

# Mazina'igan

A Chronicle of the Lake Superior Ojibwe

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## Keepers of Aki

### Outstanding leadership, fishery research recognized at NAFWS

By Charlie Otto Rasmussen, Editor

While American Indian reservations cover just 2% of the land in the United States, the rich catalog of resources contained within tribal homelands contribute an outsized impact on the wider landscape—especially when it comes to water.

Nowhere is that truer than in the Great Lakes region, where 18 tribes also help manage millions more acres in treaty-ceded territories. In recognition of that unified caretaker role, Native American Fish & Wildlife Society (NAFWS) convened its 35th annual Great Lakes Regional Conference September 19-22 at Seven Winds Casino in Lac Courte Oreilles, Wisconsin.

The event provided an opportunity for experts in biology, law enforcement and culture to share native approaches to natural resources stewardship. Featured events included raptor handling, a tour of the LCO fish hatchery, and a fur trapping demonstration from GLIFWC Warden Roger McGeshick.

In one poignant session, keynote speaker Michael Waasegiizhig Price, GLIFWC's Traditional Ecological Knowledge Specialist, reminded his audience of the humility that comes with being part of an ecosystem.

"In the Anishinaabe creation story, humans were last in order, the least of creation, nothing depends on our existence, but we depend on everything—the plants, animals



Mark Luehring (right) received NAFWS's Great Lakes Biologist of the Year and Ed White, Great Lakes Technician of the Year. (CO Rasmussen photo)

and Aki (Earth) for our existence," said Price. He went on to say native water and land managers have an increasingly important role to play as floods, wildfires, and droughts become more frequent.

(see GLIFWC, Lac du Flambeau, page 23)

## Ojibwe spirit food draws international audience

By Charlie Otto Rasmussen, Editor

Labor intensive, highly nutritious, the embodiment of a people; in the retail space, hand-harvested manoomin has long commanded a higher price than its domestic shadow-



Using traditional buckskin moccasins, Cassandra Graikowski dances on parched manoomin in a jigging pit to help separate wild rice grain from the husk. (CO Rasmussen photo)

self: paddy rice. For Great Lakes First Nations and their neighbors, natural wild rice is central to identity and good living. Just recently, news of manoomin's stature in Turtle Island's lake country came to the attention of television producers at international media giant Insider.

"I came across manoomin while reading an article in National Geographic magazine last year about the future of the Great Lakes," said Claudia Romero, an Insider producer from London, UK. "One of the resources mentioned was manoomin wild rice and how the tribes have been taking care of it in the lakes for centuries."

Romero saw a perfect subject for Insider's television series "So Expensive," which features stories from points all over the world. Recent episodes include deep dives into East African Shea Butter and the spiky Thaiander fruit, Nont durian.


"Our series is not just the price of things," Romero said. In manoomin she found not only an outstanding food but a symbol, a currency, a living thing that carried a 'certain spirituality'."

Following confirmation of an outstanding wild rice crop last September, Romero dispatched an Insider production specialist to Central Wisconsin Airport, then overland to the Sokaogon Chippewa Community reservation. The visit coincided with the tribe's manoomin camp, where school kids, elders and everyone in between "knocked" wild rice and processed the harvest using traditional parching, dancing, and winnowing methods. It was an apt setting to share the importance of wild rice for Ojibwe people.

"For some people, oil is their gold. Black gold," Sokaogon Member Leelyn Van Zile said. "For us, it's manoomin." (see Ojibwe spirit food, page 19)



In **biboon**, wolves work together to feed **the pack** and often sleep curled up near each other to stay warm.

**Breeding season** for  ma'iinganag is in full swing by February.

Learn more about **ma'iingan's** role in culture and the environment in a new GLIFWC collaboration with:



[intotheoutdoors.org/segments/into-the-history-of-wolves](https://intotheoutdoors.org/segments/into-the-history-of-wolves)



see goonikaa-ginebig, pgs 12-13





# Anishinaabe insights



## A closer look at TEK

### Indigenous knowledge finds its way into science & policy

By Michael Waasegiizhig Price, GLIFWC TEK Specialist

In November 2021, the President of the United States issued an Executive Memorandum ordering all federal agencies to integrate Indigenous Traditional Ecological Knowledge (ITEK) into federal decision-making. This memorandum is meant to strengthen relations between federally recognized tribal nations and the federal government, as well as tap into the rich wisdom that Indigenous people possess about the landscape. But, what does this really mean?



In May 2008 the polar bear was listed as threatened throughout its range under the Endangered Species Act. A. Weith photo (CC BY-SA 4.0)

The term, Traditional Ecological Knowledge (TEK), has been around since the mid-1990s. It refers to Indigenous knowledge and wisdom that have existed for thousands of years among Indigenous communities. A good definition: Traditional Ecological Knowledge (TEK) is a body of localized ancestral knowledge and wisdom about the landscape, passed down through the generations in the form of stories, songs, placenames, and traditions, that have sustained a people for millennia and contributed to their identity as Indigenous people. Knowledge of the trees, animals, waterways, and seasons contribute to the ability of a people to subsist and thrive in a particular landscape. But, just as there are diverse landscapes, so are the diverse knowledges of Indigenous peoples. Anishinaabe people are experts on wild rice beds in Minnesota; Lakota people are experts on buffalo rangeland in the Dakotas; the Inuit people are experts on arctic tundra and pack ice.

### Federal decision-making taps TEK

In March 1989, the supertanker, Exxon Valdez, hit a reef in Alaska's Prince William Sound and dumped 10.8 million gallons of crude oil into the waters. Prince William Sound is prime habitat for salmon, seals, sea otters and seabirds, and is also ancestral hunting and fishing territory for the Alutiiq and Sugpiaq peoples. State and federal agencies reached out to the local Indigenous communities for assistance in assessing the damage to wildlife. Residents of the Alutiiq and Sugpiaq communities provided critical pre-spill information about the species composition, population densities, diet and feeding behaviors of all species impacted by the oil spill. This knowledge, this TEK, was invaluable for implementing environmental restoration efforts of the coastal region.

In 2008, The U.S. Fish and Wildlife Service, incorporating local Indigenous knowledge in their analysis, listed the polar bear as a Threatened Species in accordance with the Endangered Species Act (ESA). Members of the Inuit and Chukotka communities in Alaska, namely hunters and fishermen, contributed their knowledge of polar bear habitat, hunting behavior, and population estimates to the study. This knowledge was used, along with scientific data, to determine that sea ice, which is prominent polar bear habitat for seal hunting and birthing their cubs, was significantly diminishing as a result of climate change. The observations of Indigenous hunters and fishermen, along with data collection and analysis, contributed to the ESA listing of polar bears, which afterwards, garnered federal protection.

In 2018, GLIFWC completed the Climate Change Vulnerability Assessment which identifies culturally important beings that may be vulnerable to future climate impacts (GLIFWC often uses the term "beings," rather than "species," in reference to plants, animals, and fish as equals to human beings). Local Anishinaabe elders and knowledge-keepers (see Traditional Ecological Knowledge, page 3)

## Dugout canoe recovery inspires native connections

By Charlie Otto Rasmussen, Editor

**Madison, Wis.**—When Lawrence "Moose" Plucinski got the call about the discovery of a second prehistoric canoe, he knew in that moment he needed to be there. More than a year after archeologists uncovered a thousand-year-old dugout canoe in Lake Mendota, a second canoe—incredibly, even older—revealed itself nearby.

"Just touching it brought on a sort of flashback. How life was at the time; how far native people have come. It gave me chills down my back. Goosebumps," said Plucinski, Deputy Tribal Historic Preservation Officer (THPO) for Bad River Band.

In mid-September, divers in black wetsuits carefully raised the fragmented canoe from the lake bottom. Archeologists transported the estimated 3,000-year-old canoe to the State Archive Preservation Facility in Madison. That's where Plucinski joined the meticulous work to process and conserve the fragile watercraft made of white oak.

Ho-Chunk THPO William Quackenbush had contacted his counterparts at all First Nations in Wisconsin to help process the canoe, Plucinski said. Ho-Chunk ancestral homelands include much of today's southern and central Wisconsin including the Madison area. After making the trip from Odanah, Wis. to Madison, Plucinski found an ancient watercraft measuring about 14.5-feet. Saturated for millennia with lake water, the wood has taken on the consistency of wet cardboard.

"It's incredibly delicate," Plucinski said. "Applying a solution will help solidify it, but it's a long process. It'll take about a two-years."

Maritime archeologist Tamara Thomsen discovered both canoes in Lake Mendota in 2021 and 2022. Coupled with well-documented effigy mounds in the region and indigenous oral histories, the dugouts further confirm that Madison's Four Lakes region has been home to native peoples for a long, long time.

"This isn't a case where you say: 'oh, this is a Ho-Chunk Canoe' or 'this is an Ojibwe canoe,'" Plucinski said. "But the people who made these canoes are our relatives and it's up to us today to take care of these things."

Both canoes were encountered near an underwater shelf, where the lake floor drops off. Plucinski and others theorize that this natural feature may house more significant finds in the future.

"This story is never ending," Plucinski said. "There's so much more to learn."



The 14.5-foot dugout canoe recovered from Lake Mendota is the oldest canoe ever found in the Great Lakes region by roughly 1,000 years. Lawrence Plucinski, Bad River THPO, (right) and Tamara Thomsen, Wisconsin Historical Society maritime archeologist, clean the 3,000-year-old canoe beginning the preservation process.



# Ceded Territory news briefs

## Line 5: GLIFWC comments on two Environmental Impact Statements

GLIFWC staff have been working on two separate but related Environmental Impact Statement (EIS) processes underway for the Line 5 pipeline.

The first is the Proposed reroute around the Bad River Reservation. GLIFWC submitted extensive comments on the draft EIS prepared by the Wisconsin Department of Natural Resources (WDNR) this last April. Since then, the WDNR has been working on compiling all submitted comments.

On October 3rd, staff participated in a meeting to begin discussion on GLIFWC comments. The WDNR has also sent a letter to Enbridge asking for additional information on modeling of potential oil spills. This information was a major component of GLIFWC's comment letter.

The second is a Proposed tunnel under the Straits of Mackinac. The Detroit District of the Army Corps of Engineers is in the early stages of developing an EIS for tunnel project. GLIFWC staff, in cooperation with Bay Mills, developed scoping comments for the EIS and submitted them to the Corps on October 14th. GLIFWC comments can be viewed and downloaded at [uwmadison.app.box.com/s/34x9ywxoo6qq1vmgw7mj48ntxugoe43q](http://uwmadison.app.box.com/s/34x9ywxoo6qq1vmgw7mj48ntxugoe43q).

—H. Arbuckle

## Sokaogon THPO raises concerns following Gile Flowage report

In response to a report submitted by Xcel Energy to the Federal Energy Regulatory Commission (FERC), the Tribal Historic Preservation Office (THPO) for Sokaogon Chippewa Community is calling for a closer review of potential cultural sites at the Gile Flowage in northern Wisconsin. Xcel, through its subsidiary Northern States Power Company, manage a hydro dam on the 3,200-acre reservoir and recently reported to federal authorities that the project area lacked evidence of native occupation and use.

"It is inaccurate to say there are no archaeological sites affected by the Hydro," wrote Sokaogon THPO Michael LaRonge in a November 1 letter to FERC. "The presence of the Flambeau Trail used as an inland travel route suggests the high likelihood of undocumented archaeological sites submerged by the flowage as well as a higher potential of similar sites along the shoreline."

Xcel is currently seeking federal licensing approvals to operate the dam and flowage, which is set along an historic Anishinaabe travel route known as the Flambeau Trail. LaRonge said officials should also evaluate an associated river corridor used by indigenous peoples that extends eastward to Lac Vieux Desert.

—J. Rasmussen

## Wisconsin DNR releases wolf plan

GLIFWC and tribal biologists are reviewing the first significant rework of the State of Wisconsin's wolf management plan in over 20 years. The Department of Natural Resources issued its 178-page draft plan November 9 after receiving input from the public and stakeholder groups over the past year. GLIFWC representatives and tribal governments also served on the state's planning committee in 2021.

State authors notably left out a numeric population goal from the plan, instead looking to foster a wolf resource that's in balance with the environment. Surveys estimate that fewer than 1,000 wolves currently inhabit the state. Previous population goals published in 1999 aspired to reach a modest 350 animals when ma'iingan's recolonizing effort from Minnesota was still underway.

As for GLIFWC-member tribes, the 1837/1842 Ceded Territory Ma'iingan Relationship Plan draft calls for a reciprocal relationship with wolves that's consistent with cultural teachings. From the Anishinaabe creation story to the present, wolves have been viewed as equals to humans—both having every right to exist and live in their homelands. —CO Rasmussen

## Facing a wetter, hotter future, report calls for resilience strategies

A recently released report on climate impacts to water resources in Wisconsin from the Wisconsin Initiative on Climate Change Impacts (WICCI) ([wicci.wisc.edu](http://wicci.wisc.edu)) shows that warming temperatures and changing precipitation patterns are impacting Wisconsin's wealth of water resources. The last two decades have been the warmest on record in Wisconsin and the past decade has been the wettest.

"The warming climate is having an impact on water resources in Wisconsin," said Katie Hein, WICCI Water Resources Working Group Co-Chair. "We need to increase the magnitude and urgency of actions to protect and restore habitat and enhance water quality to make Wisconsin's waters more resilient to climate change."

The WICCI report suggests solutions to prepare for and minimize climate impacts to water resources, like increasing water storage across the landscape, installing green infrastructure, protecting wetlands, building outside of flood zones, and installing flood warning systems. Visit the Water Resources Working Group webpage ([wicci.wisc.edu/water-resources-working-group](http://wicci.wisc.edu/water-resources-working-group)) to learn more. There is hope for the future, but it is us.

—D. Converse

# Late season family fishing in Minnesota 1837

For Ojibwe harvesters across the Ceded Territory, dagwaagin (fall) means more than hunting seasons as tribal members fish select inland lakes with gill netting gear. While the greatest fishing effort occurs in the spring-time, the Mille Lacs Band of Ojibwe [MLB] reserves a portion of its annual walleye (ogaa) quota for fall fishing each year. Autumn catches can yield a variety species from ogaawag to tullibeas providing fish for ceremonies, food shelves, and household dinner tables.

As the Minnesota 1837 Ceded Territory sunset comes ever-earlier in the fall, tribal members also sharpen their spears, fishing many of the same near-shore waters that produced catches in the spring. From the bow of slow-moving boats, tribal spearers fish after dark, wearing battery-powered headlamps to locate fish. Appearing like white, glassy orbs under the beam of a spotlight, ogaawag telltale glowing eyes distinguish them from other fish cruising the cobblestone bars.

"Going into winter, walleye will feed in shallows where they'll target young-of-year perch and other species," said Ben Michaels, GLIFWC fishery biologist and Lake Mille Lacs researcher.

On an October outing, MLB members Brad Kalk and daughter Ashley Hanson landed a welcome walleye catch from Mille Lacs Lake, Minnesota (photo). In most autumns, the duo make time to soak a net on the big lake together—an opportunity to gather fresh fish before the winter freeze.

—CO Rasmussen



R. Hanson

# Traditional Ecological Knowledge

(continued from page 2)

identified 11 animate beings and provided detailed observations that was used in the study. GLIFWC scientists analyzed each being using a statistical vulnerability index model to determine vulnerability. The study revealed that manoomin (wild rice), ogaa (walleye), and waabooz (snowshoe hare) as the most vulnerable beings under different climate model scenarios. Part II of the GLIFWC study will assess more than 60 local beings in the Ceded Territories.

## Integrating TEK into the scientific analysis

Both science and Indigenous knowledge are valid ways of knowing. The scientific method is an empirical process for gaining knowledge, whereas TEK is a way of life for gaining knowledge.

It is true that Indigenous knowledge-keepers may not be familiar with the scientific method, and scientists may not be familiar with Indigenous ways of life. Bringing both knowledges and epistemologies (methods of knowing) together may be challenging.

In order for TEK to be effectively integrated with the scientific method,

Indigenous knowledge keepers and elders must participate with scientists in the design of research. Insights from Indigenous peoples can assist in making the research questions more culturally relevant. It is important that Indigenous peoples have authority over their knowledge and can deny its usage. This idea comes from a long history of knowledge exploitation by the academy within Indigenous communities. This is called Indigenous Data Sovereignty, which is "the inherent right of Native nations to govern the collection, ownership and application of its own data." [Native Nations Institute]

Indigenous Traditional Ecological Knowledge is not about human beings saving the earth, but rather, it is about us, as human beings, saving ourselves. As Oren Lyons, Faithkeeper of the Onondaga Nation, stated, "Nature has no mercy, only law. If you don't abide by the law, you suffer the consequences." I believe that the understanding of natural law comes from the lifeways and wisdom of Indigenous peoples from all over the earth. The integration of Indigenous knowledge and science is a noble effort to preserve and honor our existence on this planet, the Earth Mother of us all.





