indicate possible range of scores for each scenario.

#### General Description:

Miskwaabiimizh, sometimes called miskaawabi'mik, refers to the vibrant red color of the bark and twigs. Miskwaabiimizh has been used by the Anishinaabeg in many ways including medicines, food, crafts, and the making of kinikinik (traditional tobacco), one of the most important gifts to the Anishinaabeg. Kinikinik is made by combining leaves from different plants such as apaakozigan (bearberry), wiinisiibag (wintergreen), ode'immin (strawberry), and miinan (blueberry), along with the inner bark of miskwaabiimizh. In order to obtain the inner bark, the twigs are peeled to expose the inner layer which is then also peeled or scraped off and dried for use.

The bark has also been used to treat diarrhea and rashes caused by poison ivy, and in the making of red, yellow, and black dyes when mixed with other plants and minerals. The roots are used in the making of a wash used to treat sore eyes. The berries of miskwaabiimizh were also gathered and eaten fresh or dried and cooked into other foods. However, the berries are no longer often used.

Today this being is mostly gathered for kinikinik and for crafts such as baskets and dream catchers which are believed to have been first made and used by the Ojibwe. It is said that the dream catchers originated with Asabikeshiinhkwe (which means “woman who makes nets;” also referred to as Spider Woman). She was believed to have looked over and protected the Ojibwe, especially the infants. Eventually, there were so many Ojibwe everywhere, it became impossible for her to watch over them all. She began using miskwaabiimizh to make hoops and weave sinew onto them to form a web. These were then gifted to the children and used to protect them, especially while they slept. They are still commonly used and are often found hanging on the top of a child’s dikinaagan (cradleboard) or above the heads of beds. Some say the web catches bad dreams at night and releases them in the day. Others say the bad dreams are caught by the web, but the good ones pass through a hole that is left in the center. It is also common for a small bead or beads to be seen near the center of the web, representing Asabikeshiinhkwe or the asabikeshiinh (spider).

Miskwaabiimizh is a woody shrub with reddish bark and twigs that is known in English as red osier dogwood or red willow. It is found along the edges of lakes, streams, ponds, and in wetlands. It grows best in rich, moist, poorly drained soils with high levels of nutrients, and prefers wetland margins where soils are saturated in the spring and may dry up by late summer, though it tolerates a wide range of soil conditions. Miskwaabiimizh is common across the Ceded Territories and has a wide range in North America.

Miskwaabiimizh was mentioned in about a quarter of the TEK interviews. All who were interviewed mentioned a decrease over the last fifty years or so, making it harder to find. One harvester in Nagaajiwanaang (Fond du Lac) noted a relationship between ishkode (fire) and miskwaabiimizh, stating that miskwaabiimizh seems to regenerate well after low intensity fires rather than moderate or severe fires, and it seems to sprout only one week after low severity fires. Most interviewees also mentioned miskwaabiimizh being used to make kinikinik. One interviewee in Gaa-miskwaabikaang (Red Cliff) also stated that York Island, one of the Wenaboozhoo Minisan (Apostle Islands) on Lake Superior, was originally called Miskwaabiimizhiikaag, Red Willow Island.

#### Summary of climate threats:

Miskwaabiimizh was in the 21<sup>st</sup> percentile relative to other plants and in the 25<sup>th</sup> percentile relative to other beings in the vulnerability assessment. Miskwaabiimizh is widespread and tolerates a variety of conditions. It may be somewhat affected by drought and increased deer browse, but otherwise miskwaabiimizh is not likely to be very vulnerable to changing conditions. However, based on information from interviews, localized changes in the population or timing of miskwaabiimizh will continue to occur.

(see Miskwaabiimizh, page 14)



# Let's go agwajiing (outside)

to EXPLORE the ZIIGWAN **SPRING** HARVEST

ziinzibaakwadwaaboo maple sap  
 bagwaji-zhigaagawanzh wild leeks  
 apakweshkway cattail  
 doodooshaaboojiibik dandelion  
 bibigwemin common elderberry  
 wiinisiibag wintergreen



wiinisiibag (wintergreen)



frog (omakakii)—spring peeper



meme (pileated woodpecker)

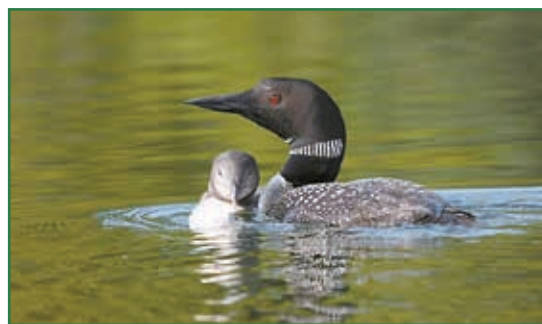
**How do you know when spring is coming?**  
**What clues are around?**  
**Ask an elder how they know spring is near.**



Esiban (raccoon) tracks in the mud.



miskwaadesi (painted turtle)



Maang (loon)



bagwaji zhigaagawinzhiig (wild leek) (K. Smith)



Negwaakwaan (a tap for getting sap from a tree).

