

# Mazina'igan

## A Chronicle of the Lake Superior Ojibwe

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## Mille Lacs Lake problems: It's about the fish

By Sue Erickson, Staff Writer

*Editor's note: This coverage of the Mille Lacs Lake walleye fishery is an evolving story as we go to press on August 6, so other events may occur before Mazina'igan even reaches our readership. However, we hope that our coverage offers background and a tribal perspective on this ongoing issue.*

**Mille Lacs reservation, Minn.**—This is the story of a crisis in Mille Lacs Lake, Minnesota where the walleye population has been declining. This year both tribes and state sport fisherman fished under lowered quotas and are under obligation to stay within those quotas. Mid-July it became apparent that the state sport harvest might exceed their quota.

The Mille Lacs Band responded. After consulting with the Tribe's Drum Keepers, Mille Lacs Chief Executive Melanie Benjamin notified her tribal members on July 31 that Mille Lacs will forgo netting for the next year through the end of the 2016 spring season except for ceremonial purposes.

In a press statement, Benjamin emphasized the tribe is acting on behalf of the resource and intends to work cooperatively with lake managers to help heal the fishery and promote the area for the benefit of all.

"There are no quick solutions to fixing Mille Lacs Lake, but the Mille Lacs Band is committed to restoring the lake. Our people made our homes here hundreds of years ago, and we intend to preserve this lake for generations to come. We look forward to partnering with the Governor to support his efforts to address the immediate and long-term challenges of the region," Benjamin stated.

As of print time, no changes have been announced from the other seven tribes who share the 1837 Treaty right to fish Mille Lacs Lake walleyes.



**Mille Lacs chief Executive Melanie Benjamin. (photo submitted)**

While much media coverage focuses on the economic suffering of resort owners and fishing guides, the loss of fishing opportunity is also deeply felt in the Ojibwe communities.

In a letter to the Mille Lacs community, Benjamin shared the words of one of the elders:

"One elder talked about how a long time ago, the fish, animals and humans could all communicate with each other. The Manidoog put us all here to live a good life, and humans needed subsistence. The fish felt it was important to protect and provide for the humans, and so they told the humans that they were willing to sacrifice and give their lives so the humans could live. The only thing they asked in return, was that we only take what we need, that we always be respectful and put our tobacco down, and make sure the Manidoog always know that we respect the walleye and will make our own sacrifices to help the fish if we need to do so."

Ogaawag (walleye) have significant cultural importance to Anishinaabeg. Benjamin noted the Ojibwe people have inhabited this area and depended on the lake for sustenance for many generations, so it's clear to see that this sacrifice of fish will not be easy. For Anishinaabeg there is a special relationship between man and everything in creation. Ogaawag along with manoomin (wild rice), waawaashkeshi (deer), and other

major food staples are necessary for many of the ceremonies and rites of passage that occur in Ojibwe communities.

"Any time our people lose the opportunity to be who we are, which are hunters, gatherers, and fishers, we lose part of our identity," states Lac Courtes Oreilles Tribal Chairman Mic Isham. "So, it is critical for us to take care of the resources and everything in creation that sustains our people."

(See **Problems in Mille Lacs Lake**, page 4)

## An Ecosystem Service Valuation of the St. Louis River Watershed

By Esteban Chiriboga, GLIFWC GIS Specialist

Healthy habitats provide people with countless benefits. Good food like wild rice and walleye; medicines like sage, and clean water filtered by wetlands (the kidneys of the Earth). While these benefits are tangible and obvious to many of us, they are often overlooked in discussions of the overall economy. When a large industrial operation is proposed, like a mine or a concentrated animal feeding operation (CAFO), the analysis of economic impact centers on jobs that might be created or taxes that might be generated, but not on the ecosystem goods and services that may be lost if the proposal moves forward. For example, wetlands are constantly treating and purifying water at no cost to any of us. But, if a mine



**St. Louis River. (photo by Minnesota DNR)**

**The St. Louis River watershed provides an estimated \$5 billion to \$14 billion in ecosystem service benefits per year which provides each of the approximately 177 thousand people living in the watershed an annual benefit of \$28,248 to \$79,096.**

destroys the wetland to dig a mine pit, that free water treatment is lost and must be replaced by a water treatment plant that can cost millions of dollars a year to operate. This common scenario results in replacing a free service with a costly system that is not sustainable and may not be in our best interest.

The St. Louis River has been named one of the ten most endangered rivers in the United States ([www.americanrivers.org/endangered-rivers/2015-report/st-louis-river/](http://www.americanrivers.org/endangered-rivers/2015-report/st-louis-river/)). A major reason for this designation is the impact of taconite mining along the headwaters of the watershed. These mines have negatively affected water quality and quantity in the river. In addition, new operations are proposed in this same area that would mine copper and other metals. The new mines would undoubtedly increase the impacts on the river and further reduce the ecosystem services that the watershed provides to society.

The Fond du Lac Band has long recognized the danger that mining poses to the St. Louis River watershed. The river itself is an important tribal fishery and passes through the reservation. The Band recently released an Ecosystem Services Valuation report that was produced by Earth Economics, a consulting firm based in Tacoma, Washington. The goal of this project is to incorporate the economic value that an intact, healthy watershed provides to help inform decision making and prioritization of conservation and restoration activities. The full report and summary factsheets can be found at [www.glifwc.org/Events/Earth%20Economics%20St%20Louis%20River%20Project%20Report.pdf](http://www.glifwc.org/Events/Earth%20Economics%20St%20Louis%20River%20Project%20Report.pdf) and [www.fdlrez.com/newnr/Earth%20Economics%20St%20Louis%20River%20Project%20Factsheets.pdf](http://www.fdlrez.com/newnr/Earth%20Economics%20St%20Louis%20River%20Project%20Factsheets.pdf).

Earth Economics uses a benefits transfer method to assign a dollar value to the goods and services provided by nature. They rely on values that have been published in peer reviewed literature to develop the valuation. The report concludes (See **Nature's benefits in the St. Louis River watershed**, page 11)

# Mille Lacs Band sponsors public hearing on Sandpiper pipeline proposal

By *Philomena Kebec, GLIFWC Policy Analyst*  
*Emily Nelis & Kristin Thannum, GLIFWC Summer Interns*

**McGregor, Minn.**—Although the Enbridge Energy Sandpiper pipeline route has been planned for lands within and close to four Ojibwe reservations (White Earth, Leech Lake, Mille Lacs and Fond du Lac), the Minnesota Public Utilities Commission (PUC), the agency charged with reviewing Enbridge Energy's application, failed to hold any of its five public hearings on a reservation. In response, the Mille Lacs Band of Ojibwe held a public hearing on the Sandpiper pipeline on June 5, 2015, at the East Lake Community Center. The meeting was coordinated by Mille Lacs Chief Executive Melanie Benjamin and District II Representative David "Niib" Aubid. The purpose for the public hearing was to allow tribal members an opportunity to voice their concerns.

The proposed route is approximately 616 miles long, starting in Beaver Lodge, North Dakota and terminating in Superior, Wisconsin. Enbridge Energy intends to use Sandpiper to ship oil pumped from the Bakken oil fields to refineries in the east.

The public hearing included testimony from Mille Lacs Band elected officials, elders and community members from Gete-minisinaakwaang or East Lake and Sandy Lake communities, representatives from the Mille Lacs Band Natural Resources Department and others. Several themes arose from the testimony, including concerns about the effect that the pipeline would have on wild rice, water resources and other environmental effects and concerns about the process in which state and federal government agencies have undertaken to review Enbridge Energy's proposal.

## Elders and resource managers comment

Representative Aubid opened the public hearing with a pipe ceremony conducted in Ojibwemowin. Within this ceremony, he recounted the story of Nazhikewaawaasang, a spirit who came to the Ojibwe as a single point of light and gave the people a feather as a representation of the covenant between the people and the rest of creation. In giving the feather, Nazhikewaawaasang encouraged the people to be good and respectful to all beings, offer tobacco, and enjoy the good life that comes with living these traditional ways. The spirit promised to come back and check on things; Nazhikewaawaasang would be making sure that there are still people who respect that feather, truly believing in the stories. Afterwards, Aubid explained that he rarely talks about that teaching, but it was important to remember because, "there's only a little dot on a world map where wild rice grows; once you destroy it and it's gone, that's a reminder of this teaching."

Elder Dale Greene or Kaadaak, shared his perspective as someone who has lived many years in the community and has seen a great number of negative changes in the environment. "Think about the other beings on the earth, animal, bird beings, everything. They all have a spirit," he testified. He explained how the roads, highways and pipelines have dried up wetlands, which are important filters for the water needed to live. Russ Shabaiash explained that Gete-minisinaakwaang is opposed to having a pipeline run through its community. "We're from here," he emphasized. "We want to share with our children the beauty and gifts that this island has to share." Many of the elders testified about the abundant wild rice that grows in the area and the importance of harvesting and eating that manoomin.

Mille Lacs Band Natural Resources Department staff reemphasized the points made by the elders. Creating a new corridor for this pipeline could have disastrous effects on the waterways. Chad Weiss, aquatic biologist, explained that manoomin is extremely sensitive to changes in water levels, flow and pollution. Even without a spill, the development of a new corridor on lands close to manoomin rivers and lakes could change the delicate balance. Forester Jake Horbacz explained that the project would require clearcutting on a massive scale, with the continual use of pesticides to control grow-back. "These pesticides," he explained, "could leach into water resources."



*District II Representative David "Niib" Aubid provides testimony on the potential impact of the Sandpiper pipeline on the natural resources in his home area, which includes Sandy Lake. (photo by Philomena Kebec)*

## Lack of government-to-government consultation

Despite the potentially significant effect the project could have on Gete-minisinaakwaang and other tribal communities, the PUC has not required an Environmental Impact Statement (EIS) to study impacts from the pipeline on the environment and the people living nearby. Many of the speakers testified about the need for a comprehensive EIS. The PUC has also refused to conduct any government-to-government consultations with affected tribal communities.

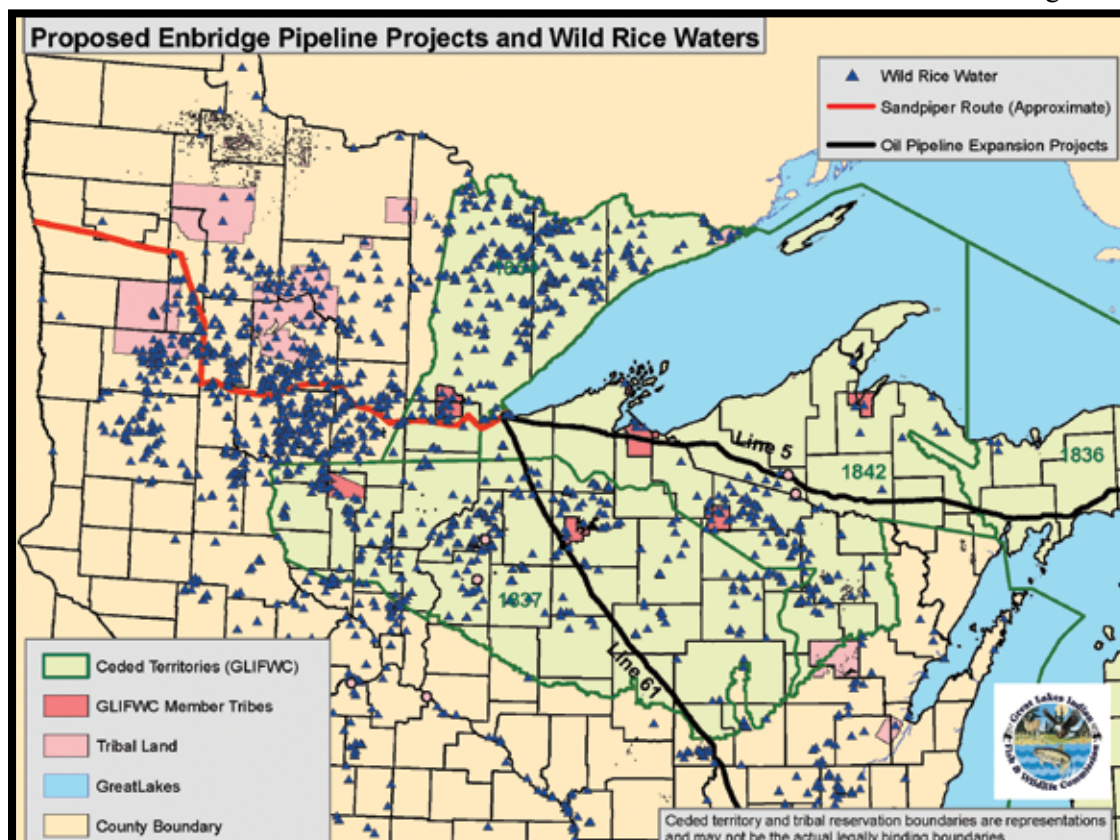
The Mille Lacs Band requested government-to-government consultation on the pipeline in August, 2014. According to Carolyn Beaulieu, Secretary Treasurer and Speaker of the Mille Lacs Band Assembly, the PUC responded by informing the band that it could participate in the general public comment process that the PUC organized to collect comments from landowners and private citizens. After a formal letter request for government-to-government consultation, in official correspondence to the Band, the PUC reiterated its position that it is under no obligation to engage in government-to-government consultation with Indian tribes, despite the fact that Governor Dayton required state agencies to consult with Indian tribes through Executive Order 13-10. "Government-to-government consultation is not achieved through inclusion in the public comment process," Beaulieu emphasized. She attributed the PUC's failure to follow through on government-to-government consultation on a "hyper-technical reading of Executive Order 13-10." The Mille Lacs Band would like to see the pipeline approval process halted until government-to-government consultation occurs.

Enbridge Energy, which has an official policy to "engage in forthright and sincere consultation with Aboriginal and Native American Peoples about Enbridge's projects and operations which have an impact on their legal and constitutionally protected rights," had failed to engage with any of the potentially affected tribes until the Mille Lacs Band and White Earth Band announced plans to hold their own public hearings. According to Beaulieu, Enbridge Energy organized a last-minute meeting with tribal leaders on May 28, 2015. Beaulieu characterized the meeting as a "publicity stunt" made for appearances only.

Although the Mille Lacs, White Earth and Fond du Lac Bands are likely to experience the most direct effects related to the Sandpiper project, the pipeline has the potential to affect many other tribal communities. Materials shipped through Sandpiper will end up in Superior, Wisconsin, where it will be shipped further east, through pipelines by other Ojibwe communities or across Lake Superior. Water resources, all along the route east, are potentially at risk.

## Impacts on manoomin, sacred sites

Manoomin, wild rice, is sacred to Ojibwe people as it plays a significant part in the migration story of how the Anishinaabeg came to the Great Lakes area. According to St. Croix Tribal Historic Preservation Officer Wanda McFaggen, manoomin is a gift from the Creator, and Ojibwe people depend on it as an important resource for sustenance. "I have never ever attended a feast or ceremonial gathering that didn't have the gift of rice there," McFaggen recalls. "Our traditional ways and spirituality depend on that [rice]." Like many other indigenous people, McFaggen worries that the harmful effects of pipelines and mines will devastate the land and resources, thus preventing future generations of Ojibwe from learning about and enjoying traditional foods and other natural resources in the (see *Concerns voiced*, page 10)



## On the cover

*Marcus Bear, GLIFWC intern, holds a lake sturgeon captured during annual sturgeon assessments at the mouth of the Bad River. GLIFWC works cooperatively with the US Fish and Wildlife Service and the Bad River Band of Chippewa. (photo by Charlie Otto Rasmussen)*



# Park Service proposes gathering regs based on ancestral connections

## Tribes question amount of “red tape” involved

By Philomena Kebec, GLIFWC Policy Analyst

On April 20, 2015, the National Park Service (Service) released proposed regulations (80 FR 21674) to allow federally-recognized Indian tribes with traditional associations or ancestral connections to Service properties, access to gather plants and plant parts for non-commercial purposes.

The proposed regulation would be an addition to 36 CFR 2.1, which generally prohibits the taking of plants, wildlife or fish from Service properties. (The current provision provides some exceptions to the general rule, including an acknowledgment that the Service cannot impede reserved treaty rights and laws enacted by Congress allowing hunting, fishing and gathering of plants on certain properties.)

Public comment on the proposed regulations was open until July 20, 2015. GLIFWC submitted comments on behalf of its member tribes from an off-reservation perspective.

### Background

Ancestral connections are different than treaty rights because, with ancestral connections, there is usually no formal acknowledgment on the existence of a tribe's ownership right of a particular area by the United States. The proposed regulations are potentially significant due to the fact that many National Parks are located on lands which were formerly owned and controlled by federally-recognized Indian tribes. Tribes were often forcibly removed from areas considered to be aesthetically significant to make way for national parks.

Early environmentalists often considered any human interaction with natural landscapes to be harmful to the land and wildlife. Accordingly, national parks were developed to “preserve” natural landscapes and prevent any manipulation of the environment by non-experts.

This way of thinking is very different than traditional indigenous philosophy, which includes an understanding of living and dynamic relationships among indigenous people and other aspects of creation. For instance, many indigenous peoples view the respectful collection of medicinal plants not as a harm done to a resource, but an activity that can benefit a resource. As medicinal plants are collected and used for healing, it is often said that they will appreciate being used and increase in abundance.

### The proposed regulation

Unfortunately, the proposed regulation does not seem to incorporate a traditional perspective on gathering. In order to take advantage of the regulation, tribes would have to enter into formal agreements with the Service. The process of entering into an agreement would start with a request, describing the tribe's connection to the property and what kind of gathering the tribe is interested in conducting. Upon receiving a request, the Service would be required to conduct an in-depth analysis. Instead of allowing the Indian tribes to define their traditional connection and how gathering certain plants located within Service properties is consistent with their traditions, the process requires the Service to make that judgment.