# Bright lights, dark water

## GLIFWC, partners wrap 38th fall electrofishing season

By Mark Luehring, GLIFWC Inland Fisheries Biologist

Early evening winds became a light whisper, and the sun dipped down below the trees. Near glass-calm settled over the water and a few of the remaining summer nighttime bugs buzzed around. Just as the September sky was finally dark, GLIFWC electrofishing boats roared to life near Iron River, Wisconsin for the 38th consecutive season of fall juvenile walleye surveys.

The bright LED lights shone almost blindingly off the front of the boats, providing a strange view for lakeshore homeowners, but a crystal clear view into the water for the surveying crews. While an odd sight for a lakeshore spectator, this annual fall walleye survey work provides a valuable baseline of information on walleye reproduction in an ever-changing environment.

Since the first GLIFWC crews started testing electrofishing equipment and learning how to do surveys in 1985, many things have changed. The first full season in 1986 featured just one highly dedicated GLIFWC crew, surveying from July until November in a rickety jon boat rigged with retro-fitted electrofishing gear.

GLIFWC's fleet of boats and crews has changed dramatically over the years, with up to four GLIFWC crews running custom electrofishing boats by the mid 2000s. With additional help from Bad River, Mole Lake, St. Croix, and USFWS crews, many more lakes were surveyed. As more crews were added, the survey season was shortened to around six weeks to standardize the timeframe and water temperatures. The 2022 season ran from September 6th through October 20th.

Even though big changes have come to the gear and the season over the last 38 years, the dedication of the crews and the consistency in data collection has remained constant. Preferring good weather, but not deterred by rain, snow, or wind, crews putt around the entire shoreline of the lakes at three mph or less (except the largest ones) to collect age-0 and age-1 walleye. They use just enough electrical current to stun the fish so they can be netted as they go, but not are not injured.

Once enough fish have been netted (or enough time has passed), the crews stop to count, measure, and take scale samples for aging from the young walleye before flipping them back over the side of the boat to once again swim freely. From all of this, biologists can calculate catch per mile and average length of age-0 and age-1 walleyes; metrics that are important for monitoring the health of individual year-classes.

In more recent years, changes have come to many of the fish communities of the north. Walleye have become less abundant, and natural reproduction has declined in many lakes. The fall surveys provide early warning signs by showing low catch rates when natural reproduction is declining. In some waters, crews are now monitoring more of the fish community, collecting bass, northern pike, and muskellunge to see how the species mix is changing as walleye decline.

Overall, GLIFWC worked with Bad River, Mole Lake, and St. Croix to survey 80 lakes in Wisconsin and Michigan in 2022. This number includes 14 surveys conducted jointly with Wisconsin DNR.

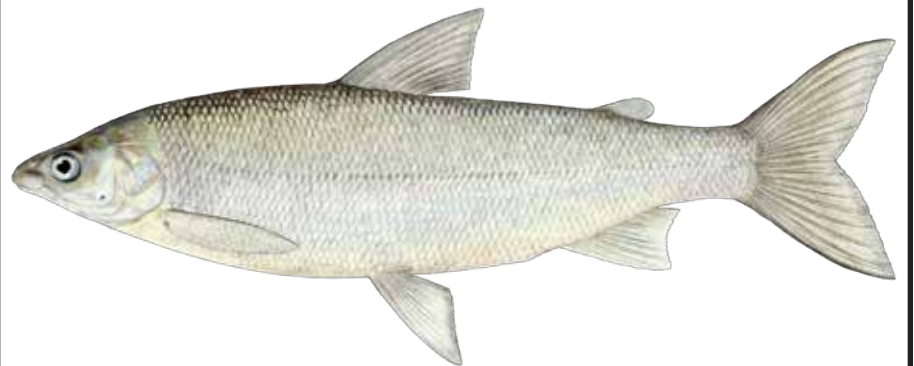
In addition, Mille Lacs and Fond du Lac Bands worked with GLIFWC to survey Mille Lacs Lake in Minnesota.



During nighttime electrofishing runs, fishery crews capture fish like walleyes in shallow water. Technicians collect data from study fish, releasing them back into the lake in good condition. (E. White photos)

### AFDO/SEAFOOD ALLIANCE HACCP TRAINING COURSE

Brimley, Michigan: December 13-15, 2022



LOCATION: Bay Mills Resort & Casino, 11386 West Lakeshore Drive, Brimley, MI 49715



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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

Lac du Flambeau Middle School students enjoy a February winter day on the ice playing goonikaa-ginebigooq (snow snakes). (CO Rasmussen photo)





# Wolves in a changing world

## *International Wolf Symposium inspires imagination, humility*

By Peter David, for Mazina'igan

The Ojibwe have long recognized and valued ma'iingan's role as an educator. That role was on full display at the International Wolf Symposium recently held in Minneapolis. We in the Midwest were fortunate to have this event in our backyard.

Wolves, like humans, can be found in many parts of the world, and this symposium could rightly have been held in dozens of different countries, but the International Wolf Center (IWC), which organized the event, choose to keep this symposium near its own core territory in Minnesota.

The gathering brought together wolf experts and enthusiasts from 19 countries and numerous Ojibwe tribes. Held only every four years, the agenda was packed with information: updates and understandings gained primarily since the last symposium, including roughly 75 papers, 30 poster presentations, a dozen plenary sessions, and for those who were interested, a day-long field trip to the IWC's education center in Ely in the heart of northern Minnesota's wolf range. Even for the hard-core wolf enthusiast, it was easy to be a bit overwhelmed.

## Early season deer registrations remain down, bear registrations up slightly from 2021

The early dagwaagin (fall) waawaashkeshi (deer) hunting season in the 1837 and 1842 Ceded Territories seems to have gotten off to another relatively slow start in 2022, and the take of makwa (bear) was the same as in 2021.

From the start of the season on September 6th (the day after Labor Day) through November 8, 2022, Ojibwe off-reservation hunters registered 315 deer and 42 black bears. Although the number of off-reservation deer registered by Ojibwe deer hunters through early November was similar to the 2021 season, the numbers are still lower than the average number of deer registered by the same time in recent history.

For instance, the average number of deer registered by November 8th from 2010 to 2021 was just over 700 deer. The early season is generally prone to large swings in deer hunting success with variable weather patterns, stretches of warm weather, the timing of leaves falling off the trees, variation in mast production, and other factors. The number of off-reservation deer registered by November 8th from 2010-2021 has fluctuated between the low of 310 deer in 2019 and a high of 1,224 deer in 2012.

This is the sixth-year tribal hunters have had the option of registering their deer remotely, via phone, and the fourth year that online registration has been available for hunters pursuing deer off-reservation within the Ceded Territories. Of the 315 deer that were registered as of November 8, 2022, approximately 83% were registered remotely, including 130 deer registered using the phone registration system and 133 deer registered using the online registration system. The remaining 52 deer were registered in person at tribal registration stations. Approximately 49% of the deer registered were antlered and 52% were antlerless deer. The peak of off-reservation tribal deer registrations typically falls over the second, third, and fourth weeks of November.

For the 42 bears registered as of November 8, 2022, 18 bears were registered remotely using the online or phone registration system. The remainder were registered in-person at tribal registration stations. Of the 42 bears that were registered, 26 (62%) were males and 16 (38%) were females. —T. Bartnick



Waawaashkeshi.



Ma'iingan. (International Wolf Center photo)

Many of the papers and presentations had their roots in western science—consistent with the IWC's mission of providing scientific information and learning opportunities to advance the survival of wolf populations. As a retired GLIFWC wolf biologist, it was fascinating for me to see the many times these “new” understandings aligned with the traditional teachings Ojibwe elders shared with me over the years. So often these stories moved beyond wolves simply as numbers—where biologists often begin—and delved deeper into recognition of ma'iingan as social beings, where their role and significance to the pack correlates closely with human communities—where age, experience, and other factors give each of us particular meaning.

This theme was particularly evident in plenary presentations by Kira Cassidy and Bob Landis, both of whom have their wolf roots embedded—as so many do—in the Yellowstone restoration effort. Kira discussed the significance of “elderly” wolves, and the benefits of having them in the pack. In many wolf-on-wolf interactions, the size of the respective packs involved is a primary factor influencing outcomes, but this work found significant benefits to having an elderly wolf in a pack—even though these wolves are likely beyond their peak physical condition.

These benefits are undoubtedly related to the experience and knowledge these ma'iinganag hold—and perhaps it was an ancient understanding of these qualities that lead to the Ojibwe's conviction to honor and listen to their own elders. Incidentally, this study also served as a reminder of just how hard a wolf's life is: a wolf gains elder status at just six years of age; well less than 10% survive to this milestone.

Landis is not a biologist, but a professional filmmaker who has spent uncountable hours capturing generations of Yellowstone wolves in his lens. He presented stunning imagery that traced the history of three rare and related white wolves in a presentation titled “*Three Wolves, Three Packs: Mother, Daughter, Grandmother.*” His footage has been scoured by biologists documenting social interactions, breeding relationships and much more, but anyone watching it immediately understands that a wolf is not just a number, and not just a replicate of all other wolves. You come away perhaps thinking that wolves are as individual as your own family members. Now where did I hear that before? (In time, you may be able to experience this story yourself, as National Geographic Television is developing a documentary founded on these wolves and the scientists who study them.)

There were dozens and dozens of other teachings that wolves provided at the symposium, including the ones relayed by GLIFWC's Tanya Aldred, who shared her telling of the Anishinaabe's relationship with ma'iingan, to a packed and captivated room.

As I considered all these teachings collectively in the days after the symposium, I kept coming back to an important Ojibwe teaching: to be humble.

So many people want ma'iingan to justify their existence on the basis of our incomplete understanding of them. In short, if we can't show that wolves have value to us—even indirectly, perhaps by enhancing ecosystems—they really don't have value. Even setting aside for a moment the arguments that wolves have inherent rights to exist regardless of human value, the symposium was a reminder of how ignorant we are.

All these new understandings gained in just the last four years make one's head swim a bit when considering what might be on the agenda at the 2122 wolf symposium, where folks will be looking back, a century from now, at the rudimentary understanding of ma'iingan we hold today. If we embrace and apply the teaching of humbleness in the relationship we have with wolves here and now, perhaps we will put less emphasis on control and management, and more on learning and living together.

*Editor's note:* Longtime wildlife biologist and wolf educator Peter David retired from GLIFWC in Spring 2022.







# Uptick in manoomin yields on many Wisco waters while others “rest”

By Kathy Smith, GLIFWC Ganawandang Manoomin & Amy Cottrell, GLIFWC Wetland Ecologist

Manoomin in the Wisconsin section of the Ceded Territory was pretty giving, considering last year's harvest. Some rice beds were lush and abundant, while others were quite sparse. But with determination many ricers still got a higher harvest than last year.

The decade of high precipitation levels continued to be an issue for ricing in the North Central forests, where many waters were unharvestable once again. In the southeastern Ceded Territory, only a few areas looked really promising from the sky, but could have been a little denser on close examination. Western Wisconsin near St. Croix, Polk, and Burnett Counties were promising. In fact, in that area, they harvested earlier than the rest. They had a successful season as they were able to share rice with neighboring communities that did not have a favorable season. Northern Wisconsin was also promising as we conducted on the ground surveys and had reports of a decent harvest. Adjacent to Lake Superior, the Kakagon Sloughs were plentiful, where lots of wild rice was harvested.

Throughout the Minnesota area, some wild rice beds were resting, a preferred term rather than a failure. Many Minnesota waterbodies were inundated with extreme precipitation just before harvest, which impacted wild rice while in its fragile stage, uprooting plants. We feel that mother earth is building up all the integral things to bring things into alignment so the rice beds can be productive. It also seemed like this year the harvest season ran later than normal, with ricers harvesting in a few spots into late-September.

GLIFWC continues to collaborate with partners on manoomin restoration projects and aerial photos provide an important vantage point to monitor progress, giving us an eagle 'eye from the sky' perspective. In an on-going pilot study with Mole Lake Band, the University of Minnesota, and Wisconsin Department of Natural Resources, GLIFWC aims at restoring wild rice on Spur Lake in Oneida County, Wis. Spur Lake had a historically significant wild rice presence and strong cultural ties to the Mole Lake community. As a group, we're evaluating the causes of manoomin decline—including high and static water levels and increased native vegetation—in an attempt to restore wild rice beds to historic levels.

Please look out for a GLIFWC manoomin harvester survey mailed in November and share your experiences with us. A gichi miigwech to those that already sent them in! This survey helps us evaluate the season and gather integral data. Also, there's a place to put in information if you are a processor accepting rice to finish and we will be updating the distributor list on the website. If you are interested in being added to the website, please contact Amy Cottrell or Kathleen Smith at 715-682-6619.

Please help us be good stewards for all things manoomin so we can continue our way of life to live mino bimidziwin.



A good start to a day of harvesting manoomin in the Wisconsin Ceded Territory (K. Smith photo)

## Honoring this beautiful gift

As manoomin beds get ready to rest for the winter, harvest feasts are underway as we express much gratitude for the abundance and sharing of wild rice. We started out the season with many invites to ceremonies and feasts before the first harvest of manoomin and nibi. GLIFWC staff is grateful for the communities that did give us the invite. It's important to honor this beautiful gift that sustains our way of life through ceremony and carrying on our tradition. What better gift is it to be able to harvest from the land, as it had been intended since Gichi Manidoo is so kind to us.

Anishinaabeg and non-tribal harvesters as well rely heavily on the rice chiefs and the helpers. They are the ones that we look upon for the knowledge. Rice keepers make sure that the rice beds are ready for harvesting and that we are not in those beds until the rice seed itself is ready. Harvesting is like a ceremony in itself. Everything we do as Anishinaabeg has a rhythm. How we paddle when we canoe, to push poling, to how we knock the rice. The rice seed even falls and lands differently in the canoe.

We reflect on and compare each harvest. How many pounds did we harvest? This lake has too many “ghost husks” should we have checked a different part of the lake or have a backup plan in place? Why was it real thick in one place where it was hard to push pole through? We might later find out it was agricultural runoff in that area. Where is the best place to rice that no one knows yet? Oftentimes we find that when we go out to shared spaces that everyone is so giving of the information and sharing knowledge. Where to go in the rice bed so we save time and have more time to harvest? The one thing that we do ask is, how do you process the rice? Harvesters always have an answer. Making connection is key.

We continue to do the work as caretakers of the medicines and teaching those ones that are coming behind us. We always think of the new generation that will also follow in our footsteps. That includes the youth and upcoming biologists and researchers. How we look at things is to hold and improve on what we have and how can we be the skabewis (helpers) to continue to do this work far into the future.



Tribal manoomin harvesters ply the waters of Michigan's Lake Plumbago in the central upper peninsula (D. Michener photo)

## KBIC camp covers all things manoomin

By Laura White, Traditional Foods Grant Project Manager

In early September, Keweenaw Bay Indian Community (KBIC) held a Manoomin Camp at the Ojibwa Recreation Area in Baraga, Michigan. KBIC Natural Resources Department partnered with Michigan Health Endowment Fund, Lac Vieux Desert Band of Lake Superior Chippewa Indians (LVD), Keweenaw Bay Ojibwa Community College, Michigan Tech University's Great Lakes Research Center and their College of Forest Resources & Environmental Sciences, GLIFWC, Roger LaBine (LVD) and other teachers to run the camp. The gathering provided attendees the skills, tools and teachings to harvest and process manoomin on their own while keeping restoration efforts in mind.

The camp got underway with workshops on making manoomin knockers, parching paddles, push poles, and birch baskets. Donald Chosa (KBIC) and Carlene Chosa (Bois Forte) shared their knowledge with the camp participants constructing birch baskets. The Chosas assisted beginners with selecting the right piece of birch bark, choosing a pattern, and shaping a nooshkaachinaagan (fanning basket). The novice basket makers had many different materials to assemble their creations thanks to the Chosas. Friday night, as the rain hammered the pavilion's ceiling, the Chosas transitioned their instruction to manoomin popping. Using popped wild rice—like small pieces of popcorn—a variety of treats were shared with participants to make a granola mix. This was a tasty surprise for campers, especially for the children. (see KBIC manoomin, page 14)





# Bull omashkoozoog lead off treaty hunting in Ceded Territory

From the upper reaches of Michigan's lower peninsula to north-central Wisconsin, Ojibwe omashkooz (elk) hunters experienced solid success in the first half of autumn. Each year Ojibwe treaty tribes share the highly-valued harvest tags with state-licensed hunters in both regions.