**HEAD OUTSIDE AND CIRCLE THESE WHEN YOU FIRST SPOT THEM!**

- woolly bear caterpillar
- chickadees, woodpeckers
- spring peepers, loons
- deer antler shed
- painted turtle
- wild flowers
- leeks
- animal tracks
- bumblebees
- fiddlehead ferns
- maple taps
- ice-out



woolly bear caterpillar

**What are you seeing?**  
 GLIFWC climate change staff are collecting phenological observations from around the Ceded Territories.  
 Help us study phenology and climate change by submitting observations such as plants budding, animal sightings, unusual storms, or anything else at this link: [goo.gl/forms/6DahgOZGfn](http://goo.gl/forms/6DahgOZGfn)



Fifth graders at Lac Courte Oreilles Ojibwe School listen to Dean of Students Jason Bisonette introduce GLIFWC's Outreach Coordinator Hannah Arbuckle. Arbuckle and other GLIFWC staff spoke to the students about treaty rights during LCO School's Treaty Week. (J. VanSickle photo)



# Ojibwemotaadiwag Anishinaabewakiing. They speak Ojibwe to each other in Indian Country.

Ziigwan. Niwii-tibaajim. Ganabaj, ingii-pawaadaan i'iw aazhooningwa'on. Aazhooningwa'on gii-wawezhichigaade. Manidoominensikaan gii-izhinaagwad dibishkoo waabigwaniin miinawaa waatebagoon. Obiminigaadaanaawaa ininiwag. Awenen gaa-gashkigwaadang? Amanj iidog. Ganabaj ina gii-miinigoowizi? Ganabaj wii-pwaanzhiiwi'o. Mii'iw. Noongom ozhitaatoon! Ziigwang indizhaamin. Ambe agwajiing! Izzaadaa iskigamiziganing! Indayaanan onow mitigo-negwaakwaanan, gaye biskitenaaganan. Inga-biindaakoojigemin. Mii'iw, gichi-miigwech.

(It is spring. I want to tell a story. Perhaps, I dreamt of that bandolier bag. The bag was decorated. The beadwork looked like flowers and bright leaves. Men carry it on their shoulders. Who sewed it? I am not certain. Maybe he received a gift? Perhaps he wears dance regalia. That's it. Now get it ready. When it is spring we go. Let's go outside! Let's all go to the sugarbush! I have these sap taps and sap buckets. We will make an offering of tobacco. That's it, thanks a lot.)

## Bezbig—1

## OJIBWEMOWIN (Ojibwe Language)

Double vowel system of writing Ojibwemowin. —Long vowels: AA, E, II, OO  
Waabooz—as in father  
Miigwech—as in jay  
Aaniin—as in seen  
Mooz—as in moon  
—Short Vowels: A, I, O  
Dash—as in about  
Ingiw—as in tin  
Niizho—as in only

—A glottal stop is a voiceless nasal sound as in A'aw.  
—Respectfully enlist an elder for help in pronunciation and dialect differences.

**More than bezbig (one)**  
>—> Pluralization:  
NA's Noun/Animate-living beings suffix **-g, ag, oog, wag, yag**  
Inini, Ininiwag—Man, Men  
Ikwe, Ikwewag—Woman, Women  
Odaabaan, Odaabaanag—Car, Cars  
**Animate pluralizations end in G!**  
>—> Pluralization:  
**NI's Noun/Inanimate—non-living things suffix -n, -an, -oon, -iin, or -wan**  
Onaagan, Onaaganan—Bowl, Bowls  
Miikana, Miikanan—Path/Road, Roads  
Nishkiinzhig, Nishkiinzhigoon—My eye, My eyes  
**Inanimate pluralization end in N!**

## Niizh—2

Circle the 10 underlined Ojibwe words in the letter maze. (Translations below)

- A. Bezbig waabigwan, Niizh waabigwaniin. Niswi aamoog.
- B. Niiwin ininaatigoog, Naanan akikoog. Ningodwaaswi ikwewag.
- C. Niizhwaaswi asiniig. Gaye nishwaaswi mishiiminaatigoog.
- D. Gidagimag zhaangaswi mitigoog iwidi. Gichi-miigwech.
- E. Gidagimag midaaswi aandegwag. Giwedining bimisewag.
- F. Aaniin endaso-diba'iganek?
- G. Gigizhebaawaa-gad noongom.
- H. Ga-dibika wayiiba.

S D E A M  
N I S O A Z  
I B S W A M G  
M I T I G O O G  
N K O E O I I O N  
O A G K J W K O G I  
O D I O S A M W D K E  
W K I I Z A O N E S W E  
A G N A A N D E G W A G  
D A S I N I I G O H A A  
O W A Y I I B A I Z B G  
M Z H A A N G A S W I I



Aabita-dibikad. It is midnight.

## Niswi—3

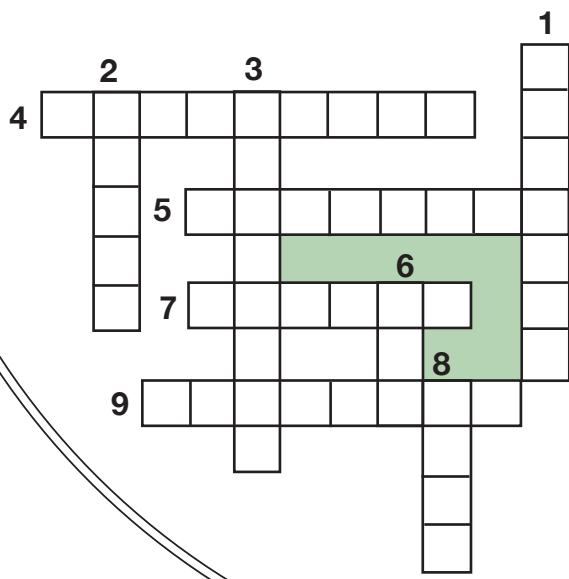
### IKIDOWIN ODAMINOWIN (word play)

#### Down:

- 1. It is spring.
- 2. I wonder
- 3. men
- 6. question marker
- 8. come towards me

#### Across:

- 4. flower
- 5. When/as it's spring.
- 7. that's it
- 9. car, sled, wagon



Naawakwe.—It is noon.

