Mazina'igan

A Chronicle of the Lake Superior Ojibwe

Published by the Great Lakes Indian Fish & Wildlife Commission — *Biboon 2026-2027*

Ongoing construction mishaps heighten Line 5 reroute concerns

Largest natural gas liquid spill in Wisconsin history

By GLIFWC Staff

Odanah, Wis—Since June 2026, GLIFWC environmental specialists have tracked a series of pipeline construction failures along Enbridge Energy's Line 5 reroute project. Canada-based Enbridge launched the project to establish a 41-mile pipeline bypass around the Bad River Ojibwe Reservation after tribal officials announced the band would not renew a lease permitting use of tribal lands a decade ago.

The magnitude of these recent failures varies widely from relatively small spills of hydrocarbons (five gallons) to the largest natural gas liquid spill in state history—approximately 1.3 million gallons. The massive August 25 natural gas liquid spill forced the evacuation of nearby residents in the Town of Saxon. Access to the site, located in Iron County, Wis has been restricted and GLIFWC is unable to investigate and draw conclusions on the severity of environmental impacts at this time.

Among the regulatory agencies overseeing the work to install a new 30-inch pipe to carry crude oil and natural gas liquids, Wisconsin Department of Natural Resources (WDNR) flagged Enbridge's succession of failures as permit violations. In a letter dated October 13, the WDNR classified the permit violations into broad categories: 1) failure to install and maintain proper sediment and erosion control best management practices 2) unpermitted construction activities and disturbance outside approved boundaries 3) dewatering and sediment discharges to waters of the state 4) unpermitted activities in wetlands and navigable waterways 5) various unauthorized impacts to waterways and wetlands throughout project construction resulting in failure to meet permit conditions pursuant to IP-NO-2020-2-N00471 and the associated water quality certification 6) failure to comply with endangered resources requirements 7) MLV 7 Line 5 rupture violations of air management general limitations.

In addition to the permit violations detailed by WDNR, GLIFWC staff were notified of an uncontrolled groundwater discharge in the Marengo River watershed. This discharge, which is a suspected aquifer breach, was reported by inde-

(see Line 5 reroute concerns, page 6)



Line 5 reroute work site. (COR photo)



Interagency fire crews kept a ground fire moving through the 17-acre ishkode site at Minnesota Point with drip torches. Low branches and other ladder fuels were first removed to keep the flames from reaching the pine canopy. (COR photo)

Restoring landscapes, healing communities with mino ishkode

By Charlie Otto Rasmussen, Editor

Duluth, Minn—Like a breath of fresh air, thick grey smoke collected in the low atmosphere around a heavily forested strip on Minnesota Point. The appearance of flames and woodsmoke generated no anxiety from onlookers, but it did carry a spirit of fraternity among those that lit the fuse.

"Thanks for the numerous partners that not only left their egos at the door but brought their hearts into the room. Without everyone's hearts carried into this work, we wouldn't be able to bring ishkode back to this place," said Nisogaabokwe Melonee Montano near the edge of a 17-acre plot where a low intensity burn crackled under a canopy of tall red pines.

Montano a Red Cliff Band Ojibwe and student researcher addressed a singular gathering of local residents, government officials, and supporters of using fire, or ishkode, to promote plant and wildlife abundance, diversity, and resilience. Nearby, Lake Superior rollers broke against a golden sand beach as fire specialists from the Fond du Lac Band, Minnesota Department of Natural Resources and City of Duluth tended the orange flames flickering through a dense layer of pine needle duff. The feeling of collaboration at the October

(see Ishkode research, page 23)



Aadizookewin

Learn about the significance of winter storytelling!

pg 9

Find more Ojibwemowin at *glifwc-inwe.com*

2026 Manoomin season: challenges, gatherings and community

By Kathleen Smith, GLIFWC Ganawandang Manoomin and Austen Hilding, Wetland Ecologist

Following a much-anticipated manoomin season, harvesters across the Ceded Territories experienced a range of conditions. While some waters provided good opportunities for gathering manoomin, lower water levels made harvesting challenging in a number of areas. Reports of "ghost rice," plants that appeared promising earlier in the season but produced little or no seed upon closer examination, were also common across many waters.

One may ask, just what is ghost rice?

Ghost rice is when no gift of life has been offered. The hull may be there and appear as though a grain has formed, but when it is opened or processed, there is little or no kernel inside. What should have carried the next generation is empty, thin or poorly developed. From a Western scientific perspective, this may be described as unsuccessful pollination, incomplete grain filling or an aborted seed. Weather, water levels, temperature, disease, insects and other environmental stresses may all play a role.

But when we look at manoomin through relationships, there is another way to understand what we are seeing. Manoomin went through its season, grew from the water, flowered and formed a hull, but the gift of life that carries manoomin forward was not offered. That distinction is important. We can count stems, survey beds from the air and see what appears to be an abundant stand of manoomin. Yet that does not necessarily tell us whether manoomin was able to successfully give seed. Ghost rice reminds us that the health of manoomin is not measured only by how much we see on the water, but also by whether manoomin is able to complete its life cycle and carry life into the next generation.

This past year, GLIFWC completed aerial surveys and used aerial photographs alongside remote-sensing imagery and on-the-ground observations. Having these different sources of information available for Rice Chiefs meetings provided a broader picture of manoomin conditions across the Ceded Territories and helped inform discussions as the harvest season approached.



The view from Pacwawong Lake, Sawyer County, Wisconsin during a GLIFWC manoomin abundance site visit. (A Hilding photo)

Each method provides a different view of the rice beds, while the knowledge and observations of Rice Chiefs, harvesters and others spending time on the water remain an important part of understanding conditions.

For those who were able to harvest, another observation became apparent during processing. In many cases, the amount of finished manoomin was lower than expected, with processed rice yields reported at approximately 30 percent this year. A canoe that may have looked like a good harvest on the water did not necessarily result in the same amount of finished rice once it was parched, danced, winnowed and cleaned.

Even with the lower processed yield, the 2026 manoomin season was a promising and successful one. Success is not measured only by the number of pounds of finished rice. There was manoomin to gather, people returned to the water, and in many places, there was enough to bring home and share. After waiting through an entire growing season, watching the water, weather and rice develop, there is something deeply rewarding about finally entering the rice bed and being part of the harvest. The sound of manoomin seed falling into the canoe reminds us that the season has given something back.

These observations are important because harvesters often notice things that cannot be fully captured through aerial surveys or other monitoring methods. The weight of the seed, how easily it falls from the stalk, the amount of empty hulls, water depth and how the rice processes all help tell the story of a season.

(see Sharing knowledge, page 12)

Spend your summer in the northwoods



Spotlight on Ojibwe culture, treaty rights



GLIFWC developed and presented Cultural Responsiveness Training for the Wisconsin Department of Natural Resources in October. Topics ranged from Wisconsin history, treaty rights and legal foundations, and government-to-government relations. Jason Schlender, GLIFWC Executive Administrator, addressed state officials in Madison. (B Jennings photo)

Ceded Territory news briefs

Adikameg plunge continues in 1836 Treaty waters

In the legacy fishing waters of Bay Mills Indian Community and other Michigan bands, non-local aquatic mussels are altering the food web, endangering the future of critical fish communities and tribal lifeways. Great Lakes scientists are monitoring a steady decline in lake whitefish numbers over the past quarter-century—a trend starkly documented by Wisconsin regulators who witnessed a 90% drop in Lake Michigan adikameg commercial harvest since the turn of the millennium. Following Lake Michigan, Lake Huron whitefish stocks have also plummeted. It's a hard hit for Ojibwe fishers in the southern waters of the 1836 Ceded Territory.

At issue, filter-feeding quagga and zebra mussels have depleted a critical food source for young whitefish: plankton. After successfully hatching, tiny whitefish rely on phytoplankton and zooplankton as a first food while adult stocks depend on bottom-dwelling amphipods like Diporeia, which also feed on phytoplankton; but throughout vast areas of the lakes, these mussels have already gobbled up the microscopic organisms. As a result, many adikameg never survive to reach catchable size for commercial, subsistence, or recreational fishermen. It's a dynamic fisheries biologists have seen with other fish species in other Ceded Territory waterbodies, notably Mille Lacs Lake in Minnesota.

Quagga and zebra mussels are native to eastern Europe. They hitched a ride into the Great Lakes in the ballast water of ocean-going ships some 40 years ago. **—CO Rasmussen**

Name partnership bolsters populations in St. Louis River

Duluth, Minn.—A new partnership including the Fond du Lac Band, Minnesota Department of Natural Resources (MNDNR) and the Great Lakes Aquarium raised, tagged and released name (sturgeon) into the St. Louis River. Name is an ancient relative that Anishinaabeg have maintained a strong cultural connection and relationship. Name can take up to 20 years to become mature for reproduction purposes.

The Great Lakes Aquarium offered its infrastructure and resources to rear over 250 juveniles from eggs. Other partnering agencies included US Fish & Wildlife Service and the Michigan DNR. Recently, staff from MNDNR and FdL Band Natural Resources participated in releasing, tagging and their relocated juvenile sturgeon to sites on the St. Louis River. The Great Lakes Aquarium will launch a new exhibit in 2027 highlighting the importance of conservation and partnerships.

Fond du Lac Band Natural Resources Director and GLIFWC Voigt Intertribal Task Force representative Biidaasige Thomas Howes spoke positively on the partnership.

"I see this collaboration as a weaving together of strengths and resources-we are always stronger together. To get to this point, it has taken all of our partners. Partners all pulled through to take it from spawning adult capture, larval drift fry collection, rearing in a trailer, rearing backup fish at Genoa National Fish Hatchery, disease testing, and a lot of research and development by the aquarium team to fund and construct a rearing facility. We look forward to the future." **—B. Jennings**

Ayaabe registrations lead first half of deer season

The off-reservation white-tailed deer season is off to a solid start in the Ojibwe Ceded Territories of Minnesota, Wisconsin, and Michigan. In the state-spanning 1837 and 1842 Territories, 234 waawaashkeshiwag were registered through November 3. That harvest figure is down slightly from the previous two years.

Despite the registration backslide, 2026 hunting conditions have been good apart from a few unseasonably hot temperature spikes in October. Mixed acorn production in the oak family resulted in only scattered northern red hotspots while white oaks are dropping more consistent mast across their range in the southern tier of the Ceded Territory.

Treaty hunters killed 133 ayaabeg through the first two months of season along with 101 antlerless deer. Bad River, Lac Courte Oreilles, and St. Croix tribal members led all bands in this period as hunting effort is set to dramatically pick up going into mid-November. For many citizens living away from tribal homelands, November waawaashkeshi hunting serves as a homecoming and coincides with state deer seasons when lots of activity in Ceded Territory woodlands leads to strong harvest numbers.

GLIFWC encourages all hunters to enjoy a safe and successful waawaashkeshi season and to make timely registrations, helping wildlife managers document the important regions Ojibwe people rely on for their nutritional and cultural sustenance. Treaty deer seasons run until at least December 31 in all territories with some extending into January as codified in tribal conservation codes. Check with your community registration station for details. Register your harvest in person or at *glifwc.nagfa.net/online*. **—CO Rasmussen**

Wisconsin Natural Resources Board acts to help struggling walleye populations



GLIFWC fisheries biologists measuring ogaa. (E White photo)

Sturgeon Bay, Wisc.—The Wisconsin Natural Resources Board passed Order FH 20-25 on September 23 allowing the Department of Natural Resources to quickly change to a rehabilitation regulation to protect walleye populations when the data show that the population or reproduction has declined.

A faster process is needed for walleye conservation since many populations have declined and the standard two to three-year progression for state regulation changes has proved to be too slow. By comparison, Ojibwe tribes typically move quickly to adjust harvest rules in response to documented ogaa declines on Ceded Territory lakes.

The 'rehabilitation regulation' allows anglers to keep one walleye, and it must be either between 18-22-inches, or over 28 inches. This regulation is designed to allow ogaawag to fully mature before they can be harvested, while also protecting some of the best egg producing females (22"-28" fish).

As part of annual population monitoring, GLIFWC and Wisconsin DNR conduct adult population estimates and fall juvenile surveys on a subset of lakes. A naturally reproducing lake would be eligible for the regulation change if three of the last five fall surveys had age-0 catch rates below 15 per mile of shoreline surveyed or if the population estimate is below two adults per acre.

The updated process—endorsed by GLIFWC and approved by the NR Board—provides an additional tool to help walleye populations, but it will not stop the regionwide decline on its own. Walleyes need the right combination of conditions in addition to protection from high harvest within a lake to thrive.

These conditions often include low development along the lakeshore, clean cobble/gravel substrate for spawning, a variety of habitats for nursery and feeding areas, a healthy food chain that provides zooplankton and the proper size prey fish for young walleye to grow, limited competition from other top-level predator fish, cool water areas, and connectivity to creeks, streams, and rivers. Partnerships that work to provide these conditions for ogaawag give them a good chance to continue to thrive where they are still doing well and to recover where they have declined. **—M. Luehring**

GLIFWC tribes request the release of ma'iingan remains

GLIFWC member Tribes deserve stronger communication and consultation from federal and state agencies

By Bizhikiins Jennings

In mid-September 2026, GLIFWC and its member tribes were notified by Wisconsin Department of Natural Resources (WDNR) that action had been taken to euthanize an entire pack of nine wolves consisting of four pups, three yearlings, and two adults in Price County, located between the Lac du Flambeau, Lac Courte Oreilles, and Bad River reservations within the 1837 and 1842 Ceded Territories.

Without any consultation or meaningful notification, GLIFWC member tribes were simply told of the action taken. There were not attempts to share data or provide decision-making criteria despite the *LCO v. Voigt* ruling, requiring co-management of resources within the Ceded Territories.

The WDNR claimed that the animals had repeatedly posed threats to human health and safety. State and federal agency representatives reportedly met on multiple occasions dating back to 2025 and after multiple failed attempts at utilizing predator deterrents, the WDNR ultimately made the decision to trap and euthanize the entire pack.

Ma'iingan has maintained a prominent figure in Anishinaabe worldview. Elders and knowledge carriers relay that ma'iingan and Anishinaabeg have shared the environment since time immemorial. Late Bad River Voigt Intertribal Task Force representative and elder Joe Rose Sr. would always share about the history and fates of ma'iingan and Anishinaabe. "Our fates

(see GLIFWC tribes, page 23)

US Forest Service MOU with Ojibwe tribes proves built to last in time of national overhaul

Manoominikeshiinyag, Wisc.—At the annual Tribal/USDA Forest Service Memorandum of Understanding (MOU) meeting, interagency representatives and tribes reviewed goals for resource stewardship and utilization while looking ahead to future opportunities on National Forests in the Ceded Territories.

Even as the formal agreement has produced many successes in 28 years, Ojibwe leaders said their concerns about forest management actions are not always addressed. Reed Robinson, US Forest Service tribal relations director, offered an optimistic outlook, noting that the tribes are well-positioned going forward.



White pine.

"The Forest Service is open to Indian Country today more than it ever has been," said Robinson, a Sicangu Oyate citizen. "Over the next year, over the next four to five years, we're going to be in a better place than now. And we're not going to give up on our trust responsibility."

The MOU is rooted in the US government's recognition of Ojibwe treaty rights and tribal sovereignty, establishing forest gathering protocols and a process for consultation on National Forest management actions. While acknowledging he was not exercising individual tribal consultation at the November 4 meeting, Region 9 Forester Gordon Blum announced that the agency was reviewing permit renewal for the sections of the Enbridge Line 5 oil pipeline that cross the Chequamegon-Nicolet, Ottawa, and Hiawatha National Forests.

"We've got a couple of executive orders directing us to support energy projects like this," said Blum of Line 5. "For us to be able to hold accountability to the degree that it should be requires us to have a permit in place."

Blum went on to say Forest Supervisors would be engaging tribes with consultations, providing additional project details. Many Ojibwe leaders were dismayed to learn of the forthcoming renewals. The aged 74-year-old oil pipeline runs nearly the length of the Ojibwe Ceded Territory and crosses sensitive Great Lakes waters at the Straits of Mackinac. Tribes have called for its decommission for the past dozen years.

Turning to interagency work at the local level, USDA and GLIFWC staff shared progress on a range of collaborative forest enhancement initiatives. Northern Research Center's Jen Ballinger provided an update on forest and prairie restoration projects, and GLIFWC's Zach Wilson detailed a series of USFS management actions, where Forest officials incorporated tribal stewardship goals in the Ceded Territory.