During Period 1 of the 1836 Treaty elk hunt in Lower Michigan, young Bay Mills Ojibwe Ciarah Carrick filled a bull harvest permit with a well-placed shot on an omashkooz in northern Otsego County. Westward, beyond Lake Michigan, Red Cliff Band hunters ushered in the Wisconsin Ceded Territory season following an intertribal ceremony and hunter orientation at Chippewa Lake.

Red Cliff's September 10 bull harvest dovetailed into a larger community outing including Boys & Girls Club of Gitchigami. Tribal youth spent a half-day knocking wild rice on Chippewa Lake and soaked up a tutorial on omashkooz biology from GLIFWC Wildlife Biologist Travis Bartnick, who was on hand to gather elk tissue samples for health testing.

"Teaching our youth to respect natural resources, to understand the culture and the science of the elk, of the wild rice, is one of the most important things we can do," said John Johnson, Chairman of the



Following season-opening ceremonies at the Ojibwe elk camp in the Chequamegon-Nicolet National Forest, Red Cliff hunter Matt Nordin, harvested an elk near Clam Lake, Wisconsin.

GLIFWC Voigt Intertribal Task Force. Following opening ceremonies in early September, Johnson returned to the Clam Lake area November 5 to assist Lac Vieux Desert Band hunters in harvesting the fourth and final bull from the 2022 Wisconsin Ceded Territory tribal quota.

In Wisconsin's northern elk range, wildlife managers continue to issue bull-only permits, encouraging the population to expand and fill all of the available habitat. For Lower Michigan elk seasons, cows



On an early season hunt in the 1836 Ceded Territory, Ciarah Carrick connected with a bull elk in Pigeon River Country State Forest last September. The hunt was family affair and included (photo from left) Lynette Carrick, Craig Carrick, Ciarah, and Justin Carrick Sr. (photo courtesy J. Carrick)

(or antlerless elk) comprise a majority of the harvest totals as officials set regulations to keep a lid on robust herd growth that has led to agricultural property damage and vehicle collisions.

—CO Rasmussen

# Warming temperatures and changing precipitation patterns are affecting water resources

By Dea Larsen Converse, for Mazina'igan

An analysis on climate impacts to water resources in Wisconsin from the Wisconsin Initiative on Climate Change Impacts (WICCI) shows that warming temperatures and changing precipitation patterns are impacting Wisconsin's wealth of water resources. The last two decades have been the warmest on record in Wisconsin and the past decade has been the wettest.

Average precipitation and extreme storm events that deliver large amounts of water in short periods are increasing in Wisconsin, resulting in flooding problems. Areas with permeable soils where the water table is near the surface, like lake shorelines and wetlands, can flood after periods of higher-than-average precipitation. Streams also flood during large storms, causing damage to infrastructure, habitat loss, and risks to human health. The fast-flowing water during floods increases erosion and can also cause deep channels to form that intensify the flow of stormwater. These channels further reduce flood storage, degrade water quality, and increase downstream flooding.



Harmful Algal Blooms are more likely to occur with warmer water temperatures and more nutrient runoff from extreme precipitation. (G. LaLiberte photo)



Ice cover duration is shorter due to warmer air temperatures. (K. Hein photo)

The warmer water temperatures combined with more runoff from extreme precipitation events also threaten water quality. In developed areas with large amounts of impervious surface, runoff receives little natural filtration, enabling sewage overflows and a wide variety of pollutants to reach surface waters. Statewide, nutrient runoff from agricultural lands fuels algal blooms, a major water quality issue. Erosion and sedimentation are also a concern in many areas, including forested lands.

As lake water temperatures have warmed overall, the risk of fish kills and toxin-producing algal blooms are increasing. As the air temperature continues to warm, lake surface water temperatures in all lakes will also warm, changing lake ecology. Fewer lakes will be able to support cool-water fish like walleye and warm-water fish like largemouth bass will be much more common as waters warm by mid-century.

In the Great Lakes basin, rapid changes in water levels, extreme storms, and longer wet periods are impacting the coastal wetlands, beaches and dunes that provide habitat in the basin and protect water quality and shorelines. In addition, more frequent extreme precipitation events and warming waters are increasing the risk of microbial contamination on beaches and toxic blue-green algal blooms in lakes.

(see Water resources, page 15)





# Ceded Territory SCIENCE

## Omeshkooz in Wisconsin

By Travis Bartnick, GLIFWC Wildlife Biologist

When it comes to members of the Cervidae (deer) family, most people in the western Great Lakes region immediately think of the abundant waawaashkeshi (white-tailed deer) or possibly even the smaller populations of mooz (moose). However, many are often surprised to hear that there is a growing herd of omashkooz (elk) within the Ceded Territory in what is now known as Wisconsin since reintroduction efforts began in 1995.

Elk were widespread throughout much of Wisconsin prior to European settlement. However, with unregulated hunting and loss of habitat due to logging and conversion of the landscape for settlement and agriculture, elk were largely extirpated from Wisconsin by the late 1800s. In fact, it is likely the last elk was killed in 1886, near the southern boundary of the 1837 Ceded Territory, just west of Stevens Point, Wis.

The elk that had once roamed Wisconsin were members of one of several subspecies of elk known as Eastern elk. Eventually, all of the Eastern elk subspecies were extirpated from North America. All reintroduction efforts in the eastern portion of North America (including Michigan and Wisconsin) have relied on source populations from the Rocky Mountain elk subspecies.

After unsuccessful efforts to bring elk back to Wisconsin in the early 20th Century, the most current elk reintroduction efforts came to fruition in 1995 when 25 elk from a reintroduced population in Mich. were released near Clam Lake, Wis. The reintroduction efforts have involved many important partners, including but not limited to the United States Forest Service, Wisconsin Department of Natural Resources (WDNR), GLIFWC, University of Wisconsin, Rocky Mountain Elk Foundation (RMEF), and others.

In addition, the Ojibwe tribes have been and continue to be important partners in the reintroduction efforts, providing funding, technical assistance, staff, input on management recommendations, and other resources. Tribal community members also gathered to hold welcoming ceremonies when the original 25 elk were released near Clam Lake, as well as when additional elk were brought to the northern elk range from a reintroduced herd in Kentucky in more recent years.

Since the start of the reintroduction efforts, the elk herd in the northern elk range of Wis. has grown to an estimate of over 300 elk as of the spring of 2022. With the success of the reintroduction of elk to northern Wis., the first managed elk hunt was conducted in 2018 and a conservative number of bull elk tags has been offered every year since. Hunting tags have only been allowed for bull elk to protect the breeding female portion of the population so that the herd will continue to grow.

### Elk herd monitoring

How do we know how many elk are in the northern elk range of Wisconsin? Since these elk are wild, free ranging animals that roam around the dense forests of northern Wis., it can be difficult to know exactly how many elk are in the herd. It would be far too difficult to go out and accurately count each individual elk across the 1,620 square mile area where they range (Figure 1).

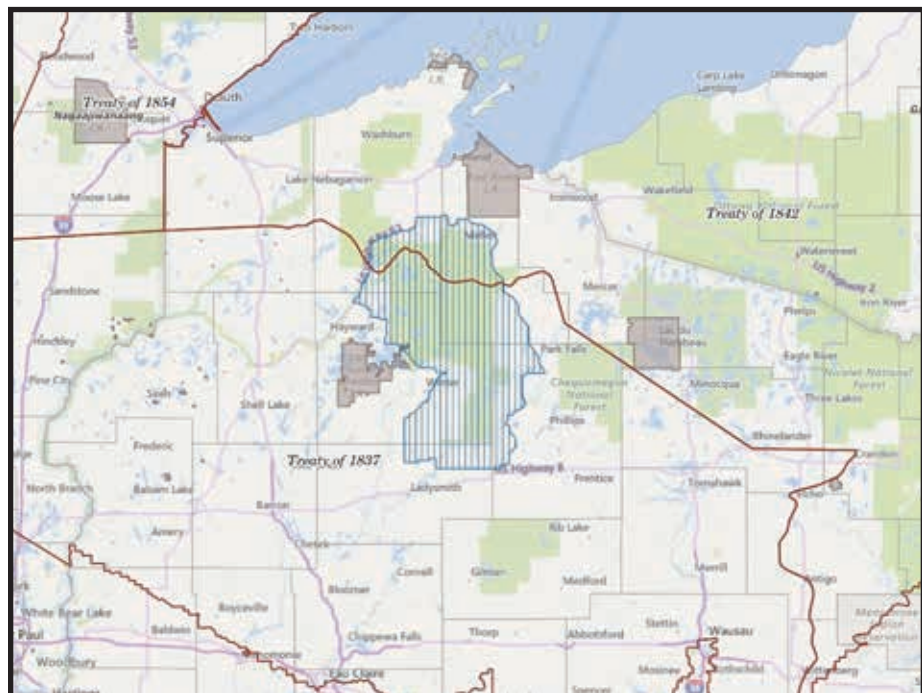


Figure 1. Location of the northern elk range within the 1837 and 1842 Ceded Territory in northern Wisconsin.



Omeshkooz. (WDNR photo)

However, there are several methods currently used to monitor and estimate the abundance of the elk herd.

One method of monitoring elk across the northern elk range is through radio collar tracking. Biologists and technicians with the WDNR have regularly placed radio tracking collars on individuals in the herd since reintroduction efforts began. Historically, most of these collars have been designed to emit a unique very high frequency (VHF) radio signal from an on-board transmitter which can be tracked using radio telemetry equipment. Biologists can use this specialized equipment to obtain approximate locations on the elk fitted with these radio collars using a method known as field triangulation.

Field triangulation of a radio collar's signal can be accomplished when the biologist finds the strongest signal using an antenna fitted to a receiver unit, which picks up the unique radio signal being emitted from the radio collar on the elk. The biologist records their own location using their geographic coordinates (often along a road or trail) and the direction (bearing) of the strongest signal being emitted by the radio collar. Then the biologist moves to a different location along a route and obtains another bearing toward the same signal. With a minimum of two bearings (but preferably three or more) the biologist can use these locations and bearings to see where the strongest signals cross on a map, which provide an approximate location of the radio collared animal (Figure 2). More bearings taken from multiple locations will often increase the accuracy of the mapped location of the collared elk. This information then can be mapped on a computer using mapping software, such as a Geographic Information System (GIS) program.

In more recent years, collars have also been outfitted with (global positioning system) GPS or satellite transmitters, which can use a network of satellites orbit-

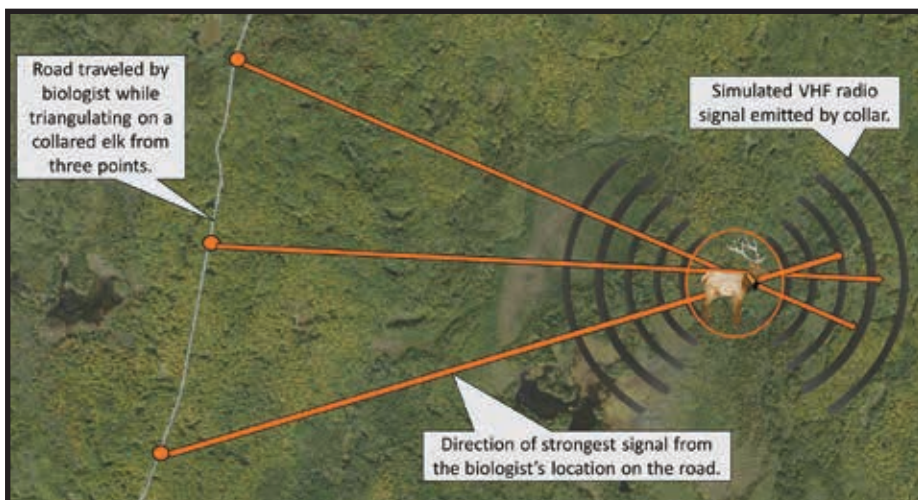


Figure 2. Example of field triangulation methods used for tracking elk fitted with VHF radio collars.





# Reclaiming traditional placenames continues on the regional, national stage

By Jenny Van Sickle, Staff Writer

Twenty-two years ago, Red Cliff tribal members set out to change the name of a local bay with a derogatory name. The effort took seven years to complete after advocates worked with community and county support. The bay, now called Mawikwe Bay, or Weeping Woman Bay, provides a strong example and foundation for the restoration work taking place across Ceded Territory. Locally, tribal members are taking seriously the effort to reclaim the sacred meanings and given names of their homelands. Their message found an attentive ear in Washington D.C.

The Department of Interior (DOI), with Sec. Deb Haaland (Laguna Pueblo) at the helm, announced that the Board of Geographic Names (BGN) has given final approval to replace 650 derogatory names from official features on federal lands as a result of the Secretary's twin orders issued November 2021.

Haaland's initial order (#3404) establishes sq\*\*\* as derogatory and creates a Derogatory Geographic Names Task Force to identify and replace offensive placenames after tribal and public consultation.

Her second order (#3405) establishes a Federal Reconciliation Advisory committee that has the authority to be proactive in soliciting replacement recommendations and removing additional derogatory placenames from federal lands without having to wait for individual complaints to be filed. The current scope of work was limited to just the term sq\*\*\*. The term, sq\*\*\* has historically been used as an offensive ethnic, racial, and sexist slur, particularly for Indigenous women, said DOI in a statement.

Haaland is the first Indigenous person to serve in the Secretary position in the presidential cabinet.

Housed within the Department of Agriculture, U.S. Forest Service is charged with helping implement Haaland's orders. The agency categorizes official federal features by sorting them into one of two buckets: the first is geographic. Geographic features are natural like lakes, mountains, and rivers. The second category is administrative. Human-constructed features like roads and buildings are considered administrative.

"This work is going to take some time and a lot of work; but we're going to get it done," said Acting Press Officer for the USFS Eastern Region, Josh Veal.



To submit suggestions, give feedback, or guidance in name reclamations go to [usgs.gov/us-board-on-geographic-names](https://usgs.gov/us-board-on-geographic-names).

Several states have passed legislation prohibiting use of the word "sq\*\*\*" in official places, including Montana, Oregon, Maine, and Minnesota.

In Arizona's Grand Canyon National Park, the Havasupai people are working to rename the popular tourist destination, "Indian Gardens." In the *Grand Canyon Trust* Fall/Winter 2022 edition, Havasupai native Ophelia Watahomigie-Corliss writes:

"One need only do a cursory review of American history to educate oneself on this multi-layered repression of the needs, desires, and voices of Native peoples. Ignorance of this remains a choice, and you owe us the effort of understanding our history as the land you own, the very home you live in, is located on Native land."

Watahomigie-Corliss first wrote about reclaiming the traditional name Ha'a Gyoh (Havasupai Gardens) in 2019. Since then, the park has offered its full support and agreed to internally change signage of the garden while approval from the BGN is pending.

In Hennepin County, Minnesota's "Lake Calhoun" underwent a very public name restoration in 2019. The restoration effort, led by twin sisters Dr. Kate Beane and attorney Carly Bad Heart Bull (Flandreau Santee Sioux Dakota) gained (see **Reclaiming**, page 22)

# GLIFWC, partners work to increase awareness of the Tribal Forest Protection Act

By Bazile Panek, GLIFWC TAM Coordinator

Passed in 2004, the Tribal Forest Protection Act authorizes the United States Secretaries of Agriculture and Interior to give special consideration to tribally-proposed co-stewardship projects on Forest Service or Bureau of Land Management land adjacent to tribal communities. The legislation helps protect tribal land and natural and cultural resources from threats such as wildfire, non-local beings, or forest pests and diseases.

The GLIFWC Climate Change Program, along with the Northern Institute of Applied Climate Sciences (NIACS), other agencies, and tribal partners are working to raise awareness among natural resource managers on how to in-



corporate tribal priorities into National Forest management plans using the TFPA to build collaborative relationships between federal agencies and tribal communities.

As a first step, the GLIFWC & NIACS-led team organized a two-part webinar series to increase awareness of the TFPA and its relationship to climate change adaptation. The webinars were a big hit, with over 260 registered participants from around the country.

The first webinar featured presentations about the TFPA and the Tribal Climate Adaptation Menu (TAM). Up next, the second webinar featured a panel discussion from representatives from tribes and national forests from around the country sharing their experiences and lessons learned with TFPA projects. The Leech Lake Band of Ojibwe and the Chippewa National Forest presented numerous examples of successful TFPA projects. One project, started in 2019, is aimed at restoring traditional fire regimes to the fire dependent ecosystems within the Leech Lake reservation.