The Service is also required to conduct an evaluation under the National Environmental Policy Act (commonly referred to as NEPA). The Service may only enter into an agreement if it finds that the proposed use “will not result in a significant and adverse impact” and that the proposed use is otherwise consistent with other applicable laws and regulations.

Under the proposed regulations, agreements made between federally-recognized Indian tribes and the Service set forth allowable activities (who can gather, what can they gather, where, when, and how they can gather) and a description of how the tribe and the Service will monitor compliance with the terms of the agreement. However, the proposed regulations allow the Service a great deal of flexibility in terminating agreements, including termination for “avoidance of conflict among visitor use activities.”

### GLIFWC member tribes' perspective

Representatives of the GLIFWC member tribes appreciated the spirit of the proposed regulations to open up ancestral territories for traditional activities for tribes who may have lost that connection, however voiced concerns about many of its features. Tribes were very concerned that the proposed regulations granted the Service too much latitude in deciding what types of activities are traditional for a particular tribe. In most cases, tribal historic preservation officers or the tribes themselves are consulted regarding ancestral uses of land and traditional activities. Most federal and state agencies recognize that tribes, themselves, are the experts on their culture.

Tribes also expressed concern that the Service would apply some of the procedures outlined in the proposed regulations to situations involving the implementation of treaty rights. GLIFWC member tribes (except the Bay Mills Indian Community) entered into an agreement with the Service to allow their members to gather plants within the Apostle Islands National Lakeshore in 2013. However, the ceded territories contain other Service properties of which there is no formal agreement.

The requirement to conduct a NEPA evaluation could prove particularly onerous for tribes. One of the problems with requiring a NEPA evaluation is that the process becomes public, allowing for the participation of third party individuals and organizations. NEPA processes also provide third parties with opportunities to sue the agency. This added complication could make the process for tribes to obtain gathering rights overly complex and expensive. From a tribal perspective, where traditional gathering activities do not necessarily lead to harm of a resource, the expense related to a NEPA evaluation constitutes wasted resources.

### Next steps

We expect the Service to review comments it received from the initial public comment period and develop a finalized version of the regulations in the coming months, with another round of public comments. However, the Service has already been sued over the proposed rule by the Public Employees for Environmental Responsibility claiming that the proposed plant harvest threatens National Park resources.

# GLIFWC's climate change program studies impacts on treaty resources

By Kim Stone  
GLIFWC Policy Analyst 4

**Odanah, Wis.**—Our earth's climate is changing, impacting people and ecosystems around the world. What does this mean for Anishinaabeg who depend on the bounty of the land to sustain them?

To evaluate how climate change will impact treaty resources in the ceded territories, and to understand how those impacts threaten Anishinaabe lifeways, GLIFWC has begun a three-year Climate Change Program. Several parts of the program will rely on gikendaasowin, traditional knowledge, to guide efforts to determine how climate change is impacting conditions in ceded territory ecosystems.

Several individual projects will occur over the course of three years.

With guidance and direction received from tribal knowledge bearers, GLIFWC will conduct a phenology study of treaty harvested plant species in two ceded territory study areas. Phenological changes—such as the timing of budding of plants, emergence of insects, migration of birds, thawing of lake ice—are useful indicators of current and future climate impacts.

The phenology study will collect information about the timing of important phenological changes in relation to culturally important resources at two locations, and their possible relation to climate change.

Another project will look at ceded territory lakes with declining walleye populations to assess whether climate change might be contributing to low fish numbers. The goal is to develop a long-term monitoring and study plan for climate related impacts and identify ceded territory waters where climate change could be jeopardizing native walleye populations.

The Climate Change Program will also be conducting climate change vulnerability assessments within the ceded territories. This process evaluates which species, habitats, and ecosystems are most vulnerable to climate change,

which depends on factors such as exposure, sensitivity, and the ability to adapt to predicted changes. Vulnerability assessments have become an important tool in understanding climate change effects and how to adapt to them.

A pilot project will identify traditionally harvested plant species with the intention of establishing a seed bank. GLIFWC will also be compiling and analyzing existing data and literature to develop climate change risk assessments on designated treaty species.

Another project within the Climate Change Program is a baseline dietary study of several Lake Superior fish species that will bring greater understanding of the lake's food web and provide data needed for ecosystem models.

A second project related to Lake Superior fish uses archival tags to collect information on the depth and temperatures used by lake trout, replicating a 2001-2003 study conducted under a US Fish & Wildlife Service Great Lakes Fish and Wildlife Restoration Act grant. Current information collected

under the Climate Change Program will then be compared to data collected in the earlier study. (See Glimpsing the secret lives of lake trout, page 9)

As the program continues, GLIFWC will use research results to help guide management strategies and adaptation plans for the ceded territories and tribal resources.

Several new GLIFWC staff members will be working in the Climate Change Program. Travis Bartnick and Hannah Panci, climate change scientists, will carry out much of the primary research under the program.

Ron Parisien Jr., fishery technician, is working on the Lake Superior fish studies with longtime GLIFWC staffer Bill Mattes. Kim Stone is the program coordinator. Existing GLIFWC personnel will play various roles in assisting with Climate Change Program research and evaluation.

Look for Climate Change Program features in future issues of *Mazina'igan*.





# Cause for concern: Ceded territory walleye decline

By Mark Luehring, GLIFWC Fisheries Biologist

**Odanah, Wis.**—Trends in some ceded territory walleye populations are becoming a growing concern to biologists, spearers, and anglers. GLIFWC and state agency monitoring programs have identified declines in adult walleye abundance on some of the more popular walleye lakes.

In Minnesota, on Mille Lacs Lake, population estimates of spawning walleye have declined from 736,000 in 2008 to 249,000 in 2014. Similarly, declines have been observed on Lac Vieux Desert (Vilas County), Lake Chetac (Sawyer Co.), Sissabagama Lake (Sawyer Co.), Nelson Lake (Sawyer Co.), Teal Lake (Sawyer Co.), the expansive Chippewa Flowage (Sawyer Co.), the chain of lakes in Minocqua (Oneida Co.), the Eau Claire Chain of Lakes (Bayfield Co.), the Pike Lake Chain (Bayfield Co.), Franklin Lake (Forest Co.), and others.

A critical component of the walleye life cycle is the juvenile life-stage, and this stage is where many of these populations are struggling. In some instances, juvenile walleye are either not hatching or not surviving to their first fall. In others, they are not surviving from the first fall to adulthood.

Even though poor recruitment of young walleye is the main factor influencing many of these declines, the causes of these year-class failures are often unclear. Juvenile walleye production and survival are influenced by the number of adults producing eggs and milt, habitat, food availability, competition, and predation.

One common theory for walleye population declines is that overharvest of adult walleyes has reduced their abundance and caused recruitment failure. However, in most of the ceded territory cases of decline, recruitment failure began while the adult population was large enough to produce good year-classes. Additionally, estimates of adult harvest have been typically low enough to be considered sustainable.

Habitat changes can have major impacts on juvenile walleye production. Shoreline development is a concern on many waters since walleye spawning and hatching occurs in near-shore rock or gravel areas. While it is unlikely for a single small development project to cause recruitment failure, cumulative impacts of shoreline habitat changes could limit reproduction or hatching success. Secondary impacts like sedimentation threaten the rocky and gravel substrates that are often necessary for successful spawning.

Fish community changes can also impact walleye abundance. In many instances, where walleye have declined, other predatory fish species have increased in abundance. These fish species can compete with walleye for available food, or even prey upon small walleye. Largemouth bass abundance has increased in many areas in northwest Wisconsin. In other lakes, smallmouth bass or northern pike populations have increased. The impacts of these predators on walleye populations are largely unknown and can vary widely among lakes.

In general, walleye, yellow perch, northern pike and/or muskellunge comprise well-balanced coolwater fish communities. In warmer water, centrarchid communities that consist of bluegill, black crappie, largemouth bass, and smallmouth bass appear to be becoming more prevalent.

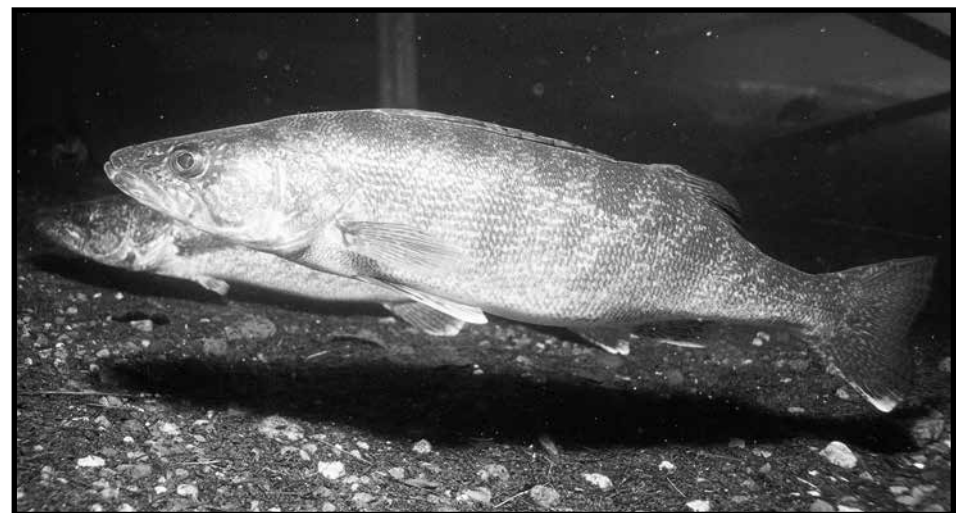
Invasive species are adding additional stress to fish communities in many lakes. Zebra mussels filter out nutrients, clear the water, and may reduce plankton densities. Zooplankton provide a critical food source for hatchling walleye. Another problematic invasive that has begun to appear in many lakes is the spiny water flea. These large zooplankton can outcompete the native species that many juvenile and prey fish prefer to eat, affecting the food chain.

Fortunately, to date zebra mussels and spiny water fleas are present in only a few ceded territory walleye waters. Eurasian watermilfoil and other invasive plants can affect the lake habitat by forming thick weedy areas and tying up nutrients and energy that might otherwise be available in the food chain.

In general, bluegills, largemouth bass, and crappies inhabit areas with weed growth, while walleye and yellow perch prefer sandy and rocky areas. In a few lakes, invasive rainbow smelt are known to wipe out entire year-classes of walleye fry by aggressively feeding on them shortly after they hatch.

Since causes of walleye declines are usually complex and not consistent across the landscape, reversing negative trends will require an individual lake approach. Biologists have limited tools at their disposal to restore walleye populations. In some instances reducing harvest to preserve current walleye stocks is critical. Steps have been taken to reduce tribal and state harvest on Mille Lacs Lake in Minnesota and the Minocqua Chain of lakes.

Habitat protection and enhancement can play a big role in lakes where the strain of lakeshore development has significantly altered critical near-shore areas. Cooperative efforts to prevent the transportation of invasive species will continue to be important since removal efforts after invasives are established are rarely fully successful. Finally, in lakes where walleye have had many consecutive years of failed recruitment, walleye stocking strategies may be necessary to re-establish healthy adult populations capable of natural reproduction.



Walleye. (photo by Eric Engbretson, U.S. Fish and Wildlife Service)

## Problems in Mille Lacs Lake continued

(Continued from page 1)

Fond du Lac Chairwoman Karen Diver also points out that Ojibwe people are place-based, deeply rooted in their communities and culture. “If the resources are depleted, there are few other options for our people to continue our lifeways, whether that be harvesting or continuing our cultural and spiritual practices.”

### Tribal harvest

For 2015 the tribes’ walleye allocation in Mille Lacs was only 11,400 pounds. The six Wisconsin bands transferred their respective shares of the walleye quota to the Mille Lacs Band last spring.

To date, Mille Lacs and the Fond du Lac Bands harvested about 10,000 pounds of walleye, taken by both net and spear. There is also a pool of walleye reserved specifically for the incidental harvest of walleye caught when fishing.

### State closure

On August 2 Minnesota Department of Natural Resources (MDNR) Commissioner Tom Landwehr announced the closure of the state walleye season in Mille Lacs Lake. Effective as of August 3 at 10:00 p.m., no walleye fishing will be allowed until the December 1 ice fishing opener. The July 31 creel survey results indicated the state had exceeded their quota and prompted the closure.

Following Governor Dayton’s recommendations, a Legislative Working Group on Mille Lacs Lake was formed with six senators, six representatives, several state commissioners along with Mille Lacs Chief Executive Melanie Benjamin and Karen McQuoid, Mille Lacs Area Tourism Council.

During an August 4 meeting of the Workgroup, State Rep. Tom Hackbarth, R-Cedar, and Sen. David Tomassoni, DFL-Chisholm, Workgroup co-chairs, recommended re-opening the sport fishery to ease the financial stress on the area’s businesses. Commissioner Landwehr responded that this would not be honoring the agreement between the tribes and the state, who jointly manage the fishery, and would likely be detrimental to the fishery. Governor Dayton also opposed re-opening the fishery in an August 6 statement.

### Background

It was mid-July that state fisheries managers found themselves faced with an unexpected situation—the walleye bite in Mille Lacs Lake in early July had been exceptional along with increased fishing pressure. Additionally, warmer water temperatures increased mortality of angler released fish. These factors resulted in an unanticipated increase in total kill and pushed the state dangerously close to its 2015 quota of 28,600 pounds of walleye.

As of July 16, the state walleye harvest had already reached 25,777 pounds, and stakeholders were put on notice—should the July 31 creel report indicate the state quota had been reached, the state walleye fishery on the lake would be closed.

In response to the news, Governor Dayton called a July 20 meeting with officials from the MDNR, the Mille Lacs Band, the Fond du Lac Band and GLIFWC. Attending the meeting on behalf of GLIFWC, Executive Administrator James Zorn, said he appreciated the quick notice regarding the potential overage and the willingness to abide by the law and close the fishery if the state’s quota is reached. “It’s a predetermined plan that puts the natural resources first,” Zorn commented.

He also believes we must look at all the stressors that impact our resources, whether it be wild rice, moose or walleye. All these resources are impacted by the changing climates, invasive species and a number of other contributing factors. “We need to look at the bigger picture,” he says.

Fishery managers speculated on the conditions that caused the “hot bite” in the first two weeks of July that pushed the pounds killed quickly upward. According to the MDNR records, this is only the second time in 30 years that walleye catch rates in July exceeded catch rates in the second half of June. In July the water temperature in Mille Lacs was the third highest on record. At that point, MDNR managers estimated that hooking mortality was about 25 percent of released fish. Catch and release mortality numbers are added to the state quota. The tribal net and spear fishery in Mille Lacs are strictly monitored with harvest numbers available daily, and individual tribes close their fishery as soon as their quota is met.

Both state and tribal fishery managers have been working diligently to understand the well-documented decline in the Mille Lacs walleye population over the last several years. While the hatches are healthy, young walleye are not surviving to become adult walleye. A variety of factors may be contributing to habitat changes that negatively impact young walleye, such as clearer water and a large number of predators.

Fall assessments will provide fishery managers the data needed to take another look at the big lake’s walleye population. A safe harvest figure is determined jointly by state and tribal fishery personnel in January.

On a brighter note, the large 2013 walleye year class appears strong with 10 to 12-inch two-year olds being recorded. It is the strongest year class since 2008.

# Respect the tree:

## Advice on successful harvest of wiigwaas

By Alex Wrobel, GLIFWC Forest Ecologist

**“Trees are considered living relatives of the Anishinaabeg, and the bark is considered a gift. Anishinaabeg do the appropriate ceremonies we have been taught when harvesting any of the gifts afforded our nation.”**

—Ozaawagosh (Leon Valliere) Lac du Flambeau

One doesn't have to dig very deep into the culture to know that birch bark (wiigwaas) is a cornerstone to the Ojibwe identity.

**“Wiigwaas will protect anything that it hauls.”**

—Joe Rose, Bad River elder

Whether it is a basket for your berries, a winnow basket for your rice or a canoe hauling your loved ones, tribal members have been relying on wiigwaas for generations. The rest of the story of the birch tree (wiigwaasaatig) is one for when there's snow on the ground, however, it is during the peak of the summer that tribal members are out harvesting this invaluable resource.

**“Look for when the wild roses are in blossom; this is when wiigwaas is ready to pop.”**

—Joe Rose, Bad River elder

Typically late June and early July provide the hot days that are ideal for harvesting wiigwaas. However, similar to the two previous seasons, harvesters are reporting the wiigwaas seems to be two to three weeks late.

**“Wiigwaas should not be gathered unless a need exists.”**

—Joe Rose, Bad River elder

Although the season is past, some tips for harvesting in 2016 follow.

Knowing the intended use will help you determine the type and amount of wiigwaas to be gathered. For example, a jiiman (canoe) will require larger and thicker pieces of wiigwaas, while a makak (basket) may require thinner and smoother wiigwaas.

Respect is fundamental in all Ojibwe harvesting practices. When it comes to wiigwaas, experienced harvesters will always stress the importance of having respect for the tree; harvesting the tree in a respectful manner; only harvesting what you need.

In order to harvest wiigwaas off-reservation, you will first need to obtain a “Miscellaneous Forest Products” permit from a tribal registration station or from GLIFWC. This permit will allow you to harvest from off-reservation areas that are open to tribal gathering. Within the ceded territories, areas open to tribal gathering include: the Chequamegon-Nicolet National Forest, the Ottawa National Forest, the



Checking the thickness of wiigwaas. (photo by Charlie Otto Rasmussen)

Hiawatha National Forest and portions of the Huron-Manistee National Forest. Select Wisconsin properties within the ceded territories are open for treaty-harvesting as well. For a map of the ceded territory boundary, and for Wisconsin state lands open to tribal gathering, please visit: [maps.glifwc.org](http://maps.glifwc.org) and select “Treaty Resources.”