**Online Resources**  
[ojibwe.lib.umn.edu](http://ojibwe.lib.umn.edu)  
[ojibwe.net](http://ojibwe.net)  
[glifwc.org](http://glifwc.org)  
[glifwc-inwe.com](http://glifwc-inwe.com)

## Niiwin—4

**Waabigwan(iin)**—Flower(s)  
VTI: Waabandan!—See it!  
**Niwaabandaan.(an)**—I see it.(those)  
Niwaabandaan **oginii-waabigwaa.**—I see a rose.  
Giwaabandaan(an) ina agobizowin(an)?  
—You see it (those) lady slipper(s)?  
**Bagizowin(an)**—Swamp milkweed(s)  
**Wiingashk(oon)**—Sweet grass(es)  
**Giizisobagoons**—Tall coneflower  
**Waabashkikiibag**—Labrador Tea  
**Wiingashk**—Sage  
**Ode'im(in)(an)**—Strawberry(strawberries)  
**Moosewijiibik**—Field Mustard  
**Apikweshkway**—Cattail

Word source: **Plants Used by the Great Lakes Ojibwa**

GLIFWC Miigwech!

- 1. \_\_\_\_\_ waabandaan \_\_\_\_\_ iniw ode'im(in)an.
- 2. Ningii-waabandaanan \_\_\_\_\_.
- 3. Gaye, ningii-waabadaanan \_\_\_\_\_.
- 4. Waabandan! \_\_\_\_\_-waabandaan ina waabashkikiibag?
- 5. \_\_\_\_\_ zaagi' \_\_\_\_\_ apikweshkwayag.
- 6. Ani-niibing, apegish menoseyeg agwajiing.

- Ni- -an
- Gigii-
- waabigwaniin
- Nin- -aag
- agobizowinan

## Translations:

**Niizh—2** A. One flower. Two flowers. Three bees. B. Four maple trees. Five buckets. Six women. C. Seven rocks. Also eight apple trees. D. You count nine trees over there. Thank you. E. Count ten crows. To the north they fly. F. What time is it? G. It is morning now. H. It will be night soon.

**Niswi—3** Down: 1. Ziigwan 2. Amanj 3. Ininiwag 6. Ina 8. Ambe Across: 4. Waabigwan 5. Ziigwang 7. Mii'iw 9. Odaabaan

**Niiwin-4** 1. I see those strawberries. (Ni- -an) 2. I saw the flowers (waabiganiin). 3. Also, I saw the lady slippers (agobizowinan). 4. See it! Did you see the labrador tea? (Gigii-) 5. I love the cattails. (Nin- -aag). 6. As summer begins, I hope you all have good luck/happenings outside.

There are various Ojibwe dialects; check for correct usage in your area. The grammar patterns may help a beginner voice inanimate and animate nouns and verbs correctly, as well as create questions and negate statements. Note that the English translation will lose its natural flow as in any world language translation. This may be reproduced for classroom use only. All other uses by author's written permission. Some spellings and translations from The Concise Dictionary of Minnesota Ojibwe by John D. Nichols and Earl Nyholm. All inquiries can be made to **MAZINA'IGAN**, P.O. Box 9, Odanah, WI 54861 [pio@glifwc.org](mailto:pio@glifwc.org). Edited by Jennifer Ballinger, Saagajiwe-Gaabawiik



# GLIFWC ANA Language Preservation & Maintenance Project launches *Ningaabii'anong: Stories of the Swimmers* interactive webpage



During a visit to Bay Mills Indian Community (BMIC), GLIFWC ANA language project staff delivered the newest set of books from the *Maajii-Ojibwemowag (They Begin to Speak Ojibwe)* series. GLIFWC caught up with BMIC President Whitney Gravelle, who accepted the full-color language books at the tribal administration building in February. (M. Rasmussen photo)

By *Melissa Maund Rasmussen*  
GLIFWC ANA Language Project Dir.



GLIFWC's ANA language staff is excited to announce the launch of the *Ningaabii'anong: Stories of the Swimmers* interactive webpage.

Developed as a companion resource to the third *Maajii-Ojibwemowag (They Begin to Speak Ojibwe)* storybook set, the *Ningaabii'anong* webpage activities correlate and expand on the Ojibwe language and the swimmers featured in the stories.

The *Ningaabii'anong* webpage is part of *glifwc-inwe.com*, GLIFWC's one-stop-shop for Ojibwe language materials. From the homepage, visitors can reach the *Ningaabii'anong* page by clicking the "Let's Go" arrow or by hovering over "Let's Play (Birth-5yrs)" on the main navigation bar, then clicking "Ningaabii'anong" from the dropdown menu.