"There's an overlapping desire to put fire back on the landscape as a management tool in addition to increasing the biodiversity and getting some more thinning of these red pine and white spruce stands to achieve more of an open woodland," said Micah Reuber, ecosystem staff officer for the Chippewa National Forest. The TFPA served as a planning tool to move tribal priorities into the management of the Chippewa National Forest to achieve desired future conditions and promote tribal values.

In late September, we held our first joint TFPA workshop between the Bay Mills Indian Community, Sault Ste. Marie Tribe of Chippewa Indians, and the Hiawatha National Forest in northern Michigan. Participants used the Tribal Climate Adaptation Menu to plan potential TFPA projects related to fire and boreal ecosystems, improving fish habitat, enhancing gathering opportunities for tribal citizens, and more.

Additional workshops for tribes and their associated National Forests to identify mutual climate adaptation priorities and develop projects on National Forest lands that Tribes can initiate through the TFPA are planned for late 2022 and 2023. Funding for this pilot TFPA workshop project came from Forest Service Research & Development through the Northern Research Station.

For more information on the Tribal Forest Protection Act, contact Rob Croll, Policy Analyst/Climate Change Program Coordinator at [rcroll@glifwc.org](mailto:rcroll@glifwc.org).

For more information on the Tribal Climate Adaptation Menu, contact Bazile Panek, Tribal Climate Adaptation Menu Coordinator at [bpanek@glifwc.org](mailto:bpanek@glifwc.org).





# Spirited Camp Onji-Akiing makes welcome return in Upper Michigan



*By Jenny Van Sickle, GLIFWC Outreach Specialist*

Just a short distance from Sidnaw, Michigan is a classic Northwoods property with a large dining hall, cabins, and sandy lakeshore that sets the stage for authentic summertime fun in the Upper Peninsula. Built by the Civilian Conservation Corps (CCC) in 1939, Camp Nesbit fosters space to develop a deeper connection to spirituality and collective kinship with each other and the outdoors.

In mid-August GLIFWC wardens, camp counselors, and 42 youth broke out their shorts and sunscreen for a week-long outdoor experience after a two-year break due to COVID-19. Established 14 years ago in partnership with the U.S. Forest Service (USFS), Camp Nesbit serves as the host site for Camp Onji-Akiing (From the Earth) where tribal youth entering 5th-8th grades enjoy fresh air and vivid, woody surroundings deep in the Ceded Territory.

The camp's central theme this year focused on climate change. Camp co-directors, GLIFWC wardens Christina Dzwonkowski and Holly Berkstresser, help lead others from the Enforcement Division in organizing the annual camp.

"The mix between nature and culture is very special. Campers are involved in drumming, smudging, ceremonial tobacco, and learning how to craft traditional items such as fans, drumsticks, and an eagle staff," Berkstresser said.

The kids rise early for the daily spirit run. Their yips and hoots alert the sunrise that they're ready to offer their tobacco and begin the day. There's a unique joyful energy to well-rested, well-fed kids partnering up with their new friends to participate in the daily schedule.

Five junior counselors (high school age) and seven camp counselors (college students) assist wardens in guiding campers through the activities of the day which include archery, swimming, cultural crafts, warden 101, fishing, and tree planting. The small beach welcomes swimmers with its clean, shallow water and soft sand. Afternoon swimming turns into a course in boating safety as the wardens help fit and buckle lifejackets to load campers into canoes.

At the beginning of the week, campers are sectioned off into four clans: bear, eagle, loon, and deer. Clan groups line up for meals, attend activities, and spend built-in time together.

"Throughout the week campers make friends and get pushed out of their comfort zones, we see the kids encouraging each other and bonding, getting to know the people in their clans," added Dzwonkowski.

Camp evenings are brimming with excitement for several rounds of the spirited "Warrior Games," a variation of "capture the flag." Teams plan their



*GLIFWC Warden Roger Weber aims for camper's flags during evening Warrior Games.*

*GLIFWC's Lt. Steve Amsler (top photo) leads a demonstration in canoe safety. (Jenny Van Sickle photos)*

strategies and maneuvers to protect the designated chief's flag. They all work in staggered formations, across a large field hollering out warnings and ideas, occasionally bursting through the tree line to make a run for the guarded flag of the opposing team. For many, these games are the highlight of the week.

When the sun finally sets, a fire ignited near the lake draws campers in to gather around and listen to stories told by elders and spiritual leaders.

## Hands-on seeds & trees

GLIFWC's Rob Croll, climate change coordinator and Hannah Panci, climate change scientist visited Onji-Akiing to discuss their miinikaan (seed) collection program. The climate change team described finding good miinikaan crops of baapaagimaak (black ash) and wiigwaasi-mitig (paper birch trees) and how to collect and care for the miinikaan before shipping them to a seed bank in Fort Collins, Colorado.

As Panci explained: "the goal is to preserve seeds and safely store them for future use." The lesson also included collecting and examining paper birch seeds, which the campers distributed throughout camp.

## Eyes to the future

Campers concluded their week with a fun opportunity to visit with natural resource professionals, college representatives, and university partners at the career fair. Northern Michigan University and Michigan Tech University were among the education booths at the career fair.

USFS presented a variety of career options for campers to consider, including geographic information systems (GIS), firefighters, law enforcement, and arborists.

GLIFWC Divisions of Intergovernmental Affairs, Planning & Development, and Public Information Office were also on hand to talk with tribal youth. (see Onji-Akiing, page 22)



*Steven Jastrzemski Acting Zone Silviculture Forester Ottawa National Forest demonstrates how to use a planting bar to plant Oak trees which are expected to live 80-200 years and are thought to be better at resisting climate change.*



*Thomas McBurney (12), Lac du Flambeau, holds a two-year old oak tree ready for planting, campers learned it was especially important to ensure all roots were properly covered for the tree to survive. (JVS photos)*





# GLIFWC & partners push back against non-native phragmites

## *Teamwork makes control and eradication possible*

By Steve Garske, Invasive Species Coordinator

During the growing season you may have seen this robust, aggressive grass dominating ditches and open areas, especially if you're traveling in southern or eastern Wisconsin, or the Twin Cities area. With its tall stalks (to 15 ft or more), blue- or gray-green foliage, and large, feathery flowerheads, non-native phragmites is hard to miss. Introduced from Europe, it arrived on the east coast in the late 1700s or early 1800s, probably as a hitchhiker in soil used as ship ballast. By the 1970s it began showing up in the upper Great Lakes region.

As a broadly defined species, phragmites or common reed (*Phragmites australis*) is native to all continents except Antarctica, making it one of the most widely distributed plants in the world. A number of different subspecies occur across this range though, that vary widely in genetics, appearance, and ability to dominate natural and human-made habitats.

The native North American subspecies, *P. australis* ssp. *americanus*, occurs in wetlands, bog edges and lakeshores across much of Turtle Island. It has relatively sparse heads, reddish lower stems, and medium green leaves that turn straw-colored in fall. Native phragmites is far less aggressive than the introduced European counterpart. In natural habitats it usually grows in fairly small, sparse patches, as part of diverse wetland plant communities. The Ojibwe have traditionally used native phragmites (Ojibwemowin *aaboojigan*) stalks to weave frames for drying berries.



Native phragmites near Highbridge, Wisconsin. October 1, 2021. (SG photo)

Non-native phragmites (*P. australis* ssp. *australis*) tends to be taller and more robust than the native type, with large, dense flower heads, tan or pinkish-tan stems, and gray-green leaves. It is one of the most aggressive and damaging invasive plants in the Great Lakes region. Dense stands of non-native phragmites displace native vegetation, reducing or eliminating habitat for wetland wildlife including birds, reptiles, and amphibians. They also clog drainage ditches, interfere with boating and other recreation, obstruct road visibility and block scenic views. Their tough, flammable stalks build up the ground, and can become a significant fire hazard.



Northwoods Cooperative Weed Management Association (NCWMA) director Ramona Shackelford and two Town of LaPointe staff people contemplate the non-native phragmites population on Madeline Island. (SG photo)

A major part of GLIFWC's invasive species program over the last 8 years has involved surveying for and controlling invasive non-native phragmites. Over these years GLIFWC staff have found several dozen populations of this plant. Hot spots have included the Bayfield Peninsula, where non-native phragmites was used to de-water sludge at the Red Cliff, Bayfield and Washburn wastewater treatment plants.

In a massive project led by the Red Cliff Natural Resource Department, all three treatment plants have replaced non-native phragmites with native phragmites. Meanwhile populations outside these facilities (initiated from seed carried by water and wind) have been nearly eliminated.

Another hotspot has been the St. Louis River Estuary, where GLIFWC and Community Action Duluth (CAD) have been surveying for and eradicating non-native phragmites on the Wisconsin and Minnesota sides of the river, respectively.

GLIFWC continues to work with the Wisconsin DNR to find and control inland populations in the Ceded Territories of northern Wisconsin. In recent years this has included GLIFWC's "adopting" phragmites sites on private land (with the permission of willing landowners), and the Wisconsin DOT's treating of roadside populations located by GLIFWC.

Because established phragmites populations have such deep and extensive root systems, herbicides are usually required to effectively control them. However, populations growing along lakeshores or other areas with periodic high water can sometimes be controlled or even eliminated without using herbicides.

Over the last two years GLIFWC has been working to get rid of a fairly small population along the shore of Razorback Lake in Vilas County. The patch was growing in shallow water, on one end of the swimming beach in the state campground. An alert camper reported it in early summer 2021, and even cut off and removed the stalks. The shallow wetlands next to the beach were teeming with life, including frogs and tadpoles, young fish and semi-tame mallard ducks. So it was decided to try and eliminate the patch without herbicides.

In July 2021 a GLIFWC staff member and two Vilas County Land & Water Conservation Department summer people spent six hours digging phragmites shoots from the sandy muck. (This was more fun than it might seem.) We filled the back of a small hatchback with the shoots and rhizomes. Later that summer the GLIFWC staff person removed several more 5-gallon bucketfuls of shoots. Then last summer we could only find a total of about half a bucketful in three visits. We're now confident that we'll be able to eliminate this population without herbicides!



Shawn O'Connell and Tatum Eigenberger of the Vilas County Land & Water Department dig phragmites from Razorback Lake in July 2021. (SG photo)

Manual control is much more effective when the plants are rooted underwater than on land. That's because like all plants, their roots need oxygen to survive. Phragmites plants rely on diffusion of atmospheric oxygen through their shoots, so when their shoots are repeatedly removed the rhizomes literally drown.

As phragmites populations across northern Wisconsin have been eliminated, more continue to show up. The latest one to come to light is a large population on Madeline Island. The population was reported in September by a Town of LaPointe employee. A couple weeks later LaPointe staff along with two people from the Wisconsin DNR and the NCWMA were able to treat the population. Road surveys by GLIFWC and partners have not found any more phragmites on the island.

Teamwork by GLIFWC and its partners has greatly improved the efficiency of non-native phragmites management in the western Lake Superior region. We'll need all the help we can get to keep non-native phragmites from turning the region's diverse wetlands into phragmites monocultures.



# Once believed extinct, snow snake numbers on the rise in upper Great Lakes

## It's all fun and games when goonikaa-ginebig shows up

By Charlie Otto Rasmussen, Editor

**Odanah, Wis.**—First, let it snow. Like sharing aloud certain stories about the Anishinaabe culture hero Wenaboozhoo, some traditional activities require the arrival of winter weather. Among them, crafting hardwood snow snakes, said Lac du Flambeau's Minogizhig Wayne Valliere. Soon after mid-October's flurry of snowstorms, GLIFWC staff and Valliere assembled a collection of wood working tools, sandpaper, and other implements to create goonikaa-ginebigoo—best known as snow snakes.

"Each snake takes on its own manidoo; its own spirit," Valliere said. "And each person that works on a snake puts a little of themselves into it. It makes them all unique."

GLIFWC biologists, food safety and language specialists, and more—28 in all—attended the two-day workshop, netting nine goonikaa-ginebigoo. The work of filing, sanding, and decorating each length of maple was punctuated by laughter, exclamations, and light-hearted teasing from a carousel of participants. GLIFWC has late January pegged for an employee tournament when teams will compete to see how far their hand-made snakes travels with an underhand toss down a wintery track. Think bowling on lake ice; holding a slippery pool cue backwards with two hands, and giving it a good heave.

"When we come together as [GLIFWC] staff to make snow snakes, to play the game, we're staying in tune with cultural ways, we're celebrating winter," said Michael Waasegizhig Price, GLIFWC traditional ecological knowledge specialist. "Snow snake games disappeared from communities for multiple generations. Now we're part of this ongoing cultural renaissance, or revitalization."

At Fond du Lac Band reservation in eastern Minnesota, Ojibwe craftsman Tom Howes calls the snow snake "zhooshimaan."



Lac du Flambeau's Minogizhig Wayne Valliere pours molten pewter into a cavity drilled into the head of an unfinished goonikaa-ginebig (snow snake). (CO Rasmussen photo)

### Return of the snakes

Fifteen years ago, Valliere set a course to help revive Ojibwe winter games, or bibooni-ataadiwin, in northern Wisconsin. Rooted largely around demonstrating skill with hunting weapons, the games include target-throwing with atlatl and spear, accuracy with archery equipment, and the centerpiece—goonikaa-ginebig.

Valliere's search for snow snake knowledge took him to far-flung museums and eastern United States indigenous communities of the Haudenosaunee people, who call the competitive wooden shafts "mudcats," he said. During his travels, he learned construction methods, distinctive styles, and local histories. Mudcats are shorter than the typical 5-foot Great Lakes snake, he said.

"Out east it's really big today, but in the Anishinaabe territories, it's just starting to come along again," said Valliere.

Like so many utensils in Indian Country, modern adaptations to historic tools help speed the construction process. For goonikaa-ginebigoo today, store-bought sandpaper is a commonly utilized to reduce friction and improve glide. Valliere learned that historic finishing methods took some preparation but yielded good results.

"You'd take a piece of buckskin, put on some tree pitch, dab it in the beach sand," Valliere said, smacking his fist into an open hand. "Let it set up, and all of the sudden you have an awesome abrasive. I've used them. It works better than sandpaper and lasts longer."

After more than a dozen years, Valliere's settled into a goonikaa-ginebig construction process that requires him to source the heartwood from hard maple trees cutting 2" square dowels and air drying them in stick-fashion before finishing. Melted pewter poured into a quarter-inch cavity drilled into the snakehead provides weight to keep it moving down the track. Brushing on sanding sealer and polyurethane adds to a snake's smooth, glassy finish.

"We could just blast through the whole thing using power tools. Make one in an hour," Valliere said. "But we need to hold the maple, hold the resource, put our spirit, our life, our strength into these snakes, and all that energy, all the conversation, the laughter, all this stuff goes into it. We honor the mitig, the tree, That's why it takes two days."



Jenny Krueger-Bear, GLIFWC, paints a floral design atop a wooden snake head. (L. Plucinski photo)



GLIFWC Biological Services staff from left: Caren Ackley, Kathy Smith, and Dawn White.



Lynn Plucinski steadies a goonikaa-ginebig as Minogizhig drills a hole that will hold pewter, adding weight to the head. (COR)



Michael Waasegizhig Price, (left) GLIFWC specialist, uses sandpaper to taper the snake's neck. (CO Rasmussen photos)

### High stakes snow snakes

Piles of furs, all sorts of goods were wagered at these games. It got pretty serious. People had their own oils, their own technique, to create a snake that could beat the others. They kept that secret.

—Minogizhig Wayne Valliere



Hannah Arbuckle, GLIFWC outreach specialist, sketches a pattern. (CO Rasmussen photo)



GLIFWC Fishery Biologist Adam Ray and family utilized a wood-burning tool. (L. Plucinski photo)



After applying five coats of polyurethane to the finished snow snakes, the last of the workshop stragglers paused for a group photo. (J. Gilbert photo)





# Finding Les Petit Nations

## Part one

By Prof. Gregory Gagnon  
for Mazina'igan

*Editor's note:* Much of the Ojibwe Indian experience with Europeans—namely the French—is detailed in Great Lakes regional histories. To the south, on the far end of today's United States, native communities also engaged with French explorers and traders, which shaped a future sometimes familiar, sometimes unique to Ojibwe nations. In this two-part look at native history, Loyola University Professor Gregory Gagnon takes an in-depth look at native life in the Louisiana region.

American Indians share much in common. All 575 federally-recognized tribes have seen their historic homelands reduced, leaving them with only a pittance of what they once held; all have experienced the Bureau of Indian Affairs (BIA) as overseers of the Trust Doctrine, with decidedly mixed results; all had their ancestral cultures withstand cultural genocide.