While searching for the ideal tree, it can be helpful to know the forest types where wiigwaasaatig is commonplace. Within the ceded territories these forest types are: Northern upland hardwoods, lowland softwoods, aspen and paper birch. A report published by the USDA Forest Service in cooperation with GLIFWC and the University of Minnesota, titled *Paper Birch (Wiigwaas) of the Lake States, 1980-2010* found that these four forest types contain 90 percent of the paper birch trees  $\geq 5$  inches diameter at breast height (dbh).

Once a tree is selected, harvesters will often test the bark and make a small cut in order to check the thickness. The outer bark (the part to be harvested) is usually no more than  $\frac{1}{8}$  inch thick. At this point you should also be able to tell if the bark is ready to come off. If the thickness is appropriate for its intended purpose and the bark is ready, the harvester will often remove a test strip. This test strip can be bent in all directions to assess flexibility and check for potential weaknesses.

Next, harvesters will offer a gift of tobacco and words before continuing with the harvest, thanking this living relative for its gifts. Next, using a sharp hook-nosed blade, the harvester will carefully make a longitudinal incision into the living part of the bark (the cork cambium layer). Again, it is important to know how deep to make the incision as cutting too deeply can result in death of the tree. During the right time of year, the bark should nearly explode off the tree and is easily removed by hand creating a large “sheet.”

The sheet of bark is immediately rolled into a bundle the opposite way from how it was wrapped on the tree and tied with twine. According to another tribal elder: these bundles “should be kept in the shade and covered with ferns. Maybe even dig a trench too for them to keep them moist.” Regardless of the intended use of the wiigwaas, it has been reiterated time and time again that harvested bark needs to be kept moist. In some cases, this goes beyond the storage stage. For example, tribes would often sink and fill their canoes with rocks in order to keep the bark moist through the long winter months.

Inexperienced or beginner harvesters should take the time to ask elders or more experienced harvesters for guidance. Proper guidance and technique can protect trees from irreparable damage and death, preserving them for future harvesters. Those who are more experienced can also offer advice that may not be intuitive to consider.

For example: Finding a large, flawless tree that is suitable for a canoe can be rare these days. It would be considered a waste for this tree to be harvested for smaller objects where a smaller tree would have been suitable.

### The State of Wiigwaas: Paper Birch report

If you're an avid wiigwaas (birch bark) harvester or simply have a concern for the environment, make sure to check out the latest report on paper birch published by the USDA. The report is unique as it may be one of the first reports to characterize the paper birch species by bark characteristics. Also, the report is specific to the ceded territory (Treaties of 1836 1837, 1842, and 1854), rather than to state or county lines. The report can be found online at: [www.fs.fed.us/nrs/pubs/gtr/gtr\\_nrs149.pdf](http://www.fs.fed.us/nrs/pubs/gtr/gtr_nrs149.pdf)

The late GLIFWC Forest Ecologist, Karen Danielson, was influential in shaping the directions of this report at its genesis. Both GLIFWC Wildlife Section Leader Dr. Jonathan Gilbert and GLIFWC Forest Ecologist Alexandra Wrobel co-authored the report with staff from the U.S. Forest Service and the University of Minnesota.



Peeling wiigwaas.

### Treaty night hunt update

It is still “wait and see” in regard to the opportunity for treaty hunters to hunt deer at night this fall. The case was remanded back to US District Court in April 2015 after the US Supreme Court refused Wisconsin's petition for review of a favorable decision from the Seventh Circuit Court of Appeals. At this time, the plaintiff tribes and the state are submitting briefs to the court, and then will wait for a decision from Judge Barbara Crabb, U.S. District Court, Western District of Wisconsin.

The plaintiff tribes are seeking a change from the original deer night hunting decision in the *Lac Courte Oreilles v. Wisconsin* case in 1990, which prohibits night hunting of deer. Citing changed circumstances as a reason to reconsider the original judgment, tribes have noted a number of circumstances where the state has allowed night hunting to take place since the 1990 decision.

Should Judge Crabb allow a treaty night hunt, it will be strictly regulated, and all treaty hunters will be required to adhere to the regulations.

Once the District Court renders a decision, GLIFWC will get the word out via Facebook, its website, [www.glifwc.org](http://www.glifwc.org), and materials will be available at tribal registration stations.



# Confronting the threat of forest invasives

## GLIFWC pursues solutions

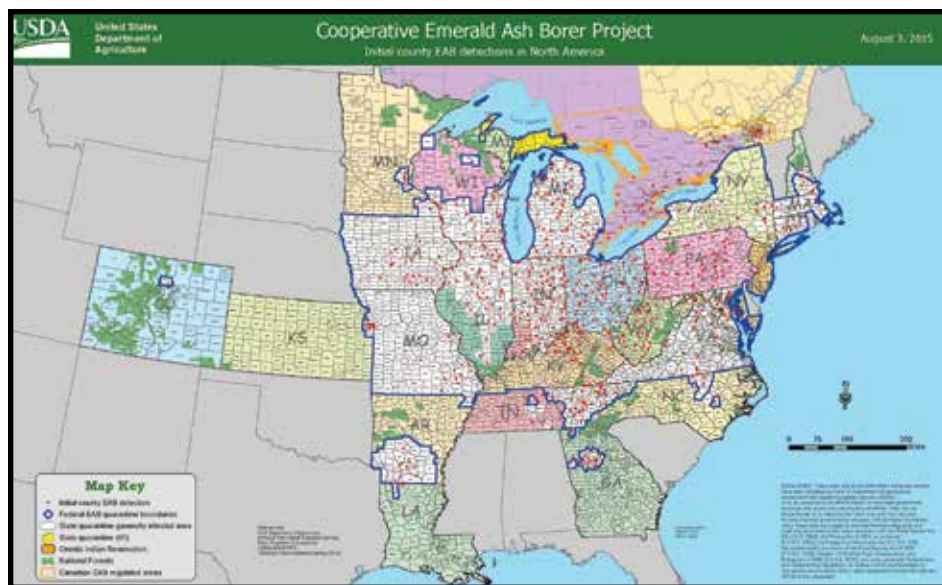
By Steve Garske, ANA Forest Pest Env. Grant Coordinator

Our forests are in big trouble. A warming climate, intensified drought and more frequent wind events put them under stress, making northern trees like balsam fir, spruce and birch more susceptible to disease. Historically high deer populations mow down tree seedlings and native herbs to the point of local extinction. Invasive European (and increasingly Asian) earthworms eat the leaf and duff layer that native seedlings need to establish and grow, paving the way for invasive plants such as common buckthorn, Japanese barberry and garlic mustard. Add tree-killing insects and diseases from distant lands to the mix, and our forests face rapid transformation within our children's lifetimes.

Since GLIFWC's forest invasives project started in winter 2012-2013, the emerald ash borer (EAB) has been found in Superior (Douglas County) and Rhineland (Oneida County) Wisconsin. It has also begun to spread from the Twin Cities of Minnesota to adjacent counties. The good news is that the EAB's spread in the region seems to have slowed, as people get the word that moving untreated logs and firewood long distances can easily start a new infestation.



Bad River basketmaker April Stone-Dahl pounds a black ash log to remove strips for traditional woven baskets. (photo by Charlie Otto Rasmussen)



Counties quarantined for EAB as of August 2015. The red dots indicate the location of the first EAB discovery in that county. Certain counties adjacent to infested counties have also been quarantined, because the EAB is very likely to be present there.

The purpose of GLIFWC's 3-year forest invasives project is to find ways to prevent or slow the spread of introduced insects and diseases, and reduce their impact on tribal communities and aki (earth). The focus this third year is to gather input from tribal elders, harvesters and gatherers on the importance of trees potentially affected by forest invasives, and on the best ways to address the threat of these beings to ceded territory forests.

In March of this year GLIFWC sponsored a meeting of Ojibwe tribal elders and gatherers, tribal natural resource staff, BIA staff, and scientists and regulators from USDA-APHIS and state agencies. The meeting gave participants a chance to hear a wide variety of perspectives, learn about the threats posed by these translocated beings, and to express their ideas and concerns.

As a basis for making proposed changes to the tribal model code, GLIFWC has drafted a forest invasives regulatory report compiling, organizing and analyzing existing federal, state, local, and tribal regulations currently in effect in the ceded territories. We are also completing a comprehensive response plan outlining what happens when a new population of EAB or another major forest invasive is discovered, and the strategies tribes might adopt in order to prevent the introduc-

tion or slow the spread of these pests in the ceded territories. We have also drafted best management practices to help tribal gatherers prevent the introduction and spread of these invasives.

Model code changes related to tribal gathering have recently been proposed to the Voigt Intertribal Task Force for their feedback and consideration. We will continue to meet with tribal representatives for input on these documents and the future direction of this work.

Even though the EAB has now spread to 25 states and two provinces, many people are still working hard to slow its spread. The most effective way to keep from spreading the EAB and other wood-borne invasives is to stop moving firewood. Slowing or preventing the spread of these organisms buys time for people to find answers that can help save our forests.

### MOVING FIREWOOD TRANSPORTS TREE-KILLING INSECTS AND DISEASES

Keep your backyard, campgrounds and favorite places safe from these insects and diseases —

**BUY FIREWOOD NEAR WHERE YOU BURN IT.**

The best way to prevent the EAB and other forest invasives from spreading is to not move firewood! Partly because of media campaigns like this, most campers have quit moving firewood. Just think if they all did!



Forest invaders threaten a centuries-old way of life. (photo by Steve Garske)

## A bit of good news for ash

There is a bit of good news in what has seemed like an endless sea of bad when it comes to the future of North America's ash. In southeastern Lower Michigan and northern Ohio, where the EAB has been established the longest (first discovered in 2002 in Detroit), small numbers of "lingering ash" have been discovered. These trees (all green and white ash so far) still have healthy crowns, even though the ash trees around them are all dead.

These "lingering ash" tend to be in small colonies of related trees that may be either genetically resistant to EAB or not as attractive to the beetles for some reason. Some of these trees are being monitored to see if they will survive indefinitely, and cuttings for grafting and seeds are being propagated. Unfortunately no lingering black ash have yet been found.

For more about "lingering ash" see the slide show by Kathleen Knight and others, at [http://ucanr.edu/sites/tree\\_resistance\\_2011conference/files/121544.pdf](http://ucanr.edu/sites/tree_resistance_2011conference/files/121544.pdf).



# Livestock are safer from predators with deterrence, no-kill methods

## Michigan wolves to South African leopards

By Charlie Otto Rasmussen, Staff writer

**Wisconsin Dells, Wis.**—For many natural resource managers in North America and beyond, killing predators has always made sense. When domestic animals and prized game species become food for the pack instead of an end use for humans, killing off the competition is a necessary response. Or was.

Scientists and researchers attending the Wolf and Wildlife Conservation & Coexistence Initiative July 15-16 showed up armed to the teeth with studies that reveal what the new face of predator management success looks like. Absent here are poison, guns and steel traps. In a sharp turn away from conventional thinking, the research invariably tells a much different story: investing time, money and resources into killing off large carnivores is a waste.

“Lethal action and inaction is just about equal,” said Ari Cornman, Little River Band of Ottawa Indians wildlife biologist. “There’s no statistical difference, which means killing wolves and doing nothing [is] about the same.”

After learning the Michigan Department of Natural Resources failed to study the outcomes between killing wolves in areas that experience depredations on livestock or taking an alternative approach—namely deterrence—Cornman and others launched a review of state records. Specifically they looked at recurrence. After a beef cow is killed, for example, and wildlife officials trap and dispose of a suspect wolf, what happens next? Problem solved, or are local cattle still vulnerable?

“The more wolves you kill, the more your risk goes up,” Cornman said. “Killing wolves creates more problems for your neighbors [with livestock]”

Cornman said it’s not clear how the dynamic works, but the state’s own data shows that removing individual wolves effects pack behavior to the detriment of livestock owners. Deterrence, Cornman said, statistically produces the best results. Measures to ward off wolves include use of guard animals, exclusion fencing, and fright tactics, best protect domestic livestock from potential wolf predation.

## International humane trapping standards: Focus of Furbearer Conservation Workgroup

By Jonathan Gilbert, PhD, GLIFWC Wildlife Biologist

Last year, in 2014, I described for you a trip that I took to Yakutsk, Siberia with the Furbearer Conservation Workgroup of the Association of Fish and Wildlife Agencies (AFWA). While the focus of that article was the trip itself, it did mention the Workgroup and how it came into being. As I continue to participate in the Workgroup, I thought it important to continue to educate people about the issue of humane trapping. This is an introductory article, and I will continue to add to the discussion in future articles.

The Furbearer Conservation Workgroup came about as a result of an international agreement among the European Union (EU), Russia and Canada. The US joined as a result of an ‘agreed minute’ between the EU and the US. The purpose of the agreement was to address a concern raised by the EU over the issue of ‘inhumane’ trapping techniques. The EU was poised to ban the importation of furs from countries which allowed these inhumane techniques. This ban threatened a significant portion of the international trade of furs and thus caught the attention of the leaders in countries participating in this trade, especially Canada, Russia and the United States. The agreement (Agreement on International Humane Trapping Standards) was designed so that the participant countries would work together to develop and implement humane trapping standards. The Furbearer Conservation Workgroup was designated to represent the US in developing these standards.

Since the signing of this agreement in 2007, Canada and the US have developed techniques to test and evaluate the performance of various traps on animal welfare, efficiency, selectivity and safety. In Canada and Russia, traps which pass the evaluation are then permitted traps. Others are not permitted. In the US it is up to the individual states and tribes to determine appropriate regulations, including the use of particular traps. In this case the Workgroup has developed what are called “Best Management Practices,” prescribing which traps meet the standards and should be used (but they do not require their use). Many state agencies (including MI, MN and WI DNRs) are trying to implement the use of these traps through hunter education programs stressing the importance of using traps which have passed the standard.

If want to learn more about humane trapping standards and which traps have passed species assessments, please visit [http://fishwildlife.org/?section=best\\_management\\_practices](http://fishwildlife.org/?section=best_management_practices) for more information.

If any tribal conservation department wishes to learn more about how to incorporate best management practices into their trapper education program, please do not hesitate to contact me at the GLIFWC offices at 715-682-6619.

Southeast across the Atlantic Ocean in South Africa, Dr. Jeannine McManus and her research team wondered if it was really cheaper to kill predating leopards and other meat-eaters than to simply deter them in the first place. Lethal controls typically include employing trappers and shooters, and using poison that indiscriminately kills wildlife.

“This is a problem we face globally, when predators have an economic impact on livestock losses,” McManus said. “What we found in our study is that non-lethal controls are significantly cheaper and result in fewer losses.”

The research is timely, coming as farmers expand the size of their herds, pushing rangelands deeper into wild country where livestock losses steadily trend upwards. But South African operators are slow to embrace non-lethal predator controls—like guardian animals—which have an effective, proven history, McManus said. Dogs and alpacas bond with herds and became traveling companions on the range. Protective collars are also effective and prevent neck-chomping leopards from taking down sheep.

“Social pressures from neighbors influence participation in non-lethal controls,” said McManus, adding that even farmers who have used cost-effective, non-lethal deterrence methods often reverted back to killing leopards.

Other conference presenters also drew attention to the power of social influence in how humans deal with predators. Despite clear evidence that killing animals like wolves and leopards is costly and ineffective at deterring predation on livestock, many wildlife managers and farmers ultimately favor lethal-control.

Speaking for the Ho-Chunk people, tribal president Wilfred Cleveland emphasized that human communities need to share with wildlife and take seriously the responsibility to make sure enough deer are available to wolves. “We still have our ceremonies; we still have our language, and we’re trying to maintain harmony with these lands,” Cleveland said.

In addition to the Ho Chunk Nation, conference sponsors include Friends of Wisconsin Wolf and Forest County Potawatomi. For more information see [www.FOFWW.org](http://www.FOFWW.org).



In the shadow of a replica Wisconsin River sandstone formation, Ho Chunk performers present Wasira, or The Dance, for Wolf & Wildlife Coexistence Initiative attendees and other visitors to tribe’s Wisconsin Dells convention center. After a round of traditional dance and drum songs, Elliot Funmaker (foreground) took a timeout to explain all the intricacies of the powwow regalia worn by Mary Green Funmaker. Staged during summer months, Wasira recreates elements of the Stand Rock Indian Ceremonial, a former staple of the Dells tourist scene. (photo by Charlie Otto Rasmussen)



# New beginning for manoomin on the St. Louis River

By **Charlie Otto Rasmussen**  
Staff Writer

**New Duluth, Minn.**—Wild rice restoration is in full swing on the St. Louis River some ten miles upstream from the Gichigami ports, Duluth and Superior. Centered along the junction of the 1842 and 1854 Treaty ceded territories, an interagency project aims to greatly increase the abundance of manoomin for future generations.

“This is one of the very special places to Ojibwe people,” said Thomas Howes, Fond du Lac Band (FdL) natural resources program manager. Known as Nahgahchiwwanong, the environs around the St. Louis Estuary—notably Spirit Island—form one of the primary stopping places made by migrating Anishinaabe centuries ago. “It’s important to bring manoomin back.”

Taking care to bypass remnant clusters of wild rice emerging from the shal-

low backwaters connected to the river, Fond du Lac Band natural resources technicians cleared Duck Hunter Bay North and South with an aquatic vegetation harvester in mid-summer. The removal of plants including sedges, reeds and others should help reduce competition for manoomin, Howes said.