The meeting coincided with an era of transformation for the Forest Service. Changes include concentrating resources and staffing in the western US with Salt Lake City serving as the new headquarters. Regional forest supervisor's offices across the nation are also slated to be contracted and rebranded as service centers. **—COR**

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

Subscriptions to the paper are free to United States and Canadian residents. Subscribe online at: *glifwc.org/education-outreach/mazinaigan* write **MAZINA'IGAN**, P.O. Box 9, Odanah, WI 54861; phone (715) 682-6619; or e-mail: *pio@glifwc.org*. **MAZINA'IGAN** is also available in electronic format.

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* and our *Facebook* page.

On the cover

A revered doodem animal, a conservation success story, an outstanding indigenous food—sandhill cranes are all these things. Across Ojibwe Country, from Upper Michigan to Wisconsin and onto Minnesota, the Great Lakes population provides good hunting opportunities in the region's widespread public lands. A pair of ajijaak appear on Mazina'igan cover, photographed during wintry stopover in Wisconsin. (Jim Edlhuber photo, *windowtowildlife.com*)

Gathering firewood

An affordable way to heat your home and feel good about it

By Zach Wilson, GLIFWC Forest Ecologist

As energy costs continue to rise, gathering firewood offers an affordable, renewable way to heat your home. For many people in Ojibwe Country, collecting firewood is more than a practical way to stay warm through the winter. It is a chance to spend time outdoors, learn about the forest, and develop a deeper connection to the Ceded Territory.

Through the Great Lakes Indian Fish & Wildlife Commission (GLIFWC) and its Native American Game & Fish Applications (NAGFA™) permitting program, gathering firewood on National Forest lands can be a straightforward process.

Band members from GLIFWC tribes can either go online and issue themselves a permit or visit their local tribal natural resources office for assistance. Getting started online is easy. First, obtain an all-purpose gathering permit through GLIFWC's NAGFA™ at *glifwc.nagfa.net/online/*, then add a firewood gathering permit. This small-scale permit allows you to collect up to 10 cords, or 10 pickup truck loads as specified by the permit. Depending on your home's size, heating needs, and the efficiency of your wood-burning appliance, this amount may provide a substantial portion of a season's heating supply or potentially a year's worth.



An Iron County, Wis residence with firewood neatly stacked for the winter. (Z Wilson photo)

These permits apply to eligible U.S. National Forest Service lands in the Ceded Territory, subject to permit conditions and site-specific restrictions. If county forestland is closer or more convenient, contact the county forestry department to learn about its firewood gathering opportunities and any additional permits required. For example, in Iron County, Wisconsin, call 715-561-2697, apply online: *co.iron.wi.gov/273/Firewood-Permit* or visit the Iron County Forestry Department and ask for a firewood permit.

Knowing where to look can make all the difference. One of the best places to start is a recently completed timber sale. During logging operations, treetops, cut ends, and other usable pieces of wood may remain on the site. With permission and proper access, these areas can provide excellent opportunities to gather firewood. County forestry staff and U.S. Forest Service district ranger stations can often help identify recently closed timber sales and potential gathering locations. Logging roads may provide convenient access to sites, although road conditions, seasonal closures, and site restrictions should always be checked before heading out.

As with any forest gathering activity, be sure to follow permit requirements, respect posted closures and protected areas and gather only what is authorized. A little planning can go a long way toward making the experience safe, productive, and rewarding.

Gathering your own firewood can help reduce household heating costs while making practical use of available forest resources. Plus, many studies show that burning wood is "carbon-neutral" because trees absorb CO2 during growth, and burning the wood releases that same carbon back into the atmosphere. A much better option than using fossil fuels. Just as importantly, it offers a chance to slow down, spend time in the woods, and strengthen your relationship with the land. With the right permit and a little local knowledge, keeping your home warm can become an opportunity to connect with the forest in a meaningful way.



After the formal closure of public land timber sales, leftover logs can be made available to firewood gatherers. (COR photo)

CWD surveillance in the Ojibwe Ceded Territory

2025 Wisconsin detections hit new high

By Travis Bartnick, GLIFWC Wildlife Biologist

Chronic wasting disease (CWD) continues to threaten waawaashkeshi (deer) and omashkooz (elk) herds in the Ceded Territories. CWD is a neurodegenerative disease spreading throughout North America for decades. It infects members of the Cervidae family (cervids) including white-tailed deer, elk, and moose. Wildlife researchers have detected CWD in both wild deer herds and captive cervid herds within or near the Ojibwe Ceded Territory.

In recent years, the number of CWD detections in wild deer continues to rise in the region. For the Wisconsin Ceded Territory, 2025 marked the year with the most CWD-infected wild deer documented since the first positive near Washburn County's Shell Lake during the 2011 season. According to Wisconsin Department of Natural Resources data, the 2025 sampling season generated 21 new detections of CWD-infected wild deer in 18 townships within or overlapping the Ceded Territory boundary in Wisconsin. This included townships in Dunn, Eau Claire, Marathon, Oneida, Portage, Shawano, and Wood counties. Fortunately, there have been no detections of wild CWD-positive deer in the Minnesota portion of the 1837 Ceded Territory or in the 1854 Ceded Territory. In Upper Michigan, there have been no detections of CWD-infected wild deer within the 1842 Ceded Territory. However, there have been several detections of CWD-infected wild deer in portions of the 1836 Ceded Territory in Michigan's lower peninsula.

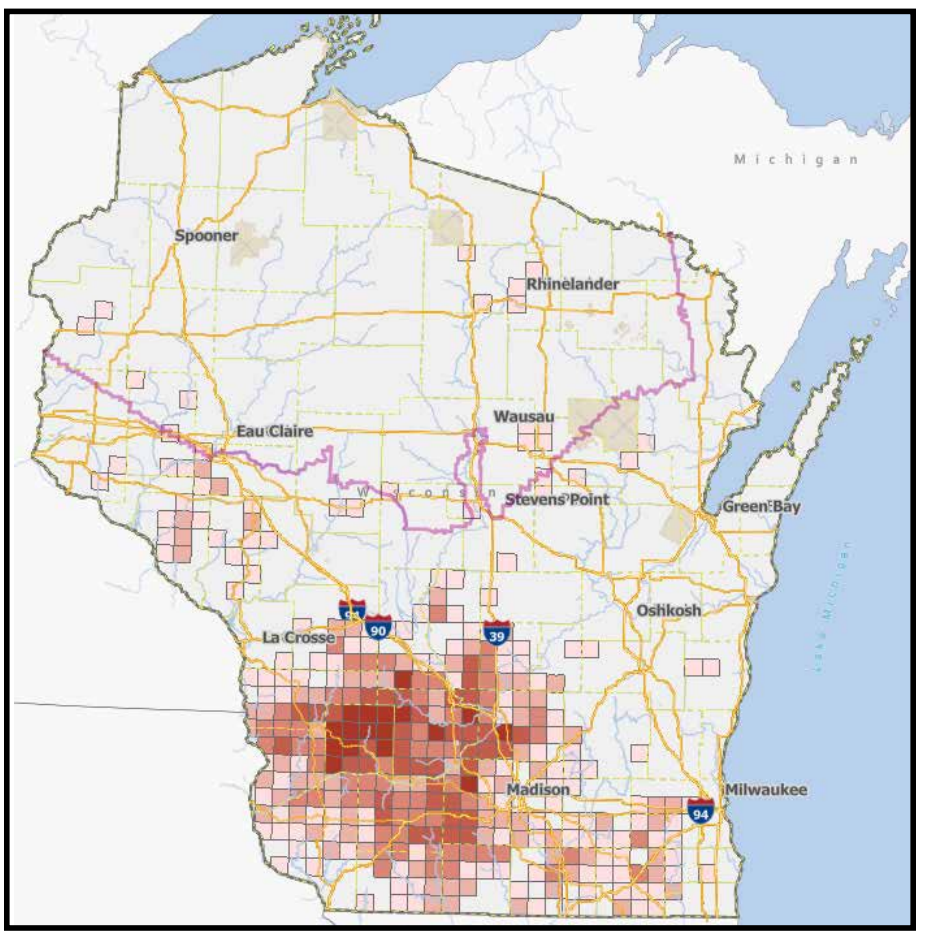
The infectious agent associated with CWD is a form of misfolded protein known as a prion (pree-on). Disease experts are confident that CWD is not caused by a bacteria or virus. There is no known cure, vaccine, or treatment for CWD, and it is always fatal. It is believed the prions can be transmitted several ways, including through contact with infected saliva, urine, and feces. Cervids infected with CWD will often show no signs of being sick during the incubation stage, which averages 18-24 months. During this time, infected individuals continue to shed the infectious prions into the environment where the disease can spread to others in the herd. Although there is no evidence that CWD can infect humans, the Centers for Disease Control and Prevention (CDC) recommends against the consumption of any animal that tests positive for CWD or shows signs of being sick. The World Health Organization (WHO) recommends keeping the agents of all known prion diseases from entering the human food chain.

How tribal hunters can help

GLIFWC continues to facilitate CWD testing of deer and elk harvested by tribal members within the Ceded Territories. GLIFWC biologists are collecting CWD samples from all elk harvested by tribal members during the 2026 elk season in the Wisconsin Ceded Territory. Ojibwe hunters are encouraged to submit deer heads for CWD surveillance efforts. Surveillance helps biologists track where the disease is on the landscape, which then helps with implementation of more targeted surveillance, research, and management actions.

In 2026, there will be GLIFWC CWD sampling sites located at most tribal registration stations. Sampling sites include a set of instructions, a freezer for head collection, garbage bags, and data forms. Hunters are encouraged to remove

(see 2025 Wisconsin CWD, page 6)



Statewide map of townships (colored boxes) where wild deer infected with CWD were reported during the 2025 surveillance season. The Ojibwe Ceded Territory boundary is indicated by the solid light purple line. (WDNR map)



Waawaaskeshi (Paul Danese, CC BY-SA 4.0, via Wikimedia Commons)

EHD outbreak hits waawaashkeshiwag in southeastern Wisc.

By Travis Bartnick, GLIFWC Wildlife Biologist

In recent decades, conversations about a disease that can affect waawaashkeshiwag (white-tailed deer) have often focused on chronic wasting disease (CWD). However, another disease that infects deer has been making headlines in recent months in Wisconsin. This time, instead of a prion (misfolded protein) disease like CWD, this latest ailment is caused by a virus transmitted by species of biting midges (tiny biting flies also known as "no-see-ums"), which tend to hatch and spread the disease in the late summer or early fall.

In mid-August of 2026 the Wisconsin Department of Natural Resources (WDNR) first announced that multiple wild deer had tested positive for the virus that causes epizootic hemorrhagic disease (EHD). The deer were located in the southeastern portion of Wisconsin, about 90 miles south of the southern boundary of the Ceded Territory. Since that initial announcement, there have been at least 2,000 suspected or confirmed reports of sick whitetails across at least eight counties. While the southern reaches of Lower Michigan witness recurring EHD episodes, this year's outbreak in southeastern Wisconsin stands out as the largest on record in the state.

(see EHD outbreak, page 16)

Register Your Harvest

Off-reservation hunters are reminded that harvest registration is required by tribal conservation codes for many species. Hunters have multiple registration options for deer, bear, turkey, and cranes: in-person, at a tribal registration stations (see *live-glifwc.pantheonsite.io/exercising-treaty-rights/registration-stations* for a map of locations), online (*glifwc.nagfa.net/online*). Swans must be registered in-person.

The benefits of harvest registration are substantial, extending well beyond an exercise in indigenous sovereignty and self-regulation. As co-stewards, tribes work with state and federal counterparts to determine population abundance and coordinate management for a variety of fish and wildlife species. This requires an accounting of both tribal and non-tribal harvest. Having an accurate measure of off-reservation tribal harvest also helps to identify and prioritize important places for protection.

For hunters seeking chronic wasting disease (CWD) testing for their whitetail harvest, in-person registration is the first choice. Clerks will register the deer, take possession of the head, and the hunter will need to fill out a short data form with their contact information and the location of where the deer was harvested to get the deer tested for CWD.

Good luck to hunters of all ages. It's a great year to take a kid hunting and pass on your knowledge.



NAGFA ID #: 9144 **Tribe:** MLK
NAME: JOHN DOE
Address: 124 Bismarck, ND 58501
Phone: 715-123-4567 **Hunter Safety #:** 123456
Remote Registratioon (deer, bear, turkey, crane): glifwc.nagfa.net/online/
More Information: glifwc.org/regulations/

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2025 Wisconsin CWD detections hit new high

(continued from page 5)
antlers from deer heads to minimize space used in the freezers and to prevent antlers from poking holes in the garbage bags. It is important to keep the head and a couple of inches of the neck intact and stored at cool temperatures (at least as cool as a refrigerator) prior to submitting for testing. Freezing the head is also an option. When dropping off a deer head for CWD sampling, it is important to follow the directions provided at the CWD sampling station, and to complete a CWD surveillance data form, including the hunter's contact information and deer harvest location. If we don't know where the deer was harvested, it makes it very difficult to initiate a proper response to a new CWD-positive detection. Deer heads submitted for testing without a harvest location will not be submitted for testing to the diagnostics laboratory.

Other ways to sample hunter-harvested deer

Minnesota, Wisconsin, and Michigan state DNRs will also be conducting CWD surveillance and offering CWD testing for deer hunters in those states. Check with a local DNR biologist or visit the DNR CWD website to get the most up-to-date information on state testing locations.

Tribal members who get their deer tested through state agency CWD testing programs will generally receive their results within one to two weeks. Testing through GLIFWC can take about two to three weeks, depending on the location of the registration station and time of year. Test results may take longer during and immediately after the state gun deer seasons when most samples are sent to the diagnostic laboratories. Some individual tribal communities might also be offering CWD testing for their members, so be sure to check with your tribal natural resources department for more information.

Compared to CWD-endemic areas outside of the Ceded Territory, there have been relatively few detections of CWD within the Ceded Territories of Minnesota, Wisconsin, and Michigan. The recent increase in detections of CWD-infected wild deer in 2025, however, are concerning. Given these recent detections, tribal hunters who harvest deer within the townships indicated on the Wisconsin DNR map are strongly encouraged to submit their deer head for CWD testing in 2026. The Wisconsin DNR is planning to have CWD testing sites and carcass dumpsters for the disposal of deer carcass parts at locations across Wisconsin. Learn more about CWD-related options utilizing state resources at *dnr.wisconsin.gov/topic/wildlifehabitat/cwd*



CWD sample site (CO Rasmussen photo).

GLIFWC Wardens review firearms safety and certifications

"Our firearms training program is part of GLIFWC's public safety mandate," said instructor and GLIFWC Warden Mike Soulier. It includes handling shotguns, long-guns, plus handgun certification under US Department of Justice requirements. GLIFWC wardens support law enforcement officers from municipal, tribal, county, state, and federal agencies across the Ojibwe Ceded Territories.