And today, all face the prodigious task of maintaining sovereignty and ties to their traditions. There are significant contrasts from reservation-to-reservation and region-to-region. On the far end of the Mississippi River from the headwaters of Ojibwe Country, Louisiana has a history few even in Indian Country know about.

Federally-recognized tribes in Louisiana differ greatly from those of the members of GLIFWC. *Mazina'igan* readers are familiar with the widespread Great Lakes treaty tribes but in Louisiana there are just four, including three of them only recognized since the 1970s.

The most obvious difference is size: Chitimacha Reservation has only 1,300 citizens and 445 acres of trust land; Coushatta Reservation has an enrollment of 960 and 5000 acres; Tunica Biloxi has about 1200 citizens and 1711 acres of



fee and trust land combined; the Jena-Choctaw have 284 enrolled and about 50 acres. Contrast this with the treaty tribes which use square miles as a measurement across the three-state Ceded Territory. Even the smallest of the Ojibwe treaty reservations, the St Croix Band, is about 3,000 acres.

Perhaps even more importantly, none of the tribes within Louisiana are surrounded by reservations of the same tribe like the Ojibwe treaty tribes. Ojibwe reservations give each other support culturally, in court cases, and in operating jointly on such issues as the fishing, hunting and gathering rights of their joint treaty.

In Louisiana, the Choctaw have contacts with the Choctaw within Oklahoma and Mississippi but these are tenuous. The Coushatta share some issues with their relatives in Texas and Alabama. The Tunca-Biloxi and Chitimacha stand alone.

All of the Louisiana tribes, originally called “les petite nations” (the little nations) by

the French do share the common ingredients with the Ojibwe but with marked differences. French imperialists never controlled the Ojibwe but they did work with them to keep the British away from trade routes. They did the same in Louisiana but with marked differences. The Chitimacha was the dominant tribe in Louisiana when the French arrived about a century after reaching the Ojibwe, but they counted dozens of others.

Interestingly, the founders of French Louisiana, Iberville and Bienville, were Canadian and brought the Canadian experience of dealing with tribes in the North to the South. They even introduced Ojibwe words to the Mabilian trade language of the Gulf Coast in the 1700s.

Once in Louisiana, the French convinced most of the tribes to chasten the Chitimacha; then subjugated the remaining tribes to the point of near extermination. Refugees coalesced and reformed several times. The majority of slaves in Louisiana were Chitimacha in 1718. Most of the tribes in the area were part of the regional slaving expeditions at one time or another. French domination was eased by the multiple diseases they brought to the tribes. Perhaps 80% of the native population died. The Choctaw tribe was based in today's Mississippi and most of them continuously allied with the French in to avoid slave raids by the English and their native allies. The Tunica tribe, reduced to only a few dozen members, became steadfast allies of the French.

Although only four tribes are federally recognized today, many more existed. This reduction process left open large areas of Louisiana for the French and, after 1760, the Spanish, to bring in settlers. By the time the Americans replaced the Spanish & French in 1803, Indians were no longer the majority of people in the state.

Southwestern Louisiana was colonized by French-speakers: Cajuns. The Little Nations either dissolved or moved or accommodated themselves to the dominant culture to the extent that Chitimacha and Tunica-Biloxi mostly replaced their own languages with Cajun French. Ancestors of Coushatta fled to Louisiana from the Alabama/Mississippi Creek Confederation homelands to escape the British and their allies, but only after Spain replaced France as European sovereign. Chitimacha retreated to the swamps of Bayou Teche, absorbed immigrants from shattered tribes, and clung to little bits of land.

In 1909 the Chitimacha had only fifty members; the Tunica Biloxi had only five families—about 30 people—living where they now have a reservation; the Choctaw only a handful; and Coushatta were reduced to under 100.

They also struggled to keep their tribal identities. They have been assisted in their efforts to maintain distinct cultures by being isolated on land amidst bayous and piney woods where White people chose not to live in significant numbers. White racism, Jim Crow, kept them separate. Survival as Indians meant that leaders had to be retained despite no federal recognition's services. Each had to mount political campaigns for recognition. Each of the tribes enculturated as necessary.

Much of the traditional culture disappeared, inter-marriage was common, both Catholics and Protestants converted, languages had only a few speakers and Indians joined the economies around them. Yet, they persevered as identifiable, separate tribes.

## KBIC manoomin camp

(continued from page 6)

LaBine and Gary Ghareeb (Wiidookaagewinini) took the lead in making push poles, knockers, and parching paddles. The pair gave direction on how to use a straight-draw shave-tool knife and how to use planers needed to carve out the respectable manoominikewin (wild rice making) tools from cedar. Campers were given three days to work on their tools, however, the labor-intensive crafting went long into the end of the weekend.

Steve Perry, a seasoned educator, prepared an area for those who wanted to make birch bark jewelry. Perry even switched gears to keep the children at the event busy by helping them make bows and shakers while sharing the Anishinaabe traditions, stories, and teachings involved in the creation of each item.

During a session designed to supply campers with Ojibwemowin vocabulary for the activities involved in manoominikewin, Katie Bresette (Red Cliff), an Ojibwemowin speaker, shared her knowledge of the language by breaking down vowel sounds and pairing them with consonants. Bresette also shared the songs she teaches her little ones to help beginners connect the sounds needed to pronounce Ojibwe words.

The KBIC DNR supplied canoes for individuals interested in visiting the rice beds near the Ojibwa Recreation Area. Plus, they gave teachings on the importance of regularly cleaning canoes to protect lakes from the spread of invasive species. Saturday afternoon, Kathy Smith (KBIC and GLIFWC's Genawendang Manoomin, “she who takes care if wild rice”) performed a water ceremony before leading a group out to reseed a restoration rice bed with Scott Herron, a biology professor from Ferris State University. Smith said,

“Our people are connecting back to our ways. We do this by honoring Nibi (water) and the Manoomin through ceremony. We acknowledge Gichi Manidoo and give much gratitude to those relatives through creation, that sustain our way of life. It is important to do the activities at manoomin camp, as our ancestors had done much to pass them through generations,” Smith said. “At one time not too long ago, we could not practice our ceremonies. In doing so, we honor them, and we all heal as it will reconnect our mind, body and spirit and bring back that balance, to live mino-bimadiziwin [the good life].”

Participants got a first-hand look at manoomin harvesting when the Chosas guided them out to a bountiful rice bed. The Chosas displayed how to stand in the canoe, use a push pole and bawa'igewin (to knock wild rice). The manoomin was not quite ready yet so they shared what to look for and who to ask to determine when the manoomin is ready to harvest.

Cortney Collia (LaBine's apprentice) helped share important teachings, educating participants on how to parch, dance, and winnow the manoomin. Austin Ayres (KBIC) tended the fires for each parching station. Maintaining a consistent temperature to scorch the husks is an integral part of the process. Ayres also kept a fire lit the from the start of camp all the way to the end, even during a downpour. LaBine later unveiled a helper he called “the manoominator,” a thresher gifted to KBIC by GLIFWC from a past Keepseagle grant-funded project.

On the final day, campers assisted in sorting the finished rice and completed their projects. Everyone was able to take home the tools they created and some manoomin for their hard work over of the weekend. Chi miigwech to Erin Johnston and the KBIC DNR team for organizing the successful camp.



*Coushatta baskets are in the permanent collections of the National Museum of the American Indian in Washington, D.C., the Louisiana State Museum, the Peabody Museum of Archaeology and Ethnography at Harvard University and many private collections. (coushatta.org/basket-making)*





# Indigenous Peoples' Day gains traction in the US

By Jenny Van Sickle, GLIFWC Outreach Specialist

Dr. Katrina Phillips, author and member of the Red Cliff Band of Lake Superior Ojibwe recently visited the virtual book club Maadagindan! to talk about the inspiration behind one of her books, *Indigenous Peoples' Day*.

"The fall is a time in the school year where a lot of stereotypes about native students can emerge," said Phillips who teaches at Macalester College in Minnesota. "This book can be a tool for educators, planting a seed so that all students have access to a respectful and celebratory narrative that can help steer conversations between teachers, librarians, and students."

Released in 2021, Phillips wrote the book to help build a fuller and more accurate discussion with and about native people, both in the past and in the present. Phillips said she has sent her own kids to school with it.

Whether it's preparing food, performing a special dance, making jewelry, singing songs, or reading a book, more schools across the United States celebrate Indigenous Peoples' Day every year.

"Lots of cities and states celebrate. What's happening around your community?" asked Phillips.

In Ojibwe Country between the Lac Courte Oreilles and St. Croix reservations is Shell Lake, Wisconsin, where Dawn Eiche, Native American Coordinator, works for the school district. Eiche planned out an entire week to acknowledge the history and culture of Indigenous people for K-12 students.

"We covered just about everything from jingle dress protocols to Ojibwe animal names and clans, to treaty rights with the older students," said Eiche.



Indigenous Peoples' Day in Shell Lake, Wisconsin. Lisa Hanson's 3rd graders listen to a story about Indigenous art, culture, food and dance. (submitted photo)

According to Eiche, the curriculum for the week focuses on education, new experiences, and connecting with different community members and leaders. The week also reminds students of all backgrounds that every day of the year is a good day to learn more about your heritage.

Canada officially observes National Indigenous Peoples Day on June 21. In the U.S, the second Monday in October is being recognized as Indigenous Peoples' Day in more communities as a supplement to the holiday in Christopher Columbus' name. The month of November is widely noted as Indigenous Peoples month.

## Books on native traditions & celebrations

- *Braiding Sweetgrass for Young Adults* by Robin Wall Kimmerer
- *Electa Quinney* by Karen Saemann
- *We are Water Protectors* by Carole Lindstrom & Michaela Goade
- *The Water Walker* by Joanne Robertson
- *Bow Wow Pow Wow* by Brenda J. Child
- *Sharice's Big Voice* by Sharice Davids with Nancy K. Mays
- *A Broken Flute* by Doris Seale

## Online Resources

- [shop.capstonepub.com/library/series/traditions--celebrations](http://shop.capstonepub.com/library/series/traditions--celebrations)
- [ailanet.org/activities/american-indian-youth-literature-award](http://ailanet.org/activities/american-indian-youth-literature-award)
- [americanindiansinchildrensliterature.blogspot.com](http://americanindiansinchildrensliterature.blogspot.com)



# Water resources

(continued from page 7)

For example, in 2018, extreme storm events elevated nutrient levels along the South Shore of Lake Superior for months and fueled major algal blooms along the shoreline.

While Green Bay has been experiencing algal blooms for decades, it is a concerning new phenomenon in Lake Superior. Extreme storms also bring contaminants that have the potential to move through the food web into fish that are important for subsistence fishers.

Changes in air temperature also influence the amount of ice cover, water levels, clarity, and chemistry associated with fish habitat. For example, the decreasing extent and duration of Great Lakes ice cover increases erosion and impacts fall and winter fish spawning beds.

Warming Great Lakes water temperatures mean cold-water fish will likely move north into deeper parts of the lakes and more thermal habitat for cool-water fish like walleye will open up in Lake Superior. However, changing precipitation patterns could potentially lower their growth rates and damage spawning habitat.

While all communities in Wisconsin are at risk from flooding and changes in the natural communities, historically disadvantaged communities bear a disproportionate burden and suffer the greatest harm. Yet, there is hope. WICCI suggests mitigating solutions like increasing water storage across the landscape, installing green infrastructure, protecting wetlands, altering land management practices to reduce runoff, building outside of flood zones, and installing flood warning systems. Visit the Water Resources Working Group webpage ([wicci.wisc.edu/water-resources-working-group](http://wicci.wisc.edu/water-resources-working-group)) to learn more. There is hope for the future, but it is up to us.

Editor's note: Dea Larsen Converse is the communications director for WICCI ([wicci.wisc.edu](http://wicci.wisc.edu)). WICCI is a nationally recognized collaboration of scientists and stakeholders working together to help foster solutions to climate change in Wisconsin.

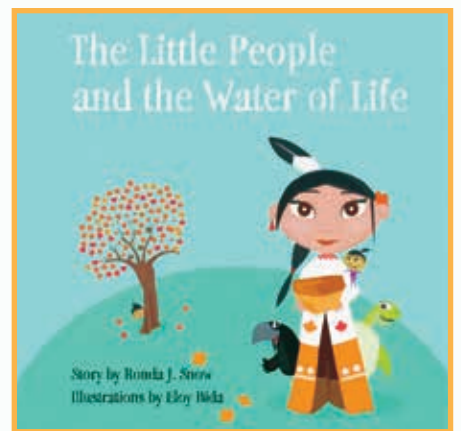
## Maadagindan! (Start Reading!)

The last book club for 2022 is scheduled for  
Wednesday Dec. 14 from 4-5 pm

Join author Ronda Snow, a member of the Lac du Flambeau Band of Ojibwe, and owner of Three Sisters Native Foods and Gifts.

As a child she remembers listening to her grandmother's stories late at night.

Her stories come from her ancestors, and she believes that the crows still talk to her, the trees hold ancient secrets, and the little people of the forest still exist.



Register at:

[go.wisc.edu/Maadagindan](http://go.wisc.edu/Maadagindan)

## GLIFWC ICE FISHING CAMP

Who: Youth 14-18 years of age

When: January 14-15, 2023

Where: Lac Vieux Desert Reservation

What you will need:

Warm clothing, fishing pole & fishing tackle/bait

Sign-up by January 6, 2023

Contact Jill Miller by email [jmiller@glifwc.org](mailto:jmiller@glifwc.org)  
or call 715-685-2112





# Elk herd monitoring in Wis.



*Biologists monitor elk populations through spring calf searching and collaring. Measurements are taken, ear tags applied, and the calf is fitted with a small radio collar designed to expand as the calf grows.*

(continued from page 8)

ing the Earth to automatically perform the process of obtaining an approximate location of the elk wearing the collar. It is similar to how GPS navigation works on smartphones to show the user where they are on a mapping or navigation application. Different collar types have different capabilities.

GPS collars often store the location information on the collar and the collar must be retrieved to obtain the data. Some of the collars are designed to automatically release from the elk after a set time. Then the biologist uses the radio signal to locate the dropped collar and can download the data from the collar to a computer.

Satellite collars have the capability of sending the location information to an email account where they can be plotted using mapping software or the location data is sent to a secure website where the location points can be displayed on an interactive map.

The advantage to using GPS or satellite collars is that it cuts down on the amount of time that biologists must spend in the field using the older triangulation methods with the strictly VHF collars. Depending on the landscape, the GPS or satellite collars can provide much more frequent and more accurate locations than using the field triangulation methods. There is also less of a chance for a biologist to disturb the natural behavior of the elk since GPS collars do not require the biologist to get close to the animal while in the field.

Another advantage of using GPS collars is that they can be programmed to collect location points more frequently or less frequently, depending on what questions about elk movement or other behaviors the biologists are trying to understand better. The collection of more frequent locations can reduce the battery life of the collars, so biologists try to maintain a balance of location frequency with GPS and satellite collars so as to reduce how frequently the individuals will need to be recaptured and fitted with new collars.

Since elk are social animals, it is not necessary to place tracking collars on all individuals in the herd. Elk often form subgroups or small herds that stick together for much of the year. There are several known subgroups of elk within the northern elk range in Wisconsin. As long as one or two of the animals from each subgroup are fitted with collars, biologists can use this tracking technique to obtain the location of the collared individual. If they are careful, they can attempt to get a visual confirmation of the number of elk within each subgroup by getting to within eyesight of the collared elk.

With visual confirmation, the biologist can then record the number of collared and uncollared elk within the subgroup. The collars can also inform

biologists about how an elk dies. Each of the collars are programmed to emit a different type of signal (mortality signal) if the collar has not moved for a set duration of time. If a biologist hears this mortality signal in the receiver, they can trek into the location of the collar and investigate the site to determine the cause of death of the elk.

## Calf searching & collaring

An additional method of monitoring the elk population has been through spring calf searching and collaring. Each spring in May and June, cow elk give birth to elk calves. Each cow typically gives birth to one elk calf, which can weigh approximately 35 pounds at birth.

Biologists monitoring cow elk fitted with tracking collars can often tell when the cow has started the process of birthing based on daily monitoring of their location at this time of year, when the cow elk stays in one general area for a duration of time.

Once the biologist is confident that an elk has likely given birth in a certain area, a team of biologists, wildlife technicians, and volunteers will head out to the approximate area and begin searching for any calves. Elk calves are spotted and well camouflaged. They have a natural instinct to lay down on the ground and hold perfectly still in an effort to avoid predation.