The ambitious multi-year manoomin enhancement project pools the expertise of the FdL Band, 1854 Treaty Authority, Great Lakes Indian Fish & Wildlife Commission, and Minnesota Land Trust. Work on the St. Louis River (or Chigamiiziibi in the Ojibwe language), a border-water between Wisconsin and Minnesota, also includes contributions from the respective state Departments of Natural Resources.

Private individuals play a key role as well. Howes plans to buy up to 17,000 pounds of freshly-knocked green rice this season to seed into the dark-water bays of the St. Louis. It’s a unique opportunity for ricers to help bring back manoomin

to Nahgahchiwwanong (or, far end of the great lake) and pocket some cash along the way.

Beginning in the late 1800s, river drives pushing pine timber downstream began more than a century of environ-

mental degradation on the river. Industrialization of the Twin Ports and the rise of paper mills in the upper St. Louis further corrupted wild rice habitat until only thin, scattered stands of manoomin remained.



*Fond du Lac Band’s weed harvester cleared around 80 backwater acres along the St. Louis River in preparation for manoomin seeding this fall. (COR)*

## Attention Ricers

FdL resource officials are purchasing unprocessed, hand-harvested manoomin for reseeded Gichigamiiziibi (great lake river) at designated sites in the ceded territory. For details contact Thomas Howes at 218.878.7163.

# Checking out the manoomin prospects for 2015

## A little too early for accurate predictions

By **Peter David, GLIFWC Wildlife Biologist & Lisa David, GLIFWC Manoomin Biologist**

Boozhoo manoomin harvesters. It’s that time of year again when thoughts turn to wondering about the status and extent of our northern manoomin stands.

We’d love to be able to report that 2015 will be a banner year with abundant harvest opportunities for all—but as all seasoned pickers know, we are in the ‘watch and wait’ period. Watching our favorite manoomin beds mature and ripen and waiting to see what the season’s weather brings.

Preliminary guesstimates for this year, based on reports from our manoomin interns and other early season reconnaissance efforts, indicate that the crop is quite variable, but certainly looking pretty good in spots. Development also seems a bit more variable than some years, with maturation varying by 10 days or more between different beds. For the serious picker, this can be an advantage—stretching



*An example of a rice bed in northern Wisconsin off to a good start. (photo by Lisa David)*

## Interested in selling wild rice seed?

GLIFWC will be looking to purchase green wild rice seed for reseeded projects. If you are interested, please contact us **before** harvesting. Call Peter David @ 715.682.6619 ext. 2123 for more information.

the harvest season out if the weather cooperates, but it also means that it’s going to be extra important to carefully scout the places you hope to pick.

It also means you can’t assume Lake B will be ready to pick tomorrow just because Lake A was good today. Harvesting or knocking rice before the plants are mature will produce low yields and may actually hinder ricing opportunities for harvesters later in the season. Manoomin can be very giving, but our patience may be required too.

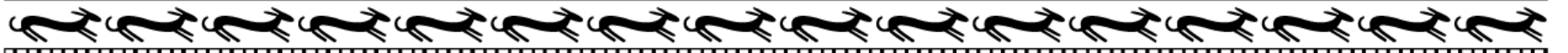
Remember to periodically check GLIFWC’s website (<https://data.glifwc.org/manoomin.harvest.info/>) for the status of select ceded territory rice waters to help guide your ricing efforts. The abundance of rice on selected waters will be summarized, and air photos will be provided for some particularly significant locations. However, keep in mind that an abundance of manoomin plants doesn’t always equate with an abundant harvest. Pollination problems can leave hulls empty of seed—the phenomenon known as “ghost rice.” Storms or non-human harvesters can take the harvest first, or disease can reduce seed production. Drought can leave beds unpickable. It’s even possible for the harvest to drop because the stands are too dense, leading to competition between neighboring plants for the nutrients needed to set seed. Harvesting success is never certain until the day is done.

The GLIFWC website will also post any information we have on the status of Wisconsin’s date-regulated lakes. The harvest season on these waters is determined jointly by tribal rice chiefs and WDNr representatives who monitor the beds and establish the dates they can be picked each year. (On non-date regulated waters, each ricer holds the responsibility of determining if the rice is ripe enough to harvest in a good way.)

Updates to the website are made regularly so be sure to check throughout the season—but remember that while we share any information we have as a service to the ricing community, the “gold standard” of opening information for any date regulated lake is the sign posted at the boat landing. And please remember: being a rice chief can be a challenging and thankless job, and rice chiefs often only hear from the pickers who disagree with their decisions. If you appreciate the long days and many miles they log on behalf of the manoomin, let them know!

For now, to bide our time until the rice is ready, we all can make trips out to favorite wild rice waters to check on the crop, find the bawa’ iganaakoog (knockers) and gaandakii’ iganaak (push pole), and keep a watchful eye on what the weather has in store. Good harvesting to you.





# Glimpsing the secret lives of lake trout

## Depth and temperature tags and diet study to tell tales

By Ben Michaels  
GLIFWC Fisheries Biologist

**Gichigami**—GLIFWC's Great Lakes Section personnel are conducting a tagging study on Lake Superior this summer. The objective of the study is to determine the depth and temperature that lake trout inhabit throughout the year. Habitat information such as this gives fisheries managers a glimpse into the secret lives of lake trout, providing valuable insights regarding climate change impacts on predator-prey dynamics, habitat usage, and movement behavior.

A similar study, using internal tags that record depth and temperature data, was conducted in Lake Superior

by GLIFWC's Great Lakes Section in 2001 and 2002; however the current 2015 study makes use of an external tag, which also records depth and temperature. The main advantage of using external tags is that fish do not have to be anesthetized during attachment of the tag, allowing quicker tag attachment and faster recovery time for the fish.

Lake trout are captured with gill nets, and upon capture, the tag is attached to the body of the fish with a harness, which consists of a small, steel wire that is surgically passed through the body with a needle, just underneath the dorsal fin.

These small, external tags record the depth and temperature of a fish's location once every 10 minutes and are

programmed to record this information for about one year. When a tagged fish is captured, the tag is collected and linked to a computer where the data can be transferred and analyzed.

This summer, nine lake trout have been tagged and released near Keweenaw Bay, Michigan. Lake trout will also be tagged in Keweenaw Bay during the fall spawning season of 2015. The goal is to tag and release 100 lake trout in 2015.

If you capture one of our tagged fish, please keep the fish and tag and contact GLIFWC at (715) 682-6619 with information regarding your fish and to claim your reward. You can also report tagged fish at: <http://glifwc.org/tag.html>

Specific information regarding the depth and temperature distribution of lake trout is vital, especially when fisheries managers attempt to assess changes in lake trout behavior in response to changing climate conditions. However, depth and temperature data alone do not paint a complete picture about how climate change may be affecting predator-prey interactions in Lake Superior. To help complete the picture, we need to know what the fish are eating.

In order to obtain diet information from fish, the Great Lakes Section

hired fisheries technician and Bad River member, Ron Parisien Jr. in April 2015 to collect stomachs from lake trout, lake whitefish, and lake herring. Ron accomplishes this task by riding tribal commercial fishing boats with fishermen from the Red Cliff, Bad River, and Keweenaw Bay tribes.

While riding on commercial boats, Parisien collects fish stomachs, records lengths and weights, and extracts otoliths used for ageing. This task is not always easy, as long hours on the water and adverse weather conditions often add an element of difficulty to data collection.

When not out on the water, Parisien spends his time processing stomach contents of samples that he collected from fishermen. Processing stomach samples involves identifying, counting, measuring, and weighing stomach contents; the process is often time-consuming, tedious, and requires a good deal of patience and a strong nose, but Parisien is up for the challenge.

The data that he collects, in addition to information recorded by the external tags, will go a long way in helping to explain lake trout behavior and predator-prey interactions in response to a changing climate.



Ben Michaels, GLIFWC fisheries biologist, prepares to attach a tag to a lake trout while Mike Plucinski, GLIFWC Great Lakes fisheries technician, holds the fish in place. (photo by Kasey Arts, GLIFWC inland fisheries section intern)

Inset: External tags that record the depth and temperature of lake trout. (photo by Ben Michaels)



## Mercury program continues under new EPA GRLI grant

By Jennifer Ballinger, GLIFWC Outreach Specialist

**Odanah, Wis.**—GLIFWC's mercury program has been testing mercury levels in commonly harvested fish, most notably ogaa (walleye), in the ceded territories since 1984. With the award of a 5-year, \$603,000 Great Lakes Restoration Initiative grant from the Environmental Protection Agency, this vital work will continue. The grant will allow for continued outreach and education to tribal harvesters, women, and children on how to safely enjoy treaty harvested fish while limiting their exposure to mercury.

Many tribal members rely on ogaa and other fish that may have high levels of mercury for subsistence. It is important for them to be able to make informed decisions, such as the ability to select lakes whose fish contain lower levels of mercury or know when to limit the number of ogaa meals per month. This information will sustain an important Anishinaabe lifeway, and the exercise of treaty rights can continue.

Approximately 350 samples of fish from Lake Superior and inland lakes in the ceded territory, will be collected and analyzed annually under this grant to ensure that GLIFWC's fish consumption advice is up-to-date. The ogaa-specific mercury maps will also be updated in 2016, 2018, and 2020 to reflect any changes that may occur.

Current mercury maps and additional information on safe fish consumption advice can be found at: <http://glifwc.org/Mercury/mercury.html>.

## KBIC environmental forum highlights sustainability

By Jennifer Ballinger, GLIFWC Outreach Specialist

**Baraga, Mich.**—Over 60 community members attended Keweenaw Bay (KB) Indian Community's "Weaving a Sustainable Future" environmental forum. The forum featured information booths, breakout sessions and kids' activities. Breakout sessions focused on a variety of environmental issues, such as land stewardship and sustainable management of treaty resources.

The breakout sessions often led to discussions on how Anishinaabe values and worldviews factor into modern environmental justice, such as the importance of tribes having access to fish with few contaminants due to the cultural and spiritual importance of harvesting and eating fish. The forum also provided opportunities for children to think about the environment by crafting with recyclable materials and learning how a butterfly garden works.

Kathleen Brosemer, Sault Ste. Marie Tribe environmental program manager, delivered a keynote presentation, "Strategizing for Tribal Renewable Energy." The Sault Tribe is one of sixteen Climate Action Champion communities selected by the White House for their work in climate change adaptation. A recently completed tribal-wide energy audit identified projects amenable to using renewable energy sources or more energy efficient equipment. Learning from the approach the Sault Tribe took to either mitigate or adapt to climate change, other tribes can plan how best to successfully apply those techniques to their own communities.

KBIC provided a presentation on their Committee for Alternative and Renewable Energy's role to help the tribe face the many challenges of climate change and the impact it may have on potential future energy consumption.

The forum was hosted by the KB Natural Resources Department with Great Lakes Restoration Initiative funding.



Kathleen Brosemer, Sault Ste. Marie Tribe environmental program manager, talks about how the tribe assessed their vulnerability to climate change and taken steps to address the issue and reduce pollution. (photo by Jennifer Ballinger)

# WDNR says EIS needed for proposed CAFO

## Tribes urge for additional scrutiny

By Sue Erickson, Staff Writer

**Odanah, Wis.**—A process using an environmental impact statement (EIS) will be used by the Wisconsin Department of Natural Resources (WDNR) for the proposed Badgerwood swine operation in Bayfield County, Wisconsin. This announcement on June 30 drew a sigh of relief from tribes, citizens, and local governments who had urged the WDNR for an EIS on the proposed concentrated animal feeding operation (CAFO) in the Town of Eileen.

GLIFWC's Voigt Intertribal Task Force raised concerns about the proposed CAFO in Bayfield County during a regular meeting last spring. Those concerns were addressed in a letter dated June 22, 2015 to the WDNR from Ann McCammon Soltis, Director, GLIFWC Division of Intergovernmental Affairs. Both the Bad River and the Red Cliff Tribes submitted letters, each with the same request—prepare an EIS on the proposed CAFO.

In GLIFWC's letter, McCammon Soltis urged the WDNR to prepare an EIS which would reveal potential impacts from the swine feeding operation (26,000 swine) on surface and groundwater as well as the air.

Proposed by Reicks View Farms of Lawler, Iowa, to be located in the heart of the 1842 ceded territory, the Badgerwood CAFO's operation is in proximity to the Fish Creek and White River watersheds, both tributaries to Lake Superior, about ten miles downstream of the proposed site.

McCammon Soltis points out that most of the waste would not only be spread out over 800 acres in the south Fish Creek watershed but also in the White River watershed. "The soils in both those areas are deep clay, increasing the likelihood that storm-event runoff will increase eutrophication in downstream waters," she states.

Future problems arising due to an overload of nutrients running off into the regions waterways and Chequamegon Bay are also a major concern of the Bad River Tribe. Potential nutrient overload was also discussed in a letter from the National Park Service (NPS).

NPS Superintendent Robert Krumenaker wrote, "due to potential water quality impacts related to spreading manure on Fish Creek, Chequamegon Bay, and ultimately in Lake Superior and other protected natural resources of the Apostle Islands National Lakeshore, I strongly encourage the state to conduct a 'detailed environmental analysis' rather than rely on an 'equivalent analysis.'" Krumenaker noted earlier that the phosphorous levels are already very high in Fish Creek waters which drain into Lake Superior and have the potential of negatively impacting nearshore waters of Lake Superior. In particular he drew attention to the protected piping plover on Long Island shores.

Central to tribal concern is the continued ability to exercise treaty rights to harvest clean and healthy natural resources in the ceded territory. The proposed CAFO has the potential to jeopardize the wellbeing of the resources upon which the tribes depend, resources such as fish and manoomin (wild rice).

McCammon Soltis reminded the WDNR that they must be accountable for impacts on the treaty rights of GLIFWC member tribes and that they "do not have the discretion to issue permits or make management decisions unconstrained by the existence of those rights."

She called for government-to-government consultation in the decision-making process and also points out that state regulations call for the preparation of an EIS when certain criteria are met. Bad River points out that of the eight criteria needed to justify an EIS, seven are already met. The criteria include:

1. The project involves multiple department actions.
2. The project may be in conflict with local, state or federal environmental policies.
3. The project may set a precedent for reducing or limiting environmental protection.
4. The project may result in deleterious effects over large geographic areas.
5. The project may result in long-term deleterious effects that are prohibitively difficult or expensive to reverse.
6. The project may result in deleterious effects on especially important, critical, or sensitive environmental resources.
7. The project involves broad public controversy.
8. The project may result in substantial risk to human life, health or safety.

The Tribe points out that numerous state and federal designations intended to protect Lake Superior and the Chequamegon Bay as well as the Fish Creek Watershed and the Whittlesey Creek National Wildlife Refuge are already in place. The Tribe also notes that it has water quality standards in place that are enforceable under the federal Clean Water Act.

While excessive nutrient run-off could cause long term problems in the watersheds and Lake Superior, Bad River also suggests that ammonia could cause additional health problems related to air quality and human inhalation of ammonia.

Local jurisdictions are also taking a cautionary approach and Bayfield County has established a 12-18 month moratorium on siting a CAFO in the county, and the issue has also given rise to significant public debate.

The WDNR will be releasing details on the scoping process for the EIS and methods to provide input in the near future.



*Pigs in a CAFO. (reprinted from <http://1.bp.blogspot.com/-38NmKnvy8yU/UCBzW0QbupI/AAAAAAAAAks/3N3ncbq8sCs/s1600/Hog+Confine,+Bjustron+5.JPG>)*

## Concerns voiced about manoomin, wetlands & sacred places

(Continued from page 2)

area. Thinking ahead for the children and grandchildren requires keeping the land and water clean. "We need to do all we can to preserve these gifts for the future generations," McFaggen emphasized.

The Sandpiper route favored by Enbridge Energy runs a few miles south of Sandy Lake. The historical and cultural significance of Sandy Lake is a sensitive topic for many Ojibwe, and the proposed pipeline has the potential to reopen still-healing wounds.

The 1850 Sandy Lake Tragedy resulted in the death of around 400 Ojibwe people who were lured there by government officials. The officials designated Sandy Lake as the place for the Ojibwe to receive their annuities late

in the fall, attempting to force a removal from Wisconsin and Michigan to the Minnesota territory. When thousands of Ojibwe arrived, there were totally inadequate provisions and no annuities. Partial payments finally arrived in December, but many perished of disease during the long, cold wait. Several hundred others perished on the snowy trek home.

According to Representative Aubid Sandy Lake community members continued to experience ethnic cleansing and violations of their rights, "what happened in 1850 never relented, it just took on more subtle forms." In 1855, the reservation at Sandy Lake measured about one mile around, but by 1910, all of the tribal land had been sold to non-Indian settlers, with only a small group of

community members remaining. Indian agents continued their efforts at moving community members to cities or other reservations, and in 1940, they burned the last remaining village.

Still, community members came back, drawn back to their homelands to harvest manoomin every year and visit with friends and family members at the community powwows, held six to eight times a year. Aubid believes that, along with being a reminder of the unfulfilled promises of the Great White Father, Sandy Lake "represents the dream of an ancient homeland."

Today, Mille Lacs Band members are looking forward to a good crop of manoomin on Sandy Lake and surrounding waters. They remain firm in their

commitment to protect the manoomin and their waters, even with the news that the PUC granted Enbridge Energy its Certificate of Need on the same day the hearing was held.

Chief Executive Benjamin pledged that the Band will fight all activities that threaten their culture, health, natural resources and rights to harvest.

Mille Lacs Band elder Misk-waanakwad offered hope. He recounted, "When I was a baby, I had a vision of a spring at Sandy Lake. This spring is going to flow so that the Indians have clean water to drink. I learned that that water is never going to be polluted by the white man. The pipeline is not going to be here. The water is going to be clean."