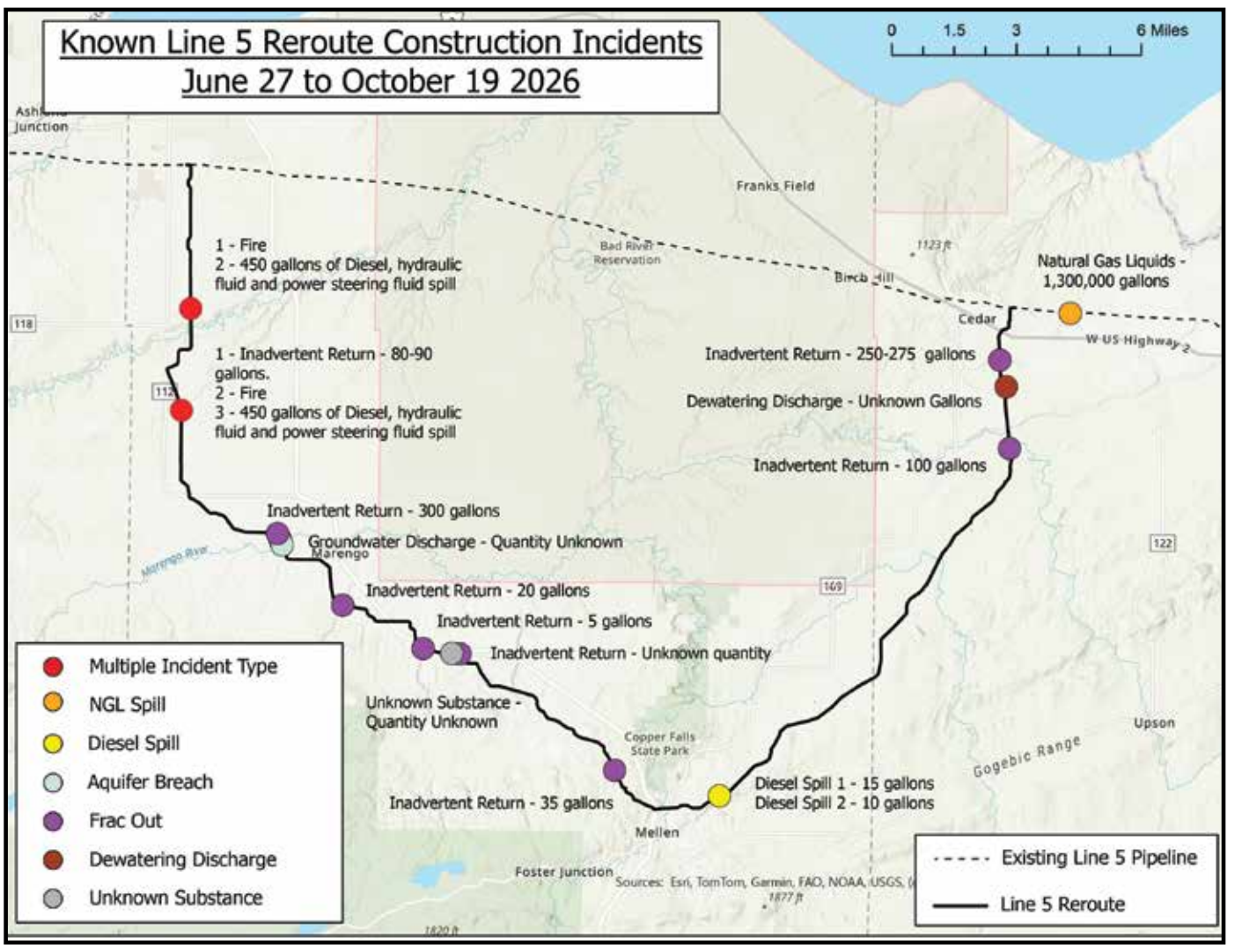

During annual fall training GLIFWC conservation wardens reviewed a key element of their law enforcement mission: firearms exercises. (COR photo)

Enbridge Line 5 reroute concerns

(continued from page 1)
pendent environmental monitors. Initial information on the quantity of discharge indicates that company engineers were able to contain the flow of groundwater at the site. Despite the significance of a likely ruptured aquifer, no details on water quality or the total volume of water involved has been forthcoming to date.

It is important to note that it is not yet known how these various failures and spills translate to actual environmental impacts. The WDNR and Enbridge have conducted water and soil sampling but most of that information has not been made available to GLIFWC staff or the public. Analysis on the lasting environmental effects of the various spills must still occur and the identification of effective cleanup and remediation actions should follow. GLIFWC staff remains vigilant to ensure that this work occurs.

The Line 5 reroute intersects nearly 200 waterways, including the outstanding waters of the White, Marengo, Brunsweiler, Bad, and Potato Rivers. In addition to extensive technical comments on the project Environmental Impact Statement (EIS) and permits granted by state and federal agencies, GLIFWC fisheries and environmental technicians conducted widespread surveys of plants, fish, and animals in riparian corridors during the runup to Line 5 reroute construction activity.



Locations of Line 5 construction failures. Information on the location and magnitude of the failures depicted in this map was provided to GLIFWC by WDNR staff in the Remediation and Redevelopment Program.

1854 Treaty celebration: a time of reflection and relationships



Niizhoo-bikwaakwidoon (double ball). (B Jennings photo)

GLIFWC and its member tribes celebrated the 1854 Treaty on September 29-30 at Gaa-Miskwaabikaang (Red Cliff) and at Moningwanekaaning (Madeline Island). On September 29, harvesters, community members, and buses of youth from around the region gathered at the Bezhigogaabaw (Leo LaFernier Sr) Cultural Center to participate in baaga'adowewin (lacrosse), niizhoo-bikwaakwidoon (double ball) and presentations centered around language revitalization and treaty harvesting. Youth, elders, and community members spent the day playing, sharing, and learning from one another in a special setting.

During the evening session, community members gathered at the Legendary Waters Casino Convention Center to screen the full-length feature documentary "Fish War," produced by GLIFWC's sister organization Northwest Indian Fisheries Commission. GLIFWC welcomed NWIFC Chair Ed Johnstone, a former elected leader and an enrolled member of the Quinault Indian Nation. Ed continues to be a staunch treaty rights advocate and shared on the history of NWIFC and the *Boldt* Decision in the State of Washington.

The following day, tribal leadership and communities gathered at Moningwanekaaning for a morning ceremony. Leadership reflected on current struggles and future initiatives with strong emphasis on remembering the ancestors that signed the treaties.

—B. Jennings

Wisconsin omashkooz treaty season generates two bulls at midpoint

Omashkooz season got underway in the Wisconsin Ceded Territory following a ceremony and hunter orientation at Chippewa Lake in mid-September. Ojibwe treaty bands share four bull-only tags for the 2026 season in the Northern Elk Management Zone. Wisconsin authorities issued an additional four bull harvest tags to state-licensed hunters.

Since annual elk hunting was restored to the region in 2018, harvests for state and Ojibwe hunters have centered on the Clam Lake area near the intersection of Ashland, Bayfield, and Sawyer Counties. Through natural movements, the assisted dispersal program, and a supplemental release of Kentucky trap-and-transferred omashkoozoog, the Flambeau River State Forest has developed into an elk hunting destination. Here, a St. Croix Band member registered the first harvest this season with a bull elk from a small clear-cut parcel in September. An Ojibwe hunter harvested a second omashkooz bull from the core Clam Lake herd. The Wisconsin Veterinary Diagnostics Laboratory tested tissue samples from the bulls for chronic wasting disease, and both were returned with "not detected" endorsements from state scientists. Two treaty bull elk tags remain as the Ojibwe intertribal omashkooz hunt continues until January 3, 2027.

—CO Rasmussen



Collecting gifts from a baapaagimaak stronghold in the 1854 Ceded Territory

By Hannah Panci, Environmental Scientist

As the emerald ash borer and cottony ash psyllid (see the 2023 Biboon Maz article for more information on this little guy) continue to impact ash trees across the Ceded Territories, the GLIFWC seed collection team continues its search for baapaagimaak (black ash) seeds. And this year, we ranged northward to find them.

Baapaagimaak, even when healthy, only produces large seed crops every 7-10 years. Our last collection of baapaagimaak seeds was on the Ottawa National Forest in the fall of 2024. The trees were heavily impacted by the cottony ash psyllid, but some still produced seeds despite not having many leaves.

The seeds ripened and fell off in a very short window, leaving us with fewer seeds than we had hoped. Prior to 2024, the last year there was a big seed crop near the GLIFWC office was 2019. That year the baapaagimaakoog (black ash trees) still looked healthy.

During the past collection season, we did not find any baapaagimaak seeds in the southern portions of the Ceded Territories, but contacts on the Superior National Forest let us know there were seeds in portions of the 1854 Ceded Territory. In mid-September we headed up the north shore of Lake Superior to see what we could find. We found healthy baapaagimaakoog north of Two Harbors, Minnesota, and in many spots, trees were loaded with brown or yellow-brown seeds ready for collection.

Collections protocols and a burst of wiigwaasaatig

After an offering of asemaa to ask each tree's permission, we collected seeds. For larger trees, we used a pole pruner with multiple segments to clip a few branches loaded with seeds; on smaller trees, we harvested seeds by hand from the ground. The seeds were pulled off the branches and stored in paper bags where they dried at room temperature for a week, then went into the refrigerator to dry the rest of the way.

After removing damaged seeds, spiderwebs, and other debris, the seeds will be shipped and stored in Fort Collins, Colorado at the National Laboratory for Genetic Resources Preservation. There, the seeds will be stored in a freezer at -18° C for long term storage, where they can stay viable for decades and be used for future planting projects.

This year was also a banner year for collecting wiigwaasaatig (paper birch) seeds! We collected large samples from both the Ottawa and Chequamegon-Nicolet National Forests with the help of staff from some member tribes.

Some of the wiigwaasaatig seeds will travel to Colorado for storage and some of the seeds will stay in the Ceded

(see Future for, page 16)



Hannah Panci and L Wilkins pictured with a pole pruner at a seed collection site. (Z Wilson photo)

Two-eyed seeing: an evolving approach to invasive species

By Chris Stanton, Non-local Beings Program Coordinator

Over the past 200 years, hundreds of new species of plants, animals, and other beings have arrived and established populations across the Ceded Territories. These organisms are typically referred to as "non-native species" because they did not originate or evolve here but were brought in (or introduced) by human activities.

Many introductions are accidental—such as the emerald ash borer, whose larvae were hidden in wooden pallets that arrived in Detroit from Japan, and the zebra mussel, whose immature stages were suctioned up into the ballast water within cargo ships that sailed from Europe and later discharged the water into the Great Lakes. In both cases, these species were released into an area inaccessible without human activity (a key aspect of how non-native species are defined).

Other introductions of non-native species by humans are intentional. For example, the multicolored Asian ladybird beetle was brought from eastern Asian countries and released on purpose across multiple southern states to feed on aphids. Ladybirds were released multiple times in the 1970's and 80's and have since spread across the Midwest. Another example of intentional introduction is common tansy. This plant with yellow flowers was brought by European settlers for multiple uses, including as an ornamental plant in gardens.

Some of these introductions are small and go unnoticed by most people. However, other non-natives become very common in their new environments and present issues. The success of these species can be due to multiple factors, including high reproductive rates, lack of local predators, and competitive advantages.

The issues they create can be ecological (impacting other species and the ecosystem), medical (spreading illness or injury to humans and pets), and/or economic (costing millions of dollars a year in crop losses and control efforts). Problematic non-native species are traditionally referred to as invasive species. Even some native species, that become dominant or problematic across the landscape, can be labeled invasive species.

For many local tribes, invasive species can also cause cultural harm by having negative effects on species traditionally relied upon for medicine, food, and other products. An example of cultural harm is being felt now as the emerald ash borer moves across northern Wisconsin, killing black ash trees historically used to make baskets, lacrosse sticks, snowshoes and many other items.



An adult multicolored Asian ladybird beetle. (iStock photo)

Given their impacts on the environment and human society, it is understandable that invasive species developed a bad reputation and are referred to by negative names. Examples include *exotic pests, alien invaders, aggressive species as well as words like nuisance and noxious*. At the Upper Midwest Invasive Species Conference last October, a speaker repeatedly referred to common tansy as a monster.

Shining a new light

There are a growing number of people, however, including scientific professionals who are now avoiding these terms with negative connotations when referring to non-native species—a shift driven in large part by Anishinaabe tribal elders.

The idea of re-examining invasive species terminology gained traction at GLIFWC during a March 2014 visit by Wendy Makoons Geniusz. Geniusz edited the book *Plants Have So Much To Give Us, All We Have To Do Is Ask: Anishinaabe Botanical Teachings*, which was written by her mother, Mary. Mary was an Anishinaabe elder who learned about plants as an apprentice (oshkaabewis) to Keewaydinoquay, an Ojibwe elder and healer from Michigan born in 1918. Her teachings stressed that all plants are beings with their own traditions and stories. During her visit at GLIFWC, Geniusz echoed Keewaydinoquay's lessons that invasive species are equal beings and we should learn to work with them.

In 2021-22, Lisa Fink (in partnership with GLIFWC) interviewed 45 elders, harvesters, and resource managers at nine Anishinaabe nations as part of her dissertation research at the University of Oregon. She asked participants about



The blooms of common tansy. (Dreamstime photo)

their perspectives on invasive species and most elders felt that these species are fellow living beings with spirits that should be welcomed, respected, and protected. The elders also expressed a desire to live in balance with the new species, understand why they are here, and learn about how they can be utilized.

The elders proposed alternative names for the organisms including "newcomers," "visitors," and "non-local beings" and remarked on the fact that these species did not come here of their own accord, but were forced to survive in a new place, by no fault of their own.[1] At GLIFWC, the first documented use of the term "non-local beings" is usually ascribed to a 2019 GLIFWC publication entitled *Dibaginjigaadeg Anishinaabe Ezhitwaad: A Tribal Climate Adaptation Menu*, which lists actions for tribal natural resource managers to help with planning and adapting to climate change.

Input from tribal elders ultimately persuaded GLIFWC to shift how they view invasive species and drove the name change for my position to Non-local Beings Program Coordinator when I was hired in August. However, it is important to note that changing the name we use for some of these beings does not make them any less harmful, nor does it mean they can be ignored, especially when they threaten cultural resources.

So, it makes sense to combine Western scientific approaches towards invasives species Scientific Ecological Knowledge, or (SEK) with tribal worldviews of non-local beings. This includes Traditional Ecological Knowledge (TEK) from both the species' land of origin and the new area. Together, SEK and TEK are often described as "two-eyed seeing"[2] and represents an expanded way to relate to these beings.

There will always be work to do to manage natural resources, protect the environment, and sustain cultural practices. And there will always be new species arriving, whether due to direct human activities (moving contaminated boats from lake to lake for example) or indirect actions (such as our warming climate), species are expanding their range and interacting with each other in new ways and in new places. So, it is vital that we continue to study these non-local beings—through speaking with knowledge-holders, observation, monitoring, scientific research, and other interactions—so that we can better understand them and learn from them with both eyes.

[1] *This information was found in* Anishinaabe Approaches to Species Considered Invasive *by Lisa Fink in 2023* (unpublished).

[2] *The term is first attributed to Albert Marshall, a Mi'kmaw Elder, in the 2012 article "Two-eyed seeing and other lessons learned within a co-leading journey of bringing together indigenous and mainstream knowledges and ways of knowing," by Bartlett, Marshall, and Marshall in the* Journal of Environmental Studies and Sciences *(vol 2).*

Aadizookewin-Winter Storytelling

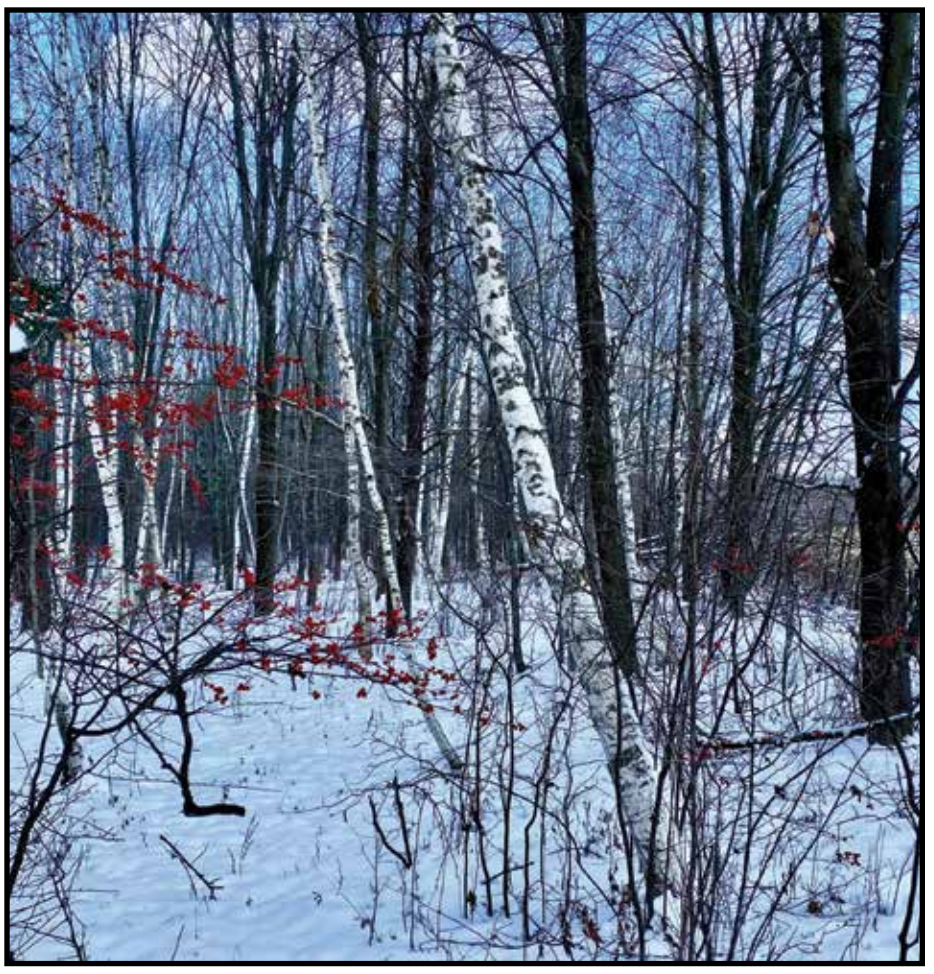
Biboon (wintertime) in the Ceded Territory is often associated with winter harvesting opportunities, warm and cozy woodstoves, and rest. It's also the perfect opportunity to share teachings, reflect on relationships, and participate in aadizookewin (storytelling), or the telling of our Anishinaabe legends. Elders and knowledge carriers often relay that biboon brings frigid temperatures and snow. During this time, there are manidoog (spirits) and more-than-human relatives that rest under the snow.