The webpage features digital versions of the *Ningaabii'anong* storybooks with audio and simple animations, age-appropriate language learning games including fish matching, puzzles, and helping amik (beaver) build an amikwiish (beaver lodge). To highlight and expand on the Ojibwe words and phrases in the stories, we've created an interactive translation and pronunciation guide for each book. For example, when you click on a word or phrase, you will hear the pronunciation and see the syllable breakdown and pronunciation.

To increase access to the developed *Ningaabii'anong* materials, we've created a *Printables* webpage which provides a PDF version of each storybook, supplemental document with cultural and harvesting information relating to each story, and a coloring book adapted from each storybook which can be downloaded and printed for free.

We are regularly adding new content to the website so check back often! If you have any questions, comments, or concerns, please contact ANA Language Project Staff at [inwe@glifwc.org](mailto:inwe@glifwc.org).

[glifwc-inwe.com/ningaabii-anong.html](http://glifwc-inwe.com/ningaabii-anong.html)

[glifwc-inwe.com/ningaabii-anong-printable.html](http://glifwc-inwe.com/ningaabii-anong-printable.html)



# Sokaogon Community unveil new signs Leaders work together to give Highway 55 an Ojibwe update

By *Jenny Van Sickle, PIO Outreach Specialist*

**Crandon, Wis.**—Biboon kicked off an eventful schedule for the Sokaogon Community of Mole Lake who hosted the Chippewa Federation conference, were featured on the UK television series "So Expensive" showcasing their wild rice harvest, and on December 26, 2022, the Band unveiled three brand-new dual language highway signs.

Zaaga'inganiin is the traditional name for the Tribe's reservation, which means "place of light in the water." The event also introduced Ojibwe language signs for Swamp Creek and Mole Lake.

Launched in 2021, the Dual Language Sign program in Wisconsin has, to date, been utilized by four Tribal communities. Red Cliff hosted the first dual language event, after working with the state's Department of Transportation (DOT), to install their dual-language sign: Gaa-Miskwaabikaang (ga-misk-wah-be-kong) which means, "the place where there are red rock cliffs."

The Oneida and Menominee nations have also celebrated dual language highway sign installations.

"It takes a lot of coordination and patience to successfully work through the process, but it sure is worth it to see it all come together today" said Mole Lake's Tribal Historic Preservation Officer, Michael LaRonge, who emceed the event between songs by the drum group, Young Weber.

Sokaogon Chairman Robert Van Zile thanked the community for their support and the dedication that was needed to get the work over the finish line. "This is a historic moment; visitor's will be greeted in our Ojibwe language which helps us all recognize tribal sovereignty and the visibility of our culture—thank you for sharing today with us," said Van Zile.

Officials from WisDOT, Federal Highway Administration, and cultural committee members past and present filled the hall before enjoying a feast together.



*Mole Lake Chair, Robert VanZile, Jr. stands next to cultural committee president, Marissa Van Zile who worked with state and federal partners and the Sokaogon community to create the newly unveiled Ojibwe language highway signs. Wisconsin's Dept. of Transportation Secretary, Craig Thompson (far left) joined the celebration along with the Wisconsin Division Administrator, Glenn Fulkerson of Federal Highway (far right). (JVS photo)*

WisDOT Transportation Secretary, Craig Thompson agreed with Van Zile and said, "these signs are bringing us together, building a stronger relationship and understanding of one another."

The day's program concluded with Cultural Committee President, Marissa Van Zile calling on the crowd to, "Learn your language, speak your language, share your language." Mole Lake's cultural committee hosts regular gatherings to revitalize language and encourage wellbriety—all are welcome.

For more details on Wisconsin's dual language sign program and application, visit [tinyurl.com/ywa367uv](http://tinyurl.com/ywa367uv).

In Minnesota visit [tinyurl.com/yc8s8vp4](http://tinyurl.com/yc8s8vp4)

**This is a historic moment; visitor's will be greeted in our Ojibwe language which helps us all recognize tribal sovereignty and the visibility of our culture.** —Sokaogon Chairman Robert Van Zile



# Snow snake tourney a capstone to Anishinaabe heritage experience

By Charlie Otto Rasmussen, Editor

Fulfilling GLIFWC's Anishinaabe Heritage Goal is an ever-evolving endeavor, personified in everything from in-office ceremonies to the lone field technician putting down their asemaa before gathering biological samples. The recent arrival of zhooshimaanag into GLIFWC's cultural collective drew dozens out to Bad River Band's traditional powwow grounds last February—still encased in deep winter snows—for an all staff snow snake tournament.

"This infusion of culture we work toward, learning the skills and ways of the Ojibwe people we serve, is a really important part of the job," said Jonathan Gilbert, biological services director. "And it can be a lot of fun."

Formalized some 21 years ago, the heritage goal established by the GLIFWC Board of Commissioners directs GLIFWC staff to: *promote cultural awareness by infusing Anishinaabe values, traditions, and language into all of its endeavors.* It's a directive that's found traction in resource management, rights protection, planning & development, public information, and enforcement programs.

In recent months, the heritage goal came to life in the shape of snow snakes, known as zhooshimaan or goonikaa-ginebig in the Ojibwe language. Played by north country indigenous people for centuries, the snow snake game is made for winter. Competitors launch 5-ish-foot lengths of smooth maple hardwood down an icy track, seeking to tally the most feet-traveled.

