

Mazina'igan

A Chronicle of the Lake Superior Ojibwe

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Stories from Gabeshiwin: Sharing culture & connections

By Dylan Jennings & Paula Maday
Staff Writers

Gabeshiwin has been a popular word in Ojibwe Country in recent years. Cultural camps hosted by tribes and other organizations have been a huge success and major contributor in the revitalization of language and traditional harvesting



Chuck Mitchell assists Martin Evaristo with proper gun handling at the Town of Russell shooting range. Evaristo was part of a group that came from California to learn more about Ojibwe culture at Red Cliff Wolf Camp June 13-16. (A. Plucinski photo)

practices. Camps throughout the Ceded Territories have been providing communities the opportunity to both learn and speak Ojibwemowin, and to relearn traditional practices such as net mending, basketry, and archery.

Red Cliff tribal elder Marvin Defoe chuckled as he began to talk about camps in Red Cliff and the surrounding area. "Our ancestors probably would have found it ridiculous that we have to do these camps in order to practice some of these traditions. But considering everything we have been through, it's a huge benefit to our communities to teach and relearn our way of life through these gatherings."

Defoe is right. There is a deep and ironic history to consider. The 1800s are commonly characterized as a treaty era, in which tribes and the U.S. government continually entered into binding agreements. Simultaneously, however, the U.S. government outlawed many Native American ceremonies and religious practices.

By entering into the treaties, the United States acknowledged the inherently sovereign status of the tribes, yet denied them their first amendment right of free exercise of religion. Arguably, some of the first spiritual ceremonies practiced in the United States, somehow became illegal.

The American Indian Religious Freedom Act didn't become law until 1978. It was passed to help protect and preserve the very way of life that had been threatened for so long.

(See *Sharing culture*, page 23)

Survival of young walleye in Mille Lacs Lake

By GLIFWC Inland Fisheries Section

The number of adult walleye in a population depends heavily on the production and survival of young walleye (fish younger than two years of age). Survival from egg deposition to age-1 is approximately 0.01%, with mortality occurring at multiple life stages. For example, a proportion of eggs might not be fertilized during spawning, eggs might not hatch, or age-0 fish (fish less than one year old) might die from starvation, competition, or predation.

Environmental conditions can also dictate survival of these early life stages, with water temperature likely being the most important factor. Given the number of factors that can influence the survival of young walleye, it comes as no surprise that survival to age-1 can vary considerably from year-to-year.

Every fall since 1999, GLIFWC, Fond du Lac Tribe, and Minnesota Department of Natural Resources have conducted electrofishing surveys of age-0 and age-1 walleye on Mille Lacs Lake (Photo 1). During these surveys, biologists count and measure both age groups of fish (Photo 2). From these data, we are able to calculate the number of fish in each age group per mile of shoreline sampled each fall, and the relative survival of young walleye over time.

To calculate relative survival, we divide the number of age-1 walleye by the number of age-0 walleye captured the previous year. These calculations result in a wide range of values, where a value closer to 1.0 represents greater survival of a year class. By analyzing these data, we hope to gain some insight into why the current adult walleye biomass (~890,000



GLIFWC biologists capture young walleye in Mille Lacs Lake. (J. Curtis-Quick photo)

pounds) is less than 50% of the biomass in 1999 (over 2.4 million pounds; see *Mazina'igan* Summer 2017 p. 4 for details).

Relative survival of age-0 walleye to age-1 has gone through a boom and bust cycle from 1999 to 2015. In 2003, (see *Survival*, page 15)

Hunting Season arrives in the Ceded Territory

September 5 opener

Minnesota 1837

Michigan (LVD) 1842

Wisconsin 1837 & 42



John R. Ford, gameandfishmag.com

Waawaashkeshi.



National Wild Turkey Federation

Mizise.



In final calculation DePerry finds retirement

After a 31-year career as a central figure at GLIFWC, Gerry DePerry has followed a paper trail leading straight into retirement.

"It's been a good ride for me," said a smiling DePerry at his retirement celebration at Red Cliff's Legendary Waters Convention Center. The US Air Force veteran launched his GLIFWC career in 1986 serving as a bookkeeper. Three years later he assumed the deputy administrator position and went on to oversee development of GLIFWC's accounting and fiscal management functions.

Through leadership and transparency, DePerry helped ensure GLIFWC funds were properly used to implement treaty rights, and to protect natural resources in the Ceded Territory. At ceremonies and tribal meetings, he carried the GLIFWC pipe for many years, starting gatherings off in a good way.

"I think very highly of the Commission and its member tribes," said DePerry, a Red Cliff member. "Over the years I've developed a lot friendships with the tribal chairs. Some are here today and some have walked on. But we're all carrying the torch for that next generation."

Officers from GLIFWC member bands presented a wide variety of gifts to DePerry at the May 23 gathering, and an intertribal drum



Gerry and Sue DePerry examine a special retirement cake adorned with photo images. (COR photo)

group played an honor song. A notable speaker and jokester, he kept his comments brief and from the heart on this occasion.

"I want to say chi miigwech to all the staff that's here today and my family," said DePerry, pointing out his wife Sue, and son Bill, along with a number of brothers and sisters in attendance at his feast. —CO Rasmussen

"Lifting Nets" Premiere

On May 22, GLIFWC premiered the second short video in the Ogichidaa Storyteller series. "Lifting Nets: Gurnoe Decision" debuted at Legendary Waters to an audience of about 100 community members, young and old, who turned out to see how Red Cliff and Bad River members initiated the 1972 treaty rights case that affirmed their tribes' fishing rights in Lake Superior.

After the film screening, a few Ogichidaag took the stage to share both emotional and humorous memories from that time. Ron DePerry, the only surviving member involved in *Gurnoe v. Wisconsin*, was among them.

"Lifting Nets: Gurnoe Decision" is available for viewing on GLIFWC's YouTube channel at www.youtube.com/user/glifwc. Next in the lineup for the Ogichidaa Storyteller series is a video that will highlight the treaty rights case *Jondreau v. State of Michigan*. Filming for that video began in June.

"Lifting Nets: Gurnoe Decision" was funded in part by a grant from the Wisconsin Humanities Council, with funds from the National Endowment for the Humanities.



Ron DePerry (left) and other Red Cliff commercial fishermen share stories at the "Lifting Nets" premiere. (COR photo)

At 25, Partners in Fishing a model for fishery management

By Charlie Otto Rasmussen, Staff Writer

While springtime boat landing protests were in the rearview mirror by early 1993, skepticism over the sustainability of Ojibwe spearfishing lingered for a vocal segment of Wisconsin sportsmen. The unease further permeated relationships between natural resource managers after a period of contentious negotiations between state and tribal officials.

"There were some raw emotions at that time, but we had work to do, a fishery to manage," said Robert Jackson, former Bureau of Indian Affairs (BIA) biologist. He was also chairman of the recently formed Joint Assessment Steering Committee (JASC)—an interagency collection of biologists organized to administer a definitive examination of northern Wisconsin's walleye population.

Just before the open-water fishing season got underway, inspiration struck on a visit to Dick Rose's home; Jackson and the Discover Wisconsin television producer hatched a plan to defuse tensions by bringing together representatives from the state, Ojibwe tribes, and federal government for an informal day of walleye fishing. To round-out the gathering—they hired fishing guides, another group uncertain whether co-managing a fishery would be successful. Out on the water, individuals from all sides were literally all in the same boat. Partners in Fishing was born.

Partnerships arise from protest sites

After the inaugural fishing event near St. Germain—an area of racially-charged protests against Ojibwe spearers only a few years earlier—Partners in Fishing became a fixture of interagency relations and additional guides were brought in as the annual gathering grew. Lac du Flambeau, St. Croix, Lac Courte Oreilles, and Red Cliff communities all served as hosts in the first years.

"There's something about sitting in a boat, fishing with a person, spending time getting to know each other," said Dave Clausen, Department of Natural Resources Board member from 2006-2013. "When you have issues to work out [between the State and Tribes], it's really valuable to know someone on a personal level." (see Partners, page 15)

On the cover

An omashkooz bull in the 1836 Ceded Territory. See pages 12-13 for Ceded Territory elk status and efforts to reintroduce omashkoozoog* to eastern Minnesota. (Michigan DNR photo)

*Omashkoozoog is plural for elk.



At the recent 25th Partners in Fishing celebration on the Flambeau Chain, retired Bureau of Indian Affairs Biologist Robert Jackson presents the prize—a St. Croix rod—for the largest walleye caught to Angelena Sikora, US Fish & Wildlife Service biologist. Following retirement, Jackson has continued his role as master of ceremonies. (C. Rasmussen photo)

Ceded Territory news briefs

Spring harvest totals from 1837 Minnesota territory

The 2017 spring treaty harvest season on Mille Lacs Lake ran from April 1 to May 11. Tribal members mostly targeted walleye with spears during the early part of the season, followed by limited gill-netting for a total of 13,938 pounds from a 19,200 pound allocation. Just over 5,200 pounds remain for dagwaagin fishing. Also, a total of 2,835 pounds of the 50,000 pound northern pike allocation was harvested mostly through gill-netting. As the walleye moved away from shore during the end of their spawning period, tribal harvesters began targeting yellow perch with gill nets on Mille Lacs Lake, harvesting a total of 794 pounds of the 101,714 pound yellow perch allocation.

Treaty fishers also sought harvest opportunity on other lakes including: Chisago Lake, Green Lake, South Long Lake, Platte Lake, Knife Lake, and Pokegama Lake. Total walleye and northern pike harvest for all these lakes combined was around 950 pounds of walleye and 720 pounds of northern pike.

Miigwech to GLIFWC, Mille Lacs Band, and Fond du Lac Band harvest monitoring teams, and a big miigwech to all the tribal harvesters for their patience while their fish were being counted, weighed, and measured. —A. Ray

Eagle possession rules under review

The U.S. Fish and Wildlife Service is engaging in government-to-government consultation with federally recognized tribes on potential changes to the National Eagle Repository and the manner in which bald and golden eagle parts are distributed from the repository.

A consultation for the Great Lakes Region was held on May 20 at the Mystic Lake Casino. Tribal leaders and representatives of GLIFWC member tribes and GLIFWC staff attended the consultation. The Service is also available to consult with individual tribes by telephone. To schedule a consultation or request more information, please contact the Service's Office of Law Enforcement at (303) 236-7540.

Get with Ojibwe speakers at language immersion camp

Ojibwemotaadidaa Omaa Gidakiiminaang with Fond du Lac Tribal and Community College are pleased to announce the seventh annual Ojibwe Immersion Academy Weekend Cohort to be held over the upcoming school year at the Cloquet Forestry Center in Cloquet, MN.

The Ojibwe Immersion Academy Weekend Cohort is a rare opportunity for language-learners who are interested in a complete immersion experience to study one-on-one and in small groups with Ojibwe elders and faculty speakers. Participants meet one weekend a month for 6 months beginning November 2017 and ending April 2018. For more information please visit ojibwemotaadidaa.weebly.com or email ojibwemotaadidaa@gmail.com. All applications are due by noon on September 13, 2017.



Ogaawag for elders, veterans

GLIFWC officers joined Lac Courte Oreilles (LCO) fisherman Jim Tate on a reservation-wide distribution of walleyes speared from local lakes last spring. For elders no longer able to harvest fish, the gift of five packages of filleted, frozen ogaawag on Memorial Day weekend was well appreciated.

"We're very thankful," said elder Beverly Smith who received armful of ogaawag from Tate.

Inspired by a young LCO spearer who gave away his entire harvest the previous year, Tate and Officer Mike Popovich hatched a plan to place fish donation boxes at active boat landings during the 2017 spring spearing season. LCO spearers responded with a contribution of 166 walleyes. Popovich and area GLIFWC warden, Pat Ratzleff, filleted and packaged the catch.

"I've got food right here but I can't get the fish," elder Chuck Martin told the wardens during a home delivery. A US military veteran, Martin lives on Tyner Lake, part of the Chippewa Flowage. Two shoulder surgeries have made it impossible for him to spear and even angling is difficult.

GLIFWC officers said they were excited about the community response and, along with Tate, hope to expand the ogaawag-for-elders program in 2018. Last spring, Tate and his spearing partner Chuck Lynk led the way, donating 66 walleyes. A chi miigwech to all the others who contributed ogaawag: David Bisonette, Mark Bisonette, Chato Gonzalas, Tim LaPointe, Kelly Martin, Keller Paap, Jason Schlender, and Charles Woller. —Charlie Otto Rasmussen

A cloudy manoomin forecast

This is the time of year I get antsy. For months I have been responding to inquires about what the manoomin season will be like with: *ask me in the middle of August; by then I should know something.* Those call-backs are going to start any day now, and it turns out I still have very little to report.

We all know how rainy this spring and summer have been. It's an obvious connection, but we may not think about how cloudy it has been as well. To me this is a problem. There is no better way to survey a couple of hundred rice waters quickly and accurately than from the air—IF the skies are cloudless. What a weather report calls "mostly sunny" is often 25% or more cloud cover, and the shadows and lighting impacts of those clouds on the rice beds can wipe out my ability to differentiate manoomin from other vegetation.

I wasn't necessarily a quick learner (and I have hundreds of lousy pictures to prove it) but over the years I've learned when its best to stay on the ground and hope for a better time. Most years, it comes. A few years we never got to a particular area, or couldn't until harvesting was already underway. The latter situation still gives us important information, even if it isn't available early enough to be beneficial to pickers. But it's starting to look like 2017 could be the first year with significant gaps in our aerial surveys of rice waters. It's a first I would like to avoid.

We have been running some ground surveys, and have been in discussion with folks around rice range, and we can tell you this: All that rain did manoomin no favors—at least for this year. The crop generally appears to be below average, but as always, some locations buck the trend. Conditions may generally be better as you move west. High water levels and fairly cool summer temps also have us thinking that the season may be a bit later than average—or at least more prolonged than usual. Many beds also appear thin—though it's worth remembering that thin beds can sometimes still produce a lot of seed.

If you need to fill your pantry, you will want to do some local scouting, and you may want to look at a couple of more waters than you usually do. Places that are higher in the watershed, or which were able to maintain favorable water levels when the rains hit, will generally be better bets.

We also suggest you continue to follow the links to manoomin information at www.glifwc.org; we will be working to post whatever abundance information we can gather as quickly as we can. If you have some information you would care to share, we would love to hear from you. Just call 715-682-6619, and ask for Lisa or Peter.

And regardless of how your ricing time unfolds, enjoy your days in the Great Spirit's garden—even if they are cloudy. —P. David



The crop generally appears to be below average, but as always, some locations buck the trend.



From the left: Officer Mike Popovich and LCO member Jim Tate led efforts to collect and donate walleyes. Officer Pat Ratzleff joined the pair on Memorial Day weekend to deliver frozen ogaawag packages. (C. Rasmussen Photo)



Ma'iingan on the rise in Wisconsin

By Paula Maday, Staff Writer

The Wisconsin Department of Natural Resources (DNR) reported in June that the state's gray wolf population increased to a record high 925-952 animals in winter 2016. This estimate represents a 6% increase from winter 2015.

What is the significance of this increase? Let's look at some of the cultural, congressional, and demographic history of ma'iingan in order to better understand this population change.

Cultural bonds between Ma'iingan and the Ojibwe

For the Ojibwe people, ma'iingan, the wolf, holds great significance. This significance goes all the way back to the Ojibwe Creation Story.

As told by Lac Courte Oreilles (LCO) spiritual leader Eddie Benton-Banai in the *The Mishomis Book* (1988), Original Man was sent to earth by the Creator and given the task of naming all the plants and animals. As he completed this task, he noticed that each animal came in pairs, whereas Original Man, was alone.

In response to this question, the Creator sent Original Man a brother, ma'iingan. The two traveled the world and grew very close. When their travels concluded, the Great Spirit told them they each had to embark down separate paths. Yet, despite this separation, they were told that "What shall happen to one of you shall also happen to the other. Each of you will be feared, respected, and misunderstood by the people who will later join you on this earth."

Man and ma'iingan went their separate ways, but have remained linked by this brotherhood and by this

fate. Historical events charting this linkage are laid out in Chapter 17 of the book *Recovery of Gray Wolves in the Great Lakes Region of the United States*.

In this chapter, GLIFWC Wildlife Biologist Peter David writes about several connections between ma'iingan and the Ojibwe, including a time during 1974-1975 when Wisconsin was believed to be wolfless. "Interestingly," he writes, "in the year that passed between the initial arrest [of LCO members Fred and Mike Tribble, arrested for exercising treaty fishing rights on Chief Lake] and the appeal, another seemingly small event occurred that involved the crossing of a political boundary: several wolves ventured into northwestern Wisconsin from the growing population in neighboring Minnesota. It was the first documented presence of wolves in the state in over a decade and a half (WDNR 1999)."

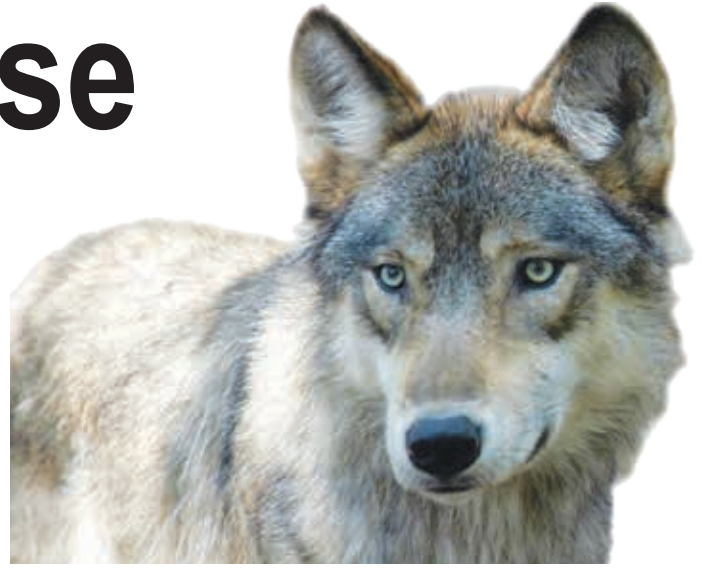
At a time when the Ojibwe people began reclaiming their harvesting territory, wolves also began to reclaim their territory. However, as predicted, the road has been filled with people and efforts born out of fear and misunderstanding of ma'iingan and the Ojibwe.