When the team finds an elk calf on the ground, they will carefully catch the elk and place a blindfold over its eyes in an effort to keep the calf calm. The team will quickly take various measurements, apply ear tags, and fit the calf with a small, radio collar



*Collared Clam Lake elk. (WDNR photo)*

Since the start of the reintroduction efforts, the elk herd in the northern elk range of Wisconsin has grown to an estimate of over 300 elk as of the spring of 2022.



*Figure 3. Example of a trail camera grid for monitoring elk. Cameras are dispersed in each of the grid cells. (Wisconsin DNR figure)*

which is designed to expand as the calf grows. Biologists can then use the collars to collect information about things like calf movements, interactions with the herd, and mortality.

## Trail cameras for monitoring

Another method that has been used to monitor the elk herds in Wisconsin in more recent years is through the use of trail camera surveys. Trail cameras have become very popular with hunters and landowners who use them for various purposes, such as scouting for where to hunt, monitoring the movement of other wildlife through their property, and even for security purposes, to see if anyone has been trespassing on their land.

Trail cameras are a passive method of monitoring wildlife and do not require the animals to be captured, handled, and fitted with tracking collars or forms of identification such as ear tags.

Relatively recent advancements in the technology associated with trail cameras (e.g., the transition from film to digital photography, longer lasting batteries, higher resolution images, more advanced sensors, etc.) has led to the widespread use of these cameras by biologists and researchers for monitoring many different species of wildlife over the past couple of decades.

Trail cameras used for monitoring elk in Wisconsin are deployed along a large grid-cell network (Figure 3). This is accomplished by overlaying a grid cell network over the target survey area, generally in the areas elk mainly use within the elk range. There are two trail camera grid networks within the northern elk range.

One of the major limitations of using this passive form of monitoring with trail cameras is that individual elk cannot be identified unless they are uniquely marked (e.g., wearing a collar or have a recognizable ear tag). However, some bull elk can be identified based on their antler structure.

At this stage in the use of trail cameras to monitor elk, researchers are interested in gaining a better understanding of what information can be used from the camera data to support other methods of obtaining population estimates, such as the radio tracking methods and the population matrix model described below.

Currently, the trail camera surveys are being used to help researchers derive better estimates of the bull portion of the population, to help assess elk calf production (cow:calf ratios), activity patterns, and population size.

Researchers with the WDNR have developed a population matrix model to predict the influence of harvest parameters (e.g., the number of elk har-

(see **Elk population matrix model, page 18**)



# Childhood on-rez, internships plot course for Sokaogon's LaBine

By Jalyn LaBine, for Mazina'igan

Beginning as a kid on a small Chippewa reservation in northeast Wisconsin—where, if you blinked, you would miss it—to being a graduate student at the University of Illinois-Urbana Champaign, my journey has been full of challenges. I went to a small school that was occupied by K-12 students in a single-story building. But, like most small towns in the Ojibwe Ceded Territories, I did not have many schools to choose from, but I cannot complain, it worked for me.

From a young age, I always knew the path that I wanted to take. As a small girl, I visited SeaWorld once, and immediately knew I wanted to work with the “pretty” dolphins. My parents allowed me to chase these dreams to the full extent. They knew I could handle the hard work and had the determination to push through. Throughout high school, they knew how important education was and how it would help me work towards my future. They guided and pushed me to do well in school and it eventually led to my departure from Sokaogon Chippewa Community after being accepted into an undergraduate program at the University of Wisconsin-Stevens Point.

As my journey led to college, I knew that biological sciences were my area of interest. This included the natural resources that were so familiar in my childhood, but I was unsure where to start. Classes that involved both natural resources, environmental and marine science were offered at the university. One of the classes allowed me to travel to Hawaii to study the ecology on the Big Island.

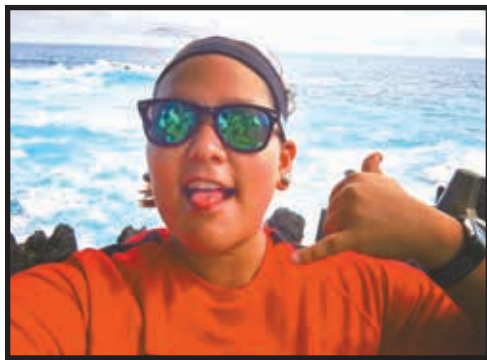
Around the same time, GLIFWC was providing internship opportunities as well. In the summer of 2014, my first internship began. Odanah, Wisconsin was a long way from home, and I didn't know a single soul there, but after having moved other places without knowing anyone, it wasn't too hard. Over the next five summers, I worked for GLIFWC in their Great Lakes and Inland Fisheries departments. The work with my fellow interns was physically challenging and the insects at some of the job sites were constantly in our face.

These experiences and the amazing people I have met through them are unforgettable. In my last summer before graduation, I was with the Inland Fisheries Section at GLIFWC. They had initiated a study on the movement of adult and juvenile ogaawag (walleyes) in Mille Lacs Lake, Minnesota with the goal of identifying which habitats each life stage occupied throughout the year. For an entire summer, we spent all our time in Minnesota learning about the receivers, telemetry tags, habitat types and fish behavior. During my internship, I met the Mille Lacs Band Fisheries biologist, and found out that he was also a fellow alumnus of UW-Stevens Point.

After my internship with GLIFWC, I learned the Mille Lacs Band of Ojibwe Department of Natural Resources had an internship of their own. Feeling that I had a good shot at getting the internship because of my past experience and that I had already collaborated with their Fisheries Biologist, applying was second nature. I was accepted into their program and started work a few weeks after my graduation from UW-Stevens Point. Later that year, a full-time fisheries technician position with the Mille Lacs Band opened and, again, I applied quickly. It seemed surreal because these types of opportunities were available so soon.



Practicing surgery on frozen juvenile walleye. This is where I learned to surgically implant tags and keep the surgeries under an important time limit. Surgeries will be done later on live walleye that will be released into Mille Lacs Lake.



Laupahoehoe Point Beach Park on the Big Island of Hawaii. My biology class in undergraduate school took a trip around the Big Island to explore the ecology of the island.

Over the next couple of years, I collaborated with GLIFWC and helped with their scientific study by surgically implanting the tags into the walleye. I gained many skills such as studying animal behavior, learning how to quantify different variables, and simply backing up a boat trailer.

This past year, I was fortunate enough to be a co-author on a peer-reviewed paper. Many individuals do not understand what it is like being a co-author. When the peer-reviewed paper was published, I felt like I accomplished something bigger than myself. I put my name on something of significance and that is what I wanted to do, and continue to do.

(see LaBine, page 18 )

## GLIFWC's 2023 summer internship opportunities

GLIFWC is excited to announce available internships for its 2023 GLIFWC Internship Program. Through this internship program, college students will work one-on-one with a GLIFWC mentor in various divisions and learn about necessary coursework, college degrees, and trainings which result in gainful employment in a multitude of careers including natural resources and stewardship careers with tribes.

Also, interns will participate in a multitude of traditional Anishinaabe cultural events and learn about the importance of treaty reserved rights to the Anishinaabe people, and their history in preserving these rights.

### Internship information

GLIFWC internships will consist of working 40-hours per week for 10 weeks (total of 400 hours), tentatively scheduled to begin May 30, 2022. All internships will be hosted at the GLIFWC Main Office, located on the Bad River Reservation in Odanah, Wisconsin. Some internships will require travel within the Minnesota, Wisconsin, and Michigan areas, as well as some overnight travel.

### 2023 Internships

Internships will be available in the following areas:

- ⊗ Biological Services Division
  - Administrative
  - Climate Change
  - Great Lakes
  - Inland Fisheries (two positions)
  - Wild Rice
- ⊗ Division of Intergovernmental Affairs
- ⊗ Conservation Enforcement
- ⊗ Public Information
- ⊗ Traditional Foods Project

\*See the internship position descriptions at [www.glifwc.org](http://www.glifwc.org) in the “GLIFWC News & Upcoming Events” box under “Employment.” Note: candidates are able to apply for multiple internships, please ensure that all required paperwork is submitted for EACH internship position.

Selected interns will be paid \$15.00 per hour during their GLIFWC internship. If needed, housing will be available.

Eligible applicants must meet the following:

- Be an incoming or continuing student that is accepted and/or enrolled full-time at a college/university for the Fall 2023 semester;
- Possess proficient verbal and written communication skills;
- Have a strong interest in working with Native American tribes;
- Be willing to travel as part of the internship;
- Submit proof of COVID-19 vaccinations;
- Complete a GLIFWC Summer Internship Program application.

To apply, applicants must:

- Submit the following, dependent on classification:
  - 2022 High School Graduate: provide verification of acceptance at a college/university for Fall 2023 (examples: enrollment verification or Fall 2022 class schedule);
  - Continuing College/University Students: provide unofficial transcript(s) verifying Spring 2023 and Fall 2022 enrollment;
  - Graduating College/University Students: provide unofficial transcript(s) verifying Spring 2023 enrollment.
- Submit proof of Covid-19 vaccinations.
- Complete the GLIFWC Internship Program 2022 Online Form.

**American Indian preference will be applied consistent with GLIFWC policies and Federal Indian Self Determination and Education Assistance Act (PL 93-638)**

Applicants that submit all required above documentation and the online form will receive a confirmation email once all items have been submitted. Transcripts and required proof of Covid-19 vaccination status should be sent to:

Pauline Lemieux, Internship Program Coordinator  
Great Lakes Indian Fish & Wildlife Commission  
P.O. Box 9  
Odanah, WI 54861

OR email to: [plemieux@glifwc.org](mailto:plemieux@glifwc.org)

**Subject:** 2023 GLIFWC Internship Program Application

Questions regarding the internship announcement or requirements can be directed to Pauline Lemieux via email or phone: (715) 682-6619 ext. 2138.

**Closing date for receipt of application**

**January 13, 2023 by 4:30 PM CST**

Find us on  
**Facebook**





# GLIFWC language project launches Ningaabii'anong: Stories of the Swimmers community outreach sessions

By Melissa Maund Rasmussen  
ANA Language Project Director

GLIFWC's ANA (Administration for Native Americans) language project staff is excited to be conducting in-person community outreach sessions to distribute and introduce the *Ningaabii'anong: Stories of the Swimmers* Ojibwe language materials.

Project staff worked with tribal storyteller Binesikwe (Debi Williamson) from the Keweenaw Bay Indian Community to develop stories featuring mikinaak (snapping turtle), giigoonyag (fish), and amik (beaver).

Project partners (tribal Head Start and other early childhood programs within GLIFWC's 11 member tribes) are receiving 250 *Ningaabii'anong: Stories of the Swimmers* sets. Each set includes three age-appropriate storybooks printed on non-toxic, synthetic paper which is waterproof and resistant to tearing.

In addition, supplemental documents developed by 2022 Planning & Development intern, Robin Armagost, (Red Cliff Band of Lake Superior Chippewa member and Northland College senior majoring in Native American Studies) featuring additional cultural and educational information relating to each of the stories round out the language packages.

"Contributing to the GLIFWC language revitalization project has really meant a lot to me, as this was my first internship where I really felt the work I was doing would benefit not just my community at Miskwabikaang, but all GLIFWC member tribes (and beyond)," Armagost said. It was so much fun learning more Ojibwemowin myself, and I cannot wait to see the young ones in our communities become the next generation of fluent Ojibwemowin speakers."

The sets also include a coloring book adapted from the original storybooks. The collated sets are delivered in recyclable paper bags for easy distribution.



GLIFWC ANA language staff met with Keweenaw Bay Indian Community early childhood teachers and staff from KBOCC Little Eagles, Preprimary Childcare Center and Early Head Start and Head Start to distribute and discuss the new *Ningaabii'anong: Stories of the Swimmers* Ojibwe language materials.

Additionally, as requested by project partners, we are also supplying a box of "chubby" crayons which are easier for little hands to grasp.

Project staff is currently contacting project partners to schedule outreach sessions. If you have any questions, please contact ANA Language Project Director, Melissa Maund Rasmussen at [melras@glifwc.org](mailto:melras@glifwc.org).

The *Ningaabii'anong: Stories of the Swimmers* companion webpage activities are currently being developed and will be available soon! Visit [glifwc-inwe.com](http://glifwc-inwe.com) and GLIFWC's Facebook page for updates.

## Elk population matrix model

(continued from page 16)

vested, the approximate age of the elk harvested, etc.) on elk population dynamics. The model is a two-sex, stage-based model, which breaks the population into calves, bulls, and cows (Figure 4). The bull portion of the population is further classified into age groups, including spikes (1 year-olds), raghorns (2 year-olds), and mature bulls (3+ year-olds). The model uses parameter estimates, such as variation in survival and reproductive values, which come directly from data that biologists have recorded from closely monitoring the Wisconsin elk population since the start of the reintroduction efforts. The model takes a starting population (historically based on census data or minimum counts but may eventually use the camera-based estimators) and projects the population estimates in future years based on various harvest scenarios.

The Wisconsin Elk Advisory Committee uses the output from this model to inform their annual harvest quota recommendations based on the Committee's primary objectives for elk management. These management objectives include things like maximizing herd growth, maximizing harvest satisfaction, maximizing the value of elk for wildlife viewing, maintaining a desired sex ratio (i.e., the ratio of bulls to cows), and maintaining a biologically sound age structure (number of calves, yearlings, and adults) of bulls and cows in the herd.

For example, if we are interested in modeling how harvesting ten bull elk per year vs. six bull elk per year over the next several years might impact herd growth, sex ratios, and the age structure of bulls and cows, we can plug those various harvest scenarios into the model and the output will provide us with an estimate of how those variables will likely change based on that level of annual harvest. This has been a very important tool to help inform the Wisconsin Elk Advisory Committee on how harvest rates can impact the elk herd and ensure that those previously mentioned management objectives are likely to be met.

Of course, no models are perfect, so researchers are continuously trying to improve the model to provide the best available science-based information to the Wisconsin

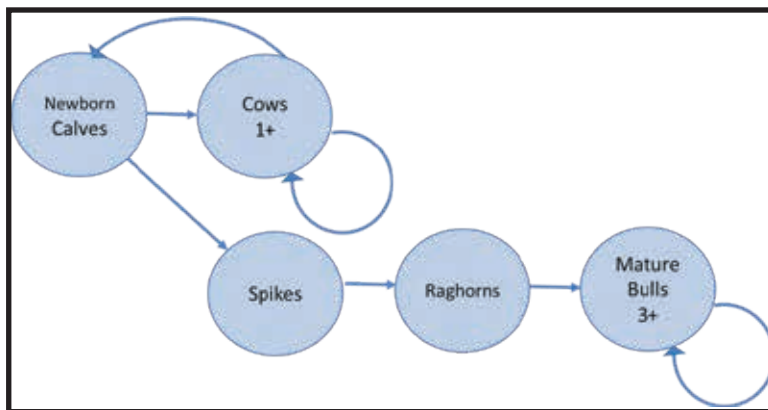


Figure 4. Conceptual diagram of the elk population model. Arrows from the cow stages to the calves stage represent reproduction. The remaining arrows represent possible movements between life stages that can occur within a given year. For example, a calf that survives its first year will transition into the yearling cow stage or the spike (1 year old) bull stage. The model does not differentiate cows over 1yo, so individuals stay within that stage until death. (Wisconsin DNR figure)

Elk Advisory Committee for developing their management recommendations. When it comes to wildlife population modeling, there are many factors that can influence the population, such as variation in survival rates, unexpected mortalities, severe winters, distribution and availability of optimal forage, and so forth.

As additional research is conducted, the information gained from the research results can be incorporated into the current model or could even lead to the adoption of an alternative model at some point in the future.

These are just some of the ways the northern elk herd in Wisconsin has been monitored since the beginning of the reintroduction efforts. Universities have also developed several projects to study other aspects of elk biology, habitat use, and population dynamics. The results of those studies, past and present, have been used to provide new insights for researchers and wildlife biologists as they strive to develop improved and innovative methods for tracking the elk population. There is still a lot to be learned about the reintroduction of once extirpated large mammals, such as elk, to their former range on the landscape. We look to the elk to teach us about the ways in which they live and interact with other beings and their environment.



## LaBine

(continued from page 17)

Eventually, with the hard work and funding from a U.S. Fish and Wildlife Service Tribal Wildlife Grant, there was enough money to continue funding me. Specifically, I will be focused on investigating the effects of environmental change on fish. Environmental change can have several effects on fish which include changes in their movement, swimming performance, behavior, and tolerance. Walleye is the primary species of fish to study, but other species can play a role in the changes in walleye behavior as well. Mille Lacs Lake harbors a recovering walleye population that fits perfectly for this study. All of this leads to the present, 2022, when I was accepted into the master's program in Natural Resources and Environmental Sciences at the University of Illinois.