# KBIC Sand Point Restoration Site inducted into Michigan Environmental Hall of Fame

By Erin Johnston, KBIC Lake Superior program coordinator

**Baraga, Mich.**—The Keweenaw Bay Indian Community (KBIC) Sand Point Brownfield Remediation and Habitat Restoration Site was inducted into the Michigan Environmental Hall of Fame for 2015. The Hall of Fame was created in 2010 by the Muskegon Environmental Research & Education Society to fill a void they identified in honoring long-time supporters of the environment. Categories include nonprofit organizations, colleges/schools, environmental projects, business/industry, individual and legacy circle. Sand Point was selected under the environmental projects category. The induction ceremony was held on May 20th in Grand Rapids, Michigan. A representative from the KBIC Natural Resources Department attended the ceremony. In 2014 the Sand Point Brownfield Remediation and Habitat Restoration Site also received a Lake Superior Stewardship Award through the Binational Program.

Sand Point's resources suffered from vast tonnages of industrial copper mining sands derived from an early 20th century stamp mill. From 1901-1919 the Mass Mill disposed of roughly six billion pounds of stamp sands into Lake Superior four miles north of Sand Point.

Sand Point is culturally important for KBIC as it is the site of the pow wow grounds, a traditional healing clinic, wild rice beds, and campgrounds. Historically Sand Point was used by the native people for hundreds of years as indicated by the existence of ancient burial grounds to the east and south of the campgrounds.

Since 2006 the KBIC Natural Resources Department with funds from the US Wildlife Service and the Environmental Protection Agency has been working to restore the Sand Point site for wildlife, native plants and recreational use. After several years of planting and monitoring, the improvements are noticeable. Natural Resource Department staff have documented an increase in pollinators in the native plant "garden," and increased use of the area by song birds, geese, deer, turtles, and other wildlife. The fitness trail has also become a popular spot for walkers and joggers. A floating bridge was constructed in 2014 to connect the light house/campground area to the walking trail at the Sand Point Restoration Site. Work will continue in 2015 to enhance the area for future generations of people and wildlife.

## Fall beachgrass planting

One aspect of the Sand Point restoration involves planting beachgrass. Beachgrass is native to the Atlantic Coast and the Great Lakes. It is more strongly rhizomatous (underground roots with shoots), less sensitive to high temperatures and somewhat longer-lived than European beachgrass. This tough perennial has proved to be the best plant for initial stabilization of moving sand. Stems from the plant form a mechanical barrier which slows and then traps moving sand. There were two days of planting with over twenty people contributing to the successful completion of this project.

On the first day, a large number of volunteers from the Earthkeepers' covenant organized by Jon Magnuson from the Cedar Tree Institute came in conjunction with a Liturgy of Loss and Hope Benediction held near Eagle Rock. A midday break was taken to attend the Annual KBIC Harvest Feast. Volunteers and staff had a chance to socialize with each other, share a bountiful meal having both traditional and non-traditional foods to select from, and listen to songs of celebration. The last of the plants were put in the following weekend with an afternoon campfire break to warm-up.



Earthkeepers, KBIC staff and community members contributed their time and energy on a cold fall day to planting beach grass at the Sand Point site. (photo Keweenaw Bay Indian Community Natural Resources Department staff)



30,000 culms of beach grass were planted over a half mile along the shoreline at the Sand Point Restoration area in the fall of 2014. (photo by KBIC NRD staff)

# Nature's benefits in the St. Louis River watershed

(Continued from page 1)

**Over seven generations (140 years) the St. Louis River watershed will provide between \$237 and \$687 billion in services to society at no cost to any of us.**



A workshop to release the *The Value of Nature's Benefits in the St. Louis River Watershed* report was held on June 24th. Attending the workshop were representatives of tribal, federal and state agencies. The workshop was hosted by the Fond du Lac Band. (photo by Esteban Chiriboga)

that the St. Louis River watershed provides between \$5 and \$14 billion per year in ecosystem services. The services that were valued include flood control, clean water, wildlife habitat, recreation and carbon sequestration among others.

It is important to note that, while these dollar numbers appear to be very large, they are actually underestimates. This is because there are several areas in which the value of ecosystem services could not be valued due to a lack of peer reviewed data, such as the open water portion of the St. Louis River. If this data were to become available, it would only increase the value of the services provided by the watershed.

The Fond du Lac Band hosted a workshop on June 24th to release the report and to begin the process of identifying partnerships and methods to fill in some of the data gaps identified in the valuation report. The workshop was very well attended by representatives of tribal, federal, and state agencies. The report has been well received and the foundation for collaborative inter-agency efforts to enhance and expand the ecosystem valuation of the St. Louis River watershed is in place.

Ultimately, the major goal of this project is to highlight the economic benefit that nature provides to society and give those long-term benefits a voice in the environmental assessment and permitting process for large industrial operations.

(Editor's note: All quotes in this article are reprinted from: *The Value of Nature's Benefits* report.)

**The Benefit Transfer Method is a federally accepted valuation method used to value ecosystem services... Consideration of Environmental Benefits in the Evaluation of Acquisition Projects under the Hazard Mitigation Assistance (HMA) Programs. FEMA Mitigation Policy FP-108-024-01)...**

# Lake sturgeon restoration efforts register success

## Name: Culturally important to the Ojibwe people

Articles By Sue Erickson, Staff Writer

Valued by the Anishinaabeg as a food source and a spiritual symbol, name, or lake sturgeon, continues to be cared for and protected by the Ojibwe people today and plays an important cultural role.

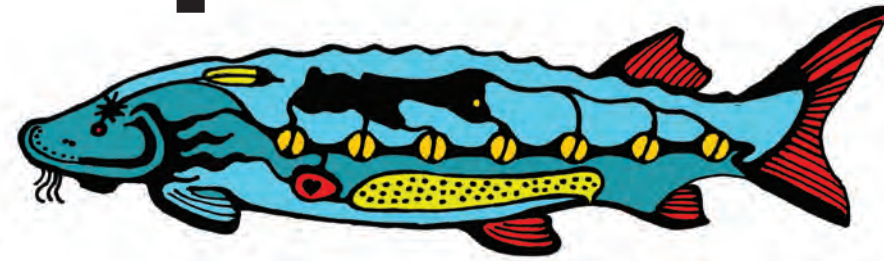
Name belongs to the Ojibwe clan system, which assigns different roles for people within the tribal communities. Giigoon doodem (fish clan members) are known as the wise people: teachers and scholars within the community. They work with youth, solve inter-clan disputes, and are problem-solvers.

According to one Ojibwe elder from Canada, name is considered a sacred Water Being to be taken and used only with appropriate spiritual ceremony, and every

single part of the fish must be used.

Stories about name in the Ojibwe oral tradition relate the relationship that Anishinaabeg have had with gete giigoonh (ancient fish). These fish, among others, give themselves up time and time again for the survival and sustenance of the people. This act of selflessness relates the unconditional love that comes from nimama aki (mother earth) and all of the orders of creation.

There are many biboon aadizokanag (wintertime stories) in which many figures play a key role in the survival of the Ojibwe people. Name is one of those characters that reached out to original man.



One Ojibwe story relates that name swallowed the kind son-in-law of the wicked Mishos to protect him and return him to his loved ones.

Another LCO elder recalls being told of past adventures riding the backs of large sturgeon in the spring time when the ice is first out. At that time those large fish lived in the Namekagon and Flambeau Rivers and migrated in great numbers upriver.

## What happened to name?



Overharvest during the mid-1900s seriously depleted the lake sturgeon fishery in the Great Lakes region. (Photo credit: West Nipissing Library)

The lake sturgeon belongs to a prehistoric family of fishes that were in the water when dinosaurs roamed the earth. However, in the early 1800s, commercial fishermen considered these large, ancient fish as nuisance fish. They were killed and tossed on shore as worthless. In the late 1800s sturgeon eggs were sought after as highly-valued caviar. Name became a target species, leading to over exploitation.

By the early 1900s few were left to catch. Over exploitation was accompanied by habitat loss and degradation. Dams blocked lake sturgeon from reaching spawning grounds, some which became silted over and polluted with run-off from onshore.

The ancient name'ewag (sturgeons) were disappearing.

## Of "Special Concern" in the 21st Century

Lake sturgeon are listed as Endangered, Threatened or of Special Concern in 19 of 20 states throughout its range. In Minnesota and Wisconsin they are listed as species of Special Concern.

Restoration efforts are underway; however, the spawning cycle of lake sturgeon (every 4-9 years) and late sexual maturity makes restoration efforts difficult, requiring monitoring and reinforcement through stocking.

Historically, lake sturgeon were found throughout the Mississippi River and its tributaries, all of the Great Lakes and most of the St. Lawrence Seaway, the Red River from Minnesota to Hudson Bay, and many tributaries of Hudson Bay.

Tribes are working to help them return to native waters.

## Tribes join in the effort to restore name

### GLIFWC data spans 21 years

Wisconsin's Bad River system supports one of two self-sustaining lake sturgeon populations in the US waters of Lake Superior. The Great Lakes Indian Fish & Wildlife Commission, the Bad River Tribe and the US Fish and Wildlife Service perform cooperative standardized assessments of juvenile lake sturgeon off the mouth of the Bad River and adult assessments in both the Bad and White Rivers, tributaries to Lake Superior.

Annual assessment of the Bad River sturgeon fishery involves three to six sets of bottom-set gillnets each year, June-August. Several sizes of mesh are used to capture both juvenile and adult sturgeon.

Data, including length, weight and girth measurements, are collected on each captured fish, and each is tagged. Data are shared and are part of a basin-wide lake sturgeon database. A lake-wide assessment effort, begun in 2011, also standardized assessment gear used across the basin.

To date two lake sturgeon tagged as juveniles age 6-8 in the Bad River system have been identified on spawning grounds. Since sturgeon do not spawn until they are 15-25 years old, this is right on target and a good thing!



Mike Plucinski, GLIFWC fisheries technician, holds a lake sturgeon from near the mouth of the Bad River. (Photo by Charlie Otto Rasmussen)

## Lake sturgeon reclaiming Gichigami south shore

By Charlie Otto Rasmussen, Staff Writer

By the late 2000s the name project looked like a bust. A dozen years earlier Fond du Lac Band (Fdl) Natural Resources Director, the late Larry Schwarzkopf, formulated a plan to restore lake sturgeon to the upper St. Louis River system. Beginning in 1998 Fdl fisheries staff invested four seasons into sturgeon (name) propagation, installing egg-filled nesting boxes into the river and releasing tiny hatchlings known as fry.

Subsequent surveys conducted by fisheries managers, however, produced no sign of the native fish. Maybe the St. Louis could no longer support name, notably with the presence of five hydropower dams that chopped up the system into isolated stretches?



A combined team of Fond du Lac Band and USFWS staff collect data from young, hatchery-raised sturgeon.

*Inset: USFWS Biologist Glenn Miller injects a permanent PIT tag under the skin of a fingerling lake sturgeon—one of more than 1,500 released into the St. Louis River in late July. (photos by Charlie Otto Rasmussen)*



Then in 2010 a fisherman landed an upriver sturgeon, followed by a second one. Photos of the St. Louis River catch-and-release angler holding up the distinctive yard-long fish reached Fdl fisheries staff.

"We call that guy 'Angler of the Year,'" quipped Thomas Howes, current Band natural resources program manager. Tribal fisheries staff responded with a new round of surveys, turning up many more lake sturgeon. The name recovery program was back on.

At the helm of a reinvigorated lake sturgeon restoration effort on Chigamiziibi, (St. Louis River), Howes monitors a program that includes stocking, assessments, and lots of coordination with other natural resources management agencies. Supported by an infusion of funding from the Great Lakes Restoration Initiative, fisheries and habitat improvements are taking long strides in the region. "At Fond du Lac we're looking to bring back the big three: walleye, lake sturgeon, and whitefish," Howes said.

Overfishing, pollution and habitat changes—most clearly evidenced by the installation of six hydropower dams that prevent species like sturgeon from reaching spawning grounds—led to sharp reductions in fish communities through the 20th Century. Howes summed it up, saying: "The fish went away because of human activity."

### Jurassic comeback

Tens-of-millions of years ago lake sturgeon swam with dinosaurs, including many creatures whose bones now inhabit natural history museums across Turtle Island. Onward throughout the prehistoric millennia, the gnarly fish known as name in Ojibwemowin adapted and survived to unique habitats. For today's biologists those distinctive characteristics—built into genes—are a key consideration in restoration plans.

"We've learned that Lake Superior sturgeon are a unique population, genetically different from others in the Great Lakes basin," said US Fish & Wildlife Service (USFWS) Biologist Henry Quinlan. "Are fish from the Lake Michigan basin less hardy? We're not sure, so we're taking precautions to protect the fishery."

Quinlan is chairman of the interagency Lake Superior Lake Sturgeon Workgroup, working closely with the Fond du Lac Band and other stakeholders. While previous introductions of lake sturgeon into the fragmented St. Louis watershed originated from Wisconsin's Lake Winnebago (1983-1993) and Menominee River (1998-2003), the new latest round of stocking draws exclusively from the Lake Superior basin—appropriately from the Sturgeon River in Upper Michigan.

### Straight out the trailer

Where the West Branch of the Ontonagon River spills out of Lake Gogebic, a long enclosed trailer has occupied the east bank in recent summers serving as a hatchery and home for the next generation of name'ewag. Placards from a half-dozen agencies are emblazoned along the trailer's steel frame, exhibiting a unified commitment from tribal, state, and federal fisheries managers to restore lake sturgeon (See Name, page 23)

## 1854 Treaty Authority monitors sturgeon population Sustaining a clan

By Marne Kaeske, 1854 Treaty Authority

Historically the St. Louis River was home to a very abundant, naturally reproducing population of name, or lake sturgeon. By the early 1900s lake sturgeon were nearly eliminated from the St. Louis River system due to effects of exploitation, water pollution, and habitat alteration.

As water quality improved into the early 1980s the Wisconsin and Minnesota Departments of Natural Resources began the long process of a large-scale reintroduction program. Between 1983 and 2001, fry and fingerling sturgeon were stocked annually in an effort to reestablish enough year classes for eventual resumption of natural reproduction.

Now, 30+ years after stocking was initiated, there are signs that sturgeon are again reproducing in the river. To monitor this occurrence, in 2010 the 1854 Treaty Authority started larval drift net sampling below suspected spawning sites to confirm successful hatching of larval sturgeon.

Generally sturgeon fry hatch within 8-11 days, and shortly afterwards drift downstream with the current at night until they settle out and begin feeding on their own.

### How drift nets work

Very fine mesh nets attached to a D-shaped frame are set in light current downstream of where eggs were likely laid. As larval fish drift downstream, they are captured in a collection cup at the back of the drift net. Nets are checked about once an hour, and any larval fish are identified as lake sturgeon or other species.

Since 2010 larval sturgeon have been confirmed in two different years, where in other years high spring flows have prevented effective sampling. In any event, it is terrific to see evidence of natural reproduction again and the 1854 Treaty Authority will continue to do this sampling each spring to document years where at least some reproduction has taken place.



As larval fish drift downstream, they are captured in a collection cup at the back of the drift net.

*Inset: larval sturgeon (photos by Brian Borkholder)*

1854 Treaty Authority have initiated additional sampling in 2015 to look for juvenile sturgeon in the middle and lower reaches of the St. Louis River estuary. Previous work with bottom trawling has indicated that it is an effective sampling technique for capturing all life stages of sturgeon. With the acquisition of a new trawling vessel (thanks to a Great Lakes Restoration Initiative grant by the Bureau of Indian Affairs) 1854 will be able to look for sturgeon, while continuing its monitoring efforts for other native and invasive fish species in the St. Louis River.



# Onji-Akiing: Fostering future protectors of the environment

By Dylan Jennings, Staff Writer

Nimamainan Aki (our mother earth) was happy this week as youth threw down their remotes and video games to partake in GLIFWC's camp Onji-Akiing, which means, "from the earth." Youth from Michigan, Wisconsin, and Minnesota took to the woods at Nesbit Lake, near Sidnaw, Michigan during the fourth week in July.

Campers are assigned to be one of four clans representing the Medicine Wheel and are cycled through activities every day. Day two of camp consisted of rice knocker construction, fishing, swimming, beach activities, canoeing and ricing simulation, high ropes course and low ropes course, and of course, crafts. Every morning began with a group exercise activity, breakfast and then morning ceremony.

A few respected elders and community members roamed about the camp, offering encouragement, teaching a little Ojibwemowin along the way, or instructing in traditional crafts. "It is our responsibility to share the knowledge we have. This camp is a good place to do that," says Roger Labine, a cultural advisor from Lac Vieux Desert.

The camp itself was started in 1938 by the Civilian Conservation Corps (CCC) and is previously known as Camp Nesbit. Within the last ten years, GLIFWC and the Forest Service have partnered to run and operate the camp every summer for tribal youth, and youth with Native American ancestry. GLIFWC wardens and various staff along with Forest Service experts teach courses on fishing, archery, ricing, hiking, canoe safety, and many other outdoor skills.

Unlike other youth camps, Onji-Akiing is heavily focused on introducing youth to Anishinaabe cultural practices and language. Youth come from all backgrounds and regions, and the camp serves as a resource for students to learn about Anishinaabe history, manoomin (wild rice), fishing, and other forms of subsistence that are important to the Anishinaabe lifeway.

The camp isn't just about one summer of fun and friendship making; it's also about opening future doors and opportunities. On Wednesday, natural resources professionals from various agencies hosted a career fair for all the students. Students were encouraged to ask questions pertaining to every career for chances to win prizes.