State, federal efforts impact Ma'iingan

The state DNR estimates that Wisconsin was home to an estimated 3,000-5,000 wolves during the 1830s, before Wisconsin was settled. Over time, however, wolf populations dwindled due to wolf bounties aimed at preserving livestock and deer populations.

Wolves were given federal protection under the Endangered Species Act in 1974 and declared endangered by the state DNR in 1975. A wolf recovery plan completed in 1989 set a state goal for reclassifying wolves as threatened once the population remained at or above 80 for three years. Recovery efforts focused on education, habitat protection, legal protection, and paid compensation for problem wolves.

The wolf population grew throughout the 1990s and the DNR completed a new management plan in 1999. This management plan set a delisting goal of 250 wolves in late winter outside of Indian reservations, and a management goal of 350 wolves outside of Indian



Ma'iingan. (Associated Press photo)

reservations. In 1999, wolves were reclassified to state threatened status with 205 wolves in the state. In 2004 wolves were removed from the state threatened species list and were reclassified as a protected wild animal with 373 wolves in the state (WDNR, Grey Wolf Factsheet, 2016).

Ma'iingan today

After years of delisting efforts, a new federal delisting process began on May 5, 2011 and wolves were officially delisted on January 27, 2012. The population count in winter 2011 was about 782-824 wolves in the state. A federal court decision relisted the gray wolf as endangered in December 2014.

With two years passed since the state's last legal hunting and trapping season for wolves, David says that the wolf population increase in 2016-2017 was expected. It should be noted, however, that the population did not increase in every wolf zone in the state.

Zone 2, which covers northeastern Wisconsin including Vilas, Florence, Oneida, Forest, and Marinette county, saw a decrease in their wolf population from an estimated 243-252 in winter 2015 to 206-214 in winter 2016. Zone 4, which is adjacent to Zone 2 on the southern and eastern sides, also saw a decrease from 52 to an estimated 37-40 over the year. The cause of this is unknown.

Overall, one could draw a parallel between the strength of wolf numbers growing throughout the state and the strength of Ojibwe voices growing in response to various environmental concerns faced throughout our communities. It is comforting to know that in our Anishinaabe purpose to help take care of Mother Earth, our brother and protector, ma'iingan runs beside us.

As Gary Ferguson, co-author of *Decade of the Wolf: Returning the Wild to Yellowstone* wrote, "They are essential wildness. And every day that they run free, comes the opportunity for us to rekindle the kind of relationships that helps us feel at home in the world."

Wolf ESA status update

The Court of Appeals for the District of Columbia determined on August 1 that the Fish and Wildlife Service's 2011 delisting of wolves did not comply with the Endangered Species Act (ESA). This means that wolves are still listed under the ESA for the time being.

The court states: "The central dispute in this case is whether the Endangered Species Act permits the Service to carve out of an already-listed species a 'distinct population segment' for the purpose of delisting that segment and withdrawing it from the Act's aegis. We hold that the Act permits such a designation, but only when the Service first makes the proper findings." The Court of Appeals then goes on to find that the Service failed to make the findings that would allow it to delist the wolf.

—A. McCammon Soltis

Researchers work to manage whitetails, harvest as CWD looms

By Travis Bartnick
GLIFWC Wildlife Biologist

Chronic wasting disease (CWD) continues to spread throughout the western Great Lakes region, and threatens the future of deer hunting in the Ceded Territories.

Thus far, in the Ceded Territories, there has only been one confirmed CWD-positive deer in the wild population of white-tailed deer, but private deer farms and hunting preserves have produced a considerable number of CWD-infected deer within or near the ceded lands.

The potential risk to human health is always a concern when talking about CWD. Rural populations, including tribal communities that rely on deer meat as an important source of protein

in their diets, are expected to be hit the hardest by the CWD problem.

Studies indicate that as CWD spreads, more and more people are coming in contact with, and/or consuming CWD-contaminated meat. The Centers for Disease Control and Prevention (CDC) recommends that people should avoid eating meat from any deer or elk that looks sick or that tests positive for CWD.

Recently, an ongoing research study has presented evidence that CWD can be transmitted to macaques, which are a species of primate that are genetically similar to humans. Although there has been no evidence to date that CWD has been transmitted to humans, this macaque study should give caution to all who consume deer and elk meat.

In 2016, the Voigt Intertribal Task Force established an intertribal CWD

working group. This working group, made-up of tribal representatives and wildlife biologists, was established to discuss culturally appropriate and biologically sound methods to prevent the spread of CWD.

CWD is caused by mis-shaped proteins called "prions." The prions which cause CWD are typically concentrated in the brain, spinal column, spleen, and lymph nodes of infected deer.

Long-distance transport of CWD-infected deer and improper disposal of infected tissues are the primary causes of the spread of CWD. Many states have been addressing this issue by implementing carcass transport regulations, which restrict what parts of a deer carcass can be transported in order to stop the spread of CWD.

One of the main goals of the intertribal CWD working group is to

develop guidelines and regulations for tribal members to protect human health and prevent the spread of CWD across Indian country. Information related to carcass transport regulations will be distributed with deer hunting permits at tribal registration stations and posted on GLIFWC's website and Facebook page.

Additional resources for deer hunters

The University of Wisconsin-Madison, Wisconsin Department of Natural Resources, and others have developed documents that provide deer hunters with recommendations for reducing the spread of CWD, including subjects related to carcass transport, handling of carcasses, disposing of carcasses, and decontaminating equipment used (see CWD page 18)

Wiigwaasi-mitig: The uncertain future of a resource

By Melonee Montano and Hannah Panci
Climate Change Program staff

A traditional legend about the wiigwaasi-mitig (paper birch tree) told by the late Niso-asin (Sean Fahrlander) emphasizes how useful and important wiigwaasi-mitig has been, and is still, to the Anishinaabe:

A long time ago, an old hunter and gatherer asked the birch tree to watch over camp while he went to check his traps. The birch tree agreed and promised to stay awake to watch the camp. Eventually the birch tree began to grow tired and fell asleep. As the birch tree slept, the trickster coyote came and stole most of the food and left a mess behind. The old hunter and gatherer came back and let the birch tree know how upset he was. The birch tree apologized and promised to do a better job next time in staying awake and taking care of camp. A few days later the hunter and gatherer again went out to check his traps. He then came back to find the same thing had happened. He became furious and let out his anger by using pine branches to hit the birch tree. The old man told the birch tree that he would always have the black marks from the pine branches as a reminder of the broken promises. As a result, wiigwaasi-mitig keeps his promise of continuing to help the Anishinaabe people by serving as a source to make things such as canoes, containers, food, medicine, nourishment, and more.

Climate change has the potential to impact this highly utilized and valued resource. What makes it so vulnerable? Several known insects, diseases, and other factors affect the tree (including the birch borer mentioned by TEK interviewees). Other disturbances include the birch leafminer, the forest tent caterpillar, the gypsy moth, and canker rot.

Inclusive effort yields wiigwaasi-jiimaan



Under the direction of master builder Marvin DeFoe of Red Cliff, a broad range of kids and adults helped construct a wiigwaasi-jiimaan, or birch bark canoe, in New Odanah. In early July, Bad River members led DeFoe deep into the 124,000-acre reservation forest to locate paper birch trees that yielded massive sheets of wiigwaas. From the first days of harvesting birch bark, jack pine roots, and other raw materials to the last coat of spruce pitch, the venture took four weeks. DeFoe welcomed everyone who appeared underneath the ironwood wigwam where construction took place throughout the work week.

"The youth are so talented, respectful and helpful," DeFoe said in the closing week of construction. "There were some really hot days, but we always had fun and lots of laughter."

Through funding by the Bad River Tribe, DeFoe shared his knowledge with community members, GLIFWC staff and interns, and statewide educators visiting the reservation to better understand native culture. —CO Rasmussen



Marvin DeFoe collects bundles of wiigwaas after a day harvesting. (COR)

Wiigwaasi-mitig, a northern species suited to cool climates, is already near the southern end of its range in the Ceded Territories. It is susceptible to drought, particularly during its first growing year, and hotter and drier summers can stress wiigwaasi-mitigoog. It is shade-intolerant and often outcompeted by other shade-tolerant species. Wiigwaasi-mitig can also be susceptible to fire topkill because of its flammable bark and, despite fire suppression, we may see more fires in the Ceded Territories as climate change progresses.

On top of all of these threats, the overharvest of birch poles is putting an additional stressor on wiigwaasi-mitig. (For more information see the Winter 2016-17 *Mazina'igan*).

Through ongoing Traditional Ecological Knowledge (TEK) interviews, GLIFWC Climate Change Program staff are learning how alarming these potential impacts to wiigwaasi-mitigoog (paper birch trees) are to harvesters and elders from GLIFWC member tribes.

To the Anishinaabe, loss of wiigwaasi-mitigoog would have detrimental economic, social, and most importantly, cultural impacts. During interviews, tribal members expressed fears of not being able to teach the younger generations how to make traditional crafts, how to carry on the cultural teachings, or how to utilize its medicine. More strongly expressed was the fear that stories of the wiigwaasi-mitig will have to be told solely in the past tense, describing a valuable gift we no longer have.

Nearly all TEK interviewees express concern about a decline in the wiigwaasi-mitig. The days of being able to travel a short distance to find birch trees large enough to make canoes are becoming mostly memories; one now has to search great distances to find suitable trees. Also seeing a major decrease are narrow birch poles, most often due to overharvesting for purely commercial purposes. Having fewer birch poles is a major concern for those who harvest them sustainably for traditional and ceremonial purposes. When TEK interviewees were asked how long they had been noticing the birch pole decline, the average response was the last five to 10 years.

Some examples of more specific observations mentioned about wiigwaasi-mitig are:

- Wiigwaasi-mitigoog are more sensitive to change. The birch borer is impacting it, and anything big is dead.
—Interview with harvesters in St Croix
- Because temperatures get hotter earlier in the day, it's necessary to gather wiigwaas (birch bark) in the morning rather than waiting until the afternoon as one had to in the past.
—Interview with tribal elder in Mole Lake
- Wiigwaasi-mitigoog are sickly and dying. There has been a significant decrease noticed since the 1940s and 1950s.
—Interview with harvesters in Lac Vieux Desert

Western science supports these reports by tribal members. Studies and vulnerability assessments by the United States Forest Service (USFS) found that the wiigwaasi-mitig is moderately to highly vulnerable to climate change. By the end of the century, wiigwaasi-mitigoog are expected to have a large decrease in suitable habitat and more than a 50-percent decrease in biomass (total weight of all wiigwaasi-mitigoog) in northern Wisconsin and western Upper Michigan.

A recent study by GLIFWC and the Forest Service ("Paper Birch [Wiigwaas] of the Lake States, 1980-2010") showed wiigwaasi-mitigoog already are suffering and additionally found the number of wiigwaasi-mitigoog declined by 49% from 1980-2010 in the forest land in the Ceded Territories.

However, fire does help it regenerate, and prescribed fire could be a way to manage for increased wiigwaasi-mitigoog. These trees are able to grow in a variety of soil conditions and can produce and distribute seeds well. Various forest (see **Wiigwaasi-mitig**, page 6)



Massive midge hatch greets researchers

Biologists survey young walleye abundance

By Ben Michaels, GLIFWC Fisheries Biologist

Last June, GLIFWC and Fond du Lac electrofishing crews shocked most of Mille Lacs Lake's 78-mile shoreline in an effort to measure the relative abundance of age-1 walleye.

This survey is no slight task. Electrofishing crews worked long hours into the night often times battling adverse weather conditions such as rain and wind, but this year crews were bugged by something a little smaller—insects.

This year's midge hatch on Mille Lacs Lake was the largest that electrofishing crews have ever experienced on the lake. Lights on the front of the boats attracted huge numbers of these insects as they swarmed and landed on every surface, including the crew members. In some instances the midges formed a layer so thick on the boat decks that they had to be shoveled out of the boat and into the water.

Moreover, dense swarms of midges hampered visibility, making it difficult for dip netters at the front of the boat to see clearly into the water. An abundance of these insects may be an indicator of suboptimal water quality, warranting further investigation to assess whether that is the case. Despite the onslaught of the midge, GLIFWC and Fond du Lac personnel were able to complete their work without any major hitches.

Biologists are compiling results of the spring electrofishing survey, which has been conducted from 2000–2007 and 2013–2017, to help give researchers a glimpse into the future of the Mille Lacs adult walleye population. Specifically,



Inland Fisheries Biologist Mark Luehring shows off a handful of midges. (B. Michaels photo)

Wiigwaasi-mitig

(continued from page 5)

management techniques, such as soil scarification, can improve regeneration and create the best possible growth environment for wiigwaasi-mitig. These practices should be increasingly used in any strategies to protect wiigwaasi-mitig in the Ceded Territories.

We encourage GLIFWC member tribes and others to continue to educate each other on the importance of wiigwaasi-mitigoog and consider action to protect it. For example, some Tribes (including Lac Courte Oreilles, Bad River, and Red Cliff) have banned or limited the on-reservation commercial harvest of birch poles. This action can allow the wiigwaasi-mitig to rest and regenerate. As climate change becomes more of a threat, similar measures can be taken to ensure the continuation of the gift, wiigwaasi-mitig.

Authors' note: Special recognition and appreciation goes to the late Niso-asin (Sean Fahrlander) as well as his family, friends, and other loved ones. Niso-asin, known for his many talents and passions, including sharing the best traditional Ojibwe legends, passed away at age 49 on March 16. A few staff members at GLIFWC were extremely fortunate to spend time with him including when he shared knowledge and traditional legends such as that of the wiigwaasi-mitig.

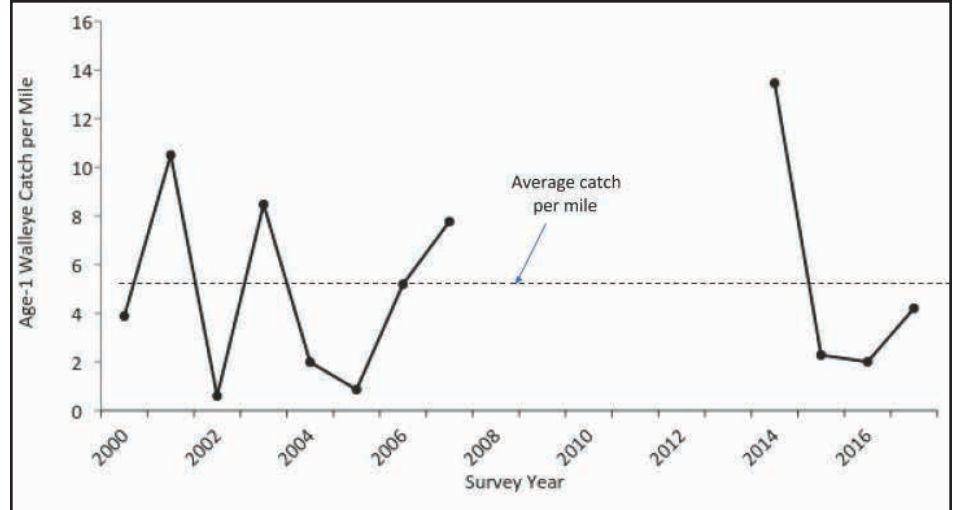


Figure 1. Relative abundance (catch per mile of shoreline) of age-1 walleye during spring juvenile electrofishing survey on Mille Lacs Lake. Average catch per mile of age-1 walleye for 2000–2017 is represented by the dashed line. This survey was not conducted during 2008–2013.

the survey provides information on how well age-0 walleye are surviving over the winter months. There hasn't been any clear trend in the abundance of age-1 walleye over time (Figure 1).

Recently the 2013 year class was detected in a relatively large quantity during the 2014 survey. Since then 2014, 2015, and 2016 year classes have been below average in the survey, indicating that those year classes will likely contribute less to the walleye spawning stock abundance as they mature throughout the next few years.

It's no secret that the adult walleye population in the lake is at historically low levels, but what remains unclear is the cause of their population decline. Biologists speculate that invasive species such as Eurasian watermilfoil, spiny waterflea, and zebra mussels may be adversely affecting the lower food web (see *Mazina'igan* Summer 2017).

For example, cladocerans, which are a food source for young small-sized fish, have been decreasing in abundance since the zebra mussel and spiny waterflea were first detected in Mille Lacs Lake. Ecosystem changes such as this could explain below-average recruitment and why young walleye disappear before making it to their first spawning season.

GLIFWC and Band biologists intend to continue this survey in future years to gain more insight into Mille Lacs Lake walleye population dynamics.

Contact Ben Michaels at smichaels@glifwc.org with questions or comments.

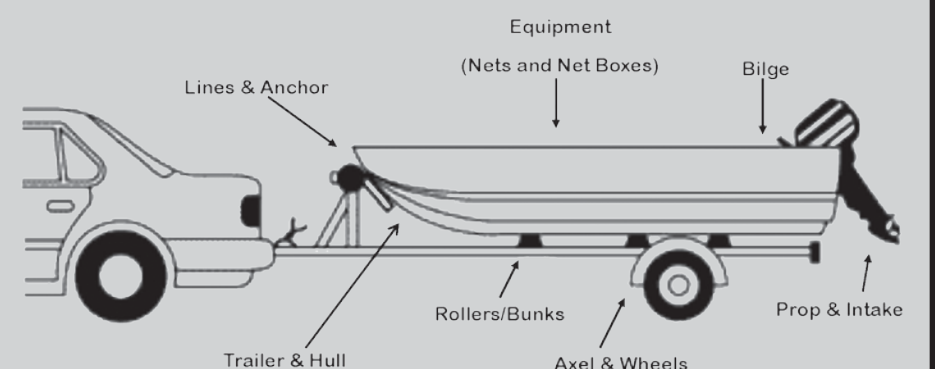
Ganawendan Ginibiiminaan (Protect Our Waters)

Aquatic invasive species (AIS) can have negative impacts to treaty resources including spawning and fish habitats. Remember when out on the waters to take the precautions to prevent their spread. Watch for invasives hitching rides on plant fragments, mud or debris!