Furthermore, as Anishinaabeg spend time indoors or in community, the sharing of these legends allows folks to ponder and reflect upon ancient teachings and ways of being. Sometimes, the same legend, shared over multiple winters may awaken new channels of understanding as folks grow older and transition through the different hills of life. Oftentimes, repetition is the mechanism which preserves these knowledge-bearing stories for future generations to keep them alive.

For folks looking to attend aadizookewin, it's important to defer to the host community or host program/organization for protocols. Sometimes it's appropriate to bring a dish to pass for the feast, which usually precedes storytelling. Many times, folks bring asemaa (tobacco) or gifts for those that will share the stories—they are sharing invaluable knowledge, which is regarded as a sacred gift.

Finally, it's important to understand that historically, these legends are told in Ojibwemowin, sometimes with English translation and sometimes without any translation. Regardless of your Ojibwe language skills, it's always a beautiful event to attend. Hearing Ojibwe language and the stories that have been passed on from generation to generation is nothing short of healing.

—B Jennings



Winter (COR photo)

AADIZOOKENG: Winter Legends

By Gaa-anishinaabemod & Gaa-anishinaabewibii'ang

[1] Mii omaa wii-ni-wiindamaageyaan gaa-izhi-gikinoo'amaagooyaan ingiw aadizookaanag gii-tazhinjigaazowaad. Mii eta-go iko biboonagak apii eni-aadizooked awiya miinawaa azhigwa gaa-pangishimod a'aw giizis.

[2] Ishke dash gaye niwii-wiindamaage azhigwa oshki-bangishing a'aw goon, booch da-asemaakawaad a'aw Anishinaabe inow Manidoon omaa eyaanijin gooning. Mii a'aw Gaa-biboonike ezhi-wiinind a'aw Manidoo.

[3] Ishke dash azhigwa a'aw goon gii-ayaad, mii owapii eni-naazikawind netaa-aadizooked. Booch weweni da-doodawind, asemaan da-miinind, miinawaa gemaa waabooyaan da-miinind, miinawaa aniibiish ge-minikwed megwaa aadizooked mii gaye ge-miinind.

[4] Ishke booch da-biboonagak. Ishke giishpin eni-aadizooked awiya megwaa ayaasinig inow goonan, omakakiin oda-mikawaan imaa da-wiipemigod. Mii iw gaa-izhi-wiindamaagooyaan.

[5] Ishke dash a'aw mindimooyenyiban gaa-nitaawigi'id, mii a'aw iko gaa-aadizookawid. Booch igo asemaan gii-miinag. Ishke dash gaye a'aw mindimooyenyiban gaa-izhid, "Wiikwajitoon da-goshkoziyan. Gego noonde-nibaaken dabwaa-giizhaajimag a'aw aadizookaan, ishke Manidoog ingiw endazhinjigaazojig omaa aadizookeng. Weweni bizindaman omaa enaajimoyaan, gegoo-go omaa gidaa-ina'oonwewiz ge-naadamaagoyan. Manidoog omaa endazhinjigaazojig omaa eni-aadizooked awiya. Gidaa-zhawenimigoog weweni bizindaman."

[6] Ishke wiin a'aw chimookamaan anooj inaajimod, gaawiin i'iw menidoowaadadinig odazhindanziin. Mii inow endazhindamaanin dibaajimowinan eyaangin a'aw chimookamaan. Gaawiin omaa gegoo menidoowaadak onjikaamagasinini a'aw abinoojiinh ge-naadamaagod.

[7] Ishke dash a'aw Anishinaabe gakina gegoo ezhi-apiitendang, mii iko azhigwa gaa-aabita-biboong ingoji-go wapii maadaginzod a'aw Gichi-manidoo-giizis, mii a'aw mindimooyenyiban gii-azheyaajimaad iniw aadizookaanan gayat gaa-tazhimaajin. Mii imaa gii-wiindamawid wii-azhegiiwewinaad iniw Manidoon imaa aadizookaaning gaa-tatibaajimaajin gii-aadizooked weweni wii-azhenizha'waad gaa-onjikaanid.

[8] Mii dash iko apii gii-aadizooked a'aw mindimooyenyiban, mii imaa gii-aayaajimaad inow Wenabozhoyan. Nebowa aadizookaanag ayaawag eni-datazhinjigaazonid inow Wenabozhoyan. Ishke bezhig inow aadizookaanan gaa-wiindamawid, mii imaa gii-tazhimaad iniw gwiiwizensan. Omigiinaazens gaa-izhi-wiinind. Miinawaa gaye aanind iniw aadizookaanan gii-kinwaabiigiziwan. Niizho-dibik maagizhaa gaye niso-dibik gii-tazhitaa gii-kiizhaajimaad bezhig iniw aadizookaanan. Miinawaa nebowa imaa ayaamagad ani-gikinoo'amawind a'aw abinoojiinh i'iw gwayak da-ni-bimiwidood i'iw akeyaa izhi-bimaadizid.

By Lee Obizaan Staples & Chato Ombishkebines Gonzalez

[1] I am going to tell what I was told about our winter legends. It is only in the wintertime that these legends are told and it must be after the sun has gone down.

[2] I also want to tell that when the first snow falls a tobacco offering must be made to that Manidoo that exist within the snow. That Manidoo is known as Gaa-biboonike in our language.

[3] Once the snow has arrived that is when you approach one who knows how to tell these legends. You must treat him respectfully and give him tobacco, and possibly even a blanket, and tea to drink while he is sharing his knowledge of the legends.

[4] It has to be winter. If someone where to go ahead and tell these legends without there being any snow on the ground, that person will find a frog sleeping with him. That is what I was told.

[5] It was the old lady that raised me that told me these winter legends. I always had to give her tobacco. This is what the old lady told me, "Please try to stay awake. Do not fall asleep before I finish telling a legend. These are Manidoog that are being talked about in these legends. If you listen carefully to what I am telling, you could be gifted with something from these legends that will help you, after all these are Manidoog that are talked about in these legends. They can gift you if you listen to these legends carefully."

[6] When the white man tells his stories, there is nothing that is spiritual that he talks about. I am speaking of the stories that the white man tells. There is nothing helpful on a spiritual level that can come from his stories that would benefit a child when hearing these stories.

[7] To show that the Anishinaabe has respect for everything, when it would be mid-winter or around the first of January that old lady would retell the legends that she had told me up until that point. It is then that she told me that she was returning those Manidoog from those legends that she had told to send them back to where they originally were.

[8] When that old lady told those legends, one those Manidoog she talked about quite often was Wenabozho. There are a lot of these legends that talk about Wenabozho. One of the legends that she told me talked about a little boy. His name was Omigiinaazens. Some of the legends she told me were lengthy. Sometimes it took her two to three nights for her to complete one of these legends. These legends consisted of a lot of teachings that will help a child live a good life, the way we should live our life as Anishinaabe.

Published November 2014—Ojibwe Inaajimowin

Using treaty harvests to help stretch your family food budget

Looking far into the future, Ojibwe chiefs negotiated treaties that would enable band members to live from the gifts and resources of the Ceded Territory. In times of shortages for life essentials like food, healthy white-tailed deer populations in Ojibwe Country can provide much needed support in family kitchens.

What is happening to beef prices and why?

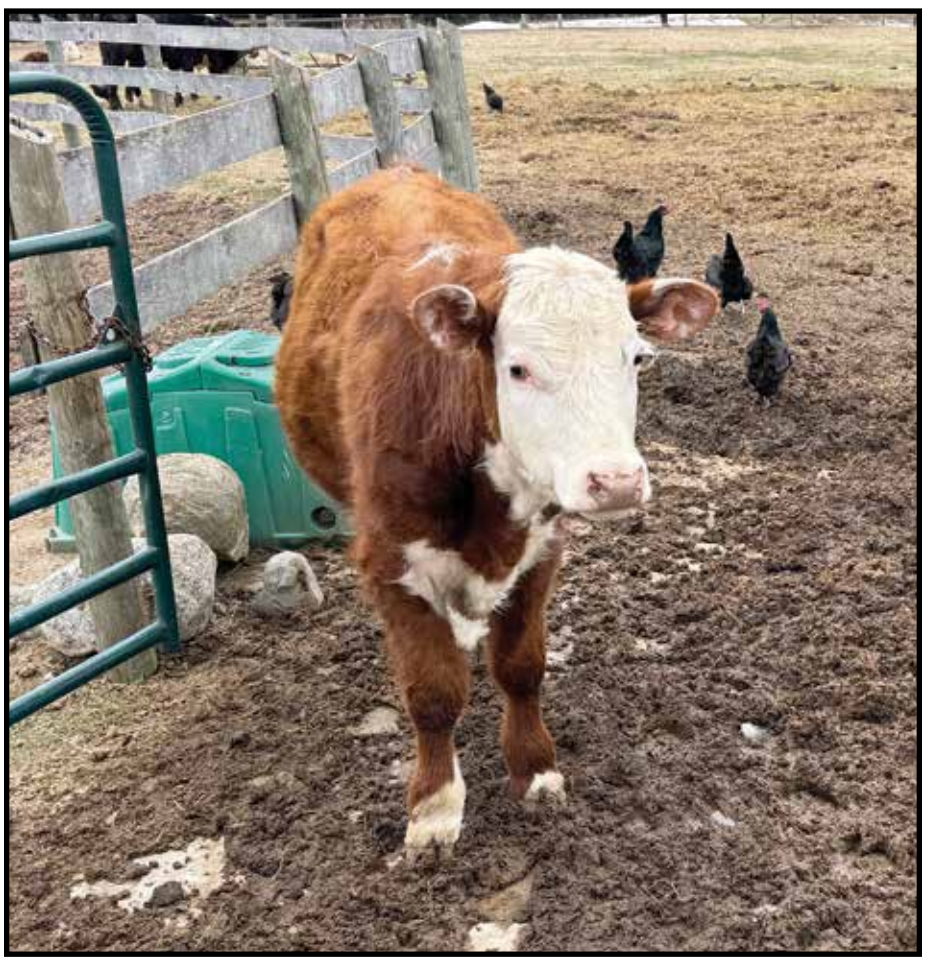
Every family is experiencing higher food costs. Federal agencies and meat industry publications have reported that ground beef is averaging about $6.79 to $7.06 per pound with prices up roughly 19-21% over a year ago. American consumers are now paying more for beef than at any point since the Korean War era. Ground beef is now the most expensive it has been in over 70 years.

Why have beef prices increased?

Global demand for beef has increased and now foreign companies are willing to outbid United States processors for beef supplies. In the U.S., long-term droughts in many key ranching states have reduced the availability of feed. Ranchers and farmers were forced to reduce the size of their cattle herds, and now the U.S. is estimated to have 86.2 million head of cattle—the lowest inventory since 1951. These farms are also experiencing record diesel costs with the national average price climbing to $6.23 per gallon on Sept. 14, 2026.

Ground Beef price v. Ground Pork price

USDA reports ground beef is averaging about $6.79 per pound v. ground pork is averaging $3.63 per pound



Beef cattle are yielding historic retail prices in 2026–the highest in some 70 years in the United States (COR photo)

What is likely to happen in the future?

The United States Department of Agriculture projects another 5.5% price increase though 2026 with no significant decline until mid-2027.

Stretching family food budgets with venison

Treaty harvesters and community members receiving venison donations can use a mixture of 75% venison and 25% ground pork to make flavorful burgers. Ground pork provides fat when cooking lean venison meat. This makes it easier to form patties and prevents them from falling apart during cooking. If kids are finicky eaters, a common trick is to add one teaspoon of Worcestershire sauce and one teaspoon of apple cider vinegar to the mixture to minimize the wild game taste.

—J. Thannum

Meat Cut	National Avg. ($/lb)	vs. Year Ago	12-Month Change
Ground Beef (100%)	$6.79	+$1.20	+21.5%
All Beef Steaks	$12.69	+$2.13	+20.1%
Round Roast	$6.48	+$0.90	+16.1%
Sirloin Steak	$14.11	+$2.61	+22.7%
Chuck Roast	$8.79	+$1.79	+25.5%

Source: USDA Economic Research Service, Meat Price Spreads dataset. Bureau of Labor Statistics CPI. (BeefPriceTracker.org)

Grocery store cost comparison for 4 lbs. of mixed venison patties v. 4 lbs. of ground beef patties	Ground Venison – 75%	Ground Pork – 25%	Venison patty – 100%		Ground Beef patty – 100%
	¾ lb.	¼ lb.	1 lb.	**v.**	1 lb.
	¾ lb.	¼ lb.	1 lb.	**v.**	1 lb.
	¾ lb.	¼ lb.	1 lb.	**v.**	1 lb.
	¾ lb.	¼ lb.	1 lb.	**v.**	1 lb.
Total Lbs.	3 lbs.	1 lb.	4 lbs.	**v.**	4 lbs.
Grocery Store Cost per lb.		$3.63	$.91	v.	$6.79
Total Grocery Store Cost for 4 lbs. of patty meat			**$3.63**	**v.**	**$27.16**

(Table by J. Thannum)

Gimino-Miijiminaan



Pair of sandhill cranes take flight from a fallow field in the Wisconsin 1842 Ceded Territory. (CO Rassmussen photo)

Ajijaak hunting season

The off-reservation sandhill crane season runs until December 31. A migratory bird hunting permit is required along with a sandhill crane stamp. Harvesters can self-issue both of these license requirements online through the NAGFA system or visit a community registration station to get them in person. Any harvested crane must be registered within 48 hours online or in person with a registration clerk or a GLIFWC warden.



One tall order: ajijaak on the barbeque

One of the region's largest flyers are making increasing appearances at indigenous tables in the Ojibwe Ceded Territory. After fifteen seasons, hunting ajijaakwag (sandhill cranes) is becoming one of late autumn's most anticipated harvest opportunities.

Long-of-leg, burnished pale bodies, and a red skull cap, sandhills are conspicuous birds visible in many of the same fields as foraging Canada geese and wild turkeys. Ajijaak calls are distinctive—like a wild blend of yodeling and trumpets—that somehow seems fitting for a prehistoric pterodactyl. Ojibwe hunters intercept low-flying cranes traveling from fields of chopped row crops to public land roosting grounds. Full body crane decoys set in meadows—sometimes combined with calling—can also be effective. Well-prepared ajijaakwag are universally held to be delicious, earning the moniker "ribeye of the sky."