With guidance from zhooshimaan practitioners Paul DeMain from Lac Courte Oreilles and Lac du Flambeau's Wayne Valliere, GLIFWC game organizers arranged an entry-level tournament for GLIFWC staff. DeMain tendered two track styles for consideration: one, a ground-level lane on lake ice or another frozen surface; second, an elevated track, blazed atop a long ridge of snow.

"We had all these snowbanks to work with, by the boat landing road, by the powwow grounds," said Adam Oja, a GLIFWC wildlife technician and Bad River member. "They worked really well for a raised track."

After consulting with Bad River officials, Oja, and a trio of fishery biologists—Mark Luehring, Adam Ray, and Aaron Schultz—constructed nearly a thousand feet of track in the abandoned neighborhoods of Old Odanah, pulling an 8" cedar log fitted with an eyebolt to create a half-pipe for the snakes to traverse.



Acting Deputy Administrator Rose Wilmer launches a zhooshimaan down a track blazed into the northside snowbank of River Road in Old Odanah. Snow snake competitors totalled the best three of four throws to claim the top spots.

With the top spot firmly in hand, GLIFWC Goonikaa-ginebig Tourney champion Kathy Smith basked in her victory, leisurely creating a "snow angel" in the nearest available snowbank. Congratulations, Wasanodaekwe!

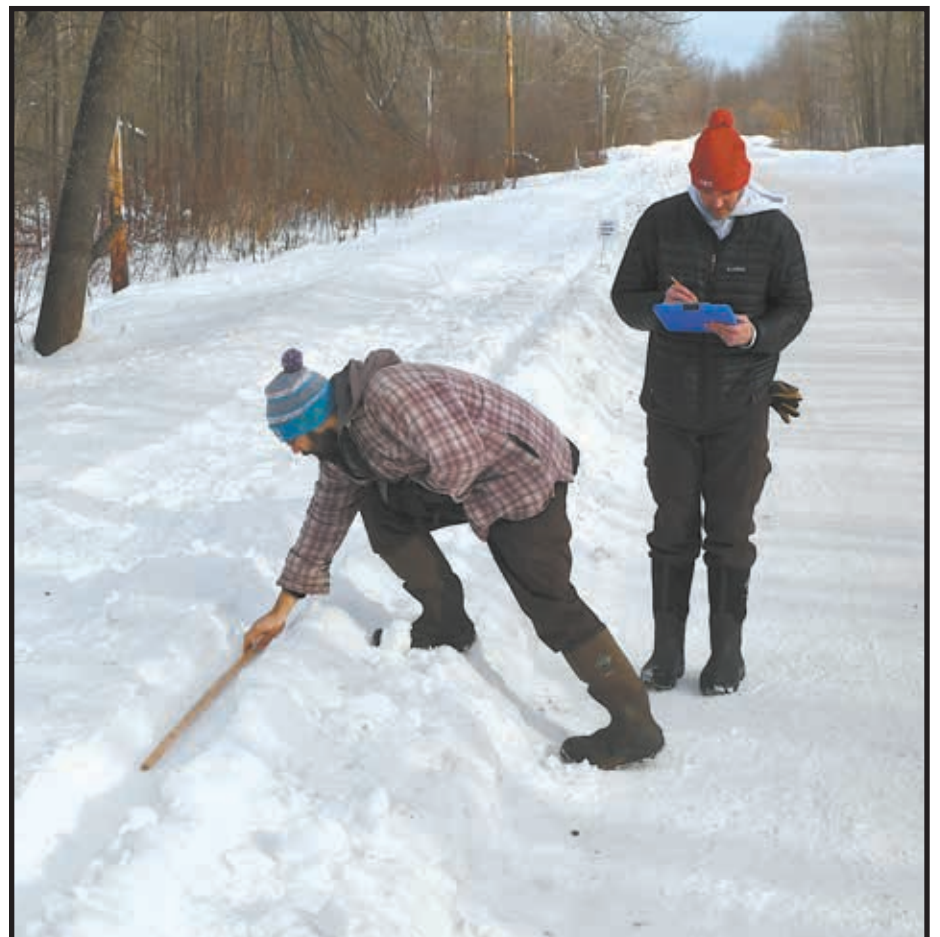
(CO Rasmussen photos)

"One guy pulled from the road-side. The other guy wore snowshoes and pulled from up on the bank," Oja said, "It was a workout!"