Stop Aquatic Invasives

- ✓ **REMOVE** any mud or debris, plants and animals from your boat, trailer and equipment
- ✓ **DRAIN** all water from boat, fishing boxes and equipment ensuring it does not drain back into the waterbody.
- ✓ **CLEAN** or **DRY** boat, trailer and all equipment that came into contact with water including nets, buoys, anchors, ropes and lines, etc.*

* Note: 1837 Treaty Conservation Code for Minnesota Ceded Territory has additional requirements for "infested waters" (including Mille Lacs).



Don't forget to check these spots for hitchhikers.

Wiigwaas: A Status Report

By Alex Wrobel, GLIFWC Forest Ecologist

According to traditional stories, wiigwaas (paper birch bark) was an early gift to man to create a wiigwaasi-jiimaan (birch bark canoe) and explore the world. Since then the Ojibwe have discovered numerous uses for wiigwaasaatig (paper birch tree), including medicine, wiigwaasi-makakoon (birch bark baskets pl.) and small crafts all the way to wiigwaasigamigoon (birch bark lodges pl.). The wiigwaasaatig is fundamental to the Ojibwe identity. So it should come as no surprise the Anishinaabe are in-tune to changes that occur on the landscape and impact the wiigwaasaatig.

As original forest managers, the Ojibwe managed in favor of the wiigwaasaatig. Tribes would intentionally burn drier locations to promote birch, berries and other disturbance-dependent species. When the time came to gather wiigwaas, harvesting was done in a respectful manner, did not kill the tree and therefore did not harm the overall resource. This is a common misconception among non-traditional harvesters that harvesting the bark harms the tree.

There is something happening, however, to wiigwaasaatigoog (paper birch trees pl.) in the Ceded Territories as harvesters are reporting less “canoe-sized” birch as well as less birch overall across the landscape. In recent years, similar observations have been reported within different agencies that manage resources in the Ceded Territories. Interestingly, these shared viewpoints have created a unique intersection between Traditional Ecological Knowledge (TEK) and Western Science that is helping researchers better understand the current status of wiigwaasaatigoog and the changing dynamics of the resource for generations to come.

Inventory and population trends

In 2010, the Forest Inventory and Analysis (FIA) program found that the Ceded Territories contain 29% of all wiigwaasaatigoog in the United States. Within the upper Great Lakes States (MN, WI, & MI) alone, the Ceded Territories contain 65.9% of all paper birch trees ≥ 5 inches diameter at breast height (dbh) and 66.2 percent of the large (≥ 11 inches dbh) trees (Fig 1).

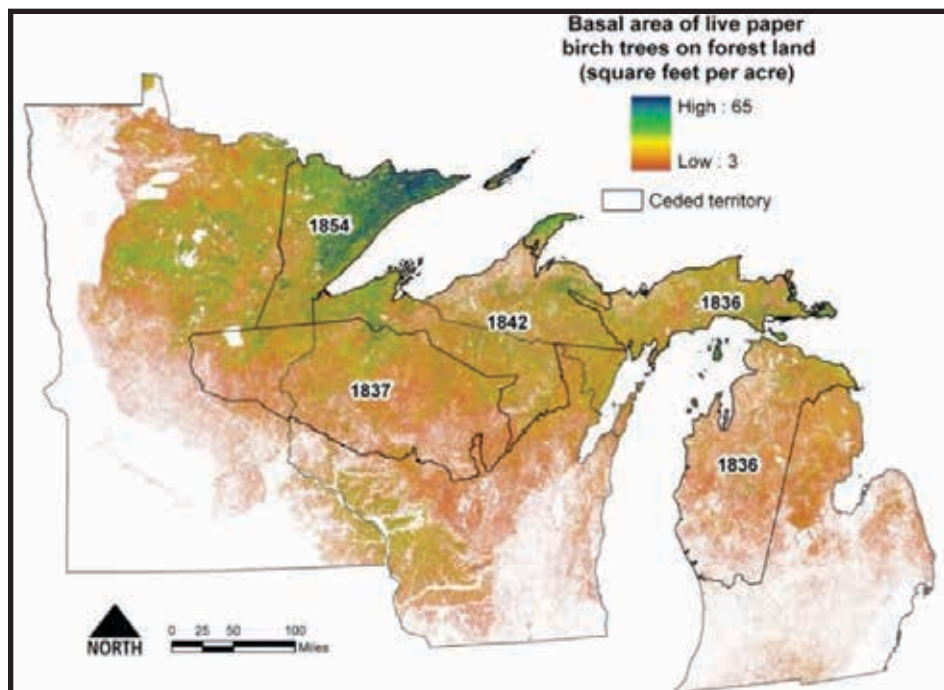


Fig 1. Current basal area of paper birch in the Lake States, within the boundaries of the Ceded Territories of 1836, 1837, 1842 and 1854 Treaties (Map by USFS Northern Research Station)

Hard frosts readies balsam boughs

Each autumn, around three weeks or so after the September Equinox, the balsam bough gathering season gets underway in the Ceded Territory. Tribal members and non-natives alike supply the regional craft industry with thousands of pounds of balsam every year used in Christmas wreaths and decorative holiday garland. Balsam bough gathering is a regular, seasonal income source for many. Recent prices fluctuate at around 25¢, a quarter-per-pound. Picked with respect and care, the balsam resource is sustainable one and can be productive far into future.

Balsam gathering tips

- Contact buyers before you pick—find out how long they want branches cut and how much they pay per pound.
- Don't pick too early—wait until the third hard frost of autumn or needles may fall off.
- Cold nights, good snaps—snapping off branches by hand is most effective following freezing nighttime temperatures. Branches become flexible in warm temperatures.
- Be prepared to navigate the woods—refer to a compass, map, plat book, or smartphone to avoid private property or getting lost.
- Don't overcut—remove branches from only the lower one-third of the tree to keep it healthy. The tree will yield another harvest in around five years.

For off-reservation permit information see www.glifwc.org or call 715.682.

6619.

—CO Rasmussen

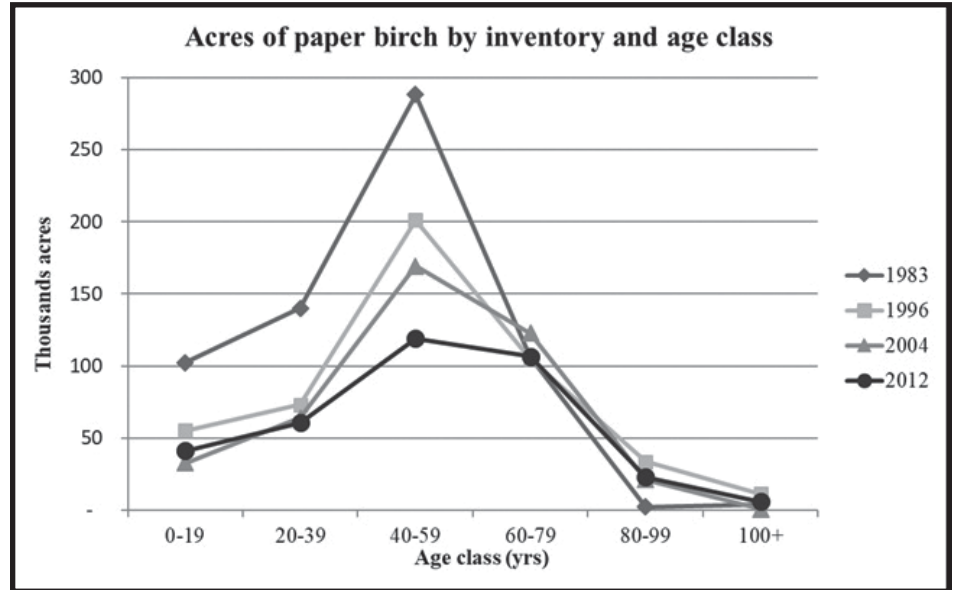


Fig 2. Acres of birch by age class from 1983 through 2012, from the WDNR Handbook.

This information tells us that wiigwaasaatigoog are still present on the landscape and in higher proportions than other places in the country, but it doesn't speak to changes in populations from past to present and why harvesters are reporting less and less birch. This is where it is valuable to consider trends over time in order to really understand what is going on in the forests.

The future of wiigwaasaatig is a concern to tribal harvesters. From 2004 through 2006 a cooperative effort between GLIFWC and the USDA Forest Inventory and Analysis Program (FIA) combined TEK and Western science in a mutual effort to further inventory the wiigwaasaatig resource in the Ceded Territories. This project involved tribal gatherers to “document TEK on desired bark characteristics for traditional uses and translate this into an inventory field guide.”

This guide was then provided to the FIA program, which incorporated the methods into its preexisting manual and trained inventory crews in the implementation of the TEK protocol. This partnership resulted in an article published in the *Journal of Forestry* titled “Using Traditional Ecological Knowledge as a Basis for Targeted Forest Inventories: Paper Birch (*Betula papyrifera*) in the US Great Lakes Region.”

It is still a generally new concept to incorporate both Traditional Ecological Knowledge with Western science in modern scientific research. This cooperative project helps demonstrate how these approaches can be complementary and provides a model for future targeted inventory efforts where other traditionally important species are concerned. In addition, it provides results that correspond to what tribal harvesters are seeing on the landscape: wiigwaas supply has declined.

GLIFWC further partnered with Northern Research Station in two subsequent reports. The first general technical report published in April 2015, “Paper Birch (Wiigwaas) of the Lake States, 1980-2010,” detailed wiigwaasaatig data collected by the FIA program on forested lands in the Great Lakes region. The results from this 30-year timeframe showed “the number of birch trees has decreased by 49% and total bark supply has decreased by 45.5% on forest land in the Ceded Territories since 1980.”

The second is a Resource Bulletin titled: “Forest Resources within the Lake States Ceded Territories 1980-2013.” These bulletins are generally published based on US State boundary lines and summarize the forest resources therein. This report is unique in that it was the first time the U.S. Forest Service reported on forest conditions using the boundaries of the Ceded Territories. Data collected over the 34 years were summarized for all forest resources in the Ceded Territories, however, in regards to wiigwaasaatigoog the results show “there are now about half as many paper birch trees (5 inches diameter and greater) on timberland as there were in 1980.”

Cassandra Kurtz, a primary author with the Northern Research Station said: “I think it is interesting to see the decline in birch three inches diameter and greater while the other species show an increase in that class. We are seeing an increase in forestland in the region, an increase in the number of trees, yet a reduction in birch, with many factors playing in. Another key finding is that areas covered by smaller diameter wiigwaasaatig stands (which can be expected to grow into large diameter stands and provide a future resource) has decreased by 75% over the same period (1980-2013).”

In the most recent revision of the Wisconsin Department of Natural Resources' silvicultural handbook, researchers found (using Forest Inventory data) that from 1983 to 2012 there has been a large decrease in the number of acres of paper birch in the 0-to-59 year age classes (Fig 2).

What does this all mean?

In simple terms, wiigwaasaatigoog and quality wiigwaas are declining across the Ceded Territories and research focus has now shifted toward “why is it declining?” and “what can be done?”

Many factors are contributing to the decline of birch, but near the top of this list is “changes to forest management practices.” In order to promote stands of wiigwaasaatigoog, the seeds generally require exposed mineral soils with high light levels and good drainage. Colleen Matula, a forest ecologist with the Wisconsin DNR, said:

“The reasons for the decline is forest health; challenges in managing birch stands (as they require further steps such as scarification or fire); cover type conversion to aspen, red maple or other species.”

(see *Wiigwaas*, page 22)

Summertime surveys on Lake Superior, tributaries

By Ben Michaels, GLIFWC Fisheries Biologist

It's been another busy and productive summer field season for GLIFWC's Great Lakes Section personnel as they complete their annual fisheries assessments.

All through the summer, interns Jalyn LaBine, Patrick LaGrew, and Jacob Rodmaker have gained valuable experience by participating in a variety of fisheries field work including: trapping sea lamprey on the Bad River, deploying gill nets to catch siscowet lake trout, and beach seining to catch juvenile whitefish on Lake Superior.

The Bad River Natural Resources Department (BRNRD) began an assessment for siscowet lake trout with their new research vessel "Minwaanimad" (good breeze). Siscowet lake trout were targeted off the western shores of the Keweenaw Peninsula near Eagle Harbor, Michigan. This continues an assessment initiated by GLIFWC in 1996 at the request of GLIFWC's Lakes Committee.



GLIFWC intern Jalyn LaBine (left) holds one end of a beach seine in place as another GLIFWC intern, Patrick LaGrew, moves the net through the water in an effort to collect juvenile lake whitefish. The purpose of this survey is to attain an index of relative abundance of juvenile lake whitefish from various locations around Michigan's Keweenaw Peninsula. (B. Michaels photo)



Jacob Rodmaker (left) and Patrick LaGrew check to see whether any lamprey were captured in the trap. During their spawning run, sea lampreys are extracted from traps on the Bad River each day and are counted, measured, and sexed. A subsample of the invasive lampreys is fin-clipped and released back into the river for the purpose of obtaining an estimate of the adult population in the river. (J. LaBine photo)



GLIFWC interns Jacob Rodmaker and Patrick LaGrew extract siscowet from a gill net as Jalyn LaBine operates the gill net lifter while fisheries technician Mike Plucinski steers the boat. The intent of the siscowet lake trout survey is to document relative abundance and diet of siscowet lake trout by setting gill nets at varying depths on the eastern side of the Keweenaw Peninsula and collecting data such as length, weight, sex, and stomach samples from captured fish. (B. Michaels photo)



GLIFWC fisheries internships provide experience on the water and in the laboratory. After collecting a load of lake whitefish (adikamegwag) stomachs from cooperating commercial fishermen, Great Lakes Division interns work in the lab, documenting whitefish meals that include macroinvertebrates, small fish, and European fingernail clams. Photo: Interns Jalyn LaBine (foreground) and Patrik LaGrew examine the contents of lake whitefish stomachs. (COR)

Ghost net packs available for anglers



Through a cooperative effort by a collection Lake Superior stakeholders, kits are now available to mark lost fishing nets. GLIFWC wardens joined the Apostle Islands Sport Fishermen's Association, Department of Natural Resources, Wisconsin Sea Grant and others to help design a kit that includes a floating marker and hook-and-line assembly to identify the location of ghost nets. The kits are available at many South Shore bait shops. For more information see www.glifwc.org/ghostnet.html or call 715.685.2114



Great lakes, treaty resources enhanced under GLRI

By Jennifer Ballinger, GLIFWC Outreach Specialist

The Great Lakes Restoration Initiative (GLRI) was first funded in 2010. Its purpose is to provide additional support to federal, state, and tribal agencies and other entities to accelerate efforts to protect and restore the Great Lakes. After an initial infusion of \$475 million in 2010, it has consistently been funded at approximately \$300 million.

The GLRI also allowed unprecedented coordination among federal, state, and tribal agencies and other entities, allowing for more efficient work addressing Areas of Concern (AOCs), invasive species, contaminants, nearshore health and nonpoint pollution, and habitat/wildlife protection and restoration.

The additional resources and coordination provided by the GLRI has allowed for expedited Great Lakes restoration. For example, 31 Areas of Concern (AOCs) were designated in the early 1970s in the Great Lakes basin. In 2010 when GLRI began, only one AOC had been delisted, Oswego River (NY) in 2006. Since 2010, three additional AOCs have been delisted, White Lake (Michigan) 2014, Deer Lake (Mich.) 2014, and Presque Isle Bay (Pennsylvania) 2013.

Increased coordination has also enabled activities geared towards ongoing restoration and protection of the Great Lakes, including current work by GLIFWC, Fond du Lac, and other agencies to delist the St. Louis River AOC (Minnesota/Wisconsin).

Capacity funding through the GLRI has helped provide tribes and intertribal agencies the resources for both involvement in restoration and protection management decisions; provide sound science necessary for land development proposal analyses; and forge interjurisdictional relationships vital to protecting traditional resources throughout the Great Lakes basin.

Safety training focuses on Great Lakes emergencies

By Bill Mattes, GLIFWC Great Lakes Section Leader

Red Cliff, Wis.—On a cool and blustery day in July, eleven fishy folks gathered on the shores of Gichigami to undergo instruction on how to prepare a vessel and its crew for emergencies on the water. Instructors Ron Kinnunen and Titus Seilheimer from the respective Michigan Sea Grant and Wisconsin Sea Grant programs were on hand to educate, demonstrate and oversee the use of safety gear and certify participants as U.S. Coast Guard Fishing Vessel Drill Conductors through the AMSEA training program (Alaska Marine Safety and Education Association).

Throughout the day, participants were shown real-life incidences, and trained on the importance of both being individually prepared and having a fully prepared crew to respond to on-water emergencies.

This was the fourth in a series of free training sessions for tribal fishermen set up with the support of the Michigan and Wisconsin Sea Grant programs along with GLIFWC.

During the ten-hour long course participants donned cold water survival suits (in under one-minute), put out fires, made proper Mayday calls, deployed an emergency raft, and followed abandon ship procedures. In total, seven tribal commercial fishermen and four tribal personnel trained to beat the odds when an on-water emergency arises. For more see www.amsea.org.



Emergency management participants learned how to most effectively use fire extinguishers during Fishing Vessel Drill Conductor training at Bay Mills, Michigan. (J. Thannum photo)



Hollow Rock, a unique natural arch formation along Lake Superior on the Grand Portage reservation. (J. Ballinger photo)

Tribes have been instrumental in the implementation of the GLRI, with over 30 tribes and intertribal agencies located in the Great Lakes region. Their reservations and Ceded Territories cover extensive portions of the basin.

GLRI funded projects related to habitat and wildlife restoration and protection and preservation and enhancement of the environment in which tribal members exercise their treaty-reserved hunting, fishing, and gathering rights.

GLRI capacity funding has also allowed increased participation in intergovernmental initiatives while providing the unique tribal perspective in management activities. For example, between 2010 and 2014, tribes restored and enhanced over 124,000 acres of wetlands, prairie grasslands, and upland habitat as well as an additional 15,000 acres of manoomin (wild rice) beds.