Once a camper reaches high school and has displayed maturity, students can apply to become junior counselors and return to camp in a different capacity. Maranda Maulson, a current camp counselor and college sophomore at Northern Michigan University, speaks about her experiences with camp. "I went to college because of this camp. It exposed me to different professionals and staff from Northern Michigan University." Recently Maranda traveled to Washington D.C as a camp representative. She speaks of her experience, "We are the fish in the bucket, and we should want to jump out of this bucket and share our culture with the world."



Part of catching fish is cleaning them. Camper Edmund Williams, Lac Vieux Desert, watches as Mike McKenzie demonstrates the art of filleting fish.

The assimilation era has done severe damage to Anishinaabe language and identity. Many schools nowadays have a hard time broaching the subject of Native American history. However, youth and adults are standing up and finding methods for revitalization.

It was truly refreshing to see so many youth inquisitive and willing to learn about the environment and why it has always been so important to Anishinaabe people. Chi miigwech to all staff, volunteers and participants in this year's Camp Onji-Akiing.



GLIFWC Executive Administrator James Zorn and Wayne LaBine, Voigt Intertribal Task Force representative from Sokaogon/Mole Lake, talk to campers about careers in natural resources during the camp's Natural Resource Career Fair.



Steve Perry, cultural teacher and Little River elder, led sessions on cultural crafts. Above, he assists camper Zoie Thiery, Keweenaw Bay Indian Community, with a project. Campers at the table are, from the left, Autumn Dakota, Cherokee, and Koresa Newago, Red Cliff.



It was hands-on activities at the table manned by GLIFWC's Great Lakes Fishery Biologist Bill Mattes. Matt Allen, Lac du Flambeau, got a taste of a lamprey's suction power and now knows why they are so lethal to Lake Superior's lake trout.

Photos by Dylan Jennings

# Canoomin Project emphasizes safety, respect for manoomin

By Sue Erickson  
Staff Writer

GLIFWC's Canoomin Safety Project's goal is to develop a safety protocol for manoominike (wild ricing), particularly handling a canoe safely. The project is supported through a grant to GLIFWC's Enforcement Division from the Marshfield Clinic. The grant includes presenting the canoe safety program to at least four reservations and developing a safety brochure, according to Heather Naigus, GLIFWC LE's Outreach Officer.

In preparation for developing the safety protocol program, team members took an American Canoe Association

canoe instructor certification course last June. Four GLIFWC officers, a cultural adviser, and one intern received certification following the course. After the course, the officers worked with the wild rice cultural advisor to develop safety standards in wild ricing. According to Naigus, this summer has provided several opportunities to further develop the program, including Lac du Flambeau's Enrichment Camp and Camp Onji-Akiing in Michigan.

While limited time is spent in classroom-style instruction, significant time is spent with hands-on, on-water learning. Some of the points being covered include how to stand up in a jiimaan (canoe), how to turn, how to



Members of the Canoomin project team who have developed a safety protocol for ricing are (pictured from left to right) GLIFWC Warden Steve Amsler, GLIFWC Warden Adam McGeshick, Casper Bendixsen, Marshfield Clinic; GLIFWC Outreach Officer Heather Naigus, Cultural Advisor Roger Labine, Lac Vieux Desert; GLIFWC Intern Erik Heiserman, and GLIFWC Warden Lauren Touri. (photo submitted)

# Lac du Flambeau Enrichment Camp offers fun on the water

By Erik Heiserman  
GLIFWC Summer Intern

**Lac du Flambeau, Wis.**—This past June, officers from GLIFWC's Enforcement Division and myself, the enforcement intern, worked with youth from Lac du Flambeau's enrichment summer day camp program, with activities such as archery, fishing, and canoe safety. During our canoe safety instruction, we worked with various native youth with different levels of canoe experience and confidence.

For some it was a new experience, while others who had spent a good deal of time canoeing said that they didn't have any defining techniques. It was rewarding to see pleased expressions in their faces as they learned skills that improved their turning, speed, and ability to even quietly advance sideways.

By the end of the day, many of the tandem groups had improved their canoeing abilities noticeably, and all of the kids agreed they felt much more confident out on the water.

Another day brought the kids from Wisconsin to Pequaming, Michigan, where GLIFWC officers took kids brook trout fishing. The hope for the day was to catch some brook trout and the Great Spirit blessed the water with lots of fish for every child. The kids had a blast catching trout, bluegill, sunfish, perch, and bullhead, with our top fisher being a girl who caught 13 in all. I would dare to say that quite a few fishermen and women were born that day.



Lac du Flambeau youth spent a day on the water improving their canoeing skills. (photo by Heather Naigus)

## Essential Ojibwemowin

jiimaan—canoe  
jiime—go by canoe

# Youth travels to GenI Youth Conference in DC

By Maranda Maulson  
For Mazina'igan

**Washington, DC**—My name is Maranda Maulson. I am 18 years old, a sophomore at Northern Michigan University and proud to be Native American. This July, I was honored to be selected to attend the first ever White House Tribal Youth Gathering, also known as GenI (Generation Indigenous), where over 1,000 tribal youth from all over the U.S. gathered in Washington D.C. In fact, there were 1075 in attendance!

To be considered for this gathering, I vowed to complete a 30-day challenge, in which I was active as a leader and a facilitator of positive change in a Native American community for one month. By doing this, I guess you could say I am now officially a "change agent."

My project focused on getting youth to "open the door" and venture out into the woods, getting reacquainted with our plant and animal relatives. I believe this is important so we can find ourselves and protect our culture, a significant amount of which has been lost in the past.

I believe that GLIFWC's Onji-Akiing, From the Earth cultural summer camp program helps do just this, so I traveled and talked to kids about attending this unique experience. I brought some of the hands-on traditional learning to schools to let them see what the Onji-Akiing program is like and how it helps connect



Maranda Maulson at the GenI Youth Gathering. (photo by Heather Naigus)

us to our culture and make us aware of how to practice our treaty rights. I even traveled to the University of Michigan to share with their Native youth weekend camp, which was super neat.

The GenI Youth Gathering was a tremendous learning experience and in a way kind of a culture shock. It was crazy to think that I was chosen to attend this conference. At the conference I met many cool tribal youth from different tribes, heard a talk from the first Native American astronaut who flew into space, and

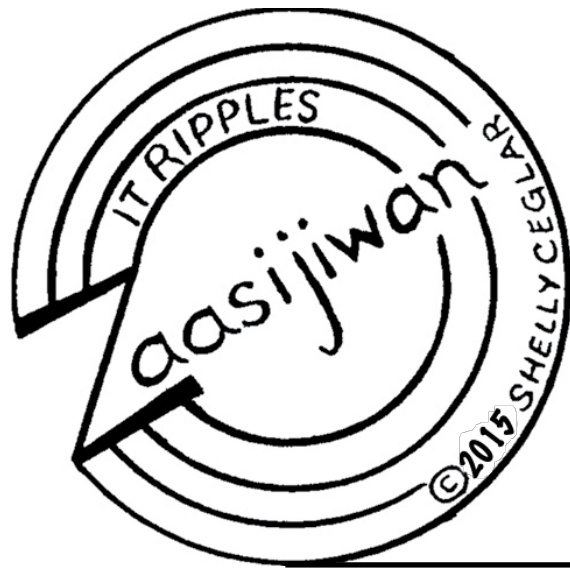
even had the honor of meeting the First Lady, Michelle Obama. She was very cool and told us that we have the power to bring back the power. She admitted that the U.S. government hasn't treated us at all well and even said that past administrations, in trying to destroy us, made it illegal to be us. She also said that this has stopped now and that although the solution might not be solved with the Obama administration, it would certainly start there.

It was very uplifting and rewarding to hear acknowledgment of what was done to our ancestors in the past and what we can bring to our future. Instead of other people deciding what is best for us, like it has been for so long, it will be we that decide what is best for us now.

Also, we broke into work group sessions, where we as youth change agents held talking circles on climate change, natural resources, health care and planning, leadership, and wellness/suicide. I enjoyed my break-out session on natural resources, where I could promote Onji-Akiing and the importance of the outdoors because that is who we are.

This whole experience was an incredible opportunity, and I encourage all youth to get involved in promoting healthy changes in their communities.

As one youth said at the conference, "If the adults are not making the changes necessary for our community, then we need to take over." This is what I plan to do, and I challenge all tribal youth to stand up as well.



# Aaniin ezhwebak dagwaaging? What is happening as it is autumn?

Gii-miinikaa. Gii-miskominikaa. Noongom giuwe-niibin. Niwii-kibozaa a'aw "miinibaashkimiisiganibiitoosijiganibadagwangwezhiganibakwezhigan." Noongom gitigaaning niwaabamaanaan agosimaan. Mandaaminaakoog adisowag. Gidaa-dabwaanag, Gemaa gidaa-gabaashimag. Howah! Dibaabandan ziibi idash zaaga'igan! Manoominitigweyaa. Manoominikaa. Giwii-kiiyose na? Giwedonong niwii-kiiyose. Giwedonong ondaanimad wenji-gisinaag. Miigwech!"

(There were a lot of blueberries. There were a lot of raspberries. Now it is late summer. I want to cook him/her in the oven that "blueberry preserves pie with covering of crust/bread." Now we see them squash/pumpkins in the garden. The ears of corn they are ripe. You should roast them over a fire. Or you could boil them. Wow, check it out/inspect the river and the lake! The river has wild rice. There is a lot of wild rice. Will you go hunting? To the north thusly I want to go hunting. The north wind comes from that direction so it is cold. Thank you!)

### Bezhiig—1

#### OJIBWEMOWIN (Ojibwe Language)

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

—Short Vowels: A, I, O  
Dash—as in about  
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.  
—English will lose its natural flow as with other world languages.

### Niizh—2

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

A. Bijiinaago na gigii-noondawaa a'aw gijigijiganeshii?  
B. Bijiinaago ningii-waabamaa a'aw mooshka'osi imaa?  
C. Apane ningii-waabamaa wa'aw migizi keyaa waasa iwidi.  
D. Awasonaago gii-kiiyose a'aw ikwezens. Gii-kiigooyike gaye.  
E. Bijiinaago, ningii-kiiyose. Ningiiwaabamaa' niso-mayagi-bineg.  
F. Ziibiing waabang gii-kiiyosewag nindinawemaaganag.  
G. Awaswaabang, niwiinooji'aanaanig waawaashkeshiiwag. Nindedeban gaa-kiiyosewinini.

### VTA Animate, Verbs, Transitive. 1st & 2nd Persons

Miikaw!—Find him/her!  
Nimiikawaa.(g)—I find h/h.(them).  
Gimiikawaa.(g)—You find h/h.(them).  
Gikenim!—Know him/her!  
Ningikenimaa.(g)—I know h/h.(them).  
Gigikenimaa.(g)—You know h/h.(them).  
Ganawaabam!—Look for h/h!  
Ninganawaabamaa.(g)—I look for h/h.(th)  
Giganawaabamaa.(g)—You look or h/h.(th)  
Miigwechiwenim!—Give thanks to h/h!  
Nimiigwechiwenimaa.(g)—I thank h/h.(th)  
Gimiigwechiwenimaa.(g)—You thank h/h.(th)

### Niswi—3

#### IKIDOWIN ODAMINOWIN (word play)

**Down:**

- river
- far away
- lake
- bald eagle
- in the direction of

**Across:**

- inspect, look it over
- There are many blueberries.
- over there
- or, maybe

*Waatebagaa. There are bright leaves.*

**Online Resources**  
[ojibwe.lib.umn.edu](http://ojibwe.lib.umn.edu)  
[umich.edu/~ojibwe](http://umich.edu/~ojibwe)  
[www.glifwc.org](http://www.glifwc.org)

### Niwin—4

VTA B-form—when, if or while...Use suffixes—These are not full sentences.

**When/if I** find him/her—Miikawag  
When/if you find h/h—Miikawad  
When/if s/he finds h/h—Miikawigod  
When/if they find h/h—Miikawigowaad  
Ganawaabamag—when I see h/h  
Miigwechiwenimigowaad—when they give thanks to him/her (them)  
Gigikenimad (adwa)—When/if you know h/h (them)  
Ganawaabamigod—When/if s/he looks for h/h/them.

Mii'iw.  
That's all.

1. \_\_\_\_\_ wii-gikenim \_\_\_\_\_ na ikwezens iwidi?  
2. Megwaayaak ganawaabam \_\_\_\_\_ nimiikawaa.  
3. Miigwechiwenim \_\_\_\_\_ gichi-minwendam gaye.  
4. Wiisiniwigamigong wii-ganawaabam \_\_\_\_\_ a'aw bakwezhigan giwii-bakade bijiinag..  
5. Waabang wiisiniwigamigong \_\_\_\_\_ wii-miikaw \_\_\_\_\_ jiibaakwewikwe. \_\_\_\_\_ wii-miigwechiwenim \_\_\_\_\_.

**Translations:**  
**Niizh—2** A. Yesterday, did you hear him/her that chickidee? B. Yesterday, I saw h/h a shypoke/bittern there. C. Always I have seen him/her this eagle in that direction far off over there. D. The day before yesterday s/he went hunting that girl. She went fishing also. E. Yesterday, I went hunting. I saw them three grouse. F. By the river tomorrow they are going hunting my relatives. G. The day after tomorrow we are going deer hunting. My deceased Dad was a hunter guy.  
**Niswi—3** Down: 1. Ziibi 2. Waasa 3. Zaaga'igan 5. Migizi 8. Keyaa Across: 4. Dibaabandan 6. Miinikaa 7. Iwidi 9. Gemaa  
**Niwin—4** 1. Do you want to know her (Gi- -aa) the girl over there? 2. In the woods when I look (ag) for him/her, I find him/her. 3. When s/he gives thanks to him/her (-igod) s/he is very happy also. 4. At the eating place/restaurant when you look at him/her (-ad) that bread you will be hungry right away. 5. Tomorrow at the restaurant I will find her the female cook. I will give thanks to her. (Ni- -aa).  
 There are various Ojibwe dialects; check for correct usage in your area. Note that the English translation will lose its natural flow as in any world language translation. This may be reproduced for classroom use only. All other uses by author's written permission.  
 Some spellings and translations from *The Concise Dictionary of Minnesota Ojibwe* by John D. Nichols and Earl Nyholm. All inquiries can be made to MAZINA'IGAN, P.O. Box 9, Odanah, WI 54861 [lynn@glifwc.org](mailto:lynn@glifwc.org).



# Sturgie: The baby lake sturgeon

By Sue Erickson, Staff Writer

Baby Sturgie was born in the St. Louis River. Like his brothers and sisters, he hatched about 10 days after his mom's eggs were laid upriver. Sturgeons swim upriver to lay eggs or spawn. His mom, Stella Sturgeon, is a 50-year old lake sturgeon and his dad, Stanley, is 35-years old. Female lake sturgeon can live to be over 100 years old, but females don't lay eggs until they are around 20-25 years old.

Depending on the water temperatures, it takes about two weeks for sturgeon eggs to hatch. Baby Sturgie emerged from one of 400,000 eggs. Stella laid her eggs in a rocky bed not far from where she was hatched 50 years ago. Sturgie was just a tiny larval sturgeon, swimming in the river in a swarm of babies when both Stella and Stan returned to Lake Superior.

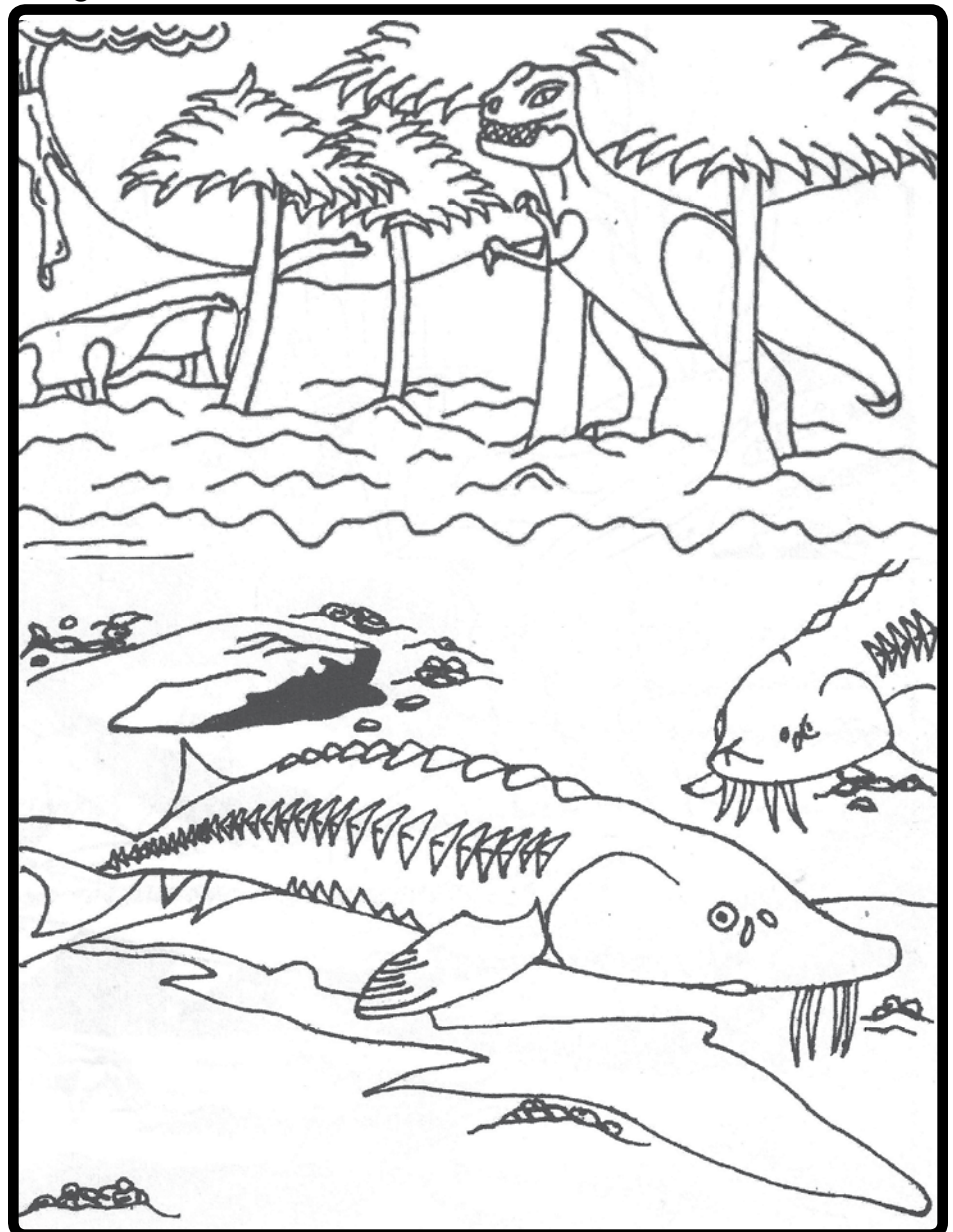
The sturgeons' return upriver to spawn near their birth place is called their migration. However, when people put dams in rivers, many sturgeons are prevented from getting to their spawning beds. Their migration is stopped, and this has harmed the lake sturgeons' ability to reproduce. Some of these dams have been removed now.