I could not have made it this far in my career without networking, meeting biologists, and just gaining experience in every job that I worked. Learning new things every day and accepting information, in all forms, can be rewarding in the end. And even though my master's project focuses on a freshwater ecosystem, many of the skills and principles I am learning can be applied to the marine environment.

Moreover, I'll be learning about the marine environment through a tropical ecology course that will include travel to the Bahamas in early 2023. Lastly, networking with fisheries professionals will hopefully lead to job opportunities as a marine biologist or ecologist. Studying coral reefs or learning more about animal physiology as a graduate student will further lay the foundation so I can conduct my own research one day.





# US, Canada, First Nations take stock in half-century of cooperative Great Lakes management



By Hannah Arbuckle, GLIFWC Outreach Coordinator

Gazing into the waters of Niagara Falls, it's difficult to not be amazed at its power. There are 681,750 gallons of water per second flowing over the largest part of the falls. It is equally intimidating as it is beautiful.

The water appears clear, clean, and full of life with birds of all kinds flying overhead in search of fish. It would be pleasant to say the water's appearance reflected its true state, but it does not. When you turn in the opposite direction of the falls, it's an assortment of casinos, hotels, fast food chain restaurants, and tourist attractions.

Niagara Falls is and has been a binational area of concern since 1987 due to shoreline alterations, as well as industrial and municipal pollution, as reported by the government of Canada. This conflict, to many, is a symbol of our current state of the Great Lakes.

The Governments of Canada and United States recently gathered for their triennial Public Forum—three full days for discussion on the state of the Great Lakes, including receiving public comments. This Public Forum is mandated by the Great Lakes Water Quality Agreement (GLWQA), the 50th anniversary of which coincidentally fell on this year's forum, lending an air of celebration to the gathering.

Canada and the United States first signed the agreement in 1972 for the purpose of restoring, protecting, and enhancing the waters of the Great Lakes and its basin. It has since been amended in 1983, 1987, and lastly in 2012, each time to adjust the focus and priorities for current conditions of and threats to the Lakes.

While it is a binational agreement, the GLWQA recognizes that the involvement and participation of State and Provincial governments, Tribal governments, First Nations, Métis, municipal governments, watershed management agencies, local public agencies, and the public are crucial to the success of the agreement objectives. Alongside the Public Forum, the International Joint Commission (IJC) provided an opportunity for the public to provide comments on the Progress Report of the Parties—a report that is also mandated to be released by the U.S.



Beauty and natural power radiate from the US-Canada borderlands at Niagara Falls. But nearby development and commercial sprawl serve as reminders that environmental threats like shoreline modifications and pollution require careful monitoring. (H. Arbuckle photo)

and Canada once every three years. The IJC continues to accept public comment, submitted online, until December 23.

As a public gathering, the invitation to attend was extended to anyone who could make the travel. From the start, the forum and discussions were framed around celebrating the achievements that fifty years of this agreement has brought to Great Lakes water quality, overall ecosystem health, chemical contamination, and more, while keeping an eye toward what threats the basin could face in the next fifty years.

While accomplishments and progress were celebrated, speakers, governmental and community leaders, and other attendees thoroughly reminded the federal governments that a lot of work remains to restore the Great Lakes, and to protect them from continuing and emerging threats.

A few main points of discussion over the three days: the State of the Great Lakes report, the Progress Report of the Parties, and Areas of Concern. From the public, questions were raised about how the state of the Great Lakes report is assessed. For example, the state of the Great Lakes report concluded the Great Lakes indicators assessed the overall health of the Great Lakes as “fair” with unchanging trends. For many, this failed to reflect fully how they see the state of the Great Lakes. Many expressed concerns over the continuing algae blooms that are increasing every year on the Great Lakes, and the increasing threat of artificial substances and chemicals in our water. On a panel discussing the reduction of harmful chemicals, Sylvia Plain from the Aamjiwnaang First Nation laid out her concerns about who is involved in decision making.

“This isn't cradle to grave but womb to grave,” Plain said. “Chemicals are killing us. We're dying. Decisions are being made by decision makers who live far away. More girls are being born than boys in my community. [If] that doesn't make them care, what will?”

The power of her words caught the attention of many who have concerns about emerging chemicals and about who is at the decision-making table. The Parties who implement the GLWQA showed a willingness to listen and consider these concerns when brought up. During a welcome speech on the first day of the forum, Ontario's Lieutenant-Governor Elizabeth Dowdeswell spoke words of hope for improving engagement with States, Provinces, and First Nations on work being done under the agreement. Her words were reflected and echoed in the responses of the United States and Canada to public comments that were made at the forum.

“We need to ask ourselves how can we imagine and implement co-creation of partnerships? How do we actually do transitions, particularly in the energy field? How do we scale initiatives for impact? Will we ever see the recognition for a healthy climate and environment as a human right and a recognition that perhaps the greatest power we have to enforce that right might well lie within our own communities and neighborhoods. Do we really believe that citizens have actual agency right here on the Great Lakes? We need to continue to agree to work on engagement, not just consultation, to have the humility and courage to make sure that the right people are in the room and that we're all really listening.”

—Elizabeth Dowdeswell, Ontario Lieutenant-Governor

The dialogue between the GLWQA governments of Canada and the United States combined with public input offered promise to better relationships with all who see the Great Lakes as a home. Both on and off-stage conversations were engaging and upbeat taking the next steps to improve the Great Lakes ecosystem and water quality. Many people have offered their voice and perspective. Now it is time for action with the hopes that these conversations served a purpose—moving forward in a good way for the next fifty years and beyond.

## Ojibwe spirit food

For some people, oil is their gold. Black gold. For us, it's manoomin.

—Leelyn Van Zile, Sokaogon Chippewa Tribe

(continued from page 1)

Van Zile and an extended group of family and friends provided commentary and guided Insider through the entire process of generating the food staple Ojibwe people call “the good berry.”

The Sokaogon reservation centerpiece—Rice Lake—provided an excellent harvest to work with. Released from nearby Crandon School, Sokaogon students helped sift through wild rice grains with ubiquitous manoomin educator, Roger LaBine, who traveled from his home reserve Lac Vieux Desert to share skills and teachings.

Tribal elder Jeff McGeshick oversaw air-drying of green rice on big blue tarps spread across the ground. Cultural education coordinator Cassandra Graikowski jigged, or danced, parched rice in a traditional pit as Red Cliff's Marvin DeFoe sang softly along. With a synchronized flick of the wrists, Wayne LaBine sent manoomin husks from a shallow birch bark winnowing basket into the light breeze. Collectively, the Sokaogon community shared an outstanding look into manoomin's power to unite, inspire, and feed American Indian nations across the region.

“When you learn all that, the price of [wild rice] becomes almost irrelevant, because what you are getting means so much more than money,” said Romero, a well-traveled food connoisseur who was born and raised in Italy.

While finished manoomin can be purchased from a few high-volume harvester/vendors for around \$8.50/lb, some Ceded Territory sellers are commanding up to \$30/lb, a jump that coincides with the pandemic years. Convenience stores and other outlets continue to sell a domesticated version of wild rice typically priced at \$13.99 for 3lbs.

Find the episode this winter at [facebook.com/GLIFWC](https://facebook.com/GLIFWC) or [insider.com](https://insider.com).



Roger LaBine, Lac Vieux Desert, and Sokaogon students sift through freshly winnowed manoomin grains. (COR)





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

Aaniin! Aandi gaa-izhaayan? Ningii-kiiyose gaa-tagwaaging. Ingii-nooji' aag binewag. Ningii-nandawishibe gaye. Inashke! Jiibaakwewigamigong, nindayaan gete-jiibaakwe-gizhaabikizigan. Noongom, niwii-chiibaakwe. Ningii-ayaan wiiyaas. Gigii-kiiyose na? Gaye ningii-izhaa wiisiiii-adaawewigamigong. Ningii-miijimadaawe. Niminopidaan mashkode-bizhiki-wiiyaas. Ambe omaa! Biindigen! Daga namadabin imaa! Gibakade na? Dazhiiken imaa. Niwii-kiizizamoon noongom. Indayaawaa jiibaakwewakik. Indayaawaag zaasagokwaanag gaye. Nibakade. Niminwendam gidaayaa omaa, gaye. Chi-miigwech. Mii'iw. Howah!

Greetings! Where did you go? I hunted when it was fall/autumn. I hunted partridges. I hunted ducks also. Look! In the kitchen/cook shack, I have a very old stove. Today, I will be cooking. I had meat. Did you hunt? Also, I went to the grocery store. I bought food. I like the taste of buffalo meat. Come here! Come in! Please sit there! Are you hungry? Stay there. I will cook something for you now. I have a cooking pot. I have frybreads also. I am hungry. I am happy you are here, too. Many thanks. That is all. Wow!

### Bezhiig—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  
Ingijw—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.

### Niizh—2 Circle the 11 underlined Ojibwe words in the letter maze. (Translations below)

A. Ginitaa-gashkigwaas ina? Ningii-kashkigwaas bangi.  
B. Ningii-mazinigwaas gaye. Nizaagitoon apane.  
C. Ningii-wanigwaadaan, ingii-wanaabidoo'ige idash.  
D. Niminwendam gidagaag, geget.  
E. Minwaande, giishpin waabishikaag gemaa makadewaag.  
F. Ozaawaa. Waabishkwaa. Ozhaawashkwaa.  
G. Gidadisige.  
H. Aniibiish minwaande.

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

#### VAI's—Simple Verbs for Animate People

**Anishinaabe(g)**—Person(People)  
**Abinoojiinh(Abinoojiinyag)**—Child(ren)  
**Abinoojiyens(ag)**—Baby(Babies)  
**Ikwe(wag)**—Woman(women)  
**Inini(wag)**—Man(men)  
**Bemaadizid(jig)**—One who lives(pl)  
*S/he eats. They eat.*—Wisini. Wiisiniwag  
*S/he drinks. They drink.*—Minikwe. Minikewag.  
*S/he giggles. They giggle.*—Baapi. Baapiwag.  
*S/he cries. They cry.*—Mawi. Mawiwag.  
*S/he walks slow. They walk slow.*—Bedose. Bedosewag... (add person(s))  
*They were happy.*—Gii-minwendamoog.  
*They will be happy.*—Wii-minwendamoog.

### Niswi—3 IKIDOWIN ODAMINOWIN (word play)

**DOWN:**

- yes/no question maker
- partridge (plural)
- one who lives
- and/but
- also, too

**Across:**

- Stay there!
- old, ancient
- come
- here
- woman
- man

**Boodawazo.**  
(S/he builds a fire to warm up.)

**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 Who? What? Where? Why?:

The W-Word Question Patterns, initial vowel change, verb's suffix patterns

**Aandi, Aaniindi?**—Where? **Awenen?**—Who?  
**Aaniin?**—How?/In what way? **Aaniish?**—How, Why?  
**Aaniin apii?**—When?

Aaniin ezhiwebak agwajiing?  
—How is the weather outside?  
A: Zoogipon. (It snows.)  
Aaniin ezhinikaazoyan?—How/what are you named?  
A: [Name] nindizhinikaaz.—[Name] is my name.  
Aandi ezhaawaad? Where are they going?  
A: [Place] izhaawag.  
They are going to [a place].  
Aaniin apii gaa-izhaad?  
—When did s/he go?  
Gii-izhaa bijiinaago.  
—S/he went yesterday.  
Gagwejitoon! ! Try it!

**Zoogipon -yan Aaniin Gii-Bijiinaago**

- \_\_\_\_\_soogipon omaa. Gii-pimikawe.
- \_\_\_\_\_a'aw zhooniyaa-waagosh gii-kiiyose omaa.
- Aaniin apii *mayaajaa* \_\_\_\_\_? Giwii-wiijiwin noopiming
- Aaniin ezhiwebak agwajiing? \_\_\_\_\_. Zhakipon.
- Awenen? \_\_\_\_\_? Aaniish? Aaniin apii? Ojibwemowin!
- Apegish mino-ayaad.
- Giishpin bakadayaan, niwii-chiibaakwaan.

**Translations:**  
**Niizh—2** A. Do you know how to sew? I sewed a little bit. B. I embroidered too. I always loved it. C. I made a mistake sewing and I made a mistake beading on the loom. D. I am happy when it is multi-colored, that's right. E. It is a good color, if it is white or black. F. It's yellow/brown. It's white. It's green/blue. G. You color things. H. The leaf is a good color.

**Niswi—3 Down:** 1. Na 2. Binewag 3. Bemaadizid 4. Dash 5. Gaye **Across:** 6. Dazhiiken 7. Gete 8. Ambe 9. Omaa. 10. Ikwe. 11. Inini

**Niiwin-4** 1. **It was** snowing here. S/he left tracks along here. (Gii-) 2. **Yesterday**, that silver fox hunted here. (Bijiinaago) 3. When are **you** leaving? I will go with you to the woods. (-yan) 4. What's the weather outside? **It is snowing**. It is a wet heavy snow. (Zoogipon.) 5. Who? **What?** Why? When? The Ojibwe/Anishinaabeg language! (Aaniin) 6. I hope you are well. 7. If I am hungry, I will cook something

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 [lynn@glifwc.org](mailto:lynn@glifwc.org). © 2022 Shelly Ceglar • Edited by Jennifer Ballinger, Saagajiwe-Gaabawiik





# Let's play a game with goonikaa-ginebigooog (snow snakes)!

## What are goonikaa-ginebigooog?

Snow snakes are wooden poles that vary in length and are carved and weighted to slide well over snow or ice. The wood from the snakes comes from hardwood trees (i.e. hard maple, oak, ironwood). The inside of the log (or heartwood) is used to create the pole for the snake.

The purpose of the game is to see who can slide their snow snake the farthest on a specially prepared track. The snow snake game is a test of both skill and strength, and a good throw can easily clear several hundred yards or a mile!

Decorate your snake for competition after weighing down the head to make your snake travel the winning distance.

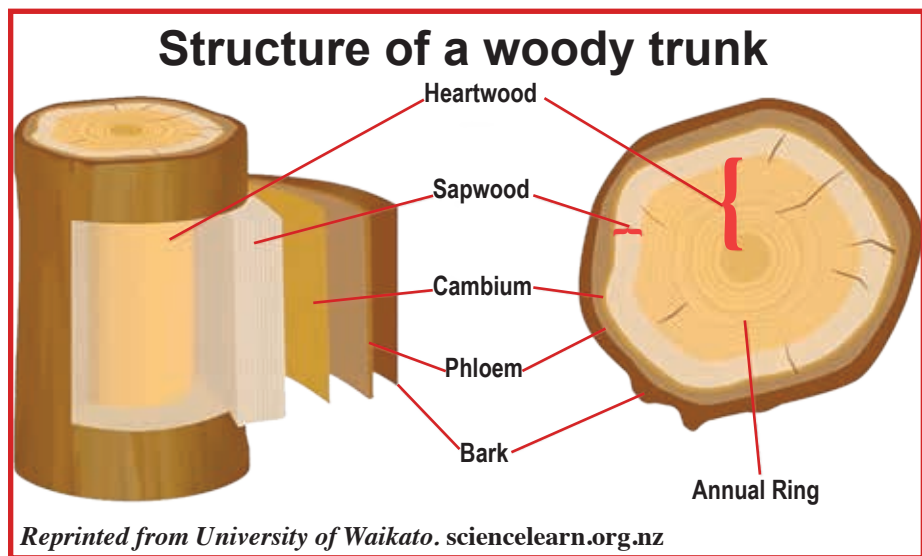
## History

The sport's popularity in earlier times was documented extensively by European travelers, ethnographers, and collectors in the 19th century across North America.

## Rules and goals

Players form teams of equal numbers or compete as individuals. The game is played in rounds. Each player throws their snow snake once per round. The snow snake is thrown underhand.

Rules vary according to different traditions. Make sure to agree on the rules and the number of points needed to win.



Completed snow snakes, ready for play. (B. Richter/UW Madison photo)



Decorate your own goonikaa-ginebig (snow snake).



In GLIFWC's 2019 monolingual Biboong storybook, the learner follows the storyline of Nigig (otter) and Waagosh (fox) and their endeavors to go spearing fish through the ice (akwa'waawin). While making their way to the frozen lake, nigig and waagosh meet up with several of their friends—Bizhiw (lynx), Ma'üingan (wolf), and Gijigaaneshii (chickadee). Nigig and Waagosh learn about making snowshoes, the snow snake game, cooperation, sharing, and being grateful. More Ojibwemowin stories can be found at glifwc-inwe.com. (W. Ballinger artwork)



Lac du Flambeau youth launch a snow snake during Bibooni-Ataadiwin (Ojibwe winter games) in 2014. (COR photo)

Visit [ldfwintergames.wordpress.com/2016/09/13/gooniikaa-ginebig-ataadiwin](http://ldfwintergames.wordpress.com/2016/09/13/gooniikaa-ginebig-ataadiwin) for more background information, pictures, tips & videos.