GLRI has been an important asset to GLIFWC and its member tribes. Continued funding is essential to tribes' restoration and protection efforts for the natural resources essential for the Anishinaabe bimaadiziwin (lifeway). Anishinaabe culture depends on continuing and enhancing subsistence harvesting practices.

There are many threats to these resources, such as pollution, climate change, and invasive species. The GLRI enhanced the tribes' commitment to work with other managers in the Ceded Territories to protect and restore natural resources and habitats, and will continue to do so.

GLIFWC's GLRI funded activities:

- Increased capacity with additional staff and participation in Great Lakes Initiatives such as Great Lakes Water Quality Agreement Annex Subcommittees, Great Lakes Executive Committee, Great Lakes Advisory Board
- Tracking Contaminants in Fish
- Safe Fish Consumption Advice
- Manoomin Restoration & Protection

Lake Superior Day



Every summer around the third Sunday in July, people around Gichigami celebrate Lake Superior Day. On the south shore of the big lake, the Bad River Tribe's Natural Resources Department hosted their annual Lake Superior Day event on July 14. With a host of displays and activities, the department helped raise community awareness about the threats facing the Lake Superior ecosystem. Photo: John Prohaska, Brownsfield Specialist for the Bad River Natural Resources Department explains environmental issues associated with pipelines to a young tribal member. (C. Rasmussen photo)



GLIFWC partners with regional forestry organization

Focus on tribal needs in climate change planning

By Kim Stone, Climate Change Program Coordinator

At its May 2017 meeting, the GLIFWC Board of Commissioners granted approval for GLIFWC to become a formal partner with the Northern Institute of Applied Climate Science (NIACS). NIACS is a regional collaborative effort between the US Forest Service and its partners, including universities and public and private groups. The organization works with forest managers and landowners to find practical, on-the-ground ways to incorporate climate change considerations into forest management projects. NIACS conducts in-person trainings and also has developed an online course in Forest Adaptation Planning and Practices.

The beginnings of a partnership

The seeds of partnership were sown during the 2015 Memorandum of Understanding (MOU) meeting between tribal representatives and Forest Service personnel. One tribal representative, noting GLIFWC's absence from the list of NIACS' official partners, suggested that a truly collaborative approach should involve tribal input.



A partnership between GLIFWC and NIACS will promote a more holistic approach to climate change adaptation that could consider species such as *mashkiigobag* (Labrador tea), utilized by Ojibwe people but often overlooked in standard forest management. (T. Bartnick photo)

In the discussion that ensued, other tribal representatives spoke of the importance of listening to Elders' wisdom with regard to the environment and the need for that knowledge to be a part of NIACS' work in climate change.

From this meeting emerged the beginnings of a partnership. Discussions in the following months between GLIFWC and NIACS concerned how the partnership would take shape and how the work and mission of each organization could best serve the other. GLIFWC requested several modifications to NIACS' charter to be more inclusive and reflective of tribal values and needs, and NIACS was fully receptive to these changes.

At its January 2017 meeting, GLIFWC's Board of Commissioners approved Dr. Jonathan Gilbert, Director of Biological Services, to serve as GLIFWC's representative on the NIACS Steering Committee. The efforts culminated in a Resolution at the Board's May 2017 meeting approving GLIFWC's formal partnership with NIACS.

NIACS is already well suited to provide more tribal specific adaptation tools because its planning process relies on the land and resource managers' values, judgment, and knowledge of the land to set their own goals and priorities for adaptation. Both organizations look forward to using their respective experience and expertise to make climate change adaptation efforts more accessible and relevant to tribes.

Getting started and looking to future collaboration

While the nuts and bolts of the NIACS/GLIFWC partnership are still developing, GLIFWC has been involved since May in an effort with other tribal/intertribal groups to create a "Tribal Adaptation Menu" with NIACS. The goal is to incorporate traditional values, traditional management techniques, and consideration of cultural and historic sites in actionable climate change strategies. While work on this project is ongoing, participants including GLIFWC hope it can be used with the current NIACS adaptation workbooks to assist tribes in climate change planning.

Its exact format is yet to be determined, but the product will be designed to supplement existing NIACS products and help NIACS more effectively reach out to and include tribal communities in its mission. The final product may also serve to assist and educate organizations who have not worked with tribes or wish to learn more about the process.

For further information on GLIFWC's Climate Change Program, go to <http://glifwc.org/ClimateChange/> or contact Kim Stone, Climate Change Program Coordinator at kstone@glifwc.org. For additional information on NIACS and the work it does, go to www.glifwc.org/Mazinaigan/Winter2016/index.html?page=4.

Bobcat harvest quotas spike in WI

By Nicholas McCann, for Mazina'igan

Despite GLIFWC opposition, the bobcat harvest quota is set to double in Wisconsin this coming season. The Furbearer Advisory Committee recommended increasing the bobcat quota from 375 last season to 750 in 2017-18. This includes a more-than-doubling of the harvest quota in the northern zone, from 225 to 550 bobcats.

The Committee includes biologists from the Wisconsin Department of Natural Resources (WDNR), GLIFWC, US Forest Service, a member of the Wisconsin Conservation Congress, and user groups, including the Wisconsin Trappers Association and the Wisconsin Bear Hunters Association.

The harvest quota increase, thought to be unprecedented by the Committee, was in response to a population estimate of 3,504 bobcats in Wisconsin, which is over the population goal of 2,000-3,000 bobcats that was set a decade or more ago.

Representatives from the user groups that were present also reported frequently seeing evidence of bobcats while hunting and trapping, leading them to believe that there were more bobcats than the WDNR estimates. The higher quotas are projected to bring the population estimate back into the population goal range of 2,000-3,000 bobcats in the coming years.

The decision to double the quota was not unanimous. GLIFWC stressed that WDNR bobcat monitoring data did not show population increases. Snow-tracking surveys, for example, did not show rising bobcat numbers, but instead revealed a 50% decline over the last 10-15 years. In addition, the success rate for bobcat trappers in the northwoods has declined by about 50% since 2010.

GLIFWC suggested that a slow increase in the bobcat quota would be better than doubling it, as population estimates and user group observations disagree with survey data and trapper success rates, making it difficult to know how bobcats are doing. Nevertheless, the Committee recommended a doubling of the bobcat harvest quota, which has been approved by the WDNR Wildlife Policy Team, and will be presented to the Natural Resources Board this September.

In addition to increasing harvest quotas for 2017-18, WDNR also presented the idea of an experimental harvest season sometime in the future, during which bobcat harvest would dramatically increase in some areas in the northwoods. The goal of such a season would be to determine if extreme increases in harvest hurt



Gidagaa-bizhiw (bobcat). (Reprinted from <http://creativecommons.org/licenses/by/2.0/deed.en>)

the bobcat population, or if the population is so large that it can sustain a much higher harvest.

Whether a dramatic increase in harvest is a good course of action is open for debate. It may be that there are better ways to "skin this cat." A subcommittee is being formed to identify more ways to get a better handle on how many bobcats are out there. The subcommittee, which will include WDNR Biologists, a GLIFWC Biologist, a researcher from the University of Wisconsin, and a user group representative, meets in late summer to discuss options.

Minutes from the Furbearer Advisory Committee meeting, including a description of the bobcat quota-setting discussion, can be found at: <http://dnr.wi.gov/topic/WildlifeHabitat/committees/furbearer.html>.

Wildlife Biologist Nicholas McCann recently moved from GLIFWC to the University of Minnesota where he will conduct research to assess the feasibility of reintroducing elk to northeastern Minnesota.



GLIFWC officers prepare communities for manoominike, recreational canoeing

By Charlie Otto Rasmussen, Editor

For beginning canoeists, a universal rule declares that one should never attempt stand-up in the long, tippy boat. It makes sense in most situations. But at GLIFWC's innovative Canoomin program, participants must both stand and propel in the narrow boats with a push pole to complete the course.

"Our class gives people all the skills they need to harvest manoomin for the first time," said instructor Lauren Tuori, a GLIFWC conservation officer. Manoomin is the Ojibwemowin word for wild rice, a nutritious and culturally vital grain that grows in shallow waters throughout large sections of the Ceded Territory.

The Commission developed Canoomin—a mashup of canoe + manoomin—to encourage more tribal members to harvest wild rice and to help develop basic canoeing proficiency. At the core of program: safety.

Tuori and additional GLIFWC training officers including Heather Bliss, Adam McGeshick, and Steven Amsler stress the "Four Ws" to Canoomin students: wind, weather, water & waves. Before launching on a recreational trip or off to a wild rice bed, canoeists must consider this safety checklist and calculate where safety issues might arise.

"There's a lot that can happen whether canoeing out to reach the wild rice, or right there in the bed," Tuori said. "Water and air temperatures are generally cooler during the harvest season and hypothermia is a concern in the event someone goes overboard."

Students learn how to reenter a canoe—even in deep water—and conduct rescues using a push pole, paddle and rope. PFDs, or personal flotation devices, are a must for anyone going out on the water.

Now in its third year, Canoomin courses are available on-demand. This year GLIFWC certified students at Keweenaw Bay Indian Community, Sokaogon Mole Lake, and a third course is available at Fond du Lac near Cloquet, Minnesota.



Canoomin students practice poling canoes in shallow water at Keweenaw Bay Indian Community. (L. Tuori photo)

The final Canoomin class for 2017 is scheduled to take place at Fond du Lac Reservation in September. Contact Community Outreach Officer Heather Bliss for details at 906.458.3778.

GLIFWC youth attend NYCALC 2017



Travis Brown (Red Cliff), Talon Defoe (Red Cliff), Nam Corn (Menominee), and Saagi Stark (Bad River) traveled to Shepherdstown, West Virginia to attend the Native Youth Community Adaptation and Leadership Congress (NYCALC) during the week of July 9-15. The congress brought together Native American, Alaskan Native, and Pacific Islander students in 10th-12th grade to discuss environmental issues impacting Native peoples.

NYCALC's mission is to develop future conservation leaders with the skills, knowledge, and tools to address environmental change and conservation challenges to better serve their schools and home communities. GLIFWC is proud of the youth that attended and we can't wait to see how they put their learning into action! (H. Bliss photo)



Each summer GLIFWC Officer Lauren Tuori offers Adult CPR, First Aid and AED Defibrillator training to staff and interns. The coursework, which includes both original certifications and refresher courses, is part of an effort to increase emergency preparedness across the Commission no matter where staff is located. "It's important for both field staff and people working in the office to have this basic knowledge," Tuori said. "Medical emergencies can occur at any time." Photo from left: Tuori oversees a first aid bandaging exercise with Dawn White and Travis Bartnick. (C. Rasmussen photo)

Ready for the Upper Michigan treaty deer hunt

A new crop of hunters from Keweenaw Bay Indian Community is ready for the fall season following a three-day course in Baraga, Mich.

Fifteen boys and girls, aged 10-17, completed the hunter safety education program through instruction by GLIFWC wardens including Steven Amsler, Matt Kniskern, Gale Smith and Dan North.

The late August program featured two days in the classroom and a day at the range where students fired shotguns and rifles at stationary targets.

Following successful completion of a written test, each student received a hunter safety certificate.



The KBIC treaty waawaashkeshi (deer) hunting season in the 1842 Ceded Territory opens September 1 and runs till the end of the year.

2017 GLIFWC Enforcement youth activities/education			
Class	Date/Time	Place	Contact
ATV/ Snowmobile	September 12 5:00–7:00 pm September 13-15 5:00–8:00 pm	Bad River Chief Blackbird Center	Jim Stone 715-292-3234
Hunter Safety	September 18 5:00–7:00 pm September 21-22 5:00–8:00 pm September 23 8:00 am–2:00 pm	Bad River Chief Blackbird Center	Jim Stone 715-292-3234

Dates are subject to change. For updated information on these dates and others be sure to check our website at www.glifwc.org, visit us on Facebook or contact your local GLIFWC warden.

Additional hunter education and safety courses in September & October
At press time, dates still being finalized. Contact Kim Campy at 715.685.2114 to enroll in a safety course.

Elk (omashkooz in Ojibwe) returning to Ceded Territory

Working together to bring back iconic native species

The elk comeback continues in the Ceded Territory. The long-reestablished elk herd in Michigan has provided the foundation for a Wisconsin population. In eastern Minnesota, the Fond du Lac Band and its partners are in the midst of an elk restoration feasibility study. For the tribes, promoting native species is a high priority and the elk, or omashkooz in Ojibwemowin, is prominent example of tribal natural resource management at work.



Rocky Mountain Elk Foundation photo

Michigan Department of Natural Resources photo

Eastern Minnesota elk restoration study underway

By Mike Schrage, For Mazina'igan

In 2013 the Fond du Lac Band of Lake Superior Chippewa's Resource Management Division first proposed the idea of whether or not it would be feasible to restore elk to the Ceded Territories in eastern Minnesota.

The next two years were spent researching elk and elk restorations and discussing the idea with the Fond du Lac Reservation Business Committee along other agencies and conservation organizations. This led to a 2015 partnership with the Rocky Mountain Elk Foundation and the University of Minnesota to submit an application for funding to Minnesota's Environmental and Natural Resources Trust Fund.

The application was to study the feasibility of restoring elk to portions of southern St. Louis, Carlton and northern Pine Counties in eastern Minnesota. The application was supported by Pine, Carlton and St. Louis Counties, the Minnesota Department of Natural Resources, The Izaak Walton League, Minnesota Deer Hunters Association, and a number of other conservation organizations. In 2016 the Minnesota Legislature approved the application, and the funding, and it was signed into law by the Governor.

The feasibility study, led by the University of Minnesota, has two parts. The first part is to determine if enough suitable habitat is available for elk, and the second part is to determine the level of public support for wild elk roaming across the landscape again.

After consultations with county and tribal foresters and DNR Wildlife staff, three areas in the 1854 and 1837 Ceded Territories were selected for further study.



MDC photo

These areas were picked based on the relative lack of agriculture, abundant forests and abundant public lands.

In June 2017, a field crew from the University began assessing the amount of potential elk forage in the three study areas. A survey of the opinions of landowners and the general public is planned for late summer 2017. The habitat assessments will continue with GIS mapping of forest cover types and other land uses. The data from the habitat assessment and public opinion surveys will be pulled together into a final feasibility report in June 2019.

Conducting the feasibility study is only the first step in what may easily be a 10-year long process. If the initial studies find that abundant good elk habitat remains on the landscape and there is strong public support for restoring elk to the area, a number of other steps need to be completed before elk could ever be released back into the wild.

The first step is convincing tribal, state, and local political leadership to support returning elk to the landscape. Funding has to be raised for what may be a \$3-5 million project and a plan has to be written for how elk will be managed once they are here. A source herd or herds of disease free elk has to be located and donated by another state or tribe.

With an abundant wolf and black bear population, a larger number of elk will need to be brought in initially if they are to produce enough calves to overcome predation and other sources of mortality.

While the goal is to someday have a thriving and huntable population of elk restored to the 1854 or 1837 Ceded Territories of Minnesota, this may take years to accomplish. It's a process to be undertaken not for us, but for our children and grandchildren. (Schrage is a wildlife biologist for the Fond du Lac Band.)

Elk recovery in Wisconsin continues after 22 years

By Travis Bartnick, GLIFWC Wildlife Biologist

Omashkooz (elk) were once native to Wisconsin. However, as European settlers continued their westward expansion exploiting natural resources, elk were eventually extirpated from Wisconsin by the late 1800s. A reintroduction effort was attempted in northern Wisconsin in the 1930s, but the elk did not survive.

In 1995, 25 elk were trapped in Lower Michigan and then released in the Clam Lake area of Ashland County as part of an elk reintroduction feasibility study. The Clam Lake herd has continued to grow steadily over the years, with the exception of a couple of especially cold, snowy winters.

With the success of the Clam Lake elk restoration in northern Wisconsin, a second elk restoration site was proposed in the Jackson County area near Black River Falls, Wisconsin. The state of Wisconsin came to an agreement with the state of Kentucky to undertake a multi-year project, relocating up to 150 elk from Kentucky to Wisconsin over a 3-5 year period.

In 2015 and 2016, 73 elk that were trapped in Kentucky were released in the Black River area. Many of the elk are fitted with GPS tracking collars. Some of these collars can provide nearly real-time locations of the elk as they settle-in to their new range. Biologists are currently monitoring the movements of the Black River elk herd to determine whether they will stay within the elk management range or venture into new areas. There is a concern that some adventurous elk could become a problem for private landowners and those in the agriculture business. Time will tell whether this new elk herd will be a part of Wisconsin's wildlife success stories.

Earlier this year, tribal members held a pipe and drum ceremony upon the arrival of 28 elk that were trapped in Kentucky and transported north to the Clam Lake herd. The elk were then held in a 7-acre pen near Winter for several months while biologists performed health tests and allowed the pregnant cow elk to give birth. After passing rigorous health examinations, the elk were eventually released into the existing population in mid-July of 2017.