Sturgie's ancestors were nearly fished to extinction (none remain). First, commercial fishermen found the big sturgeon (they can grow to 8 feet) troublesome in their fishing nets, so they killed them and threw them away. Later, they became valued for their eggs, called caviar, a very expensive, fancy food. In order to get the eggs, the fish had to be killed. For their eggs, they were over-harvested for years. Soon few lake sturgeon remained.

Native tribes also valued lake sturgeon way before the arrival of European people. They used all the parts of the fish either for food or utensils. Sturgeon, known as namé (nah-may) to the Ojibwe, is also a clan symbol. People in the fish clan are known as teachers and healers in the community.

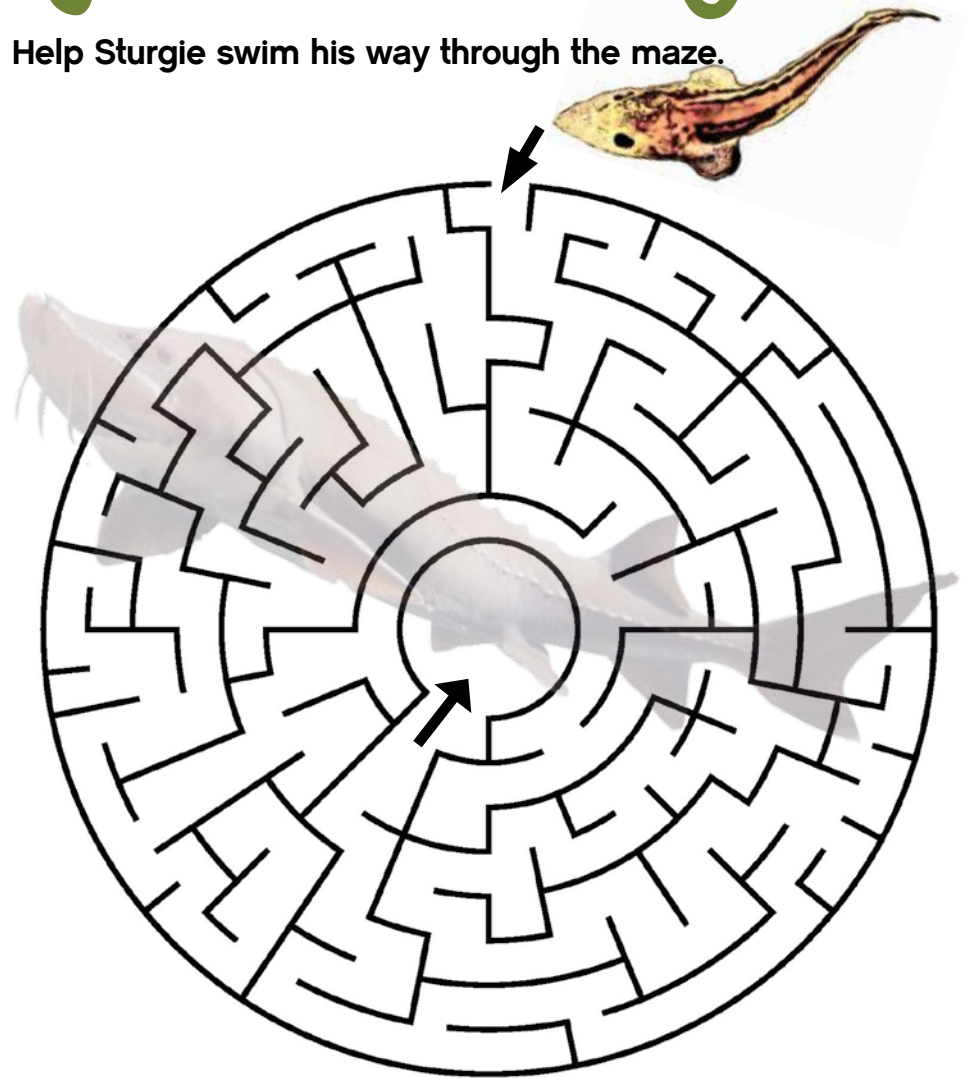
Little Sturgie's family has always been in the St. Louis River. But further upriver, few sturgeons remain because of the dams. People are trying to re-establish this ancient native fish by stocking sturgeons from other rivers. That is called restoration.

**Namé belong to a prehistoric family of fish that were in the water when dinosaurs roamed the earth. Color the picture of Sturgie's ancestors. (G.R.fitch 2007)**



Sturgeon Activity Book 2009/ZenMedia gm.sturg@gmail.com

Help Sturgie swim his way through the maze.



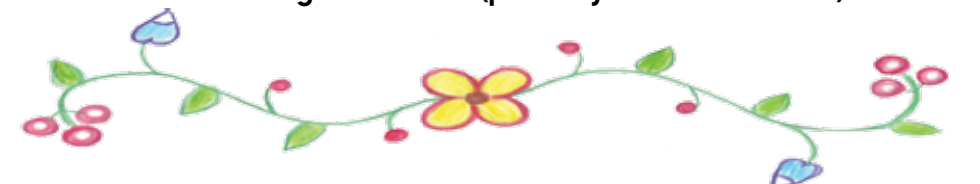
Little Sturgie remained near his spawning site for nearly a year before he began his trip to Gichigami (Lake Superior). Luckily, he never fell prey to larger predatory fish who would eat him in an instant. He carefully swam along the river's bottom, feeling for food with his sensitive four barbels (long whiskers) that hang off his nose. Sturgie's mouth can also extend out like a little funnel to suck up food, like insect eggs, as he swims along the bottom.

Sturgie's body does not have bones or scales. His skeleton is made up of 5 rows of bone-like plates called scutes that cover his back and sides. Sturgie has no teeth.

Little Sturgie is lucky because his home river, the St. Louis, is one river where lake sturgeon restoration and protection are taking place. Little Sturgie can be Big Sturg if we all help.



A native youth is awed by a young lake sturgeon that was fitted with a telemetry transmitter as part of lake sturgeon restoration research in the St. Louis River. The telemetry transmitter is used for tracking movement and habitat usage over time. (photo by Brian Borkholder)





# 15 summer interns give GLIFWC a boost

By Darcie Powless, GLIFWC PIO Summer Intern

**Odanah, Wis.**—Transitioning from vigorous hours of studying and listening to endless lectures to working as an intern, 15 student interns entered the GLIFWC summer workforce to assist with a variety of tasks. GLIFWC offers something most college students seek, a summer internship. Even though the GLIFWC internship is open to everyone, GLIFWC likes to see Native American students who are enrolled in an undergraduate or as a graduate student, says Jim St. Arnold who coordinates the program. “GLIFWC is pleased to provide opportunities for students and hopes to encourage more Native youth to enter careers in the various aspects of natural resource management and enforcement by offering them hands-on experiences,” he says.

The program is growing, and every year there are more applicants. This resulted in an increase of summer interns at GLIFWC this year working in various divisions, including Biological Services (Great Lakes Fisheries Section, Inland Fisheries Section, Wildlife Section), Public Information, Administration, Planning and Development, Intergovernmental Affairs, and Enforcement.

GLIFWC views interns as the future leaders of the Native American people. As they continue to strive for greater opportunities and seek more knowledge, student interns are geared towards making a positive impact on the world. So let's meet GLIFWC's 2015 summer interns:

## Administrative Division

Emily Nelis, Bad River's own, is back again this summer to join GLIFWC's staff. This time around Emily joined the Administrative Division; whereas last summer she worked in the Public Information Office. Her journey at UW-Madison continues. This year she will be entering into her junior year, majoring in social welfare along with receiving a certificate in American Indian Studies. During Emily's down time she enjoys going to pow-wows and beading. This summer she continues to go to pow-wows representing GLIFWC at their information booths. She explains that her favorite part of the job is manning informational booths and drawing florals that are used in the *Mazina'igan* and various other materials distributed by GLIFWC. Emily returned to GLIFWC this summer because she enjoyed her time last summer working and traveling to various events.



Emily Nelis, left, and Geneva Anderson. (photo by Darcie Powless)

## Biological Services Division

Bad River tribal member Florence Powless joined GLIFWC as a wildlife intern this summer. Looking to gain more experience and understanding of the outdoor life, Florence applied for a GLIFWC internship. Florence attends UW-Superior and is entering her junior year this fall, where she is majoring in Communications. In regard to her internship, “Flo” enjoyed the long walks she gets to take in the woods while setting hair snares as part of GLIFWC's pine marten study. When not setting snares, she builds them for the next set.

During the 2015 Healing Circle Run/Walk she also assisted Bad River and Red Cliff in walking the long route. During her free time she enjoys walking her dog, reading and taking long boat rides with her family. She also enjoys going to pow-wows during the summer.



Florence Powless, left, and Willis Ford. (photo by Darcie Powless)

Willis Ford, Lac Courte Oreilles (LCO) Community College student, is studying Natural Resources with an emphasis on land. Willis, a LCO tribal member, is also a Wildlife Section intern. He assisted with a pine marten study and helped with the removal of aquatic invasive species this summer. Willis was interested in the internship at GLIFWC because it meant hands-on training and spending time outdoors. His mother, Sirella Ford, was a previous GLIFWC employee so he was familiar with staff and liked the atmosphere at the office. After graduating, Willis plans on becoming a warden. During his down time, he enjoys beading and staying fit.

Bryton Jennings, first time GLIFWC intern, is working in the Wildlife Section this summer. During the course of the summer Bryton monitored the rice beds. He and his partner, Andre Virden, checked manoomin stands on various ceded territory lakes, recording data on each. Bryton attends UW-Madison where he is majoring in Biology. He lives in Weston, Wisconsin but is a Bad River tribal member. In his down time Bryton likes playing with his pup Gus and studying different animals like beavers.

The other wild rice intern is Lac du Flambeau tribal member Andre Virden. Andre attends the University of Wisconsin-Stevens Point where he is a major in Fisheries and Water Resources. He partners with Bryton monitoring the wild rice stands, checking for occurrence of rice as well as density and appearance of any diseases. During Andre's free time, he enjoys “hanging out” and just relaxing.



Andre Virden (photo by Bryton Jennings)



Bryton Jennings (COR)

Thomas McCutcheon, Bad River, is a new intern at GLIFWC this summer. He is working with the Biological Services Division. Throughout the summer Thomas collected samples for water quality testing and helped remove invasive species from the Kakagon Sloughs.

Thomas just graduated from high school and is attending UW-Stevens Point this fall. His plans are to major in Forest Management with a minor in Environmental Law Enforcement.

Thomas has been “out and about” as part of his job collecting water samples in a variety of lakes. He enjoyed being out and the opportunity to travel throughout the area. After Thomas graduates with his degree he hopes to find work in his field of study. During his free time Thomas enjoys things like camping, biking, and swimming. He also enjoys harvesting wild rice and looking for eagle feathers.

The Inland Fisheries Section welcomed new intern, Albany Jacobson Eckert, into their division this summer. She is an enrolled Bad River tribal member. Albany



Albany Jacobson Eckert. (photo by Butch Mieloszyk)

attends college at Stony Brook University in Long Island, New York, where she is majoring in Marine Vertebrate Biology.

As an intern, Albany aged walleye and musky using dorsal spines and cleithra. She also helped with inputting of population data. Albany particularly enjoyed learning the history and biology of freshwater fish. She also liked gaining experience working in a fish and wildlife agency. After Albany graduates, she plans on working in conservation biology and continuing to work towards a graduate degree. Moving to Alaska is also on Albany's to-do list. Biking, yoga, reading, photography and learning new languages are some of the hobbies she participates in during her down time. (See Interns, page 19)

# Interns get hands-on career experience

(continued from page 18)

## Biological Services Division continued

UW-Stevens Point student Jalyn LaBine returned to GLIFWC this summer. Jalyn works as a Great Lakes intern. She is majoring in Biology with a minor in Psychology. This fall she will enter her junior year. As a Great Lakes intern, Jalyn helped with trapping lamprey to keep record of the population. During the second part of the summer she assisted with netting sturgeon while recording data in Wisconsin's Bad River and with siscowet assessments near Houghton, MI. The best part about being an intern at GLIFWC for Jalyn is working outside. Jalyn loves being outdoors during her free time, playing sports or even just taking a walk through the woods.

Marcus Bear is a Red Cliff tribal member and also a Great Lakes intern. Marcus attends LCO Community College where he is studying Natural Resources with an emphasis on water. After he graduates he hopes to work for an agency that recognizes treaty rights and is willing to fight so that treaty rights remain intact. Marcus also explains that he would like to assist in making sure seven generations from now will still have resources to harvest. Along with Jalyn and Kasey, Marcus has been trapping lamprey and keeping population data. He also helped with sturgeon assessments. Towards the end of summer Marcus and his partners, Jalyn and Kasey, have been tagging lake trout as part of GLIFWC's temperature/depth study. The best part of his job is being outdoors because it offers hands-on training, he explains. He also enjoys being around Lake Superior. During his free time Marcus enjoys commercial fishing, drawing and reading.

GLIFWC has also brought in Northland College student Kasey Arts. Kasey is pursuing a double major in Biology and Natural Resources. After she graduates, her plan is to attend graduate school for conservation biology. She likes the opportunity to work in a friendly environment. Kasey particularly enjoyed working with lake sturgeon, helping net them and recording data. As a Great Lakes intern she also assisted with lake trout monitoring, ageing otoliths, lamprey monitoring and monitoring commercial fishing catch. When she's not working, Kasey enjoys volleyball, hiking and kayaking.



Kasey Arts (far left), Jalyn LaBine and Marcus Bear. (COR)

## Planning & Development

Planning and Development intern, Paul Soulier, is returning again this summer to GLIFWC's staff; he interned in the summer of 2014. Paul is currently entering his senior year at UW-Eau Claire; he will be graduating with a degree in Political Science and American Indian Studies. After he graduates Paul hopes to find a job that will impact his home community, Red Cliff, in a positive way.

This past summer Paul got an opportunity to write an Otto-Bremer Foundation grant. Paul enjoyed writing the grant. He explains this was the first grant he had ever written and was pleased with the opportunity. Paul also assisted with the information booth at several tribal events. During his free time, he enjoys learning as much as he possibly can about politics and playing several musical instruments. He is in the biggest D-3 marching band in the country at UW-Eau Claire, where he plays the sousaphone.

Geneva Anderson worked for both the Planning and Development and Administration Divisions. Geneva will be entering into her senior year of high school this year and is a Bad River tribal member. After she graduates high school, her plans



Paul Soulier (photo by Darcie Powless)

are to attend the University of Minnesota Twin Cities where she would pursue a major in Psychology or Psychiatry. This summer Geneva has been learning about the traditional foods of the Anishinaabe in the Planning and Development Division. For the 2015 Bad River Health Fair Geneva put together a display board on traditional Anishinaabe foods versus modern processed food. She also helped Sue Lemieux with various office tasks in Administration. The reason she was interested in working for GLIFWC is because she likes what GLIFWC stands for and how GLIFWC assists its member tribes. After she graduates college, Geneva plans to work on a reservation, responding to public needs while incorporating Native American culture. When Geneva isn't working, she likes to be outside, swim, watch movies, listen to music and read.

## Intergovernmental Affairs



Kristen Thannum (photo by Darcie Powless)

Kristen Thannum joined the Department of Intergovernmental Affairs (DIA) this summer as an intern. Kristen attends college at Chippewa Valley Technical College in Eau Claire, WI, where she is studying to be a paralegal. She plans on continuing her education until she receives her master's degree. During her internship with the DIA, Kristen assisted one of the attorneys with updating the Off-Reservation Code and printed 100 copies to be distributed throughout the member tribes. She also conducted a phone interview with Wanda McFagggen from St. Croix to get a tribal perspective on the significance of Sandy Lake and how the proposed Sandpiper Pipeline could impact the site. Kristen admits that she enjoys the warm and welcoming atmosphere at GLIFWC. During her free time, she enjoys activities that allow her to express herself like painting, reading, and listening to music.

## Enforcement Division

The Enforcement Division gained a new intern Erik Heiserman. Erik attends Northern Michigan University in Marquette, Michigan.

Erik has been assisting with numerous tasks, such as working with students at Camp Onji-Akiing. Erik helped plan many of the events at camp and taught youth canoe safety at Lac du Flambeau's Enrichment Summer Camp. Canoe safety included different paddling tactics and the correct way to get back into a canoe if you were ever to fall in the water.