Whether you've brought home a bird from a successful hunt or received sandhill breasts as a gift, there are several tried-and-true preparation methods. For longtime ajijaak harvester Conrad St. John, there's one surefire way make a successful meal—fire up the grill! **—CO Rassmussen**

Grilled Sandhill Crane

Ingredients:

- 2 boneless crane breasts
- ½ cup Worcestershire sauce
- 1 tbsp of olive oil
- 1 clove garlic minced
- 1 juice from fresh-squeezed lemon

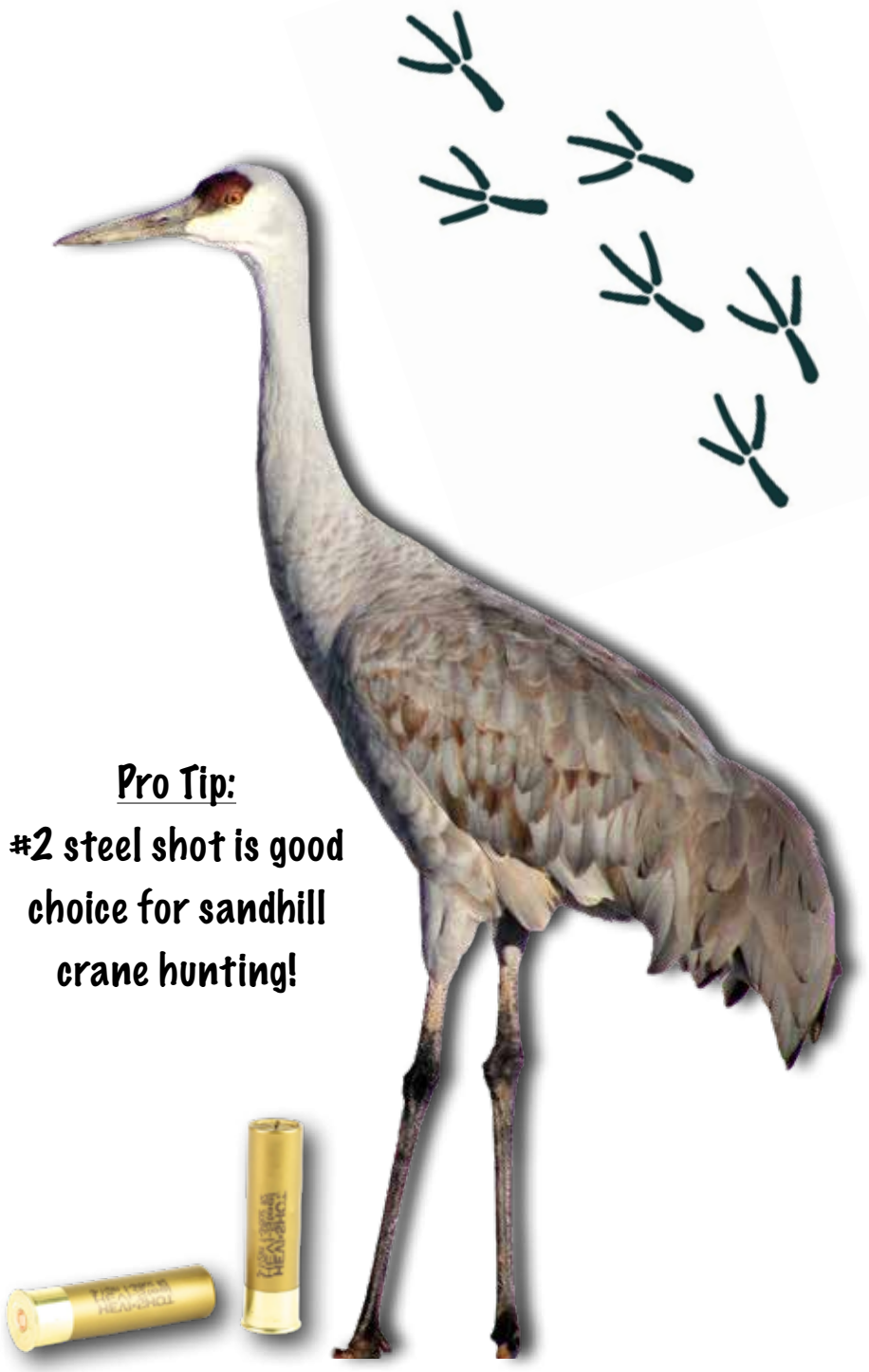
Instructions:

1. Trim away any meat damaged by birdshot.
2. Combine Worcestershire sauce, olive oil, minced garlic, & lemon juice
3. Cut each breast in half
4. Marinade breasts in Worcestershire mixture for 4-8 hours
5. Heat grill to around 400-degrees

As with many wild foods, the Golden Rule—don't overcook it—applies to ajijaak. St. John recommends cooking breasts for around 90 seconds or so on each side. Cooked too long, the meat quickly becomes dry and tough.

Notes: While St. John prefers a rare cut of ajijaak, transferring the meat to lower heat for up to 10 minutes after searing will help dial in desired doneness. Keep a meat thermometer handy with a target temperature of 130-degrees.

—Recipe by Conrad St.John



Pro Tip:

#2 steel shot is good choice for sandhill crane hunting!

Sharing knowledge, making connections

Even with the challenges of the 2026 harvest, rice camps brought people together across the Ceded Territory. One of the season's highlights was a vibrant Intertribal Manoomin Camp at Manitowish Waters, Wisconsin on September 18-20. Camp provided an opportunity for people from different tribal communities to come together around manoomin. Experienced harvesters shared knowledge alongside people learning for the first time. Participants of all walks of life gathered on the water, learned harvesting techniques and worked together through the different stages of processing manoomin.

The camp was filled with activity, canoes on the water, processing fires going, people making things, preparing and sharing food, visiting, telling stories and laughing together. Those moments are an important part of caring for manoomin.

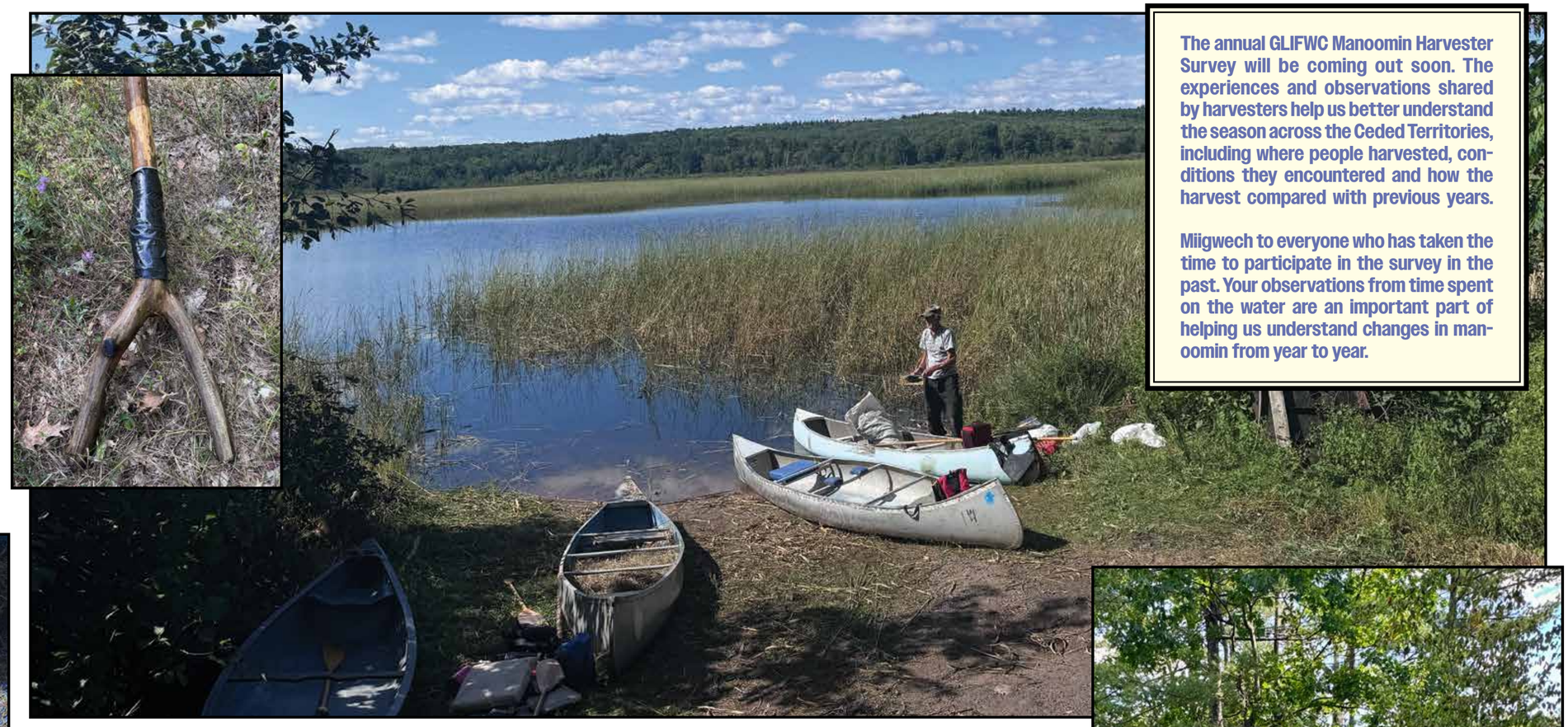
We often measure a season by how much rice is growing on a lake or how many pounds are harvested. Those numbers are important, particularly when we are seeing changes such as lower water levels, ghost rice and reduced processed yields. But there is another measure of a successful season: people continuing to gather.

Seeing youth, families, experienced harvesters and new ricers together remind us that the relationship to manoomin continues through participation. Knowledge is passed by getting into the canoe, watching someone work a pair of knockers, tending a parching fire, dancing the rice and sitting together while the work gets done.

Not every manoomin season brings abundance. The 2026 season reminded us that conditions can change considerably from one water to another and that what looks promising during the growing season may not always translate into a strong harvest.

It also reminded us that harvest is about more than the amount of finished rice. It is about gathering, sharing knowledge, feeding our families and communities, and continuing our responsibility to care for manoomin. As the seed settles back into the lakes for another winter, we carry forward what this season taught us and continue watching, learning and caring for the waters where manoomin grows.

—K. Smith and A. Hilding



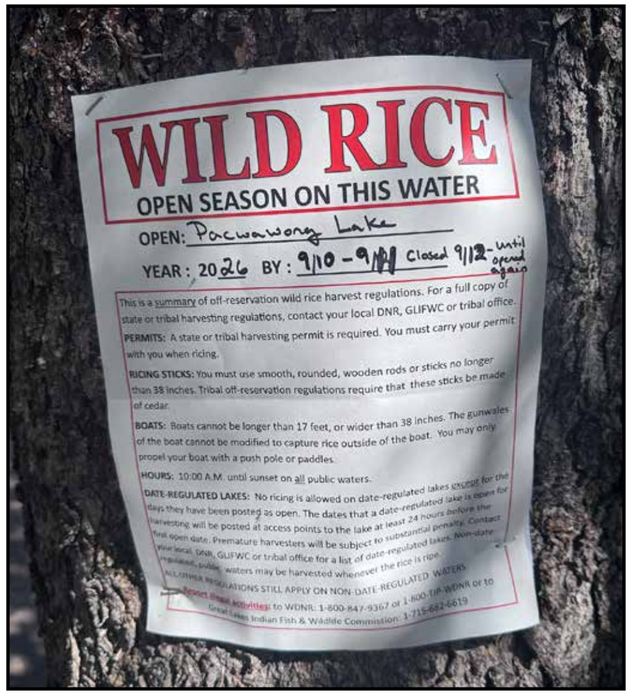
The annual GLIFWC Manoomin Harvester Survey will be coming out soon. The experiences and observations shared by harvesters help us better understand the season across the Ceded Territories, including where people harvested, conditions they encountered and how the harvest compared with previous years.

Miigwech to everyone who has taken the time to participate in the survey in the past. Your observations from time spent on the water are an important part of helping us understand changes in manoomin from year to year.











Views from the 2026 Ojibwe Ceded Territory manoomin season. (Kathleen Smith, Austen Hilding, and CO Rasmussen photos)

Protecting Gichigami's native fish from sea lampreys



An electrical barrier on Michigan's Cranberry River jointly deployed by Keweenaw Bay Indian Community and United States Geological Survey. It functions by emitting controlled, low-voltage pulses through electrodes anchored along the riverbed. As upstream migrating adult lampreys enter this electrified area, the mild current disorients the lamprey, compelling them to turn back downstream before reaching upstream spawning habitat. This seasonal deterrent prevents lamprey reproduction without obstructing river flow, altering water levels, or creating a physical dam that blocks traffic for native fish. (B Michaels photo)

By Ben Michaels, Great Lakes Section Leader

GLIFWC maintains long-standing cooperative relationships with interagency fishery managers to assess and reduce sea lamprey populations within Gichigami (Lake Superior). Working collaboratively across the Gichgami basin, partners include U.S. Fish & Wildlife Service Sea Lamprey Control (FWS-SLC), Great Lakes Fishery Commission (GLFC), Keweenaw Bay Indian Community (KBIC), Bad River Natural Resources Department (BRNRD), and Canadian provincial agencies.

Sea lampreys are non-local, parasitic, jawless fish with the potential to cause serious harm to native fish species including namegos (lake trout). A single parasitic sea lamprey can kill up to 40 pounds of native fish during its adult lifetime. In the mid-20th century, sea lampreys devastated the Great Lakes fishery by latching onto native fish and feeding on their bodily fluids. The lamprey's arrival from the Atlantic Ocean caused a near-total collapse of commercial and sport fisheries before effective control programs were established. Thankfully, successful lamprey control measures have prevented the total annihilation of culturally and economically important fish species.



Samson Wood, GLIFWC Fisheries Biologist, tends an elver net on the Potato River, Wisc. The main goal is to capture juvenile lamprey, but often non-target species such as creek chubs, dace, and darters, are captured, enumerated, and released. (B Michaels photo)

Population estimates generated from the spring 2026 trapping efforts of spawning adult lampreys in Gichigami tributaries show that while lamprey abundance in the lake remains relatively high at over 130,000 adult lamprey (Great Lakes Fishery Commission 2026), largely due to treatment omissions during the COVID-19 pandemic, the population has steadily declined each year since 2023. Compared to the other Great Lakes, Gichigami currently maintains the highest levels of adult lamprey abundance, highlighting the importance of continued control efforts; however, these recent downward trends offer an encouraging sign of progress.

Expanding options for lamprey control

Controlling sea lamprey numbers relies on a multi-pronged approach using lampricide applications (such as TFM and Bayluscide) to kill larvae in stream sediments along with upstream barriers to block adult migration and trapping to physically remove spawners. While chemical treatments are highly effective and selective, they can be disrupted by weather delays and are costly to implement. Physical barriers can block access to spawning sites, but they can impede non-target native fish unless equipped with passages. Trapping provides invaluable population data and removes adults, but it cannot eradicate a lamprey population on its own.

To supplement these traditional measures, Tribal agencies are exploring other tactics. For example, KBIC has partnered with the United States Geological Survey (USGS) to employ electrical barriers to thwart the upstream movement of spawning adults, while GLIFWC Great Lakes specialists, USGS, and BRNRD have tested the suitability of using trammel nets to capture adult lampreys while minimizing mortality of non-target species.

Understanding the sea lamprey lifecycle is crucial for targeted control efforts. Adult sea lampreys migrate upstream into freshwater gravel beds to build nests, spawn, and die shortly afterwards, much like salmon. After hatching, worm-like larvae called ammocoetes burrow into stream sediments to filter feed on microscopic organic material for up to a decade as they grow. They then enter a transformation phase, developing eyes, restructured gills, and suction-cup mouths lined with sharp, rasping teeth as they transition from bottom-dwellers into free-swimming, parasitic adults. Once metamorphosis is complete, dropping water temperatures and autumn rainstorms increase river currents, prompting the newly



From Wisconsin's Marengo River: a transforming juvenile sea lamprey typically measuring four to six inches long, develops functional eyes, gills, and a tooth-lined suction mouth as it prepares for its downstream drift. Trapping these newly transformed juveniles during migration prevents them from reaching open water to prey on native fish. (S Wood photo)

transformed juveniles to emerge from the sediment and migrate downstream into open lake waters where they begin seeking host fish. To intercept young lamprey before they reach the open waters of Gichigami, GLIFWC and KBIC deployed fyke and elver nets in various tributaries in Wisconsin and the Upper Peninsula of Michigan in the fall of 2026. By capturing juvenile lampreys as they undergo their transformation and downstream migration, biologists can intercept some of the young lamprey before they are able to parasitize native fish.

Intercepting sea lampreys at every stage of their lifecycle contributes to protecting Gichigami. Through strong interagency cooperation and research, sea lamprey control teams continue to build a positive future for Gichigami's native fisheries. For a full report of sea lamprey status in the Great Lakes, visit the Great Lakes Fishery Commission at *glfc.org*.

Splake study intersects with annual namegos, adikameg assessments

By Samson Wood, Great Lakes Fisheries Biologist

Copper Harbor, Mich—Kicking off annual dagwaagin fishery assessments in Lake Superior, GLIFWC launched its big lake research vessels into Michigan's Keweenaw waters the week of October 19. The Great Lakes Section crew set off in search of namegos (lake trout) and adikameg (lake whitefish), plus splake this year as part of an interagency study on naturally occurring hybridization.

Located at the northernmost point of the Keweenaw Peninsula, Copper Harbor is one of three locations where the Michigan Department of Natural Resources stocks the hybrid species known as splake in Gichigami (Lake Superior). Splake are the result of crossing a male maazhmegoons (brook trout) and a female namegos in a hatchery setting. Fishery managers originally thought splake would not be able to reproduce in the wild, however, they are observed on reefs alongside native namegos, and in rivers alongside native maazhmegoons during fall spawning runs in the Gichigami watershed.

The Great Lakes Section evaluated both splake and namegos in the Copper Harbor region as a part of an ongoing splake introgression study working with multiple tribal, federal, and state agencies along with universities across the Ceded Territories. The study aims to gauge the amount of wild hybridization occurring between the native salmonids and introduced splake.

Early results shared at last summer's Lake Superior Technical Committee Meeting revealed from splake, maazhmegoons and namegos DNA collected around Gichigami that splake and their native counterparts DO experience wild introgression, but at an extremely low rate. This introgression seemed to only occur at locations where splake are currently stocked, such as Copper Harbor, and not on most other reefs. Wisconsin DNR and Minnesota DNR had already suspended their splake stocking programs over concerns about suspected introgression with native species in Gichigami. Michigan DNR, however, will continue to stock the non-native hybrid annually.