# From computers to canoes, Rosin tracks GLIFWC assets



Lee Ann Rosin, a member of the Bad River Band of Lake Superior Ojibwe joins GLIFWC accounting staff in the Administration Division. Rosin has logged 12 years of experience in government bookkeeping and is taking on a new role as GLIFWC's property & procurement officer where she'll focus on requisitions, purchase orders, inventory and assets, as well as assisting the accounting team wherever needed.

"Everyone at GLIFWC has been so welcoming and generous with their knowledge and I really appreciate that in a work environment," Rosin said.

Rosin was born in Chicago but has lived most of her life in Odanah, Wisconsin. In 1996 Rosin earned her Associate degree studying Microcomputer Office programs at Northwood Technical College (WITC-Ashland). She has three grown children and five grandchildren that range in ages from learning how to walk to learning how to drive a car!

When she's not crunching numbers, Rosin looks to her family, enjoying the outdoors, game night, or just a nice meal together. She said she's looking forward to learning many new things in the future, meeting new people, and is excited about her adventure with GLIFWC. —J. Van Sickle

# Growing IT section adds specialist

Brenden Ohlsson joins the IT section as an IT Support Specialist. Ohlsson will work throughout the Commission to keep connections running smoothly, support IT staff operations, and troubleshoot issues through the ticket submission system. Ohlsson joins GLIFWC as a former network technician where he worked with businesses to install internet, TV, and phone lines for a telecommunications company.

In 2021, Ohlsson graduated from Northwoods Technical College (Ashland) after completing the Systems Administrator coursework and plans to return to school one day to earn a degree in cybersecurity.

Born and raised in Ashland, Wis., Ohlsson has a passion for movies, arts, music, and trivia. When he isn't practicing his trombone, he likes to hike on the trails around northern Wisconsin, fish on Gichigami, and enjoys cooking.

"I really wanted a position where my specialties in technology were the focus," he said. "When the opportunity to do that work at GLIFWC came up, I jumped at the chance."

Ohlsson is most looking forward to learning more about tribal communities and how best to support their initiatives while getting to know people across the Commission's departments and further developing his skills. —J. Van Sickle



# Camp Onji-Akiing

(continued from page 10)

"We've had campers become junior counselors, who become counselors, and go to college for something in the natural resources field," Warden Berkstresser explained. "Some of these kids have never had any of the outdoor bonding and cultural experiences they encountered at camp. It's a great growing and learning opportunity."

Warden Dzonwokowski agreed: "when it's time to say goodbye, they have made lifelong friendships and we see hugs, tears, and promises to keep in touch! It's beautiful to see."

Camp Onji Akiing is a humble, accessible venue, and has real results when it comes to promoting the long-term engagement of tribal youth while encouraging the exploration of careers in natural resources.

The camp is next scheduled for August 7-11 in 2023. For more information on how to get involved, contact GLIFWC's Enforcement Division (715) 685-6619.



Campers participate in various team building games and exercises that encourage them to work and strategize together. (J. Van Sickle photo)



Keweenaw Bay's Rodney Loonsfoot helps lead an activity of securing feathers for an eagle staff. (J. Van Sickle photo)

# Reclaiming traditional placenames

(continued from page 9)

momentum in 2017 when the Minneapolis Park Board approved the measure to restore the lake's name to its original title: Bde Maka Ska (Lake White Earth or White Earth Lake). Organizers then petitioned the Department of Natural Resources Commission after learning that neither the municipality nor the park board had the statutory authority to officially change the lake's name, although they were able to update the park signage to reflect their decision.

Minnesota House Representative and Judiciary Chair Jamie Becker-Finn (Leech Lake Band of Ojibwe) introduced a legislative amendment during the 2019 budget session in support of the name restoration when a group called "Save Lake Calhoun" formed in opposition of the Dakota namesake. Becker-Finn is the daughter of MN State Senator "Skip" Finn who had long-partnered with community members to remove derogatory names from official places and was the first Native American to serve the Minn. Senate. Finn walked on in 2018.

"In the 90's I watched my dad work through these same local issues, it's important to keep going," said Becker-Finn.

In 2018, the MDNR made the name change official and was met with a challenge in court. One year later, a Court of Appeals sided with the petitioners who claimed that the MDNR acted outside its authority. Following the Court of Appeals decision, the MDNR challenged the ruling to the Minnesota Supreme Court and in a 5-2 decision the court affirmed that the name restoration was not only legal and official, but it was also final.

"The accomplishments in this work by local tribal members is extraordinary and we're seeing the broader work happen on a national stage in real-time," said Becker-Finn who has also been a vocal advocate to prevent the spread of chronic wasting disease, another priority issue for tribes. "Secretary Haaland is doing the exact work she promised to do and is doing it exactly how she said she would. This level of visibility and action on derogatory terms is historic."

In the Ojibwe Ceded Territory, GLIFWC's Traditional Ecological Specialist, Michael Waasegiizhig Price is very familiar with the name reclamation process (see *Mazina'igan* niibin 2022 "Anishinaabe Insights: The politics of placenames"). In collaboration with elders and Ojibwemowin speakers, Price worked on renaming a handful of streams in northern Wisconsin.

Said Price: "Haaland is addressing a low-impact racial bias in the federal government that has been there since the inception of the United States. I say, low impact because no one, except Native people, are aware that these sexist, racist placenames are embedded into the geography of our nation. I was honored to assist with Haaland's initiative to erase these misogynist placenames while working with Native communities to provide the replacement names here in the Ceded Territories."

For folks that want to submit suggestions, give feedback, or guidance in name reclamations are encouraged to participate: [usgs.gov/us-board-on-geographic-names](https://usgs.gov/us-board-on-geographic-names).

For additional information, download a free copy of *Gidakiiminaan* (Our Earth) Atlas, which contains 100's of Anishinaabe names of rivers, creeks, lakes, bays, and peninsulas across 1836, 1837, and 1842 Ceded Territories of Michigan, Wisconsin, and Minnesota [tinyurl.com/gidakiiminaanatlas](https://tinyurl.com/gidakiiminaanatlas).





# Land transfer to Fond du Lac Band brings measure of peace to the Ojibwe of Wisconsin Point



Fond du Lac Band Chairman Kevin Dupuis and City of Superior Mayor Jim Paine prepare to finalize two deeds that will officially cede ownership of two sites to the band during the land Reclamation event August 18, 2022. (N Rose Greene photo)

By Charlie Otto Rasmussen, Editor

Wisconsin Point—a long sandy peninsula that separates today’s City of Superior from Gichigami—housed an Ojibwe settlement and cemetery when the land was seized for industrial development at the turn of 20th century. Workers emptied many of the gravesites, interring the remains in a mass grave on the mainland near the Nemadji River at St. Francis Cemetery in Superior. It’s a brutal turn of history that’s left the Fond du Lac Band of Ojibwe (FDL) unsettled for some 120 years.

“The pain is real. And it really hurts,” said FdL Chairman Kevin Dupuis.

Now, through the collective efforts of the band, Superior city council, and others, the Fond du Lac Ojibwe are caring for both burial sites after acquiring title to the parcels. During an August 18 signing ceremony, Superior Mayor Jim Paine signed over deeds for the two plots of land to the tribe. Dupuis called it an opportunity to begin the healing process for tribal members, including the descendants of Chief Osaugie—a treaty negotiator originally buried on the Point.

The event brought together leaders from around the region. Bryan Newland (Bay Mills), Assistant Secretary of Indian Affairs at the US Department of the Interior; Minnesota Governor Tim Walz and Lt. Governor Peggy Flanagan; Wisconsin Governor Tony Evers, and Wisconsin Senator Tammy Baldwin all spoke about the importance of the land transfer.

Dupuis credited Superior City Council President Jenny Van Sickle as a driving force in seeing the years-long reclamation effort come to fruition. A Tlingit/Athabaskan Sheet’ka Kwaan kiks.ádi, yéil and GLIFWC outreach specialist, Van Sickle also serves as an elected representative of both burial locations.

“I can say right now we couldn’t [have done] it without her,” Dupuis said. Learn more about Wisconsin Point here: [ci.superior.wi.us/226/Wisconsin-Point](http://ci.superior.wi.us/226/Wisconsin-Point).



## GLIFWC, Lac du Flambeau standouts at NAFWS



Lac du Flambeau President and Voigt Intertribal Task Force Chairman John Johnson was honored with the NAFWS Glen T Miller Tribal Leadership Award which recognizes outstanding tribal chairpersons. (COR)

(continued from page 1)

With 20 tribal natural resources departments and three intertribal commissions, the Great Lakes states contain a wealth of indigenous resource expertise.

Among the talented pool of fish and wildlife professionals, NAFWS selected a pair of GLIFWC inland fisheries staff for awards. Mark Luehring received NAFWS’s Great Lakes Biologist of the Year and Ed White, Great Lakes Technician of the Year.

The highest accolade went to Lac du Flambeau President and GLIFWC Voigt Intertribal Task Force Chairman John Johnson. He was honored with the NAFWS Glen T Miller Tribal Leadership Award, which recognizes outstanding tribal chairpersons.

The Great Lakes Region also acknowledged a pair of retired resource managers that have made lasting contributions to the Ojibwe Ceded Territory. Bureau of Indian Affairs Biologist Bob Jackson and Larry Wawronowicz, who headed up Lac du Flambeau’s natural resources department for decades, were both presented with the Outstanding Service Award. Miigwech for your service!

—Jenny Van Sickle contributed to this article



LCO Veterans lead the intertribal color guard. (COR)

## United by Nibi

By Kathy Smith GLIFWC Ganawandang Manoomin

The 4th Annual People of the Heart Water Walkers joined people of all colors, faiths, and philosophies to work together for life’s most precious resource: nibi (water). This water walk is inspired by the work for nibi led by Walt Bresette and Grandmother Josephine Mandamin, who helped expand the water walk movement across Turtle Island.

My fellow Keweenaw Bay Indian Community (KBIC) member Terri Denomie and I served as helpers, using Anishinaabe teachings and protocols to facilitate the annual water walk. Our three-day, almost 90-mile journey started at Sandpoint Lighthouse near Baraga, Mich. all the way to Hunter’s Point Park, Copper Harbor, Mich.

As we do this work for our precious nibi, that beautiful life-giving resource, we are beginning the healing process through community awareness and by bringing all people together. As we bring awareness to nibi through prayer and song, we plant seeds in our communities.

With much support through the Indigenous Peoples’ Day Campaign in celebration of all first nations, Michigan Technological and Finlandia University also joined our effort. Participants included KBIC tribal elders and youth, Little Traverse Bay Bands of Odawa Indians, Sault Ste. Marie Tribe of Chippewa Indians and surrounding community members from the Keweenaw Copper Country. Miles Falck, wildlife section leader with GLIFWC, lifted up prayers in a pipe ceremony.

Nimiigwechiwendem to all that supported the People of the Heart Water Walk and the people that were with us in spirit. With their thoughts and prayers, it made our hearts full. I am humbled by the support of the people that stopped to acknowledge us on our three-day journey. Nimiigwechiwendem to all who walked with us.





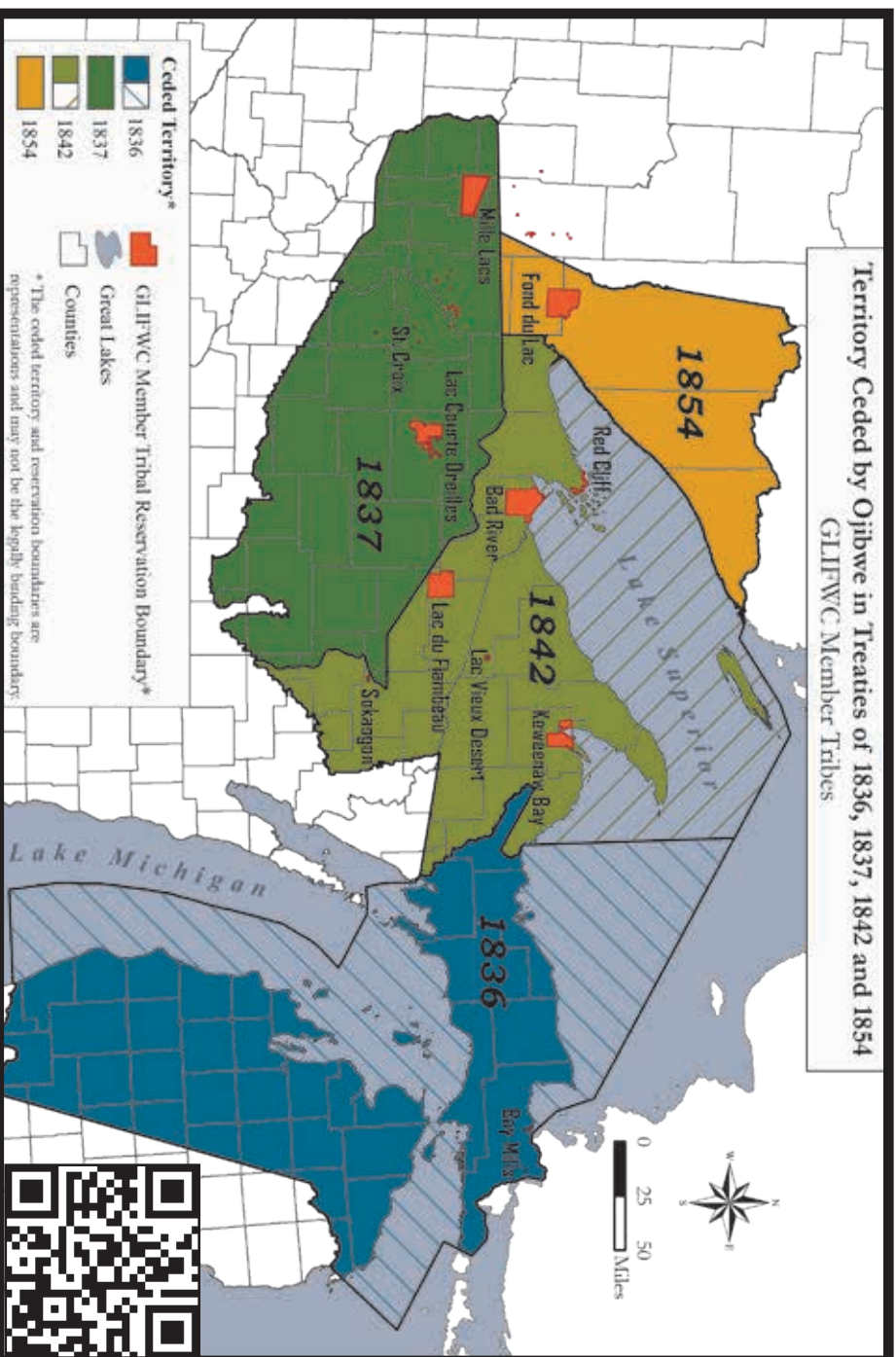


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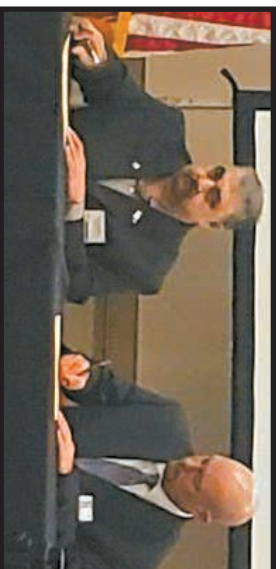
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## Red Cliff signs onto Great Lakes leadership role

At a ceremony in Detroit on October 18, the Red Cliff Band of Lake Superior Chippewa Indians became formal signatories to the Great Lakes Fishery Commission's (GLFC) Joint Strategic Plan. The move elevates Red Cliff Band to a Great Lakes management team that includes the United States and Canada, eight states, the province of Ontario, and three intertribal agencies: Chippewa Ottawa Resource Authority, 1854 Treaty Authority, and GLIFWC. Red Cliff Councilor Rick Peterson serves as a representative for the tribe, along with Natural Resources Administrator



for Andy Edwards who sits on the Lake Superior Committee. The GLFC helps coordinate stewardship and protection of the lake's remarkable fishery—a vital resource for millions that provides fish for native communities, sport anglers, and commercial operators who supply restaurants and family shops. Binational, intertribal cooperation on the Great Lakes jurisdictions witnessed the destructive power of invasive sea lampreys in addition to the negative impacts of pollution and habitat degradation.

—CO Rasmussen



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