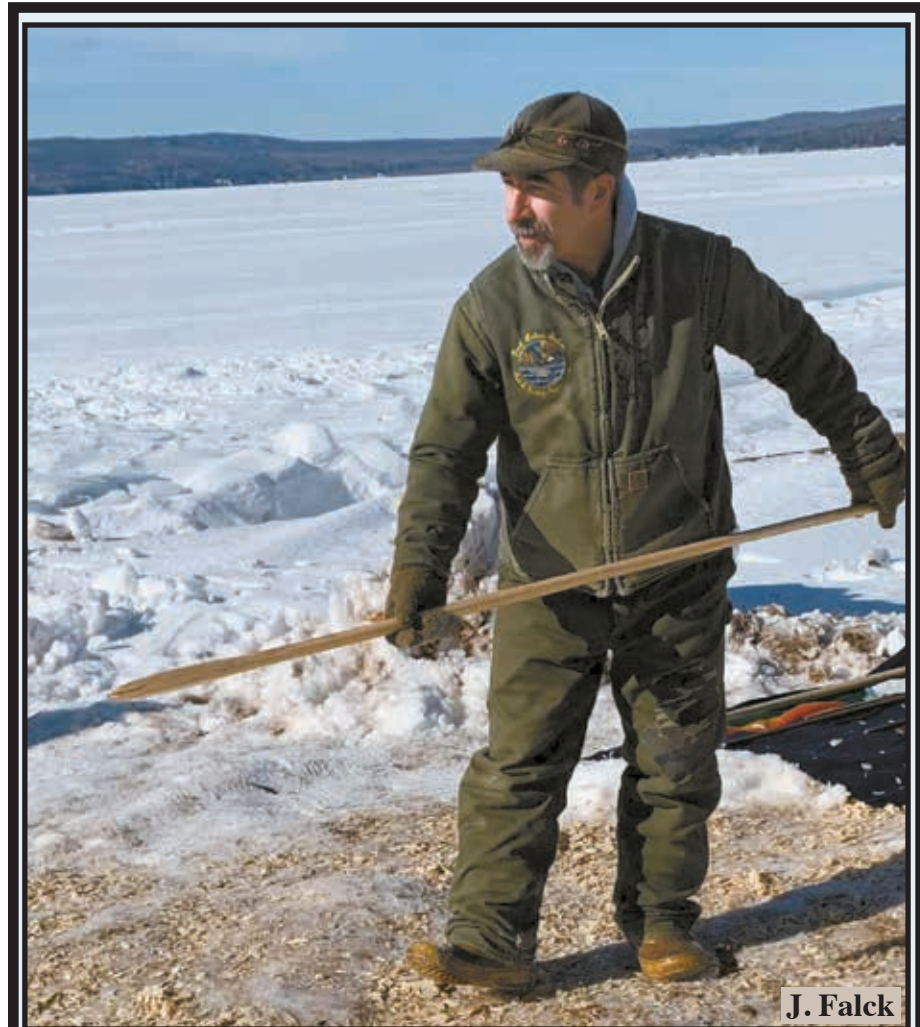
GLIFWC's manoomin ganawandang, Kathy Smith, took the top spot with the highest total distance over four tosses, followed closely by Oja and James Rasmussen. From the field of nearly 30 contestants, Aaron Shultz topped the longest single throw category with 394-feet. Everyone that participated scored a frybread Indian taco from Bad River's Esie Leoso, who provided a welcome hot lunch in the 30-degree temperatures.

"I'm already looking forward to next year," Oja said. "Getting my kids involved, getting more community members involved."

The tournament completed a circle that began in October 2022 when staff began shaping air-dried hard maple into lengths of polished wood. That autumn workshop produced nine snow snakes used in February, each zhooshimaan a witness to the Ojibwe teachings, fellowship, and spirited humor shared by GLIFWC staff in pursuit of new ways to honor the Anishinaabe Heritage Goal.



Mark Luehring retrieves a snow snake as Adam Ray tallies up the distance during a GLIFWC goonikaa-ginebig tourney February 6.



J. Falck

At the 2nd Annual Mooningwanakaaning Minis Inter-Tribal Snow Snake Festival Feb 11th on Madeline Island, GLIFWC's Miles Falck and Kathy Smith represented the Commission on a fun-filled day at Joni's Park Beach. An MC stand, warming fire, and registration table greeted participants who signed up for various categories. Food donations were well received including corn soup, smoked fish, frybread, and provided a well-rounded meal for participants and observers.

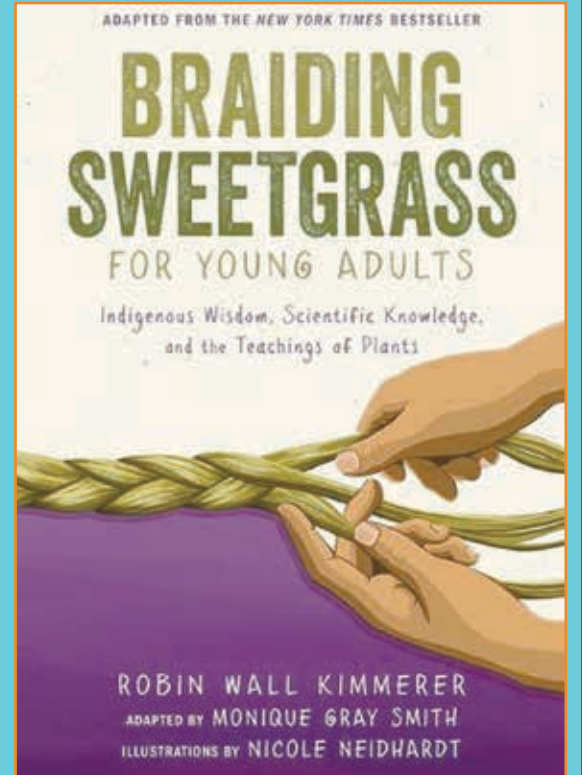
Gimiigwechiwendam to the core group of organizers made up of the local community and Akiing 8th Fire group for their hospitality, and to hosting a great event. Many people including Ho Chunk, Oneida, and Ojibwe citizens appeared in the winning categories. Ultimately, we are all winners. Their success is our success.