Dagwaagin on the water

During its time surveying off the northern tip of Keweenaw, Great Lakes Section continued to see both splake and namegos in Copper Harbor area. Using 750' multifilament gillnets with varying mesh sizes (4.5", 5", 5.5"), crews were able to collect, measure, sex, tag, and release both namegos and splake, during the first two weeks of fall assessment netting.

With nets set in <35' of water, the crews were still able to wrangle some large individuals this year. The largest namegos came in at 39.3", and the largest splake was 32"! Some of the other fish species observed in Copper Harbor were; ogaa (walleye), namebin (white sucker and longnose sucker), mizay (burbot), and menominee (round whitefish).



GLIFWC Fisheries aide Victoria Ripley with a massive 32" female splake. The Michigan hook and Line state record splake from Gichigami is 34.5," making this fish extra special for the crew to see. The mighty splake was tagged and released in good condition. (S Wood photo)



The Crew at Work: Working in cold, windy conditions, Fisheries Aide Jake Parisien removes a lively splake from the gillnet. Fisheries Technician Patrick LaGrew pauses from boxing gillnet to hand GL Section Leader Ben Michaels a namegos just picked from the net. In the background, Fisheries Aide Victoria Ripley records data. (S Wood photo)

After finishing at Copper Harbor, a crew moved down the eastern shoreline of the Keweenaw Peninsula in early November. Here, they visited various historic namegos and adikameg spawning reefs. Reefs are raised areas of the lakebed, often adjacent to deeper water and made up of coarse substrate, that open-water fish utilize as a place to congregate and spawn. The coarse substrate allows fertile eggs to fall into interstitial spaces guarding them from strong currents, ice, and predation until they hatch.

Namegos utilize reefs for spawning first when water temperatures are between 48˚-53˚F. Once the season progresses and water temperatures fall to 45˚-48˚, adikameg move onto many of the very same reefs that are used by lake trout to spawn. All lakers and whitefish collected in survey nets were sexed, tagged, and released back to the reef they came from.

AFDO / SEAFOOD ALLIANCE
HACCP TRAINING COURSE
December 8-10, 2026
LOCATION: Bay Mills Resort & Casino, Brimley, Michigan
CONTACT
Elliot Nelson
Advanced Extension Educator,
Eastern Upper Peninsula
(906) 322-0353
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REGISTRATION
qrs.ly/lxhig7k
In partnership with
Great Lakes Indian Fish & Wildlife Commission
Sea Grant MICHIGAN
MICHIGAN STATE UNIVERSITY
Michigan Sea Grant helps to foster economic growth and protect Michigan's coastal, Great Lakes resources through education, research and outreach.
A collaborative effort of the University of Michigan and Michigan State University, Michigan Sea Grant is part of the
NOAA-National Sea Grant network of 34 university-based programs.

Essential Ojibwemowin

bakazhaawe—s/he cleans fish

Teaching Great Lakes knowledge in the classroom



The National Estuarine Research Reserve (NERR) and Friends of the Lake Superior Reserve hosted educators from across the Great Lakes for a three-day workshop last June. The gathering provided an opportunity for all kinds of educators to learn more about resources the NERR offers. As a longtime partner with NERR, GLIFWC joined the workshop, teaching Ojibwe treaty rights history and sharing games, publications, and other classroom tools. The event proved to be an incredible opportunity to connect with educators from Minnesota, Wisconsin, and Ohio who work in the classroom, outdoors, and with a wide range of different ages. The workshop offered some outdoor experiences at places like Wisconsin Point, where participants could see the impact of ishkode (fire) on the landscape. Miigwech to the National Estuarine Research Reserve and Friends of the Lake Superior Reserve for gathering these educators and allowing GLIFWC the opportunity to build relationship and share knowledge and resources!

— I. Alexander

All season guidance for releasing ogaawag



Fishing through the ice or out in the open water, anglers can improve outcomes for fish released back into regional lakes by following a trio of principals central to the Keep Fish Wet initiative: 1) Minimize air exposure 2) Minimize contact with dry surfaces 3) Reduce handling times. GLIFWC is supporting the Keep Fish Wet effort, helping amplify catch-and-release tips, especially for ogaawag—walleyes in the Ceded Territory.

Toting all-weather metal signs, Inland Fisheries Biologists Aaron Shultz and Mark Luehring hit road this fall, visiting around a dozen lakes in and around the Wisconsin Northern Highland State Forest. At each boatlanding, the biologists installed "Walleye in our Hands" signage featuring recommendations to increase the survival rate of hook-and-line ogaa turned loose into our waterways.

Looking for signage or educational materials for your Ceded Territory lake? See *keepfishwet.org* or contact Shultz at *aaronshultz@glifwc.org*

—CO Rasmussen

EHD outbreak hits waawaashkeshiwag in Southeastern Wis.

(continued from page 5)



A biting midge next to mosquito. (Dunpharlain photo)

EHD basics

EHD stands for epizootic hemorrhagic disease, which is an acute, infectious, and often fatal viral condition that affects white-tailed deer and other ungulates (hoofed animals). EHD and the similar bluetongue (BT) virus both cause forms of hemorrhagic disease with similar outcomes and clinical signs.

The viruses that cause EHD and BT are spread by small biting flies known as midges of the genus Culicoides. Clinical signs of EHD infection include excessive thirst, hemorrhages (bleeding) or bruises in the mouth and nose, and swelling of the head, neck, tongue and lips. Infected deer often seek out water; carcasses from deer that have succumbed to the disease are usually found near water. Infected deer may die within 1-3 days after being bitten by a virus-carrying midge. There are no vaccines or treatments available for EHD. Although there is no evidence that the EHD virus can infect humans, wildlife agencies generally advise against consuming any animal that appears sick.

Most EHD outbreaks occur from late summer through the fall (often from August through October). The disease tends to wane once freezing temperatures arrive and midge populations die off. The disease occurs sporadically, with somtimes multiple years between documented outbreaks, and it usually has very localized impacts on deer. Research and post-outbreak herd monitoring has suggested that affected populations tend to recover quickly—within a year or two of the outbreak. Almost all documented EHD outbreaks in Wisconsin have occurred outside of the Ceded Territory and have been mostly located in the southern half of the state.

Future for baapaagimaak remains uncertain

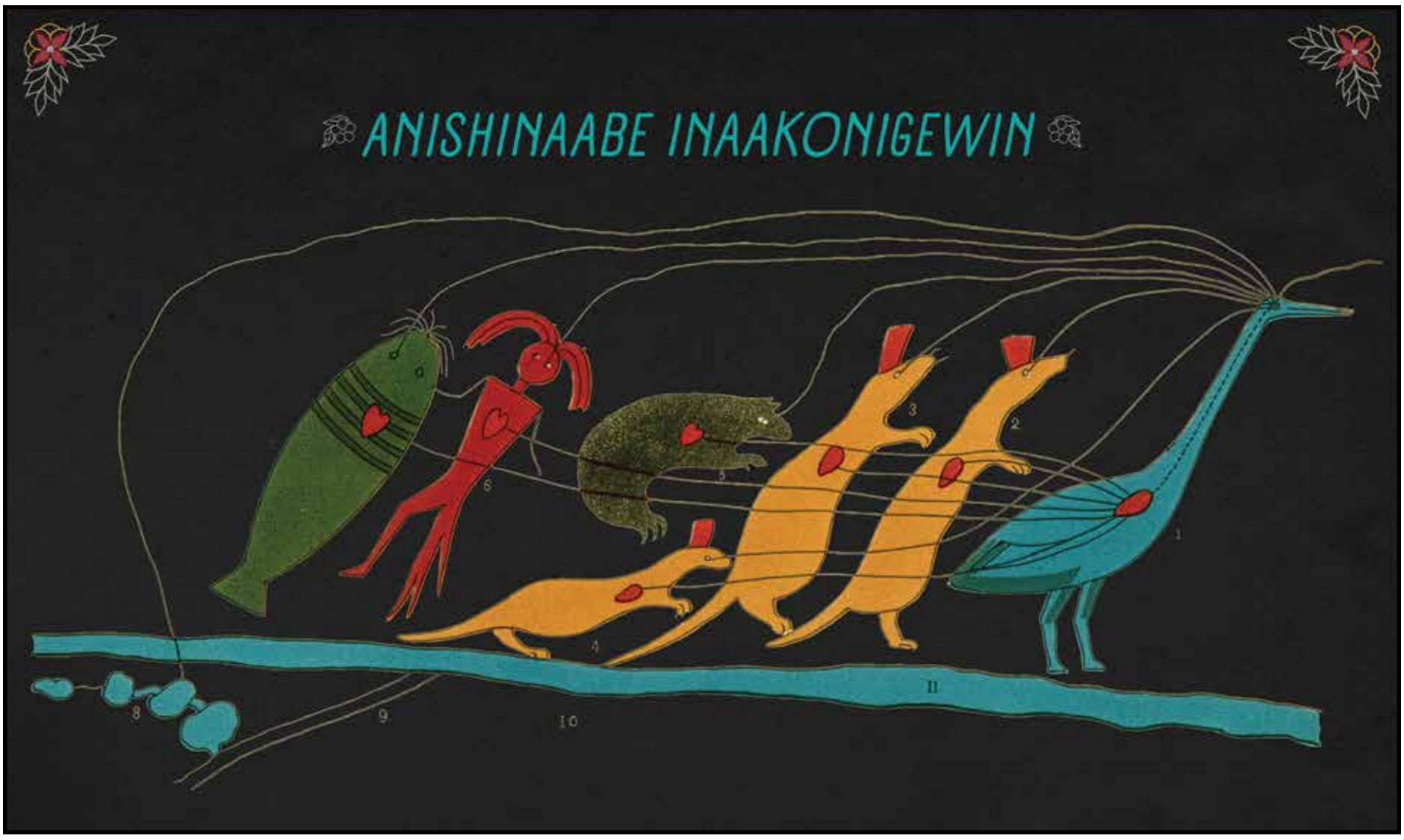


Baapaagimaak or black ash seeds. (H Panci photo)

(continued from page 7)

Territories to be used in planting projects, including a cooperative planting effort with Chequamegon-Nicolet staff at a site appropriate for wiigwaasaatig.

The future for baapaagimaak as well as our other ash (green and white) throughout the Ceded Territories is uncertain, but the ash trees have been helping GLIFWC staff learn through careful observation (gikinawaabi). Many people are now looking for and researching lingering ash—trees that have survived the emerald ash borer. GLIFWC has recently acquired funding to do more baapaagimaak work to continue to support our relatives and maintain our cultural relationship with these plant beings.



2026 GLIFWC annual poster reveal

SYMBOLIC PETITION OF CHIPPEWA CHIEFS

This iconic image was first printed in Henry Rowe Schoolcraft's The History of the Indian Tribes of the United States, Historical and Statistical Information Respecting the History, Condition, and Prospects of the Indian Tribes of the United States, Vol. 1 (Philadelphia, 1851). It is understood that this image originally appeared on birchbark and was carried by Oshkabawis to Washington in 1849, petitioning the United States to adjust 1842 LaPointe treaty boundaries. The beings in the petition represent various Ojibwe clans, while the lines connecting their hearts and minds acknowledge that the clans shared the same views and are inextricably connected and tied together in solidarity.

First copy free, additional prints $2.50 each plus postage! For order on the GLIFWC Educational Materials store at *glifwc.org/education-outreach/store*

Pictograph's Numbered Images:

1. Osh-ca-ba-wis—Chief and leader of the delegation, representing the Crane doodem.
2. Wai-mi-tig-oazh—He of the Wooden Vessel, a warrior of the Marten doodem.
3. O-ge-ma-gee-zhig—Sky Chief, a warrior of the Marten doodem.
4. Muk-o-mis-ud-ains—A warrior of the Marten doodem.
5. O-mush-kose—Little Elk, of the Bear doodem.
6. Penai-see —Little Bird, of the Man Fish doodem.
7. Na-wa-je-wun—Strong Stream, of the Catfish doodem.
8. Rice Lakes in northern Wisconsin.
9. Path from Lake Superior to the rice lakes.
10. Lake Superior Shoreline.
11. Lake Superior.

GIIWOSE



Bad River's Natalie Stone unloaded a break-action shotgun before demonstrating how to safely cross a wooden fence obstruction. (COR photo)

By the time Ceded Territory white-tailed deer activity shifted into high gear in early November, GLIFWC had helped prepare a new year-class of certified hunter safety graduates across the region.

Hunter safety education is required for Ojibweg hunting public lands and waters. At Bad River Reservation, Seargent Jim Stone discussed not only safe firearms handling principles, but he also revealed some of the less conspicuous hazards that come with hunting. Recalling a century-old era when Bad River was home to thousands, farms populated the reservation interior, and scattered homesteads were common, Stone said remnants of those developments remain on the landscape after decades of rewilding.

"There's old foundations you might come across, barbed wire fences, different things that can trip you up in places where you wouldn't expect it," Stone said. Much of the old infrastructure is overgrown, lying just below layers of leaves, forest duff, and fallen trees.

At safety classes in Bad River, Stone—and his assistant Nathaniel Doucette from Red Cliff—guided 10 students to graduation November 8 in New Odanah. School-age boys and girls comprised the majority of aspiring harvesters, but adults were not shy about committing to the four-day program.

"My dad has always helped me out when I needed venison," said Natalie Stone, 40. "I've got to the point where I want to provide for myself and spend quality time with my dad. Time in the woods; hunting time. Learning from GLIFWC, I know how to do things and do them in the right way."

Sgt. Stone and all the GLIFWC wardens that offer hunter safety certification teach the basics of firearms safety, field dressing deer, and off-reservation treaty hunting rules. The rules collected under TAB-K are foundational to all hunters across Minnesota, Wisconsin, and Michigan.

T – Treat every firearm as if it is loaded
A – Always point muzzle in a safe direction
B – Be certain of your target, what's before and beyond it
K – Keep your finger outside the trigger guard until ready to shoot

"If you retain TAB-K, you should be a safe hunter with firearms for the rest of your life," Stone said.

Stay tuned to GLIFWC social media and *glifwc.org* for upcoming safety classes with GLIFWC wardens including snowmobile safety. Have a safe and successful season to all hunters and recreationalists. **—CO Rasmussen**





Jim Stone, GLIFWC warden and hunter safety instructor addressing students during a classroom session. (COR photo)



Biboon—It is Winter

Mitigoog gaawiin nagamosiiwag noongom. Nibaawag. Gii-miskobagaa.
Biitoosinon akiing. Zoogipon. Makwa indoodem. Ogemaa. Makwag, nibaawag waanzhang.
Biboong ningitimishk. Apane nimbakade dash niwii-wiisin. Niwii-nibaa gaye.
"Noogishkaan!" ninikid. "Bimosen! Ogimaawin!"
Gemaa gaye anishaa nindaa-zhoozhkwaada'e agwajiing zaaga'ganing.
Wii-minwendaagwad mii nange.

(The trees they are not singing today. They are sleeping. There were red leaves on the trees. They lie in a layer on the earth. It is snowing. Bear is my clan. A leader. Bears they are sleeping in the den. When it is winter I am a lazy bones. Always I am hungry and I want to eat. I want to sleep also. "Stop!" I say. "Walk! Be a leader!" Or maybe just for fun I should skate outside at the lake. It will be fun for certain.)

Bezhig—1

OJIBWEMOWIN (Ojibwe Language)

Double vowel system of writing Ojibwemowin.
—Long vowels: AA, E, II, OO
Aaniin—as in father
Miigwech—as in jay
Niibowa—as in seen
Noongam—as in moon

—Short Vowels: A, I, O
Idash—as in about
Imaa—as in tin
Omaa—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.

VAI—Verb

(action) **A**nimate **I**ntransitive
Root verb is 3rd person; He or She.
Conjugate the < root> verb.
Ojibwemo.—S/he speaks Ojibwe
Nindojibwem.—I speak Ojibwe.
Gidojibwem ina?—Do you speak?
Maajaa.—S/he leaves.
Nimaajaamin.—We leave.
Babaamoode.—S/he crawls about.
Gibabaamoodemin.—We all crawl.
Zhizhoobii'ige.—S/he paints.
Gizhizhoobii'igem.—You all paint.
Gashkigwaaso.—S/he sews.
Gashkigwaasowag.—They sew.