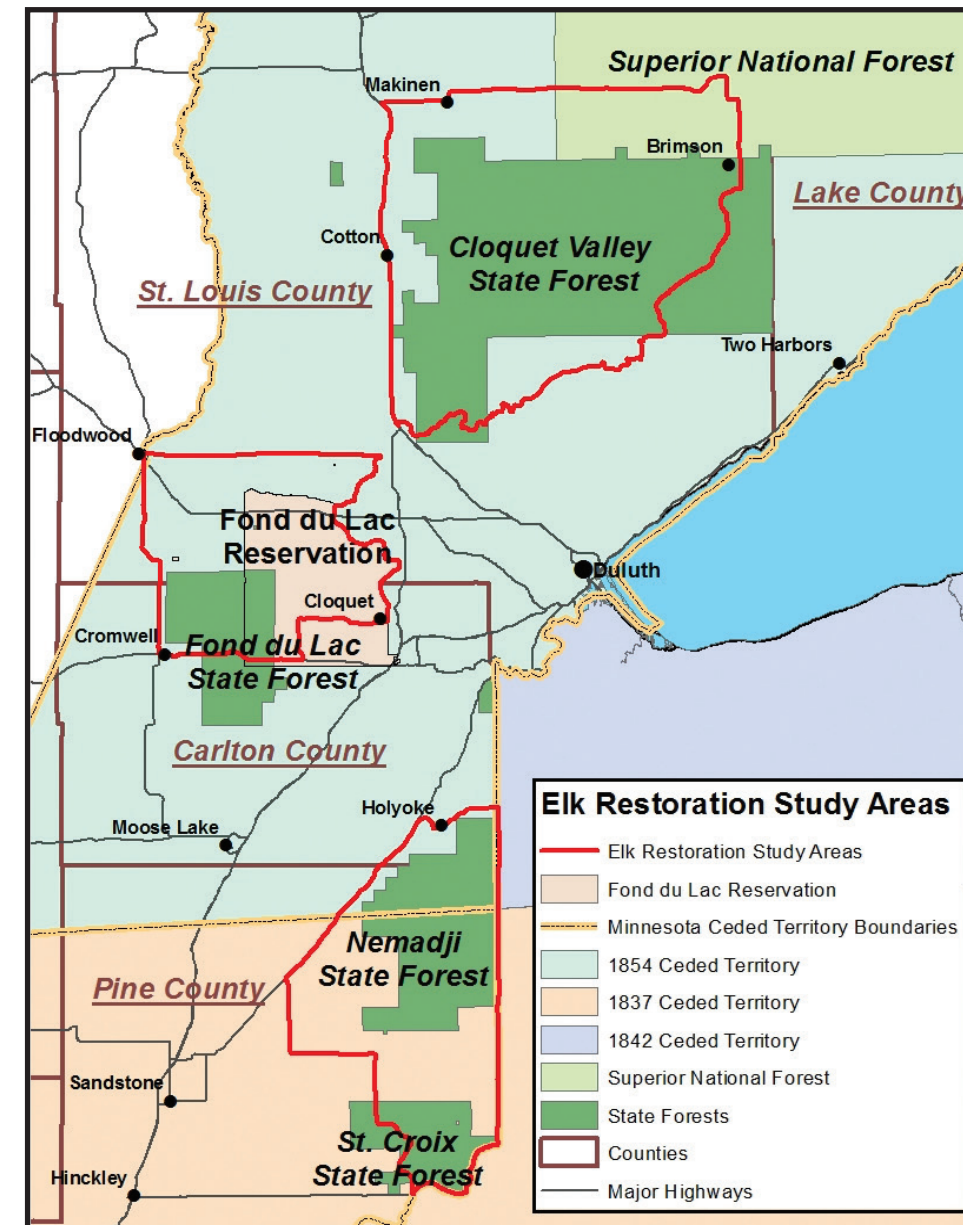
The addition of the Kentucky elk to the Clam Lake herd should result in a more productive and more genetically diverse population. With a couple of years remaining in the agreement with Kentucky, Wisconsin is planning to continue to translocate elk to the two elk restoration areas within Wisconsin. The overall goal is to establish a healthy, self-sustaining herd that will allow for an annual hunt.



GLIFWC wildlife staff work cooperatively with the Wisconsin Department of Natural Resources to conduct health assessments and to monitor elk populations in the Clam Lake area of northcentral Wisconsin. (C. Rasmussen photo)

Many partners have been involved in the elk restoration efforts over the years, including GLIFWC. GLIFWC staff have participated in conducting elk restoration feasibility studies, reviewing various research proposals, health testing of translocated elk, purchasing feed for elk while they are held in quarantine pens, and contributing to future management and planning as a member of the elk advisory committee.

Wisconsin's tribes have contributed over \$1.7 million in gaming funds to Wisconsin's elk reintroduction program since the State of Wisconsin's 2001-2002 fiscal year.



Elk in Lower Michigan's 1836 Ceded Territory

By Charlie Otto Rasmussen, Editor

Lower Michigan is home to one of the oldest successful elk restoration regions in the eastern United States. In the north-central portion of the peninsula, home of Pigeon River Country State Forest, a thriving omashkooz herd provides ample recreational viewing and hunting opportunities.

As in other western Great Lakes states, the original elk population in Michigan was wiped out by the late 19th Century. In 1918 a small founder population of seven Western elk were released near Wolverine, giving rise to today's herd almost a century later. Habitat improvements and a crackdown on widespread poaching has helped stabilize the herd over the past three decades.

Since 2007, Bay Mills Indian Community and other Michigan 1836 Treaty tribes have harvested elk for feasts and meals across extended families. Prior to the autumn elk seasons, state and tribal hunters that receive harvest tags through a lottery attend a mandatory orientation session that details carcass handling requirements and other regulations.

Under the 2007 Consent Decree with the State of Michigan, treaty tribes are entitled to 10-percent of the elk harvest quota annually. With a harvest target ratio of 30 percent bulls and 70 percent antlerless elk, Michigan wildlife managers issue kill permits to maintain the herd around the target goal of 900 animals or less. For wildlife officials, hunting is an important tool to reduce problems associated with agricultural damage and over-browsing woodlands. Each of the five 1836 tribes is guaranteed at least one permit annually.

As wildlife diseases continue to spread, researchers study elk that have been harvested during hunting seasons or through other mortality. To assess the age structure of the herd, state and tribal biologists collect tooth samples at elk registration stations. Tissue samples are also collected in an effort to detect bovine tuberculosis and other health issues.

Sizing up threats to St. Croix, Namekagon Rivers

Spill response plans under review by agencies, tribes

By Philomena Kebec, GLIFWC Policy Analyst

The St. Croix and Namekagon Rivers are major features within the Ojibwe Ceded Territories. During the 16th Century, it served as a shared territory and boundary area between Ojibwe and Dakota communities. By the 17th Century, Ojibwe communities claimed the St. Croix watershed, living a good life from the animals, plants and medicines flourishing in the area.

Four Ojibwe communities own lands within the St. Croix watershed: the St. Croix Chippewa Indians, the Lac Courte Oreilles Band of Lake Superior Chippewa, the Mille Lacs Band of Ojibwe and the Fond du Lac Band of Lake Superior Chippewa. Several communities enjoy treaty reserved rights within the St. Croix Watershed, which begins in the 1842 Ceded Territory and extends through the 1837 Ceded Territory.

The St. Croix and Namekagon Rivers originate as fast running streams eventually emptying into the Mississippi River at Prescott, Wisconsin, as a wide, meandering river. The Namekagon supports two major communities of manoomin, or wild rice, at the Pacwawaong and Phipps Flowages.

The rivers' pristine water quality supports a myriad of aquatic species: walleye, pike, sturgeon and bass, along with forty species of mussels, including five endangered mussel species. Most portions of the river continue to be valued by paddlers who enjoy the fast flowing water and scenic landscapes.

In 1968, Congress enacted the Wild and Scenic Rivers Act to enable the National Park Service authority to protect certain rivers. Within the 1968 legislation, Senators Walter Mondale and Gaylord Nelson, sponsored the St. Croix River and its tributary, the Namekagon. Shortly thereafter, the St. Croix National Scenic Riverway (Riverway), a unit of the National Park System, began acquiring lands bordering the rivers and securing scenic easement protection over private lands, restricting development on the rivers' shoreline for over 200 miles. Its purpose includes preserving, protecting and enhancing the values of the river for the benefit and enjoyment of present and future generations.

Carrying out its mission has required the Riverway to identify threats to the rivers' environmental quality. Climate change, the introduction of invasive species and changing land use pose significant risks to the river's environmental quality. The use and transportation of industrial chemicals across and within the watershed has resulted in spills of toxic material. A significant spill could interrupt harvesting and recreation within the river, or serious and irreparable damage to the river's plant and animal communities could result.

In order to better protect the river from potential spills, the Riverway obtained funding to partner with the Upper Mississippi River Basin Association (UMRBA) to develop a spill response plan for the St. Croix Riverway. UMRBA has significant experience in this area. For the past ten years, it has been developing spill response plans for portions of the Mississippi River. The plans developed by UMRBA have been used following several spills to speed response time and limit the potential size of the spill.

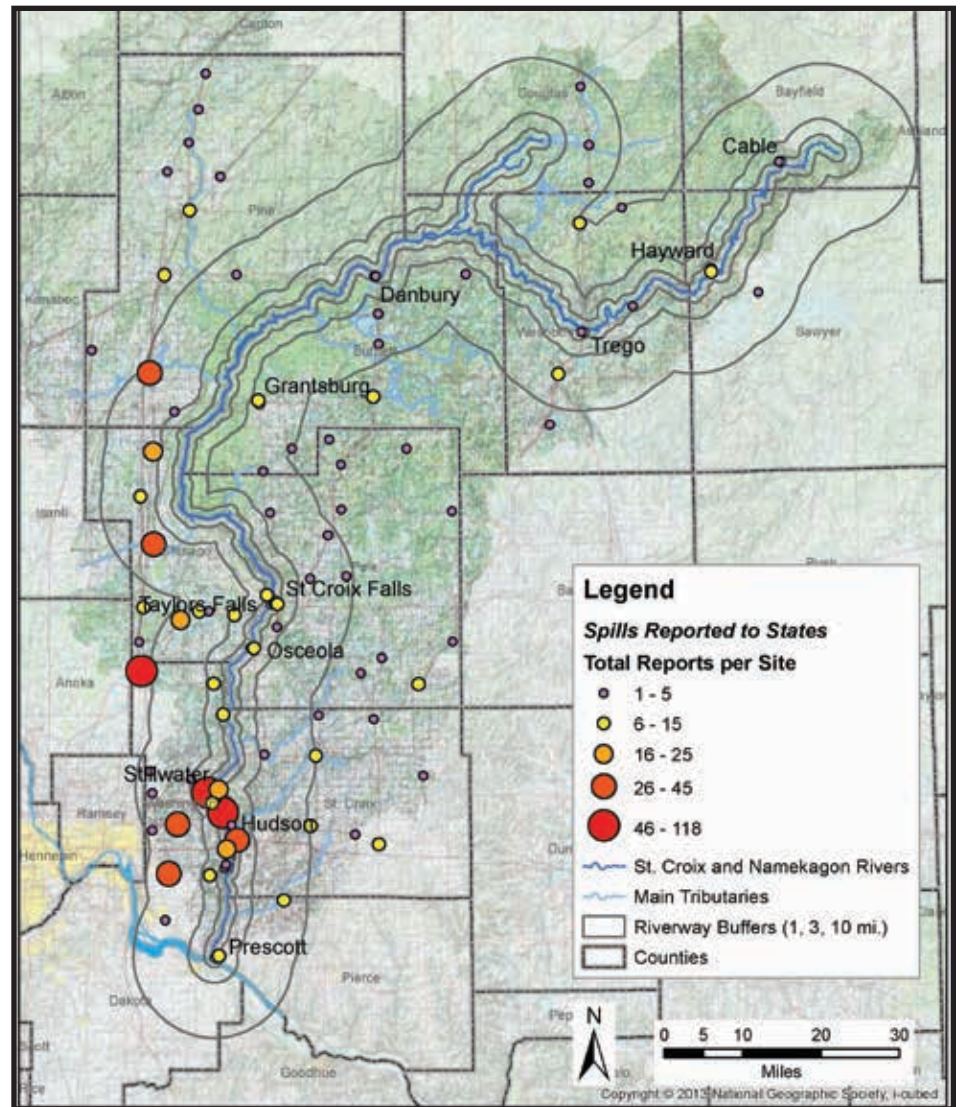
In contrast to a remediation plan, which is developed after a spill has happened, spill response plans can be developed in advance of a spill event to speed response time. Mark Ellis, Project Coordinator for UMRBA, explained the benefit of having spill response plans in place before a major spill event, "It significantly speeds up response time. The command team is already in place, so instead of wasting hours setting up a command structure, responders can start deploying clean up strategies upon arriving to a site." For spills into rivers, timing is critical. A chemical spilled into a river will travel downstream until it reaches a barrier. With a spill response plan in place, responders can more quickly deploy barriers, saving hours of time and miles of river.



Response training supported by UMRBA near Prairie du Chien, Wisconsin, in 2016. Following a classroom safety and response training session, participants from the Wisconsin DNR, Iowa DNR, local governments and oil response organizations took part in tours of land-based equipment stations and participated in on-the-water mock response actions. (Submitted photo)

Saint Croix National Scenic Riverway

Spills Reported to MPCA and WI DNR, 2006-2015



Data Source: Minnesota Pollution Control Agency, Wisconsin Dept. of Natural Resources, 2015

Developing spill response plans involves compiling site-specific data about geography, sensitive areas, access points and transportation networks. It also involves bringing communities together to build relationships and determine the expertise and capabilities of various responding agencies. Ellis explained that the Environmental Protection Agency was interested in funding a spill response plan for the Mississippi River because it serves as the boundary between states. Without coordination by a group like UMRBA, there is no natural connection between various state agencies normally involved in spill response.

During a recent spill event on Wisconsin side of the Mississippi River across from Iowa, where a spill response plan was deployed, fishery managers from both states were able to more effectively coordinate the response, quickly deciding that one state agency should manage the fishery habitat near the spill and with the other natural resources department caring for the downstream habitat.

An important aspect of UMRBA's spill response plans is the inclusion of data on sensitive areas. These sensitive areas include habitat for threatened or endangered species, historic and cultural sites, designated areas (i.e. trout streams and natural areas) and features like water intakes. In a spill response situation, responders' number one priority is protecting human health. Accordingly, significant efforts are made to immediately divert spillage away from drinking water intakes. Response plans do not always include detailed information about the habitat of sensitive species or historic and cultural sites. Keeping this information confidential is often important to maintaining the integrity of those sites. Response plans do indicate the location of these types of sites with contact information to the trustee of that site, who can provide advice on how to prevent damage to those areas.

According to Ellis, the development of the St. Croix Riverway spill response plan has presented unique challenges. The upper reaches of the St. Croix and Namekagon Rivers are fairly remote. In this "canoe" area, the rivers move fast and are too narrow to deploy motorboats. Effectively responding in the remote areas could be limited to shoreline clean-up. The heavy use of the river by recreational canoeists, kayakers and people fishing presents an additional health and safety challenge: notifying river users of the spill, in a remote area, where the speed of the water is likely to carry spillage downstream fast.

The Riverway and UMRBA are reaching out to Tribes and tribal agencies in the development of the plan. They met with the Voigt Intertribal Task Force at its July meeting and will include information provided by the Tribes in the spill response plan. When UMRBA completes its spill response plan for the St. Croix watershed, it will contain a wealth of information for local and regional responders, (see Spill response page 18)



Survival of young walleye in Mille Lacs Lake

(continued from page 1)

2008, and 2013, there was high relative survival of age-0 walleye to age-1, which suggests that a peak in survival may be occurring every five years (Figure 1). Similarly, low relative survival was observed every 3-4 years over this period. The most striking trends have occurred in the last few years.

The charted valley in 2010, 2011, and 2012 was the lowest relative survival compared to valleys in previous years. Similarly, the peak in relative survival in 2013 was the lowest relative to peaks observed in previous years. This low relative survival has translated to lower relative abundance of age-1 walleye in 2010 to 2016 compared to previous years (Figure 2).

Collectively, this means both survival and abundance of young walleye has decreased in recent years, which can have negative consequences on the adult population of walleye in Mille Lacs Lake.

Biological (e.g., predation) and environmental (e.g., water temperature and clarity) factors are both likely playing a role in the variability in survival and abundance of young walleye in Mille Lacs Lake. One or more of these factors changed recently, resulting in lower relative abundance and survival of young walleye. While the exact mechanism remains a mystery, we have identified a possible cyclical pattern in survival of age-0 walleye to age-1, with a peak occurring every five years. If this pattern repeats itself, we could potentially see another influx of young walleye sometime within the next 2-3 years.

However, if biological and environmental conditions continue to change, then the influx of young walleye might be smaller relative to previous years. In either case, conservative management strategies should remain in place to encourage



GLIFWC biologist counts and measures young walleye in Mille Lacs Lake. (J. Curtis-Quick photo)

the establishment of another strong year class of walleye and improve the chances that adult walleye stocks will increase in Mille Lacs Lake.

Please contact aaronshultz@glifwc.org for more information. Comments & questions about this article are welcome.

Dr. Aaron Shultz, Dr. Adam Ray, Mark Luehring, Ben Michaels and Joe Dan Rose contributed to this article.

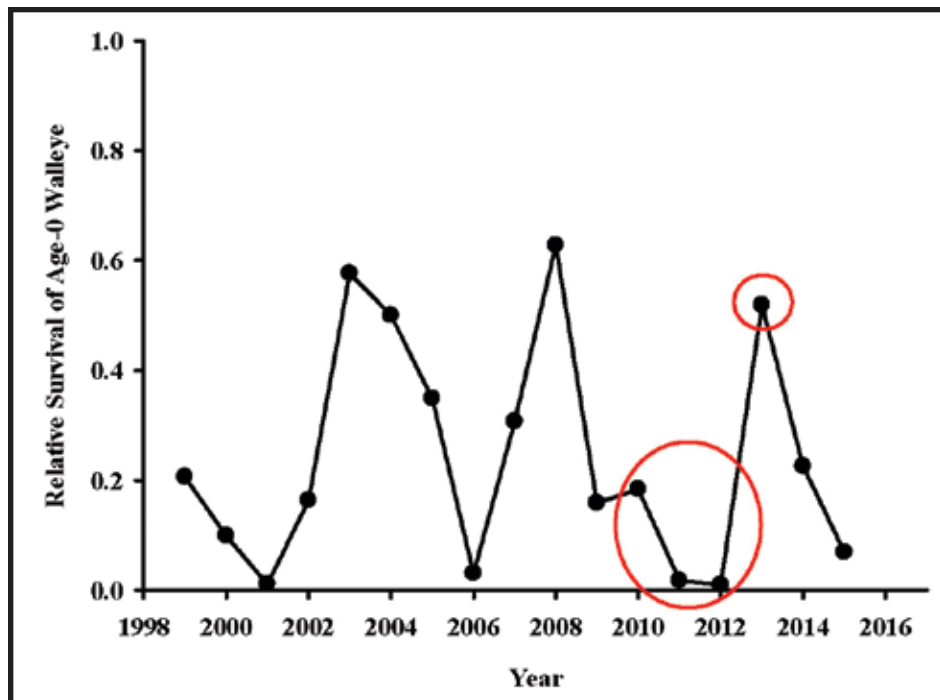


Figure 1. Relative survival of age-0 walleye to their second fall (i.e., age-1) from 1999 to 2015 in Mille Lacs Lake. Age-0 and age-1 walleye were collected by electrofishing the shoreline in the fall (September or October) of each year. Relative survival was calculated by dividing the number of age-1 walleye per mile of shoreline by the number of age-0 walleye per mile of shoreline captured in the previous year. Relative survival value of one indicates that most of the age-0 fish reached age-1. Red circles indicate the lowest valley and peak in relative survival of age-0 walleye compared to previous years. High survival of age-0 walleye to age-1 occurs every 5 years.