—K. Smith



# Maadagindan! Start Reading! Ojibwe Books for Young Readers

Join us and special guests for this online book club discussion for parents, teachers, educators and anyone that loves to read to children



*Keeshig  
& the Ojibwe  
Pterodactyls*

**Wednesday  
March 15, 2023  
4-5pm CST**

*We are Water  
Protectors*

**Wednesday  
April 12, 2023  
4-5pm CST**

**Register:**

[sites.google.com/wisc.edu/  
maadagindanstartreading/home](https://sites.google.com/wisc.edu/maadagindanstartreading/home)



*Braiding  
Sweetgrass*

**Wednesday  
May 10, 2023  
4-5pm CST**

If you would like to join us, please send an email to [akmoser@aqu.wisc.edu](mailto:akmoser@aqu.wisc.edu) to be added to our email list!



## Indoor fun, Indigenous lacrosse

Families and students of all ages packed the Denfeld High School gym in Duluth, Minn. on a Saturday morning to learn more about Indigenous lacrosse, its history, and to break a good sweat.

“The most effective change happens for our people when we lead those efforts,” said co-organizer and partner, Hannah Bluedog Crow of the University of Minnesota Medical School (UMM).

UMM’s C2 Dream program is working with the Native American Community Clinic (NACC), Hennepin County, Binesikwe Edye Washington, Duluth Public Schools and more to positively effect cardiovascular health through understanding equity, culture-based activities, and traditional foods.

—J. Van Sickle



Dr. Mary Owen, UM Medical, (Tlingit) and “Stick maker” Tom Howes, Fond du Lac look on as Amaya St. John, 9 and her grandma try out a stick. Howes told the group he started to get more serious about learning and revitalizing the game about six years ago. Dr. Owen added, “We play for future generations. You’re the ones who will carry this forward; teach your cousins, brothers, and sisters. This game lives through you.” (JVS photo)



*Miskwaabiimizh strikes a sharp contrast against the snow in early spring (K. Smith photo)*

## Miskwaabiimizh

(continued from page 9)

Factors that increase the vulnerability of miskwaabiimizh to climate change:

- SI** **Dispersal:** Miskwaabiimizh has been known to be dispersed by birds and mammals up to 700 feet, but is still limited by its dispersal ability.
- N/SI** **Physiological hydrological niche:** Miskwaabiimizh is not particularly drought tolerant and requires soils that are saturated for at least part of the growing season. Dry conditions may affect this being.
- N/SI** **Pathogens or natural enemies:** Miskwaabiimizh is browsed heavily by waawaashkeshi (white-tailed deer), which are expected to increase as climate change continues. Other beings, such as manidoo-waabooz (cottontail) and amik (beaver), also browse miskwaabiimizh to a lesser extent.

Legend	<b>GI</b>	<b>Greatly Increase</b> This factor greatly increases vulnerability	<b>I/GI</b>	<b>Increase/Greatly Increase</b> This factor may increase or greatly increase vulnerability	<b>I</b>	<b>Increase</b> This factor increases vulnerability
	<b>SI</b>	<b>Somewhat Increase/Increase</b> This factor may somewhat increase or increase vulnerability	<b>SI</b>	<b>Somewhat Increase</b> This factor somewhat increases vulnerability	<b>N/SI</b>	<b>Neutral/Somewhat Increase</b> This factor may not increase or may somewhat increase vulnerability



# All Staff Day returns after three “Covid years” off

*Experienced workforce recognized on 5-year anniversary dates of service to GLIFWC and its member tribes*



*The up-and-comers, from left: Jim Stone (20yr), Mike Popovich (15yr), Rob Croll (5yr), Jill Miller (5yr), Kristen Thannum (5yr), Mark Luehring (15yr), Adam McGeshick (15yr), Dawn White (10yr). (COR photo)*



*The 25-year club, from left: Charlie Rasmussen, Esteban Chiriboga, Jenny Krueger-Bear, Joe Dan Rose, Roger McGeshick, and Miles Falck. (D. Soulier photo)*



*135 years of service: Lynn Plucinski (40), Bill Mattes (30), Ann McCammon Soltis (30), Leanne Thannum (35). (COR photo)*

**~Save the Date~**  
**Camp Onji-Akiing**  
**August 7-11, 2023**

Keep an eye on GLIFWC's website and Facebook page for more information.

## From the big lake to the laboratory, research drives workplan for LaGrew

Patrick LaGrew, a Red Cliff tribal member, joined the Biological Services Division this past winter in the Great Lakes Section. He brings experience assisting harvesters with their off-reservation hunting and trapping licenses through GLIFWC's Enforcement Division since 2015.

LaGrew has two degrees in progress: Water & Land Management at Lac Courte Oreilles Ojibwe University and Fisheries & Wildlife Ecology at Northland College. LaGrew also completed a two-year internship with the U.S. Forest Service on the Washburn District and a one year internship with GLIFWC's Great Lakes section in 2017.

As a Great Lakes Fisheries Technician, LaGrew's new role has many duties that range from the annual Lake Superior siscowet trout assessment to sea lamprey management and control. Currently, LaGrew's work is focused in the GLIFWC lab analyzing whitefish and lake trout food sources. LaGrew documents the contents of a fish's stomach, then moves on to remove the otolith, or ear bone.

"The ear bone has rings like a tree, so we can tell how old it is and how plentiful its food sources are" explained LaGrew. Along with other data points, the work helps managers in stock assessment modeling and to understand more about whitefish and lake trout populations.

LaGrew enjoys bird hunting especially for wild turkeys and ducks. When he gets a chance to fish, he's looking for "the big" northern pike or bass.