Niizh—2

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

A. Aaniin waa-izhichigeyan biboong Ojibwewakiing?

B. Niwii-pabaa-mawadishiwe nindinawemaaganag.

C. Niwii-akwa'waamin giiwedinong zaaga'iganing.

D. Giwii-izhaa na aabita-biboon niimi'iding giziibiigiisaginige-giizhigak?

E. Niwii-zhooshkwaagame Nagaajiwanong noongom.

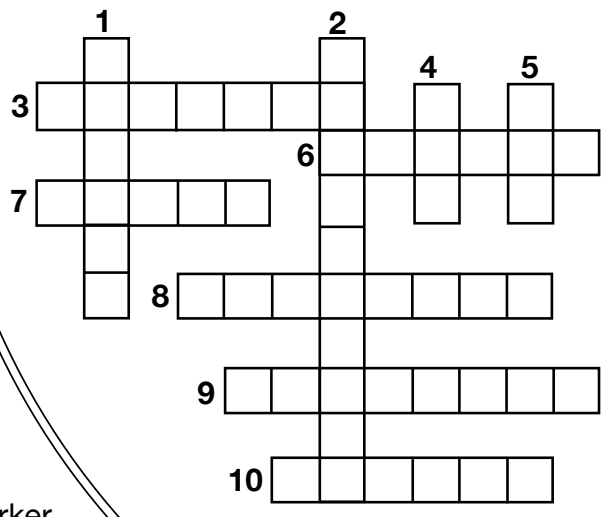
F. Abinoojiiyag wii-zhooshkwajiwewag.

G. Niijii wii-wanii'ige megwaayaak.

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

Niswi—3

IKIDOWIN ODAMINOWIN (word play)



Down:
1. How or in what way.
2. S/he is tall.
4. Future tense marker.
5. It is thus that.

Across:
3. S/he is short.
6. Friend.
7. S/he sleeps.
8. I leave.
9. It is snowing.
10. It is winter.

Niiwin—4

Vai Conjugation Practice

Bakaakadozo.—S/he is skinny.
Wiinino.—S/he is obese.
Dakoozi.—S/he is short.
Ginwaakozi.—S/he is tall.
Nimbakaakadoz.—I am skinny.
Gidakooz.—You are short.
Niwiininomin.—We are obese.
Giginwaakozim.—You all are tall.
Bakaakadozowag.—They are skinny.
Drop the short vowel when in 1st person–I, and 2nd person–you.

Goojitoon! Try it!
Translation below.

Gid...

Gi...m

Ni...min

Nin...

...wag

1. _____maajaa na? Gisinaa dash zoogipon.
2. Michisag abinoojiiyensag babaamoode_____.
3. _____ojibwemo_____ ina ishkoniganing?
4. _____zhizoobii'ige nibaawigamig biboong.
5. _____gashkigwaaso_____ gabe onaagosh.

Translations:
Niizh—2 **A.** What do you want to do when it is winter in Indian country? **B.** I want to visit around with all my relatives. **C.** We want to spear fish to the north on the lake. **D.** Do you want to go to the mid-winter dance on Saturday? **E.** I want to ski at Fond du Lac today. **F.** The kids want to go slidding. **G.** My friend,he wants to go trapping in the woods.
Niswi—3 ***Down:*** **1.** Aaniin **2.** Ginwaakozi **4.** Wii **5.** Mii ***Across:*** **3.** Dakoozi **6.** Niijii **7.** Nibaa **8.** Nimaajaa **9.** Zoogipon **10.** Biboon
Niiwin-4 **1.** You leave are you? It is cold and it is snowing. **2.** On the floor the babies they crawl. **3.** Do you all speak Ojibwe on the reservation? **4.** I paint in the bedroom when it is winter. **5.** We sew throughout the evening.

There are various Ojibwe dialects; check for correct usage in your area. 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.

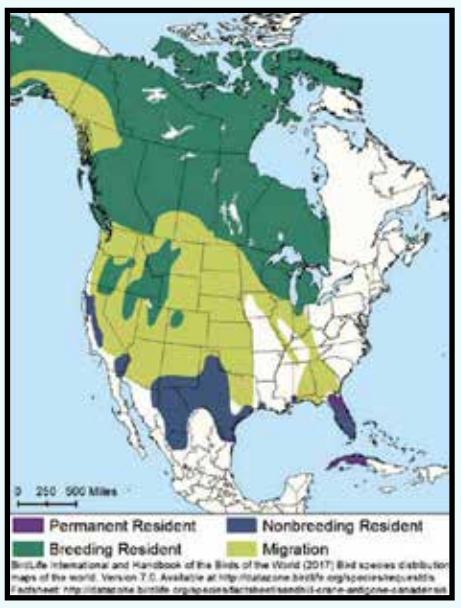
Some spellings and transaltions from The Concise Dictionary of Minnesota Ojibwe by John D. Nichols and Earl Nyholm. All inquiries can be made to **MAZINA'IGAN**, P.O. Box 9, Odanah, WI 54861 pio@glifwc.org.



Ajijaak (Sandhill crane) has many nicknames. One of those, "echo maker," refers to how their cry in flight echoes across the fields and lakes and is a respectful nickname for the Ajijaak doodem (Crane clan), members of whom are known for leadership and oratory. Another is "beefsteak of the sky" referring to the delicious taste of these large migratory flyers. Ajijaak is also a conservation success story. In the early 1900s there were fewer than 50 breeding pairs of ajijaakwag in the Ceded Territory primarily due to unregulated hunting. Today, after strict hunting restrictions, their population is recovered to the point where they are becoming an increasingly important and available first food for Ojibwe harvesters, and many states are again allowing non-tribal hunting. While ajijaak is less likely to be highly vulnerable to climate change, there are concerns around habitat loss, extreme precipitation events during nesting, predation, and loss of genetic diversity. Elders in Gaa-miskwaabekaang (Red Cliff) and Ginoozhekaaning (Bay Mills) have reported seeing more ajijaakweg on the landscape in the past decade. What changes are you seeing in your part of the Ceded Territory? Let us know at *climate@glifwc.org*

—R Croll

Ajijaak Traditional Knowledge



In Baawating (also known as Place of the Rapids or Sault Ste. Marie, Michigan) many elders tell the story that mewinzha (a long time ago), Gichi-manidoo (Great Spirit, also referred to as the Creator) sent ajijaak flying down to aki (earth) to search around the Great Lakes to see where the Anishinaabeg could gather for various events such as ceremonies.

Ajijaak flew down several times, stopping at ideal gathering areas that were identified for their beauty, available food, plants, and medicines. The first stop was at Baawating where he looked around and communicated with the other beings there about the beauty of the area.

According to Ojibwe star knowledge, ajijaak is seen in the night sky as Cygnus, a northern constellation that is cross-shaped and falls along the plane of the milky way. It is said that ajijaak is the one who made maang the first in council leadership among the animal beings represented in the stars. Therefore, maang (loon) is in charge in the night sky but ajijaak is the one who placed him there.

Ajijaak is a part of the Ojibwe clan system whose clan members have historically held the role of Chieftainship along with helping to provide a balanced government by working in collaboration with the Maang Clan. Members of the Ajijaak Clan have been known to be very intelligent and possess strong leadership skills. They have been respected as speakers and decision-makers. Many members of the Ajijaak Clan have been great advocates, orators, translators, and ambassadors.

Some elders shared that the Ajijaak Clan is also sometimes referred to as the Baswenaazhi (echo maker) Clan because of the sound of ajijaak whose echoes brought together the Anishinaabe people for ceremonies and other gatherings. They are to serve as a reminder to us to think things through before speaking because what we share can be carried as echoes to others. Today members of the Ajijaak Clan are less common but still exist.

What are you observing in the Ceded Territories? Ozhibii'an ezhiwebak noopiming.

PLACE STAMP HERE

Tape and stamp this form and return to GLIFWC by June 30, 2027. Make sure to include the information below:

Name:_____

Address:_____

_____

Tribal affiliation (if any):_____

_____

Phone number or email:_____

Are you a:

☐ Youth observer

☐ Adult observer

To submit observations via our online submission form or for additional copies of this form, go to:

glifwc.org/phenology.calendar

Please print return address clearly:

GLIFWC–Climate Change
72682 Maple Street
PO Box 9
Odanah, WI 54861

Aaniin ezhiwebak Anishinaabe-akiing?

Please Help GLIFWC Observe Seasonal Events in the Ceded Territories

GLIFWC is trying to understand how environmental changes could be affecting treaty resources.

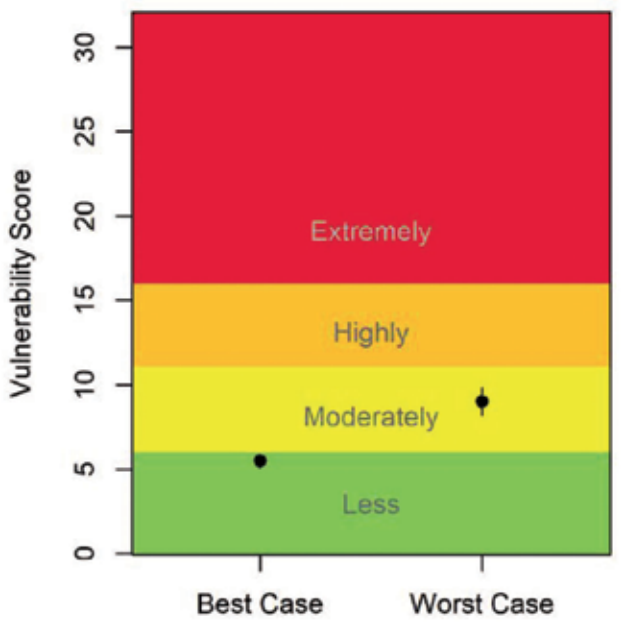
Help us study phenological and seasonal changes by writing down your observations on this form. Keep it on your bulletin board or refrigerator. Share your knowledge by mailing it back to GLIFWC by June 30, 2027.

GREAT LAKES INDIAN FISH & WILDLIFE COMMISSION

Ajijaak

Ajijaakwag (plural) / Sandhill crane / *Grus canadensis*

Less – Moderately Vulnerable
(Confidence Level: Moderate)



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

Factors that increase the vulnerability of ajijaak to climate change:

SI Physiological hydrological niche: Seasonally flooded wetlands are important for nesting, chick rearing, and for migration and wintering habitat. Some ajijaakwag nest in seasonally flooded wetlands and depend on them for food and water as well as protection from predation. Changes in precipitation arelikely to affect these life stages.

SI Disturbance regime: Both extreme precipitation events that cause flooding and severe drought would negatively impact ajijaak during nesting. Flooding can destroy eggs and kill chicks, and drought can reduce water levels, increasing predation risk and reducing the availability of food and water.

N/SI Pathogens or natural enemies: Predation is the most common reason for nest failure; many predators of ajijaak, such as wiisagizi ma'iingan (coyote), migizi (bald eagle), esiban (raccoon), nigig (otter), gidagaa-bizhiw (bobcat), and makwa (black bear) are expected to be favored by climate change. Diseases including avian cholera and botulism are also risks as ajijaak congregates on migration and wintering grounds and a high density creates susceptibility to disease.

I Bottlenecks: The ajijaak population was reduced to fewer than 50 breeding pairs scattered throughout Minnesota, Michigan, and Wisconsin in the early 1900s. This bottleneck makes ajijaak more susceptible to changes in climate, as genetic diversity is likely reduced.

SI Future change in range size: The suitable habitat of ajijaak in the Ceded Territories is expected to decline by about 31% by mid-century.

In Baawating (also known as Place of the Rapids or Sault Ste. Marie, Michigan) many elders tell the story that mewinzha (a long time ago), Gichi-manidoo (Great Spirit, also referred to as the Creator) sent ajijaak flying down to aki (earth) to search around the Great Lakes to see where the Anishinaabeg could gather for various events such as ceremonies. Ajijaak flew down several times, stopping at ideal gathering areas that were identified for their beauty, available food, plants, and medicines. The first stop was at Baawating

Aanji-bimaadiziimagak o'ow aki Climate Change Vulnerability Assessment Version 2

What are you observing in the Ceded Territories? Ozhibii'an ezhiwebak noopiming.

Please record the date, location, and species (if applicable) for each observation. Return to GLIFWC by June 30, 2027. Miigwech!

Biboon / Winter — Date/Location

First white coat seen (snowshoe hare, ermine) _____
First snowfall _____
First snow that sticks _____
First temperature below zero _____
Ice storms/unusual storms _____
Lake freezes (specify lake) _____
First walleye caught through the ice _____
First musky speared through ice _____
First eagles at nests _____
First snow fleas _____
First ski / snowshoe _____
First deer antlers dropped _____
Last deer with antlers seen _____
First day above freezing (32°F) _____
Other biboon observations:

Ziigwan / Spring — Date/Location

First flowers on trees _____
First leaf buds bursting on trees _____
First new needle growth on trees _____
First maple sap flowing _____
End of maple sap season _____
First plants (species) _____
First leeks harvested
First wildflowers blooming (species) _____
First fiddleheads harvested _____
First deer fawns _____
First bear _____
First frogs calling (species) _____
First walleye speared (lake) _____
Walleye spawning (lake) _____
First fish caught (species) _____
First fish spawning (species) _____
First suckers running (river) _____
First arrivals of birds (species) _____
First woodcock mating call _____
First grouse drumming _____
First turtle laying eggs (species) _____
First tick _____
First mosquito _____
First hummingbird _____

First dragonfly _____
First rain _____
First thunderstorm _____
First crusty snow _____
Last snow before summer _____
Last frost before summer _____
First night above freezing (32°F) _____
Ice out (specify lake) _____
First canoe (lake/river) _____
First mushrooms harvested _____
Other ziigwan observations:

Learn about Anishinaabe doodem system!

The Anishinaabe have a special way of organizing our families- doodem is the way we talk about our clan system. Our clans are often named and represented by our animal relatives. It is commonly known in the Great Lakes region that we have seven orginal doodem types, however, there are many different clans and subclans that exist across Ojibwe Country. Some common clans are Makwa (Bear), Ajijaak (Crane), Migizi (Eagle), Giigoohn (Fish), Maang (Loon), Waawaashkeshi (Hoof/Deer) and Waabizheshi (Marten). In our histo- ries, it is recorded that each doodem had a special role. For example, if you are a part of the Ajijaak doodem, you might be involved in leadership. Howah!

Show off your skills!
Color the image below.

Draw a line to match the clan names from English to Ojibwemowin


a. Bear


b. Crane


c. Eagle


d. Deer


e. Marten


f. Fish


g. Loon

Migizi 

Maang 

Waawaashkeshi 

Giigoohn 

Waabizheshi 

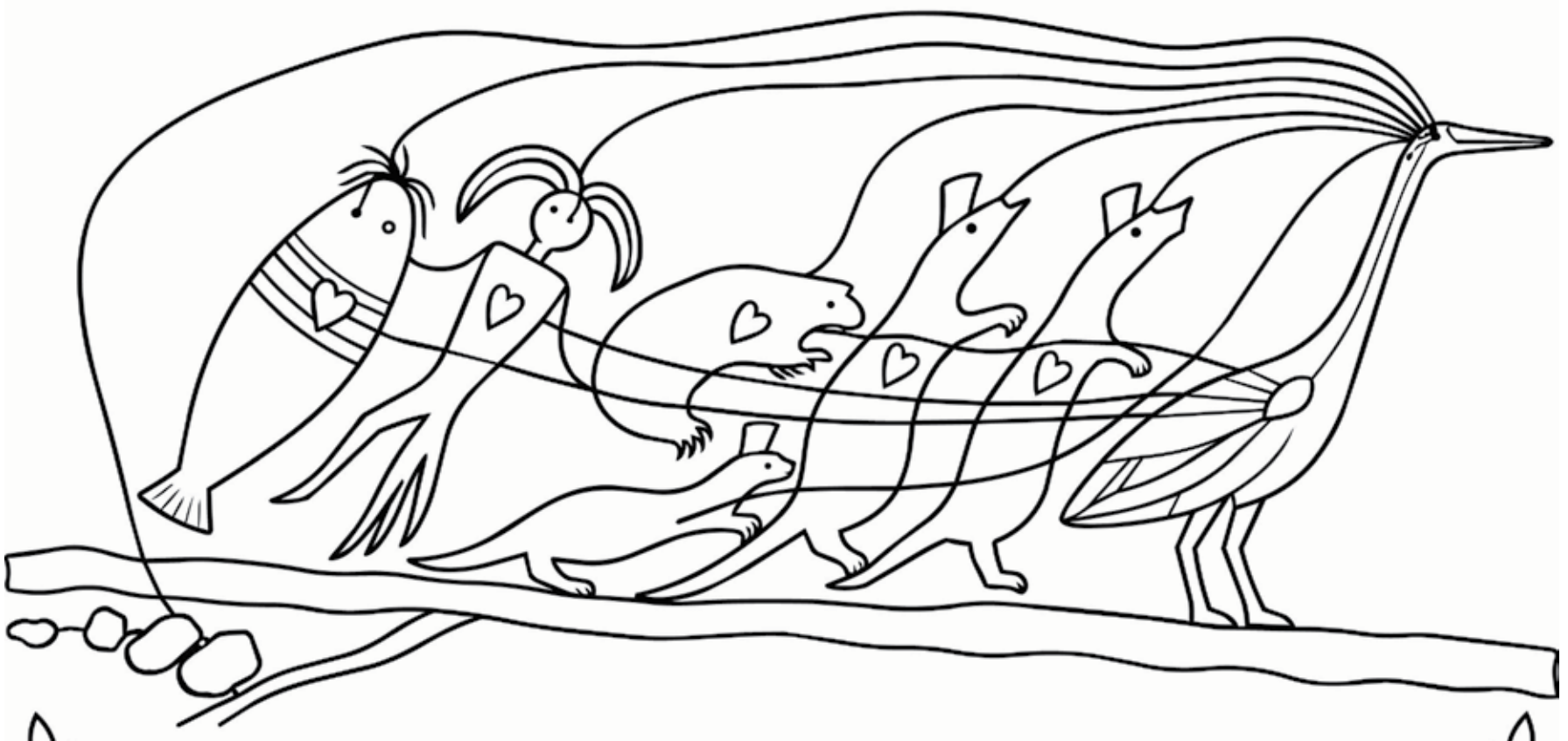
Makwa 

Ajijaak 

Illustrations sourced from Canva

Do you know your doodem? Write it below!