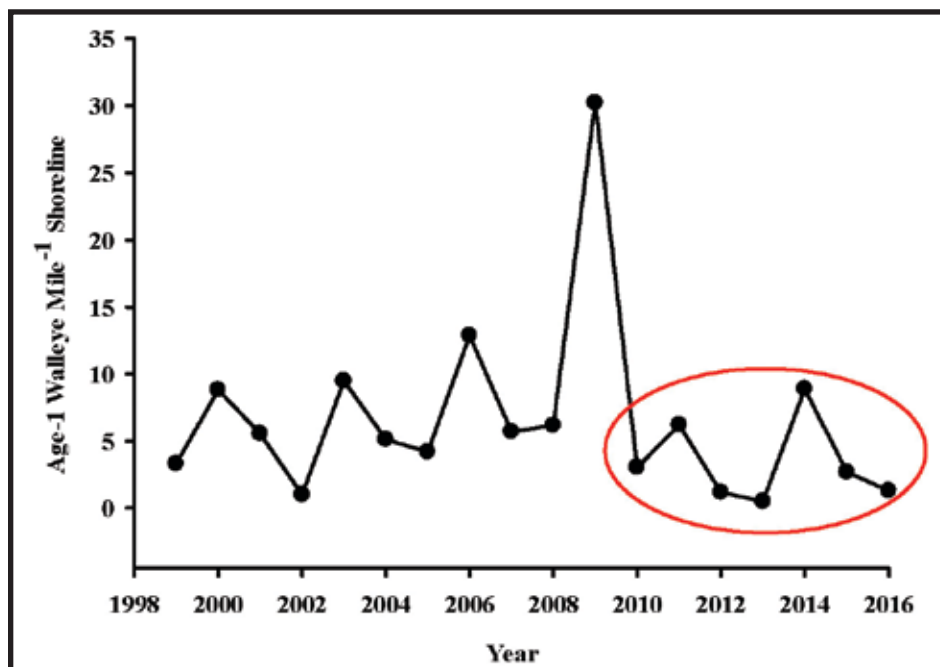


Figure 2. Relative abundance of age-1 walleye per mile of shoreline in Mille Lacs Lake from 1999 to 2016. Red circle indicates that abundance of age-1 walleye from 2010 to 2016 was significantly lower than the previous years (1999-2009).



Partners in Fishing

(continued from page 2)

Under the JASC, a team of biologists and technicians share responsibility for conducting walleye assessments on Ceded Territory lakes. Upper level fisheries managers review population data and establish safe harvest levels for state and tribal fishers.

The event's success at strengthening the work of the JASC drew the attention of officials in the US Department of the Interior, leading to the 2009 Partners in Conservation Award. Representatives from BIA, GLIFWC, Wisconsin Department of Natural Resources, and US Fish & Wildlife Service shared the prestigious award for helping reduce social unrest related to treaty fishing and bolstering walleye stocks in the Wisconsin Ceded Territory.

At the recent 25th Partners in Fishing celebration held at Lac du Flambeau June 7, Jackson singled out another group of collaborators that form an important link between fisheries managers and Ceded Territory communities. They also know where the fish hang out.

"This event could not happen without the guides," he said. "All 26 guides here today helped make this a success."

Teamwork and the football hook

Beginning in 1999, Partners in Fishing planners enhanced the event with help from professional football players who came aboard to reinforce the power of teamwork—whether on a stadium field or in an agency office. Champions of Super Bowls I and II, Green Bay Packers legends Jerry Kramer and Fuzzy Thurston made a memorable visit to the 2004 Partners gathering at Lac Courte Oreilles.

"One of the reasons my team, Fuzzy's team, was an exceptional football team wasn't really the people; we weren't great athletes, but we were able to subjugate our needs, wishes, and wants for the benefit of the team. For benefit of everyone," said Kramer, addressing the group near the Chippewa Flowage shoreline. "And the DNR and the Indian Nations are coming together, and you can have an incredibly powerful impact if you can become a team and do what is best for the area."

While the Partners roster includes 20 different Packers players—both active and retired—William Henderson and Gilbert Brown emerged as regulars, forming bonds with fisheries managers from all the agencies represented. The respective offense and defense standouts earned a championship in Super Bowl XXXI.

For more on the work of the JASC and walleye population surveys in the Wisconsin Ceded Territory see www.glifwc.org/publications/pdf/Casting_Light.pdf

Sioux Chef travels to Ojibwe country

By: Dylan Bizhikiins Jennings, Staff Writer

Odanah, Wis.—Chef Sean Sherman isn't your average chef. Many chefs spend years mastering the culinary arts of communities far away. Some focus on Italian cuisine, others focus on exceptional Asian dishes.

Chef Sean Sherman simply wanted to cook with the foods of his ancestors. Sean grew up on the Oglala Pine Ridge reservation in South Dakota. For him, a big part of understanding his identity has been through food. He's spent many years relearning the intricacies of indigenous food systems and the many uses of plants and wild game.

"To truly understand these resources is to know the many uses. Some plants are not only foods, but can be used medicinally or used as natural dye," Sherman said.

On June 29 the Sioux Chef team arrived in Ojibwe country. Bad River, situated on the shores of Gichigami (Lake Superior), has been home to Anishinaabe for many generations. Like many tribal communities, the majority of the reservation is undeveloped, making it a prime location for foraging. Youth and community members took the woods and waterways in search of culinary supplies. Bad River Natural Resource Department staff, community members, and the Sioux Chef team took turns helping youth to identify wild plants and their uses. The group harvested cattails, grape leaves, ginger, cedar, rose petals, berries and a few other tasty plants.

"I had never known that we could eat some of these plants that we see every day," said Bad River youth Tim Oja.



THE SIOUX CHEF™

Bad River Family Style Dinner

mashkodebizhiki - cedar braised bison
okanakosimaan - maple roasted squash + veg + seeds
gitigaanens - wild green salad + berry sauce
mandaamin - mixed hominy corns + wild herbs
gibozigan - corn bread + smoked fish bean spread
manoomin - bad river wild rice
dekaag - berry sorbet + native granola

Maple roasted squash with vegetables and seeds was a favorite dish amongst those who attended the community dinner. (P. Maday photo)

Inset: The family-style community meal was developed around ingredients native to the area including wild greens, berries, and cedar.



Sean Sherman, Dana Thompson, and Vern Defoe are part of the Sioux Chef team that visited and prepared indigenous cuisine for the Bad River community June 29-July 1. (P. Maday photo)

Identifying and harvesting are some of the first steps in the process of healthy eating, and cooking is the third. With so many processed foods in the system these days, many cooks have forgotten how to prepare certain harvestable foods in a manner that is both tasty and healthy. Many of the health disparities seen across Native American communities can be attributed to diet and the negative effects of processed foods. Chef Sherman said that fry bread has become the face of the tribal culinary experience and it's shocking. Fry bread, created with government issued commodities, is typically cooked in a pool of grease and is by no means traditional or healthy.

Youth and community members took to the kitchen and began to clean, cook and prepare a delicious lunch, with only foods harvested within the reservation boundaries. The crew also began to prep the com- (see *Sioux Chef*, page 19)

Waagaagin learning through my GLIFWC internship

By Jordan Tabobondung
 GLIFWC Planning & Development Intern

Growing up, I remember my grandmothers, mother and aunts talking about how we used to harvest and eat waagaagin, the Anishnaabemowin word for fiddlehead ferns. They said to me that we didn't harvest or eat them so much anymore. Few people knew what to look for to determine whether they were the correct species of fern, or if they were ready for harvest.

Earlier this year, GLIFWC Planning and Development's Traditional Foods Program began working with a researcher at the Metropolitan University College in Denmark. During the last part of May and early part of June, I followed along with GLIFWC staff and collected samples of bracken fern fiddleheads for a trial study.

"The study will provide preliminary information on the levels of a naturally occurring, but potentially harmful, chemical in local bracken fern stands," said Owen Maroney, GLIFWC community dietitian. "Bracken fern is found on every continent with the exception of Antarctica. The fiddleheads, or young, deeply arched shoots, are a traditional Anishnaabe food. These young fiddleheads are frequently consumed in Asian diets in places like Japan and China."

Guided by GLIFWC staff, I learned the identifying features of the fiddleheads that were ideal for collection in this study—those possessing a deep "U" curve of the fronds during the fiddlehead stage. This included collecting fiddleheads growing in a variety of sun exposure (full sun, partial shade, and fully shaded) within the same GPS coordinate. We gathered samples at the stage of growth and tenderness recommended by community elders during the Mino Wiisinidaa! project from 2011-2014. After locating the ideal samples, we cut the fiddleheads just above the (see *Waagaagin*, page 18)



Jordan Tabobondung

Comments sought for model codes in tribal food, agriculture

The Model Food and Agriculture Code Project is a 3-year project coordinated by the University of Arkansas School of Law Indigenous Food and Agriculture Initiative (IFAI). The project aims to serve as a resource for tribal governments by providing model codes in food and agriculture for review, adoption and implementation.

The IFAI team is currently drafting codes, with the model code expected to be released next year. In addition, the IFAI team is providing tribes with technical assistance to more effectively advocate for federal food policies that support tribal sovereignty.

The IFAI team recently released an assessment of the 2018 Farm Bill, available at <http://seedsofnativehealth.org/regaining-our-future-report/>.

The IFAI will be conducting food policy roundtables during this fall on issues related to food access and food sovereignty, focusing on U.S. Department of Agriculture feeding programs (SNAP, WIC, School Lunch, Summer Food, etc.), along with providing information about the upcoming 2018 Farm Bill.

Roundtables are scheduled at Oneida, Wisconsin (October 5) and Milwaukee (NCAI meeting, October 15-19). For more information, visit www.indigenousfoodandag.com. —P. Kebec



GLIFWC Interns get hands-on experience

By Amanda Plucinski
GLIFWC PIO Intern

Odanah, Wis.—This year, LaTisha Coffin became the new intern coordinator following Jim St. Arnold's retirement. As intern coordinator Coffin oversaw recruitment and hiring of eleven undergraduate students and one graduate student for GLIFWC internships.

Every summer GLIFWC internships encourage Native youth to enter careers in various fields. Throughout the internship GLIFWC offers students hands-on experience and networking opportunities. The internship is ten weeks long beginning in late June and ending in early August. One of the things that the internship prides itself on is its ability to show the interns Anishinaabe culture and values by letting them participate in different ceremonies.

This year's interns worked in a variety of divisions, including Biological Services (Great Lakes Fisheries, Inland Fisheries, Wild Rice), Public Information Office, Planning and Development, Intergovernmental Affairs, Law Enforcement, and Climate Change.

Biological Services Division Great Lakes Fisheries

Mole Lake tribal member Jalyn LaBine is in her fourth year as a Great Lakes Fisheries intern. This fall she will be entering her fifth year at University of Wisconsin-Stevens Point majoring in Biology and minoring in Psychology. Jalyn's favorite part of the internship has been netting for siscowet lake trout on Lake Superior.



Jalyn LaBine, (left) Jacob Rodmaker, and Patrick LaGrew. (A. Plucinski photo)

This summer Jalyn has also assisted on sea lamprey collecting, stomach sampling, and juvenile sturgeon assessments. Her future plans after finishing school are to move out west and work on the coast. Jalyn has already been contacted by two different people on the west coast through her intern video on GLIFWC's Facebook page regarding future endeavors.

This is Patrick LaGrew's first summer as a GLIFWC intern. He is a Red Cliff tribal member who attends Lac Courte Oreilles Ojibwa Community College in Hayward. He is double majoring in Land Management and Water Management. Patrick says his favorite part about his internship is the connections he is making with his coworkers while learning new methods of fish and water management.

This summer Patrick also worked on aging otoliths, collecting stomach samples, and lamprey control. His future goal is to work for GLIFWC in the Biological Services Division.

Great Lakes Fisheries' other intern is Northland College student Jacob Rodmaker. In the fall Jacob will be a senior majoring in Fisheries and Wildlife Ecology. So far, Jacob says that this job has provided a lot of hands-on experiences for him such as lamprey control, whitefish and lake trout monitoring, and siscowet assessments. His future plans are to possibly work in a fish hatchery or an agency like GLIFWC.

Inland Fisheries

This year's sole Inland Fisheries intern is Andre Gilles, a Bad River tribal member. Andre recently graduated from Hocking College in Ohio with an Associate's degree in Fish Management and Aquatic Culture Science. As an intern, Andre's favorite part has been electrofishing.

Throughout the summer, Andre has been sampling fish stomachs with Inland Fisheries Biologist Aaron Schultz. He assisted on a juvenile walleye assessment on Mille Lacs Lake, and helped with bass population estimation on Bass Paterson Lake.

Andre's future plans are to hopefully continue working with GLIFWC and go back to school.



Andre Gilles. (A. Plucinski photo)

Manoomin

Jake Oster is in his second year as a wild rice intern. He recently graduated from Northland College with a degree in Chemistry and Secondary Education. Jake is a descendent of the Ysleta del Sur Pueblo Tribe in El Paso, Texas.

This summer Jake monitored the rice beds and did surveys throughout the Ceded Territory. Jake is looking forward to learning more about wild rice and networking with coworkers. In the fall, Jake will be teaching chemistry at a high school in Washington D.C.



Marvin DeFoe presented plaques to GLIFWC interns who assisted him with the construction of a wügwaaši-jüman. The cedar plaques were presented during the Voigt meeting at Fond du Lac on July 27. Receiving placques were, from the left, Jordan Tabobondung, Shannon Soulier, Marvin DeFoe, Kristen Thannum, and Amanda Plucinski. (D. Jennings photo)

Mary Sellars, first time GLIFWC intern, also worked as a wildrice intern. Mary also monitored wild rice beds and did surveys throughout the Ceded Territory. She will be a junior this fall at Northland College majoring in Wildlife Biology and minoring in Geographic Information Systems.

Mary's future career plans are to continue with her schooling until she receives a graduate degree in Wildlife Biology. Mary said that she chose GLIFWC because of its mission to conserve treaty rights throughout the Ceded Territories and that's what she wants to do with her studies.



Mary Sellars and Jake Oster. (A. Plucinski photo)

Climate Change

This year's climate change intern is Shannon Soulier, a Red Cliff tribal member. This fall she will be a freshman at the University of Wisconsin-Green Bay. This summer she worked in the field and on the different phenophases. Shannon has worked on Traditional Ecological Knowledge (TEK) interviews of tribal elders. She says, "It's interesting to listen to what these elders are saying compared to what is being found in our studies." She hopes that her internship with GLIFWC will give her an idea of what she wants to major in.

Division of Intergovernmental Affairs

Kristen Thannum, a Bad River tribal member, has worked in the Division of Intergovernmental Affairs for the past three summers. She recently graduated from Chippewa Valley Technical College with a Paralegal Degree. As an intern, Kristen has been doing legal research into possession permits of Eagle feathers and the upcoming 2018 Farm Bill. In addition to this she has been working on the Minnesota 1837 Model Code books. Kristen hopes that her internship with GLIFWC will allow her to apply the skills she learned in school in a way that helps tribal members.

Enforcement Division

Menominee Nation tribal member Rashawn Bell is in his second year as a GLIFWC intern. In the fall he will be a junior at the University of Wisconsin-Oshkosh majoring in Kinesiology. As an enforcement intern Rashawn has been involved in many different cultural activities such as being a camp counselor at Camp Onji-Aking.

Shawn said that his favorite part was going on ride-alongs with the officers and seeing what it means to be a game warden. He is hoping that this internship with GLIFWC will help with his future employment due to the hands-on experience that he has had.

This is Mole Lake tribal member, Megan Muhlako's first summer as a GLIFWC intern. In the fall, Megan will be a sophomore at Vermilion Community College in Ely, Minnesota majoring in Wildlife/Wildland Law Enforcement. This summer she has been involved in many different cultural activities as an enforcement intern such as the Healing Circle (see GLIFWC interns, page 22)



Megan Muhlako (front) and Rashawn Bell. (C. Dzwonkowski photo)



Manoominike Gets High-Tech at the Duluth Children's Museum

By Paula Maday, Staff Writer

Duluth, Minn.—A new exhibit at the Duluth Children's Museum focuses on bringing Ojibwe language and culture into the museum in an interactive way.

Manoomin occupies the back part of the second floor of the museum. The main attraction is a wiigiwaam structure that houses a motion game called *Manoominike*. The game responds to movement, guiding children through various motions associated with harvesting and processing manoomin (wild rice). These motions include knocking, roasting, jiggling, and winnowing.

At the start of each step, a word to describe the motion appears on screen and is said aloud in Ojibwemowin. Next, an on-screen figure begins the motion, which the children have to follow. The motion must be continued for quite some time before that step is considered complete, mimicking the hard work and time it takes to harvest and process wild rice. Once all steps are completed, a final movement has the children raise their arms to the sky in thanks to their ancestors, who are represented via the northern lights.

During my family's time in the wiigiwaam, a museum guide was present to explain the different steps in manoominike, while my 5-year old did the work. This was extremely helpful, as I'm not sure a child who just stumbled into the wiigiwaam would understand exactly what they were doing or why, unless they or a parent read the introductory text panel. I did try to jump in at one point so my son and I could do the motions together, but unfortunately the motion sensors are positioned to react to smaller beings.