—J. Van Sickle



## Technician refocuses outdoor work from fisheries to wildlife

Born and raised in Odanah, Wis, John Wilmer Jr. is excited for the new adventures and expanded opportunities working outdoors as a full time Wildlife Technician.

Wilmer, a Bad River tribal member, has been working with GLIFWC and managing spring creel teams since 1995.

A graduate of Northwood Technical College (formerly WITC-Ashland), he completed the Marine Repair Technician program in 2007. Wilmer spent a decade living in the Milwaukee area before returning home.

Wilmer's background also includes working in hunting and trapping regulations: "I'm really looking forward to building on my experience assisting with small mammal and marten live trapping, working with grad students, and learning more about invasive plant species," he said.

Wilmer especially enjoys spending time outdoors fishing for walleye and camping as much as possible, with Wyatt, the youngest of his four children.

—J. Van Sickle

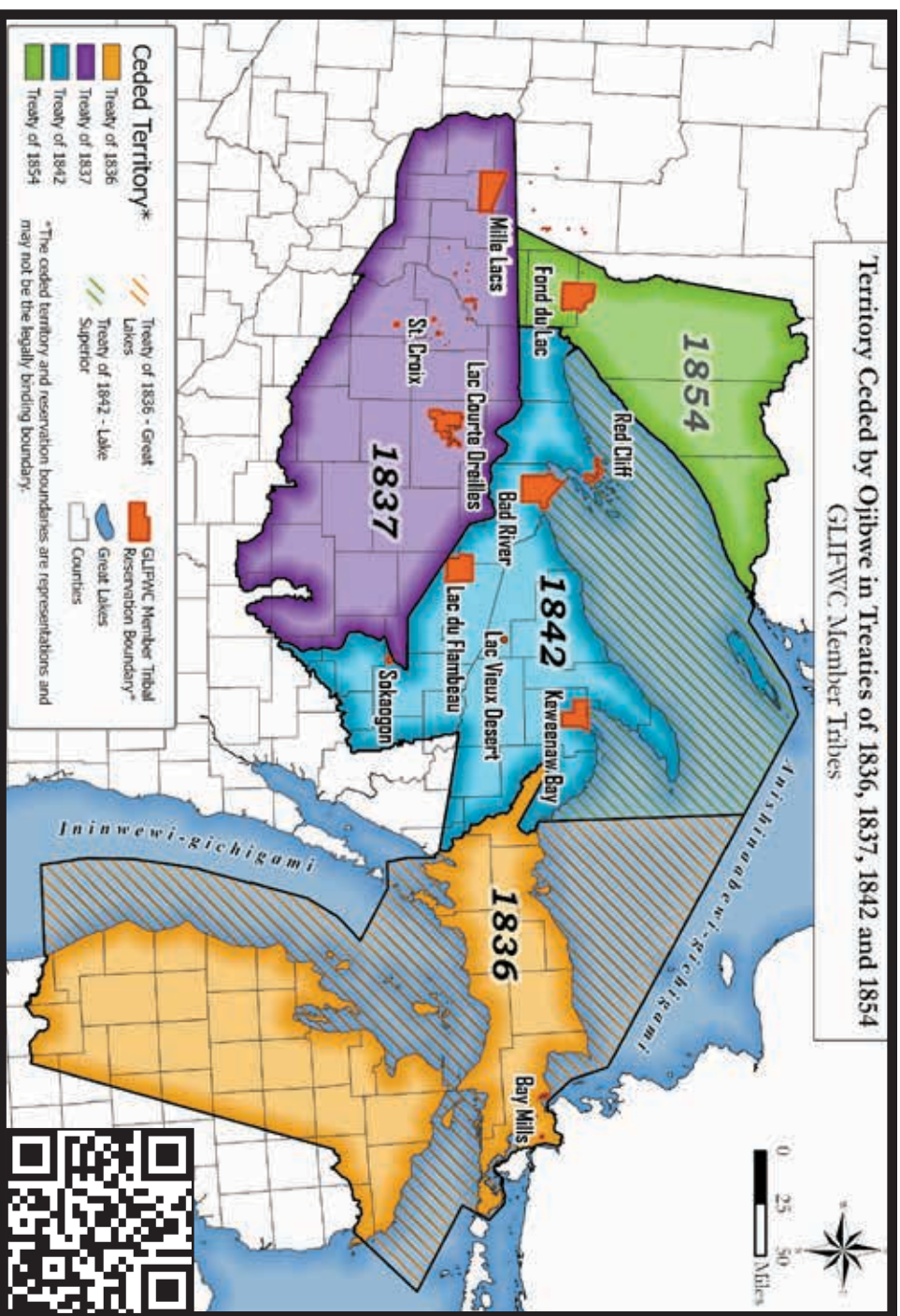




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## GLIFWC enforcement brings fur school to Ojibwe Winter Games



At University of Minnesota—Duluth's annual bibeon gathering, Ojibwe Winter Games, a full spectrum of community members came out to celebrate snow and the many activities that come with it. During presentations about fur-bearing animals and Ojibwe trapping traditions, GLIFWC Wardens Christina Dzwonkowski and Gale Smith provided instruction to elementary school classes, college students and elder residents of the region.



**ZIGWAN 2023**

Lac Courte Oreilles v. Voigt Decision 1983

**INSIDE:**  
Embracing ishkode  
Nibi pressure: Tamarack Mine  
40th Anniversary commemorative poster