ANISHINAABE INAAKONIGEWIN



Learn more about this image on pg 17

Warden advances to Minn 1837 Territory duty station

When it comes to outdoors certifications in the modern era, Sierra Schindler checks off a lot of boxes. From wildfire training and wildland first aid to operating all manner of recreational vehicles, the UW-Stevens Point graduate has compiled a standout list of qualifications in her pursuit of a career protecting fish and wildlife.

Schindler is GLIFWC's Minnesota 1837 Ceded Territory warden. While training never stops for the Law Enforcement Division, Schindler has wrapped up the inaugural big stuff: BS in Conservation Law Enforcement with a Wildlife Ecology minor, Fox Valley Technical College Law Enforcement Academy graduate (720hrs), and most recently, she's about to complete GLIFWC's 52-week Field Training Program. That four-season specialized training took her to the far-flung corners of the Ceded Territory where she learned from each GLIFWC conservation warden across three states.



An early appreciation for wildlife and wild places on family outings formed a conservation ethic for young Schindler. By high school, she was helping process family fish and game harvests. Schindler also became aware of the harm inflicted on wildlife by poachers—close to home and as far away as the African grasslands. She set her sights on becoming a conservation warden, learning in classrooms and experiencing the outdoors on the water, in the woods, and from the seat of a mountain bike.

With one full year under her duty belt, Schindler looks forward to 2027 and her second season at Lake Mille Lacs and surrounding region. GLIFWC wardens enforce off-reservation conservation codes established by treaty tribes in the Ojibwe Ceded Territories.

—CO Rasmussen



PIO welcomes design and graphics expertise

The GLIFWC Public Information Office welcomed a new face this fall to assist with all things design and communications related. Isabella Potack-Rettler grew up in the Milwaukee area and is a descendant of Lac Courte Oreilles Band. She graduated from the Milwaukee Institute of Art and Design (MIAD) in 2022 with a Bachelor of Fine Arts in Communication Design. Potack-Rettler previously worked for Indian Community School of Milwaukee where she is also an alumnus. She has worked in the graphic design field for the last eight years.

Friends, family, and animals consume Potack-Rettler's free time, especially her three cats and dog. When she's not caring for her fuzzy relatives, she is an avid traveler and loves to visit new places—both near and far. A recent visit back home to celebrate the Milwaukee Brewers Championship was especially gratifying. She has traveled internationally as well and visited the likes of London, Paris, and even Iceland. When asked about her career interests, she noted, "I'm interested in working with our member tribes and I felt my skill set could be helpful to GLIFWC and the communities we work with." GLIFWC PIO is excited to welcome Bella Potack-Rettler!

—B Jennings

Intern to full-time staff, Armagost poles into manoomin position

Part of the 2022 GLIFWC Internship year class, Robin Armagost returns to GLIFWC four years later as a fulltime staff member in the Biological Services Division. As Manoomin Wiidookaage, Armagost is focused on stewardship and caretaking of wild rice in the Ojibwe Ceded Territory. A key part of GLIFWC's manoomin team, the wiidookaage (helper) position serves in the field, at GLIFWC's central office, and with natural resources partners—tribal nations, wild rice chiefs, lake associations, and governmental entities, including the Joint State-Tribal Wild Rice Committee in Wisconsin.



With a wide base of experience, Armagost may have landed at multiple spots in GLIFWC. Her GLIFWC language internship helped propel her Ojibwemowin studies, experience in food handling and safety training honed miijim skills, while Northland College provided a strong foundation in information technology with writing and communications internships. But ultimately, the opportunity to work afield with a culturally important being like manoomin won over.

"The pull towards my wild rice relatives, to help do my part is what got me excited," Armagost said. Witnessing ever-climbing temperature records set in recent years helped lock in on manoomin, which is listed as Extremely Vulnerable to climate change in GLIFWC's natural resources assessment Aanjibimaadiziimagak o'ow aki.

Armagost is a Red Cliff Band Ojibwe and earned a BA in Native American Studies from Northland College in 2023.

— CO Rasmussen

Water quality advocate focuses on Ceded Territory



As a lifelong east coaster from Doylestown, Pennsylvania, Colin Jefferis recently moved to Madison, Wisconsin to fill the newly created role of Policy Analyst V in the Division of Intergovernmental Affairs. In this position, he is involved in Minnesota, Wisconsin, and Michigan's water quality standards processes, advocating for the protection of treaty rights in water quality standards across the Ceded Territories. State governments administer the federal Clean Water Act through water quality standards, adopting and enforcing rules that protect waterbodies and limit pollution based on a waterbody's designated use.

Jefferis earned his bachelor's degree in environmental studies from New College of Florida where he spent a year working closely with the Seminole and Miccosukee Tribes on water quantity and quality policy issues. After graduating from New College in 2025, he attended Lehigh University and graduated with a master's in environmental policy in August of 2026. At Lehigh, he deepened his technical understanding of US water policy, and built skills in policy research, communication, and community engagement. Jefferis also focused on environmental justice and the ways in which environmental policy can create more equitable outcomes across the country.

An amateur horticulturist, he enjoys collecting orchids in his Madison apartment.

Jefferis is currently working with Wisconsin on a designated use for manoomin (wild rice) and subsistence fishing waterbodies, "I'm excited to continue building connections across tribal communities and work towards cleaner water throughout the Ceded Territory."

—J Van Sickle

Kids Page Answer Key:

a.- Makwa, b.- Ajijaak , c.- Migizi, d.- Waawaashkeshi, e.- Waabizheshi f.- Giigoohn and g.- Maang

Managerial know-how drawn from science, executive systems



Sara Wieland grew up in northeastern Illinois and has family roots in northern Wisconsin where she spent a lot of her childhood. She brings a diverse background to her role at GLIFWC, with experience in executive support, operations, education, and technical and analytical work.

Wieland graduated with a Bachelor of Science in Biology (Ecology) from Winona State University in 2009. After college, she lived in central Texas for eight years before moving back up north to work on an organic farm, return to the fresh water, and live a more sustainable life.

"I love the strong, resilient communities of this area and the changing of the seasons, which is what drew me back to the Northwoods," said Wieland.

Wieland also brings a strong scientific and analytical background after spending years in an environmental quality testing lab as an analytical chemist, working with EPA methods, laboratory data, quality processes, and detailed record-keeping. She also held the role of executive assistant and operations specialist at an ag-tech company that specializes in precision irrigation management tools built to manage and protect groundwater resources.

She enjoys spending her free time with her dogs, gardening and growing food, cooking meals from scratch, making/enjoying music and art, and being outdoors.

In her role at GLIFWC, she supports leadership, day-to-day operations, coordinates meetings and schedules, works with vendors, and helps organize events. "I look forward to learning more about indigenous culture and traditional ecological knowledge and how it influences the world," said Wieland.

—J Van Sickle

Ishkode research and restoration



Professor Evan Larson displays an historic fire scar revealed in the cross-section of a red pine stump. (COR photo)

(continued from page 1)

8 cultural burn stood in sharp contrast to a grim era when northern communities rallied to oppose indigenous ways.

"Going into this, I didn't know what would happen," Montano said. "Thinking back to the spearfishing days of the Walleye Wars, being at the boatlandings as a young person with my brothers, I saw people who were ready to fight us on anything, for years and years. With ishkode, I wondered where the push-back would come from."

If any anti-Indian types got a whiff of the planned ishkode at Minnesota Point, they kept their heads down. What Montano ultimately came to find were nearby homeowners, along with regional policymakers, coming together to fully support indigenous knowledge at work on the doorstep of a modern city.

"Seeing all this come together, hearing people say 'come help us do this,' helps everyone move beyond some of that old hurt from the past," Montano said.

Research and restoration

Joining other indigenous students working with Professor Evan Larson, Montano and interdisciplinary author Robin Wall Kimmerer led a team of researchers peeling back the fire history of Minnesota Point and its companion peninsula, Wisconsin Point several years ago. The researchers learned through sampling red pine stumps that ishkode last appeared on Minnesota Point in the 1840s right before the settlement era. Archeological evidence and tree ring data made clear that once native people were pushed off their traditional harvest grounds, landscapes that thrived on intentional burns slowly regressed. Nationwide fire suppression policies reinforced the trend and fire-dependent plants like blueberries disappeared; pine regeneration plummeted. Now that both Wisconsin Point and Minnesota Point have experienced the very intentional return of fire in the span of one year, optimism for continued indigenous knowledge like ishkode being applied to landscapes may be on the rise.

"There's rapidly growing interest in understanding how to do this well," said Larson (UW-Platteville), explaining that mainstream United States history of appropriating native culture and knowledge and extracting American Indian resources has created trust issues among tribes. "The project here is led by indigenous students and I think that's why it went so well. There's a line in our published paper that says something like 'Western science is playing catch-up to indigenous knowledge.'"

Montano and project manager Bazile Panek from Good Sky Guidance had praise for all organizations that supported the recent cultural burns, as well as planned future ishkode applications to the Points: US Fish & Wildlife Service, Minnesota Point 50, and Duluth Airport Authority. Learn more at *ishkode.org*

"We've had so many partners along the way," said Montano. "All around it's just been a really good experience."

GLIFWC tribes request the release of ma'iingan remains

(continued from page 3)

are intertwined, what happens to one of us, will happen to the other."

Indeed, a quick examination of history reveals these parallels drawn by tribal elders and tribal knowledge systems exist. In the 1800's, gray wolves faced habitat elimination through extensive logging and wolf bounty laws passed by states and territories. Furthermore, the loss of natural prey, fueled by habitat diminishment and overharvesting contributed to rapid ma'iingan decline.

Simultaneously, policies in the United States also sought to remove and or diminish tribal lands and territories through acts like the 1830 Removal Act, and the 1887 Dawes (General Allotment) Act. For Anishinaabeg specifically, 1850 marked tragedy as conspired efforts by government officials sought to move Great Lakes Ojibwe communities to west of the Mississippi.

Treaty annuity payments were intentionally moved from La Pointe to Sandy Lake Minnesota which would result in over four hundred men, women and children passing away from starvation, sickness, exposure to elements and exhaustion. Further acts of congress would continue to suppress tribal communities through the 1800s and mid 1900's which would also parallel ma'iingan extirpation from the Great Lakes region by the 1950's.

In an October 2026 press release, GLIFWC leadership condemned the action and cited the lack of consultation and meaningful engagement with GLIFWC member Tribes. GLIFWC Executive Administrator Jason Schlender noted the strain on relationships. "WDNR leadership has acknowledged the damage that has been done and Secretary Hyun has issued an apology. We need to do better and use this as an opportunity to change policies and implement necessary consultation triggers throughout the depredation processes. If our communities have lived peacefully with ma'iingan for generations, so can others."

GLIFWC member tribes have long recognized the ecological importance of ma'iingan and even point to the ecosystem services provided by these beings. Removing members of a keystone species from a complex ecosystem can have long-term impacts on the health of the environment. GLIFWC Biological Services Director Alex Bohman noted the crucial role that ma'iingan plays in the environment. "Wolves strengthen deer populations through predation of sick, weak, and old animals. Tribes have coexisted with wolves for hundreds of years and can bring traditional ecological knowledge, as well as western science and data to these discussions."

Unfortunately, across the Ceded Territories, these types of incidents are not uncommon. The Mille Lacs Band of Ojibwe dealt with a similar situation in August 2023 regarding wolf depredation incidents and lack of consultation in Hillman, Minnesota, which is located just ten minutes from the Mille Lacs reservation and located within the 1837 Treaty boundaries. Minnesota Department of Natural Resources, U.S Fish & Wildlife Service and USDA Wildlife Services were already in the process of trapping and euthanizing an entire pack of wolves by the time Mille Lacs Band DNR and GLIFWC were notified.

Tribes have maintained strong relationships with the very environments that continue to sustain them through honoring the original treaties with their more-than-human relatives—the four legged, birds, plants, trees, fish. Through consultation and solid engagement state and federal agencies should welcome GLIFWC and its member tribes in a consensus approach to wolf management, in which the parties review all relevant information and can participate in a comprehensive discussion.

Tribal environmental knowledge is ancient, relevant and often informed by hundreds of years of close relationships and environmental observations. Why not use this additional knowledge to guide agencies to the most appropriate course of action?

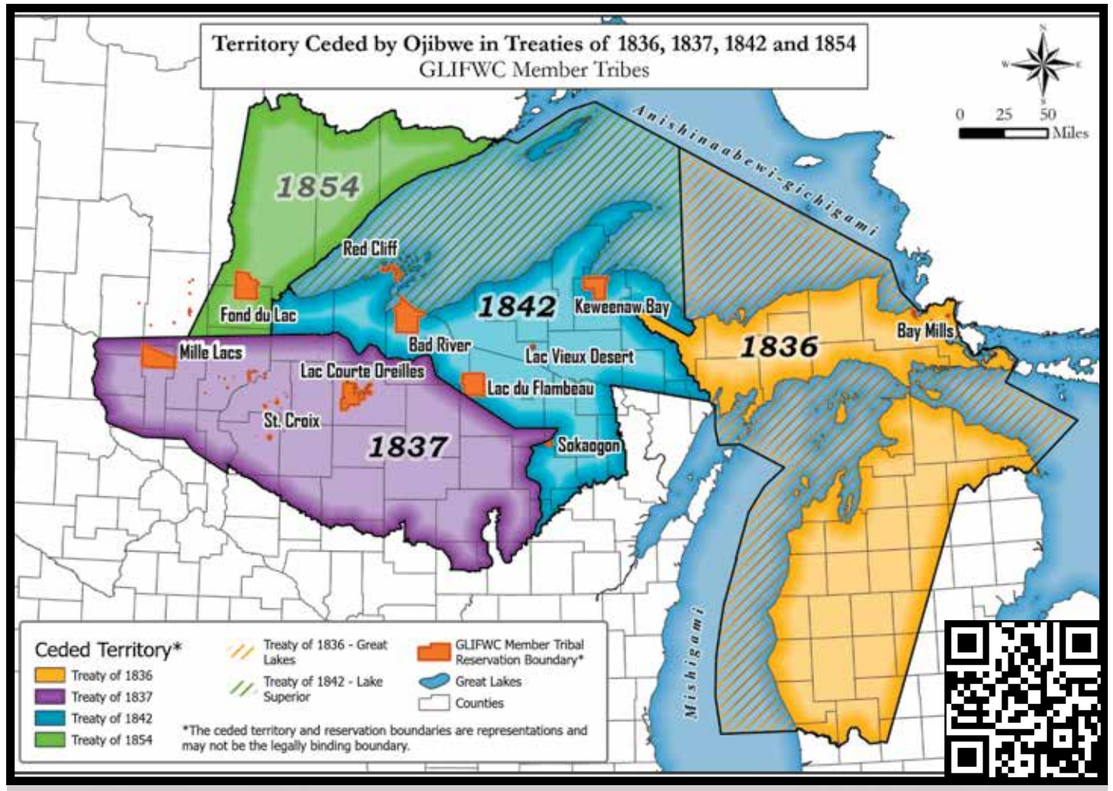


GREAT LAKES INDIAN FISH & WILDLIFE COMMISSION

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Mazina'igan
A Chronicle of the Lake Superior Ojibwe



See pg 3

Jim Edlhuber photo

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INSIDE:
Two-eyed seeing
Great Lakes fisheries
Giiwose, manoomin updates