Traditional harvesting is often done together by families and passed down through generations, so it would have been nice to be able to also practice it together this way interactively. Instead, my husband and I sat on benches lining the inner perimeter of the wiigiwaam to watch my son's progress through the game.

Outside the wiigiwaam, a canoe with life jackets, a push pole and knockers sit to one side. The canoe is surrounded by photographs of growing wild rice stalks to create a feeling of paddling through rice beds as you sit in the canoe. This free play area was very appealing to children.

To the other side, a faux birch-bark pedestal with two iPads offers museum-goers the opportunity to play a free app called *Mikan* ("find it" in Ojibwemowin). The app features a matching game in which children match objects related to wild rice harvesting. The objects' names are written and pronounced aloud in Ojibwemowin. The app can also be downloaded from the App Store to play at home on any tablet or smartphone.



Manoomin is on exhibit now at the Duluth Children's Museum, located at 115 S 29th Ave West in Duluth, Minnesota. (P. Maday photo)



A look inside: 5-year old Everett Maday jigs the rice following the movements on an interactive screen located inside the wiigiwaam. (P. Maday photo)

Rounding out the *Manoomin* exhibit are a few display cases with beadwork, books, and other cultural items, some related to wild ricing, some not.

Overall, it was really fun to see the ways in which Ojibwe culture is being shared utilizing new technologies. My 5-year-old enjoyed playing *Manoominike*, but didn't linger in the area; choosing instead to ascend an adjacent climbing structure, as boys will do. His attention will likely be more focused when he finally gets out on the water with his grandpa for ricing season. But for kids who have never been ricing and don't know how it's done or what it means to the Ojibwe, *Manoomin* is a delightful introduction.

Manoomin is expected to be on exhibit for four or five years at the Duluth Children's Museum. For more information, contact the Duluth Children's Museum at (218) 733-7543.

Elizabeth LaPensée, Ph.D., who designed and completed the art for both Manoominike and Mikan, is an award-winning writer, designer, and artist of Anishinaabe, Metis, and Irish descent. Her next project, Thunderbird Strike, will allow gamers to fly from the Tar Sands to the Great Lakes as a thunderbird protecting Turtle Island with searing lightning against the snake that threatens to swallow the lands and waters whole.

Spill response plans

(continued from page 14)

including tribal governments. Included in the plan will be: contact information of responders and descriptions of their roles in a spill response, maps, photos and descriptions of discrete segments of the entire river, including access points, locational data of sensitive areas, locations available for setting up command centers, along with information on response strategies that would most effectively contain spillage in particular areas.

Following the completion of this plan, UMRBA will likely be developing spill response plans for other rivers. Staff at UMRBA is also available to share its approach to developing spill response plans. Much of the data compiled by UMRBA is publically available. Spill response plans can be developed by individuals or groups with familiarity to Geographic Information Systems (GIS) and an ability to bring experts and local responders to the table.



CWD resources for hunters

(continued from page 4)

in hunting for and processing deer. The documents can be found using the following links:

- <http://dnr.wi.gov/topic/wildlifehabitat/documents/transmission.pdf>
- http://nomocwd.org/WI_processing_tips.pdf

Those who are interested in learning more about where CWD has been detected can access a current map here:

- www.nwhc.usgs.gov/disease_information/chronic_wasting_disease/

More information about CWD can be found at the following websites:

- <http://cwd-info.org/>
- dnr.wi.gov/topic/wildlifehabitat/regulations.html
- www.dnr.state.mn.us/wildlife/research/health/disease/cwd/index.html
- www.michigan.gov/emergingdiseases/0,4579,7-186-81018_25806---,00.html

Waagaagin

(continued from page 16)

level of soil and placed them in coded zip lock bags for categorization and further processing at the GLIFWC office. Samples were then cut and dehydrated at a low temperature until dry. After the samples were ground, we sent them to Denmark where they will be analyzed later in August.

Together with the collections of bracken fern fiddlehead samples, we collected soil samples from each site, identified the general types of soil (dirt, clay, dark earth), and placed samples into a coded container to identify collection sites. In late summer, soil samples will be tested to determine pH levels, helping researchers better understand the growing conditions of the bracken fern from each sample.

I am grateful for the opportunity to be part of this research and data collection on bracken fern fiddleheads. I feel as though I extended my learning about waagaagin on a personal level, broadening my understanding and experience about the methods of academic research and scientific process. I am sure that the skills I've gained through the mentorship and guidance of the GLIFWC staff will continue to inform future research I may do. And it's something that I can share with my family as well, hopefully encouraging them to once again harvest waagaagin.

Bilingual education blooms at immersion schools

By Dylan Jennings, Staff Writer

Booch da-ganawendamang gidinwewininaan, mii gaa-miinigoowiziyang anishinaabewiyang. There was a time not long ago, when the vast majority of people living in this region would understand these words when spoken. Nowadays, a small fraction of the population understands or speaks Ojibwemowin.

Boarding schools, forced assimilation and organized religion are commonly blamed for the depletion of first language speakers throughout the country and more locally, Ojibwe Country.

Many tribal communities have worked to incorporate Ojibwemowin classes within their respective schools and districts. Others have taken a more direct route and established immersion schools on-reservation, which promote the usage of only Ojibwemowin in the classroom.

Waadookodaading Ojibwe Immersion School located on the Lac Courte Oreilles reservation is an excellent example of a thriving immersion school.

In a small public school in Duluth, Minnesota, they set out to prove that the average school district can do a lot to help revitalize a very significant way of life. Misaabekong Ojibwe Immersion Program was established just a few years ago and operates out of the Lowell Elementary School in Duluth, MN. With the exception of Art, Music, and Physical Education, all subjects are taught by qualified instructors in the language.

Citing research that highlights the positive outcomes of bilingualism, the school and its administration are also approaching Spanish in the same context.



Misaabekong Immersion school staff and students gather around local Ojibwe artist Jonathan Thunder, who created illustrations for their Ojibwe reading books. (Misaabekong Immersion School photo)

“Every child has the right to learn their own language, even if it’s not spoken much at home,” said Program Director William Howes.

According to research, the immersion experience actually enhances English language development (Cloud, Genesee, & Hamayan, 2000). With twice

as many synapses in the brain, the average child is developmentally equipped to learn languages.

Edey Howes, the American Indian Education Coordinator reiterates, “This is definitely a family commitment. The families have to support the students in any way necessary and also stimulate the bilingualism concept even at home. The rewards and benefits are tremendous and definitely outweigh the extra work.”

The Misaabekong Immersion Program is still in its infancy, but the coordinators have great vision for the program, looking to expand beyond the grade levels already developed. In fact, many immersion schools throughout the region are operating in the same manner. As a class graduates and moves to the next grade, staff and curriculum developers are working diligently to develop the next stepping stones in curriculum.

Regarding state standards and testing, immersion schools and programs like Misaabekong work throughout the year to make certain that curriculum standards and state standards are met—no different than any other public school. The most important difference is that these particular schools are both saving and preserving a language tied to an old but thriving way of life.

Booch da-ganawendamang gidinwewininaan, mii gaa-miinigoowiziyang anishinaabewiyang. Even though the Ojibwe language is very descriptive and somewhat difficult to translate into English, I’m sure the majority of folks can understand this:

“We have to take care of our language, it’s what was given to us as Anishinaabe.”

For a full citations and learning resources see www.psych.mcgill.ca/perpg/fac/genesee/fredadd.html.

Canada: recent survey tracks native language speakers

Following the 2016 population census, Canadian authorities learned that many First Nations people are using indigenous languages at home. While French and English are the only officially recognized languages, Canada is home to 634 First Nations that speak more than 50 distinct languages.

Cree is by far the most spoken native language with 83,985 Canadians, followed by 39,025 using Inuktitut. Ojibwemowin rounds out the top three with 21,800. A total of 228,770 said they speak a native language at home.

Census officials note that indigenous language use is highest among younger generations. It’s a trend that rings true for Jordan Tabobondung from Wasauksing First Nation near Parry Sound, Ontario.

“There’s been a general push in native communities to learn their languages,” said Tabobondung, a University of Winnipeg graduate student and 2017 GLIFWC intern. “I’m amazed at how well really young kids speak—right in the 4-13 year-old range.”

—CO Rasmussen

Sioux Chef

(continued from page 16)

community dinner for the following evening. Over 100 participants from the community crowded the elderly center for an amazing meal of cedar braised bison, maple roasted squash, wild green salad with berry sauce, wild rice, parsnips and hominy. Youth served the final dessert course which was a berry sorbet made from cranberries, honey and maple syrup.

Bill Roundwind, a Bad River tribal member and elder reminisced about the dinner: “It was a delicious, flavorful dinner reminding us of the natural unprocessed healthy foods available and surrounding us in the lands and waters of this beautiful homeland.”

The Sioux Chef team, on their journey to both educate and bring awareness back to the communities, has hopefully inspired both adults and youth in the area to make healthier food choices, and to learn Anishinaabe traditions. Anishinaabeg were blessed with beautiful resources to live mino-bimaadizi and it’s time to revitalize one of the original forms of sovereignty, food sovereignty. For more information about the Sioux Chef, bookings or to preorder their brand new cookbook visit their website here: <http://sioux-chef.com/>.

Nigig and friends are back!

The Nenda-gikendamang Ningo-biboonagak (We Seek to Learn throughout the Year) set of Dagwaagin (Fall) booklets are hot off the press and being distributed to GLIFWC’s tribal communities!

The Dagwaagin storybook continues to follow Nigig and friends as they explore traditional Anishinaabe cultural activities. Working together, the characters learn about playing lacrosse, harvesting manoomin (wild rice), and preparing food for the long winter.

Funded through a grant from ANA (Administration for Native Americans), the project aims to support Ojibwe language learning for children in grades K-5, promoting language and cultural literacy.

As with the previous sets, Dagwaagin provides a monolingual storybook, activity book, and a bilingual parent/teacher answer book. An added resource, the www.glifwc-inwe.com website offers interactive language activities and audio, as well as PDFs of the four seasonal sets of booklets to download and customize for dialect differences, making this resource even more beneficial across Anishinaabe-akiing.

Each of the 11 GLIFWC member tribes will receive 660 books: including 220 of the storybook, 220 of the workbook, and 220 of the parent/teacher edition. Communities will distribute the sets as they see fit to ensure that they reach the appropriate audience.

Ojibwe language learners can always view and download the digital content via the www.glifwc-inwe.com website. For further information please contact Wesley Ballinger at wesley@glifwc.org.



Essential Ojibwemowin

Gekinoo'amaaged—Teacher



The elk, or omashkooz, is making a comeback

Did you know that elk used to live all across Wisconsin, Michigan and Minnesota? Because of overhunting and changes in land use in the 1800s, elk disappeared. More recently, elk are being brought back to the region with the help of tribes, states and conservation organizations. The elk, or omashkooz in the Ojibwe language, is a culturally important animal.

Elk babies are called calves. Calves are born in late May through early June. They are born with spots and have very little scent to camouflage them from predators. They spend their first few weeks hiding motionless while their mothers feed.

After a few weeks the calves and their mothers begin to group together in herds. By this time the young elk have grown stronger and have a better chance of outrunning predators. More elk in a herd equals more eyes to watch for danger and lets calves focus on nursing or finding the most nutritious food.

Often, a bunch of calves stick together in a nursery herd and follow a single cow. That cow acts like a babysitter, keeping her eyes and ears alert for danger. Different cows take turns babysitting so they all get a chance to eat. If a predator shows up, the babysitter will lead all the calves away in a group. That way they don't scramble around confused looking for their mothers. Once the danger disappears, the herd settles down and the mothers will sniff out their calves.

Elk talk to each other in a lot of ways. Since they live in large groups, they must talk to each other more than many other animals. A newborn gives a high-pitched squeal, and its mother can recognize her calf by its voice. An elk bark is a warning of danger. Omashkooz talk to each other by making sounds such as chirps, mews and miscellaneous squeals. Bugling (loud hollering or a squealing whistle ending with grunt) is done by a bull advertising his fitness to cows, warning other bulls to stay away, or announcing his readiness to fight.

(Reprinted with permission from the Rocky Mountain Elk Foundation.)



Omashkooz. (Wikipedia photo)

Fast Facts

- Elk calves weigh an average of 35 pounds at birth.
- Elk are members of the deer family.
- Moose are the largest members of the deer family, followed by elk, then caribou, then deer.
- Elk have antlers, not horns. Antlers are shed and regrown every year. Antlers are made of bone.
- A set of antlers can weigh up to 40 pounds.
- Elk replace all of their hair twice a year—once in the spring and once in the fall.
- Elk are herd-forming animals. Herds offer more security because there are so many eyes, ears and noses checking for danger.
- There were an estimated 10 million elk throughout North America before Europeans arrived. By 1907, there were less than 100,000. Today, about 1 million wild elk roam in 26 states and five Canadian provinces.
- Predators of elk are: black bears, wolves, coyotes and humans.

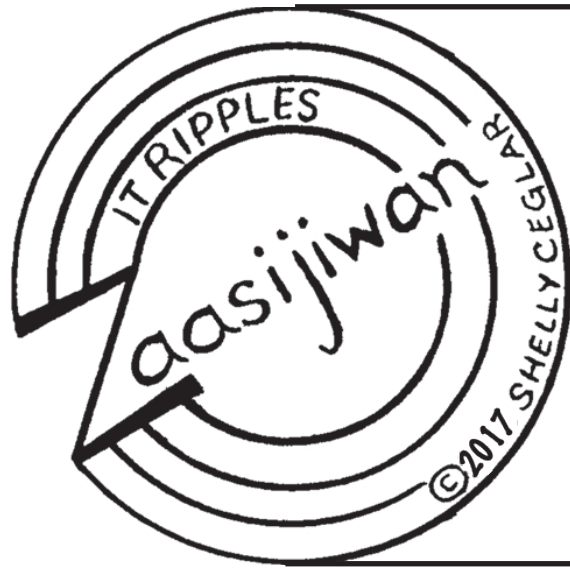


Color omashkooz.

Omashkooz Word Search

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

- | | | |
|--------|-----------|----------|
| Antler | Bark | Bugling |
| Bull | Calves | Elk |
| Herd | Omashkooz | Predator |



Aaniin ezhiwebak agwajiing? What is happening outside?

Dakaayaa wayiiba dash wii-sasakwaa. Dakaanimad. Giiwedining keyaa ondaanimad wenji-gisinaag. Dagwaaging, ikwewag miinawaa ininiwag da-gikino'amaagoziwag, maajii-objiwemowag gaye. Gagwe-objiwemowag: Daga biizikonayen noongom, wewiib! Gizhaagamizamawishin makade-mashkikiwaaboo! Nibakade. Gibakade na? Niwaabandaan iw naboob. Aaniin endaso-diba'iganek? Tayaa! Waawaabinoojiinh ayaa omaa waaka'iganing! Manoominikedaa noongom! Izhaadaa! Bezbig, niizh, niswi!

("It is cool weather but soon there will be a heavy frost. There is a cold wind. The wind comes from the north so that is why it is cold. In the fall, women and men will go to school and start speaking Ojibwe. The practice speaking Ojibwe: Please get dressed, hurry! Heat up the coffee for me! I am hungry. Are you hungry? I see that soup. What time is it? Oh! A mouse is here in the house! Let's harvest wild rice now! Let's go! One, two, three!")

Bezbig—1

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

—Short Vowels: A, I, O
Dash—as in about
Ingiw—as in tin
Niizho—as in only

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

Niizh—2

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

A. Dagwaaging, daga bimosedaa megwaayaak!
B. Ingiw ininaatigoog miskobagiziwag. Howah! Bimoseg!!
C. Ikwewag giyosewag baapinakamigiziwag idash.
D. Gidaa-biindaakoonaa awesiinyag. Mii dash miinawaa ondaadiziwaad.
E. Waawaashkeshiwag, binewag, makwag, nikag, zhiishiibag.
F. Baashkizigan, akandoowin, jiimaan. Giiyose-aabajichiganan.
G. Gaandakii'iganaak, okaadakik, abwi, noozhkaaji-naagan. Manoominike-aabajichiganan.

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

Niswi—3

IKIDOWIN
ODAMINOWIN
(word play)

Down:
1. You are hungry.
2. in the direction of
3. S/he counts him/her.
4. They are hunting.
7. Eat him/her!

Across:
5. to the north
6. It is cool weather.
8. please
9. seek, look for

Niiwin—4

VTA Root Commands

Zaagi?!—Love him/her! Mikaw!—Find h/h!
Amo! —amw— —Eat him/her!
Bamenim!—Care for h/h!
Giziibiigin!—Wash h/h by hand!
Onaabam!—Choose/pick h/h!
Bakwajibizh!—Remove/pick h/h off!
Waabam!—See h/h!
Naazh! —naan— Go get/fetch h/h!
Naada'!—Go get h/h by boat!
Nanda-mikwenim!—
Try remember him/her!
VTAs spoken with living things.

Gagwejitoon! Try it!
Mii'iw. That's all.

1. _____gii-pakwejibin _____
aw ezigaa zhigwa.
2. _____boozi' _____ odedeyan
naagaj. Wii-kimiwan.
3. Ininiwag _____ waabam _____ iniw
waawaashkeshiwan.
4. Apane na _____ bamenim _____ gookomis?
5. Eya', ingichi-zaagi'aa! _____ zaagi' _____ in gookomis miinawaa gimishoomis? Aawiwag gichi-ayaa'aag. Gichi-apiitendaagoziwag sa go. Miigwech.

Translations:

Niizh—2 A. In the fall, please let's all walk in the woods! B. Those maple trees have red leaves. Wow! All of you walk! C. The women are hunting and excited. D. You should offer tobacco to the animals. Then they be will born again. E. Deer, partridges/grouse, bears, geese, ducks. F. Gun, blind, canoe/boat, hunting-tools. G. Push pole, 3-legged kettle, paddle, fanning basket. Wild ricing-tools.

Niswi—3 Down: 1. Gibakade. 2. Keyaa 3. Odagimaan. 4. Giiyosewag 7. Amo! Across: 5. Giiwedining 6. Dakaayaa 8. Daga 9. Nanda

Niiwin-4 1. I picked that woodtick already. (Nin...aa) 2. She should give her dad a ride later. It's going to rain. (Odaa...aan) 3. The men see the deer. (O-...aawaan) (Deer's obviate suffix of -wan shows it is the 4th person or 2nd 3rd person receiving the action of the verb.) 4. Do you always care for your grandmother? (Gi...aa) 5. Miigwech. Yes, I love her very much! Do you love your grandmother and grandfather? They are elders. They are highly respected. Thank you. (Gi- aag)



Mikwendaagoziwag ceremony



Canoers prepare their boats for launch during the 2017 Mikwendaagoziwag Memorial ceremony. Over 400 people attended the ceremony, which included a four-mile paddle across Sandy Lake, a feast, and traditional Ojibwe observances in honor of the 1850 Ojibwe band members who suffered and died traveling to Sandy Lake, Minnesota to receive annuity distributions in 1850-51. Visitors came from as far as southern Wisconsin, California, even Puerto Rico to join tribal members and friends in remembering and reflecting on the sacrifices of Ojibwe ancestors. (P. Maday photo)



At its July meeting, the Voigt Intertribal Task Force (VITF) recognized John Gozdziwski on the occasion of his retirement from the Wisconsin Department of Natural Resources. Gozdziwski served the DNR since 1982, acting as the Northern Region's Director since 2004. He worked closely with the VITF and its member Tribes on a variety of issues, and was instrumental in developing a consultation process to ensure tribal input when the State considers permits that have potential to impact manoomin in the Ceded Territory. Voigt representatives described Gozdziwski as acting with "integrity and honesty in his dealings with the Task Force, seeking to fully understand the Tribes' perspectives and to generate effective, open dialogue on matters of mutual concern." (PM photo)

GLIFWC interns

(continued from page 17)

run and Camp Onji-Akiing. Megan said her favorite part about her internship is the hands-on experience that she has been given in this division. Her future goal is to become a game warden with GLIFWC.

Planning and Development

This year's planning and development intern is Jordan Tabobondung, a graduate student at the University of Winnipeg. She is in the Masters of Development Practice: Indigenous Development program. She is a member of the Wasauksing and Sawanaga First Nations. This summer her focus was on the traditional foods program and the Nenda-Gikendamang Ningo-Biboonagak language project. She says that her favorite part has been having the chance to visit with community members and youth through the construction of the wiigwaasi-jiimaan (Birch bark canoe) in Bad River. She says, "It gives her the opportunity to learn more skills that I haven't had the chance to be involved with and hear songs, stories, and laughter from the community members who have visited." This fall she will be returning to Manitoba to begin her second year of studies at the University of Winnipeg.

Public Information Office

As for me, I am a Bad River tribal member, in my second year as public information office's intern. This fall I will be a senior at the University of Wisconsin-Superior majoring in Elementary Education and minoring in early childhood. This summer I have been working on a lot of different things, writing articles, invoices, packing slips, and taking intern pictures. I had the pleasure of attending the Wisconsin American Indian Summer Institute in Crandon, WI during the first week of August. After finishing my schooling, I hope to come back home and teach in the elementary school. My favorite part about my internship has been helping Marvin Defoe build a canoe with Bad River youth.

Wiigwaas

(continued from page 7)

According to one forestry industry source: "One problem is that as birch trees age, they become a 'risk tree' from a timber perspective. A forester might ask: 'will this 12-14" diameter birch tree decline in value if I don't mark it for harvest now?' Whereas a tribal member might say 'this tree is growing nicely, I'll come back in 5-10 years and check on it again.' In general, birch trees within mixed stands are often marked for removal because they are usually seen as being at risk of losing their value."



A load of confiscated birch poles.

In recent years the market for wiigwaasaatigoog in the special forest products industry has skyrocketed. Used primarily for home and business décor, young size classes (≤ 5 inches diameter) of birch are being targeted before they reach maturity. Birch saplings, twigs and even some larger trees are being harvested across the Ceded Territories.

Because this has become a significant issue with widespread implications, a committee has formed, comprised of GLIFWC, the tribes, the WDNR, county foresters, the USFS, forest product business owners, as well as enforcement officers, to research the issue further and begin to help protect the already struggling small size classes of birch.

Given that wiigwaasaatig is already at a disadvantage (with low recruitment, high harvest pressures), one would hope that the trees that do survive would grow into the larger diameter size classes. However, wiigwaasaatig is relatively short-lived when compared to other tree species. "Across most of their range, mature paper birch trees average 10-12 inches (23-30 cm) in trunk diameter (dbh) and 70 feet (21 m) in height. On the best sites occasional trees may reach 30 inches (75 cm) in diameter and 100 feet (30 m) in height" (Safford et al. 1990).

A changing climate provides additional pressures to wiigwaasaatig. Birch is considered a "high risk" species in various assessments meaning it is highly vulnerable to environmental stressors that come with a changing climate. Stressed trees also become more susceptible to disease and forest pest infestations. For example, the bronze birch borer, a beetle that targets already stressed or dying trees.

What's next?

Within the Ceded Territories there is a need to research wiigwaasaatig regeneration, to identify locations with ideal environmental conditions to support wiigwaasaatig, and to implement harvest practices that facilitate birch regeneration. For example, it may be a good idea to target the clay plain around Lake Superior. A boreal forest, this landscape historically supported healthy wiigwaasaatig and may potentially be more resistant to a changing climate than other locations. If these "ideal locations" can be identified then we can work toward promoting large healthy birch on sites where they have a greater chance of survival.

Currently, GLIFWC has begun to learn more about what environmental conditions these "ideal locations" exhibit. In a project report titled: "Characteristics of Sites Supporting Large Paper Birch in the 1836, 1837 and 1842 Ceded Territories," GLIFWC Specialist Steve Garske collected TEK, potential canoe-birch locations and environmental characteristics to understand more about large birch site qualities.

Project goals centered on learning more about the quantity, quality and distribution of wiigwaasaatigoog in the Ceded Territories and learning more about environmental conditions that are likely to support large, healthy trees. An example of the findings in this project include: "the largest birch trees in several of the sampled locations occurred on the edge of the woods and open areas such as road or power line corridors."

Using this type of information we are continuing to work toward identifying more locations that contain the "ideal ecological characteristics" to support large diameter birch, managing the wiigwaasaatigoog that occur within these areas as well as offering silvicultural recommendations to preserve large "legacy birch trees."

Other Considerations:

Under the best case scenario where we fully understand how to reduce limiting factors and manage for the most "desirable" birch, there are other questions worth considering: How many wiigwaasaatigoog should we manage for in the Ceded Territories?

As mentioned before, the Ojibwe have been described as the "first forest managers" because they understood ecological processes needed to regenerate the resources they harvested. This includes respectful harvest practices that didn't compromise the resource as well as management techniques (such as fire) to help promote desired forest composition. Do we manage for pre-settlement amounts of wiigwaasaatigoog? Was this enough to fulfill the traditional needs of the Ojibwe?

David J. Mladenoff with the Department of Forest Ecology and Management at the University of Wisconsin-Madison in a project titled: "Pre-European Settlement Vegetation of Wisconsin" found that pre-settlement data actually demonstrates that there was much less birch on the landscape, but that it existed in small patches where fire was more prevalent.

Eventually, following European settlement, cutover, and many fires, the acreage of birch forests dramatically increased. Is the post-settlement acreage of birch more desirable? For the tribes and other forest management partners, it's an important question worthy of thorough consideration.

For more information or a list of referenced material, feel free to contact me at awrobel@glifwc.org.



Mitiganaabe on the run

Healing Circle connects eight Ojibwe communities

Aaniin nindinawemaaganidog, mitiganaabe nindizhinacaz. Greetings relatives, my name is mitiganaabe. Many of you that are more familiar with GLIFWC, know that I am one of the many sacred tools gifted to help Anishinaabeg. I am the tallest staff adorned with many miigwanag (eagle feathers). Every miigwan has a beautiful story and meaning.

I am utilized by Anishinaabeg for many different purposes. Every year I attend the commission meetings, solstice feasts, Mikwendaagoziwig ceremony and most recently, the Healing Circle Run.

As it does every year, the Healing Circle Run kickoff ceremony began at Pipestone Creek on the Lac Courte Oreilles reservation. Asemaa (tobacco) and opwaaganag (pipes) were passed to acknowledge this journey and lives of spirituality. The first two days were made very easy as runners from Waaswaagoning (Lac du Flambeau) and Sokaogon (Mole Lake) picked up extra miles.

The community of Getegitigaaning (Lac Vieux Desert) treated us to a wonderful breakfast and the youth participants ran multiple miles through seemingly endless hills. For the first time in a long time, runners took me in hand and carried me to the very end. Despite my heaviness and inconvenient height, the runners raised me up proud and eloquently.

Upon arriving to Miskwabekong (Red Cliff), we were anxious to meet new Red Cliff Tribal Leadership and to do ceremony right on Gichigami (Lake Superior). The following day would bring more anxiousness as we neared the community of Nagaajiwanaang (Fond du Lac).

Nagaajiwanaang was very special this year as we participated in ceremony at the Minnesota Highway 23 site, which had been disturbed. Construction crews began refining a road and bridge on old burial sites, which left the Tribe in a vulnerable state of emotion. The community came together and decided that ceremonies



Healing Circle Run participants walk with mitiganaabe through Watersmeet, Michigan. (J. Krueger-Bear photo)

needed to be done in this area to acknowledge our relatives that had been disturbed. It was truly beautiful to hear everyone acknowledge their ancestry and embrace the mistakes that had been made in a positive manner.

The last leg of the relay always goes the fastest. We arrived at St. Croix and had a wonderful spaghetti dinner and the community youth drum sang some jammers.

It's truly a blessing to participate in these ceremonies. They say that at any given moment in time, someone else is having a ceremony and praying for you. We keep humanity in mind when our runners both run and participate in ceremony. I have an ability to evoke extreme emotion from those that hold onto me while they speak. I don't allow people to speak from a script; I force them to speak from the heart. These ceremonies have a lot of healing power both physically and spiritually.

The 2017 Healing Circle Run has come and gone yet again. However we remember that everyday is a ceremony and a blessing. As a spiritual being, I love to remind people that we are always here for them. Use us, feast us, and never forget the pure love and good intentions we have for Anishinaabeg. —Dylan Jennings

The mitiganaabe gift

The tall shaft of polished South American wood is called mitiganaabe—spirit of the wood—the late Negaunegabo Gene Begay explained to the gathering at Lac Courte Oreilles in the autumn of 2000. Seventeen years ago Begay presented the staff to GLIFWC representatives at the Aabanaabam Conference, an event designed to share and capture stories from the recent past. Begay instructed GLIFWC leaders to bring the staff to ceremonies and important meetings. Mitiganaabe is the fourth in a series of spiritual gifts passed to GLIFWC around the turn of the century.

—CO Rasmussen

Sharing culture & connections

(continued from page 1)

Today, communities are both preserving and expanding the knowledge they have been blessed with. Bad River hosted a niibin gabeshiwin (summer camp) this past July which garnered activities such as lacrosse, black ash basketry, birch bark etching, net mending, fish preparation, and moccasin games. Visitors from other communities traveled to Bad River to share the various teachings they had been given.

Dan Ninham, Director of Northern Indigenous Lacrosse traveled from Red

Lake, Minnesota to share his passion and love for the creator's game. Ninham expressed his excitement about the opportunity. "It was great to come to a community that still has elders that retained some of the spiritual aspects of the game."

Over a hundred birch bark canoe miles away, the Mole Lake Sokaogon community began their Manoomin Gabeshiwin (Wild Rice Camp). Youth spent a day participating in Canoomin, an interactive canoe safety class designed for tribal harvesters. The group also spent

a day identifying materials and shaving giizhik (cedar) into rice knockers. Youth gained all of the equipment and skills necessary to harvest manoomin this fall.

"This is just the first of many camps to come. We will also follow up with a harvesting and processing camp that will not only teach youth how to harvest manoomin, but also how to process it afterwards," Sokaogon Trails Coordinator Rachel Vodar said.

Tribal Chairman Chris McGeshick added: "This is how we build our future leaders; we teach them our traditions and values, and they in turn understand the importance of the resources. They now understand why we fight so hard to protect these resources."

As knowledge and skills come back to and are shared among Ojibwe communities, the demographic makeup of cultural camps is beginning to change. At the start, the focus of the camps was solely to revitalize traditional ceremonies, language, and harvesting activities that many Ojibwe communities had nearly lost. And while continuing to pass traditional knowledge and practices from generation to generation remains the core objective of the camps, a second objective has come into focus: encouraging cultural understanding among non-native people.

Red Cliff Wolf Camp hosted a group of kids from California this year. At Raspberry Campground, the group participated in archery, beading, canoeing, and language alongside Red Cliff youth. They also took to the shooting range for target practice with GLIFWC

and Red Cliff tribal wardens. One of the visitors, Martin Evaristo, was super excited about target practice. "This was my first time shooting!" he said.

In between target practice, Evaristo talked about his experience in Red Cliff. "This camp is great!" he remarked. "I failed miserably at archery, but it was cool to experience something other than my community. I liked how visitors got to eat first as a way to honor them."

At GLIFWC's Camp Onji-Akiing the sharing of culture happens between members of different bands of the Ojibwe nation, and between different tribal nations such as Menominee and Oneida. This is an important exchange, as many Ojibwe bands have their own unique language dialects, customs, and ways of practicing ceremonies. Intertribal connection provides youth the opportunity to express their cultural distinctiveness and grow their cultural confidence as leaders.

The outlawing of Native American ceremonies and religious practices, and the walleye wars of the 1980s are two examples of what can happen when lack of cultural understanding and respect exists between people of different heritage. It is important that cultural practices are being renewed and restored to Ojibwe people and communities through seasonal gabeshiwin, but it is also important that those gatherings are providing opportunity for others to understand Ojibwe worldview. Today, together, we face many threats that pose harm to Mother Earth, Aki, and one of those threats should not be each other.



Sixty youth from the Ceded Territory and beyond gathered together to share culture and friendship during GLIFWC and the USFS's Camp Onji-Akiing July 17-21.



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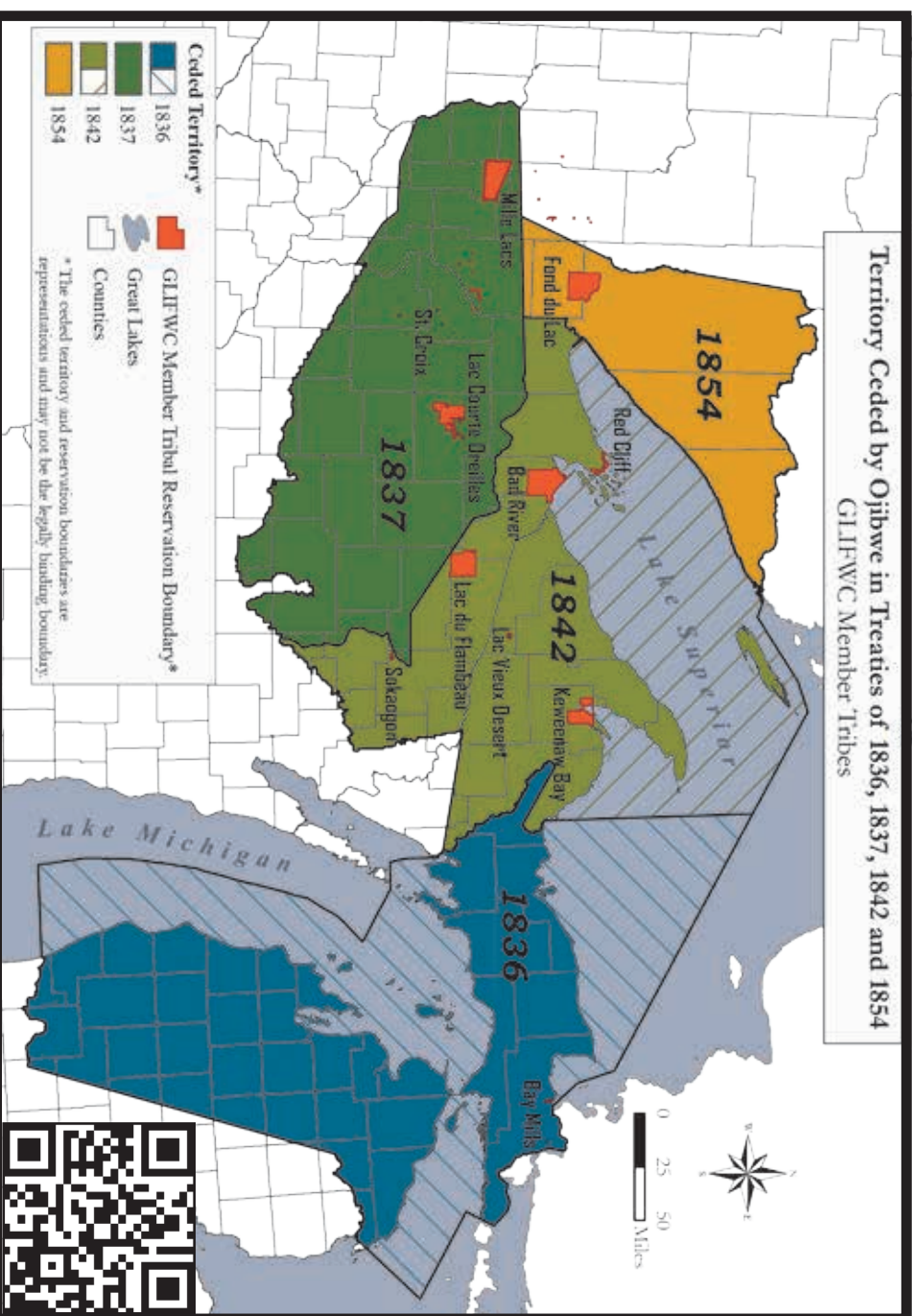
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Mazina'igan

A Chronicle of the Lake Superior Ojibwe



Dagwaagin 2017

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