He also assisted with teaching the youth about ricing and the correct way to rice without harming the rice. Erik enjoyed being able to work with the youth and educate them.



Erik Heiserman (photo by D. Jennings)

## Public Information

Lastly, is myself, Darcie Powless, the author of this article. As an intern I work in the Public Information Office. I was interested in joining GLIFWC because it presented me greater opportunities. Bad River is my home, another reason why I was extremely interested in the internship; it was so close to everything I knew. I am currently attending Madison Area Technical College (MATC) in Madison, where I'm receiving my associate's degree in Liberal Arts.

After I complete my degree at MATC, I hope to transfer into UW-Madison to major in Sociology with a certificate in American Indian Studies. My plan is to return home after I finish my schooling and work for my tribe. Pow-wows, swimming and beading are some hobbies I enjoy during my down time.

My fellow intern, Emily Nelis, and I worked GLIFWC's information booth at pow-wows this summer. Photo scanning, writing for the *Mazina'igan* and a variety of office tasks kept me busy this summer in the Public Information Office. The best part of the position was getting to absorb a lot of information and learning about things I had no idea about before I came to GLIFWC.



Darcie Powless (photo S. Erickson)

**"GLIFWC is pleased to provide opportunities for students and hopes to encourage more Native youth to enter careers in the various aspects of natural resource management and enforcement by offering them hands-on experiences."**

—Jim St. Arnold, Program Coordinator



# Phragmites, purple loosestrife & leafy spurge focus of invasive species program

By Miles Falck, GLIFWC Wildlife Biologist

**Odanah, Wis.**—GLIFWC's invasive species program got off to a busy start this summer. Staff and interns have been pulling garlic mustard, cutting Japanese knotweed, distributing biological controls for leafy spurge, surveying ceded territory waters for aquatic invasive species (AIS), confirming phragmites reports, and following up on last year's phragmites control efforts.

Garlic mustard is a biennial herb native to Eurasia. Garlic mustard can be identified by its small, four-petaled white flowers in early spring, and as its name implies, the garlic smell of its crumpled leaves. The herb was most likely introduced for its medicinal or culinary uses. It prefers damp soil and partial shade and can invade undisturbed forests. In North America, garlic mustard forms large dense stands that spread rapidly and replace native plant communities. GLIFWC staff and interns assisted with garlic mustard pulls along the Bad River north of Copper Falls in Mellen, Wis. These cooperative workdays go a long ways toward restoring the native plant communities at these sites. Also helping were volunteers from Ashland County Conservation Department, Bad River Natural Resources Department, Bad River Boys and Girls Club, Bad River Watershed Association, Wisconsin DNR, US Forest Service, and Northwoods CWMA.

Japanese knotweed is a large herbaceous perennial plant native to eastern Asia. It's green bamboo-like stems can grow to heights of 10 feet or more. Knotweed produces upright clusters of small creamy-white flowers in late summer. Japanese knotweed forms dense stands that displace native plant communities, especially along stream corridors. GLIFWC assisted staff from Iron County and Wisconsin DNR with knotweed control efforts in Iron County.

Leafy spurge is a perennial herb native to Eurasia. It can be identified by its yellow flowers which bloom in May and early June, and the milky sap that seeps from its broken stems. Leafy spurge replaces native vegetation in open habitats including prairies and pine barrens.



Adult "flea beetle" (*Aphthona lacertosa*) feeding on leafy spurge flowers. (photo by M. Falck) Inset photo courtesy of USDA.

Pine barrens habitats in northwestern Wisconsin are unique habitats that are especially vulnerable to the threats posed by leafy spurge. The use of biological controls complements herbicide applications conducted in the fall and reduces the amount of herbicide needed to achieve effective control. GLIFWC collects and distributes *Aphthona* beetles in early summer. These "flea beetles" are on a strict leafy spurge only diet.

GLIFWC's annual AIS surveys look for invasive aquatic plants and animals in ceded territory waters and wetlands. Their

objective is to detect pioneer populations of invasive species that can be treated effectively and hopefully eradicated before they become widespread and abundant.



Willis Ford, GLIFWC intern, cuts Japanese knotweed stems in Iron County, Wisconsin. (photo by D. Unglaube)

## Canoomin project

(Continued from page 15)

enter and exit a rice field, and rescue or how to get back into a jiimaan if you fall out. Naigus has been soliciting interest from GLIFWC's member tribes for having the course offered on various reservations.

While not an element of the grant, the canoe safety team plans to develop some vignettes on the safe handling of jiimaan for posting on the wild rice page of GLIFWC's website. These will be actual, short demonstrations of canoe handling while ricing with an emphasis on respecting manoomin.

If you are interested in this program for your community, please contact Heather Naigus at 906-458-3778 or email [hnaigus@glifwc.org](mailto:hnaigus@glifwc.org).



Travis Bartnick, GLIFWC climate ecologist, pulls garlic mustard in the Bad River floodplain near Mellen, Wisconsin. (photo by D. Unglaube)

As of this writing, this year's AIS survey efforts have detected Eurasian water milfoil on Roberts Lake in Forest County, and an established bed of curly leaf pondweed on Gilmore Lake in Oneida County. The crew is also continuing verification of phragmites reports in the ceded territory, especially those in or near manoomin waters. Four non-native phragmites sites were verified in central Wisconsin.

Meanwhile, GLIFWC's control crew recently got started evaluating past phragmites control efforts and re-treating where necessary. Purple loosestrife, leafy spurge, and phragmites will be the focus of their control efforts this summer. Purple loosestrife and non-native phragmites are both wetland invasives that displace native wetland vegetation with dense monotypic stands that provide fewer options to meet the food and cover needs of native wildlife.

While GLIFWC has been controlling purple loosestrife with the aid of biological controls for several years, non-native phragmites is a recent arrival, and it is not well established in the ceded territories. Ongoing control efforts within the Lake Superior basin will hopefully prevent the negative impacts phragmites has caused along shorelines and wetlands in the lower Great Lakes basins.

### Mazina'igan digital flipbook

Do you receive *Mazina'igan* in the mail? Would you rather read it online? You now have this option. The online edition is a full-color flipbook that can be read or downloaded to a PDF.

Flipbooks are environmentally friendly, and they save postage and printing costs. If you choose the online edition, you will be notified via email—approximately one week before the *Mazina'igan* is mailed—when it is available for viewing. The email will contain a link to GLIFWC's website where you can view the flipbook.

To receive the *Mazina'igan*, either electronically or a mailed subscription go to: [www.glifwc.org/publications/mazinaigan/Mazinaigan.html](http://www.glifwc.org/publications/mazinaigan/Mazinaigan.html) and choose either new subscription or E-edition notification. You may also email [lynn@glifwc.org](mailto:lynn@glifwc.org) or phone 715.685.2150.

# “Preserving the Power of Plants”

## Workshop shares old knowledge, new to many

By Darcie Powless, GLIFWC Summer Intern

Ashland, Wis.—Participants had the opportunity to re-discover the power of wild plants and their many uses for sustenance, utilitarian purposes and medicine during a “Preserving the Power of Plants” Workshop. Held at the Northern Great Lakes Visitor Center in Ashland, Wisconsin on June 9th, 2015, participants were welcomed in a good way with an opening prayer by Jim St. Arnold, giving thanks for the new day.

Danielle Lake-Diver, University of Minnesota master gardener, provided a cultural perspective and proceeded with an introduction to ethnobotany. Ethnobotany is the study of the relationship between plants and humans. The morning session focused on sweet fern, wintergreen, milkweed, ostrich fern, and wild leeks. Numerous facts about plant parts, planting, and harvesting were relayed. One interesting piece of information discussed was the 1 in 20 rule. The 1 in 20 rule safeguards from overharvest because it provides that every plant that is pulled must be surrounded by 19 of the same type of plant. A plant grows best when surrounded by the same type of plant. Plants actually grow better in groups, not straight rows. Also when harvesting plants you must make an offering to the plant for giving its life to you. Anishinaabeg are taught to lay asemaa (tobacco) down before taking anything from Mother Earth.

Later, the whole group proceeded to the outdoor amphitheater. Stacy Quade, herbalist and owner of Energy Connections for Life, led the seminar at the outdoor amphitheater. She went on to explain the various plants she has worked with and some she has even used as medicine. She focused on basswood leaves and mint leaves specifically. Basswood leaves can actually be eaten in salads. She wouldn't recommend eating a whole salad of basswood leaves only a few in a salad. Basswood leaves are also used to soothe headaches, reduce smooth muscle spasms along the digestive tract, and balance acid in your stomach. Then she went on to talk about mint leaves and the benefits the leaves contain, which include boosting digestion and strengthening the liver.

Next was a cooking demonstration by LaTisha Coffin, GLIFWC ANA SEDS coordinator, and Owen Maroney, GLIFWC community dietician. Their presentation, titled gimijiminaan (our food), included cooking with traditional Anishinaabe foods using some of the plants discussed that day. Before they actually started making the food, LaTisha gave background on the foods they were using and how they harvested them. She especially stressed the importance of learning from Elders about harvesting. The Elders also talked about the need to think of the next seven generations. Harvesters only take what is needed and also replant to make sure seven generations from now those resources are still here.

She also went on to explain the difference between traditional foods and cultural foods. Traditional foods are pre-colonial foods. Foods such as wild rice,



Paul Hlina, UW-Superior Lake Superior Research Institute botanist, led a nature walk pointing out trees and plants and discussing their uses. (photo by Darcie Powless)

berries, corn and venison were harvested or acquired by trade between tribes. Cultural foods are post-colonial foods, composed of non-traditional ingredients such as “commods” or frybread. The food prepared for the group to sample was a wild rice bannock, made from wild rice flour, topped with sunflower seed pesto. The second sample was a chilled wild rice and berry salad, which consisted of wild rice, raspberries, blueberries, blackberries and a tad of maple syrup.

Later that afternoon participants were treated to a nature walk. One group was led by Paul Hlina, UW-Superior Lake Superior Research Institute botanist and his colleague Mark McConnell, co-owner with his wife Mary of Gitiiganmaa'ishkam, a hobby farm and growing site for Preserving the Power of Plants. Another group was led by Danielle Lake-Diver and Mary McDonnell. Mary noted that the goal of Preserving the Power of Plants is “to preserve plants and the knowledge of wild edibles so the knowledge is not lost. We try to connect with youth and use the knowledge from Elders,” she says.

The four trees studied thoroughly were aspen, birch, willow and balsam fir. Interestingly the sap from an aspen tree or a willow tree can be rubbed on a baby's gums when he/she is teething because the sap contains aspirin. When the Ojibwe (See *Preserving*, page 23)

# The great pumpkin and red sumac—nutritious & delicious

By Owen Maroney  
Community Dietician &  
Geneva Anderson, Intern

The last of the miinan (blueberries) are washed and headed to the freezer and the ode'iminan (strawberries) were jellied a while ago. Baakwaanan (sumac clusters) have turned red, and gardens are beginning to grow autumn hardy vegetables like okosimaan (squash). Let's take some time to look at one garden plant and one wild plant.

The Anishinaabe people were not only great hunters, fisher people, and foragers but they also had gardens that include several varieties of squash. Ozaawikosimaan (pumpkin) (Latin name: *Cucurbita pepo*) is a type of squash whose seeds were brought to the Great Lakes Region through trade routes about 3,000 years ago.

There are many edible parts of the pumpkin plant: the flowers, fruit, seeds, and rind. When harvesting pumpkins, be sure to collect before a hard freeze to prevent damage and while the pumpkin is orange with a hard rind. Pumpkins are low in calories, carbohydrates, and fat. They are also an excellent source of



Staghorn sumac berries. (photo reprinted from [www.flickr.com/photos/martinlabar/3932976023/](http://www.flickr.com/photos/martinlabar/3932976023/))

vitamin A, which is great for eyesight and the immune system. Additionally, they are a good source of potassium which is an electrolyte (think Gatorade), vitamin C which is good for skin elasticity and preventing cell damage, and riboflavin which helps the body convert food to energy.

As alluded to earlier, pumpkin can be used in various ways. One creative and useful way is making pumpkin puree. Pumpkin puree can often be used in baked goods to replace oil or butter, which are high in fat.

One note: adding pumpkin will generally produce a darker, denser, moister product. When using pumpkin

purees to replace oil, the ratio is 1:1 and for butter replace half with pumpkin. For example, if a recipe calls for one cup of butter, use ½ cup pump-kin puree and ½ cup butter.

For those who are looking for something to harvest outside the garden, now is the time to start collecting sumac clusters also known as heads.

A couple of notes:

- As the harvester, it is your responsibility to know where and what you can legally harvest, to correctly identify the plant and the edible portion, and to harvest responsibly. Check out [www.glifwc.org](http://www.glifwc.org) for more information on harvesting regulations and areas open to harvesting.

- ONLY pick red sumac clusters. There is a poisonous variety called poison sumac that can easily be avoided since the poison sumac clusters are white and never turn red.

- Sumac is related to cashews and mangoes so it may be unsafe for persons allergic to nuts or mangoes.

- Sumac generally grows in disturbed areas, like the sides of roads. Look for sources of pollution before you harvest and try to avoid harvesting in polluted areas.

Sumac fruits grow in red clusters that are made up of hard “berries.” Staghorn sumac (*Rhus Typhina*) will have fine hair or fuzz on the branches and berries, while smooth sumac (*Rhus Glabra*) will not. Both have a lemon flavor and were used by Anishinaabe to make a lemonade flavored beverage.

To try at home use fresh or dried clusters, soak in cool water for as little as 30 minutes or up to two days, strain clusters and berries from water, add maple syrup and enjoy.

If you would like to drink it hot, it is better to heat the water after removing the clusters as heating sumac can release tannins that can make the tea very bitter. Sumac berries can also be ground and used as a spice for meats and vegetables. Currently, there is no nutrition information available on sumac through the USDA or Health Canada.

Recipes to use sumac and pumpkin can be found in the *Mino Wiisinidaa! (Let's Eat Good!) Traditional Food for Healthy Living* cookbook. Try the “Sumac Berry Ade” (page 157) recipe for a refreshing summer treat or the “Wild Rice Flour Bannock” (page 191) to try replacing oil with pumpkin puree.

Happy Harvest!



# Striving to understand: Wis. Chapter of the Wildlife Society receives cultural training at Waswagoning

By Dylan Jennings  
Staff Writer

**Lac du Flambeau Reservation, Wis.**—It's a cloudy and misty day in Waswagoning (Lac du Flambeau), yet everything feels mizhakwad (clear sky). About 25 members of the Wisconsin Chapter of the Wildlife Society arrived at Waswagoning for a two-day work-

shop in June to learn more about Ojibwe perspectives pertaining to wildlife and the environment.

The Wildlife Society is the professional international organization for wildlife biologists and was formed in 1937 to address national and international issues that affect the current and future status of wildlife in North America and throughout the world. States and provinces have their own chapters.

Every group works diligently to bring its members the experience necessary to work in the field.

Every year, the Wisconsin chapter discusses future trainings and potential technical topics. A majority of the members requested some form of cross-cultural training with tribal entities. Jonathan Gilbert, GLIFWC wildlife section leader, organized the two-day workshop for these professionals in hopes to help bridge the gap of understanding between tribal and non-tribal communities in the wildlife field.

The first day was intended to break the ice and provide a base of relevant cultural practices that one might see in a tribal community. The second day provided members with technical breakout sessions. Breakout sessions included language and culture, tribal sovereignty, Traditional Ecological Knowledge (TEK), and tribal consultation.

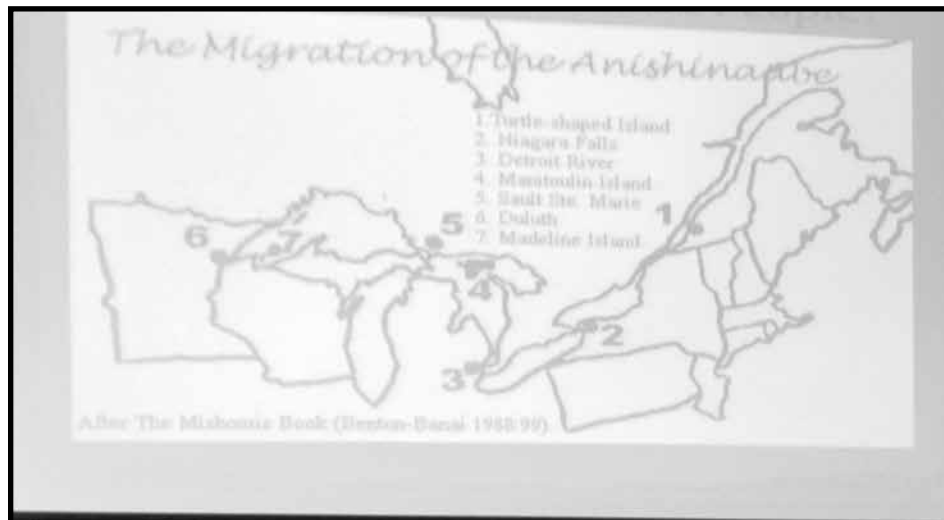
"This is a really good thing that you guys come here to learn these things and sit down with the tribal communities," said biskakone Johnson, Lac du Flambeau (LdF) member and Ojibwe artist, in his welcome address at the LdF campground. His invocation was followed by a traditional feast and pipe

ceremony. The group shared food and good words with tribal members in a setting that was culturally sound and appropriate.

In today's mainstream society, tribal perspective isn't always considered nor revered as important. However, the knowledge that Native American people carry cannot be undermined nor ignored. Science is deeply rooted in observation; however, tribal communities that have been around their ancestral homelands for generations have observed and lived within these natural environments for centuries.

At the end of the day, it was refreshing to see such all-around positive interaction. Everybody in attendance had different teachings; however everyone could respect and relate to the environment and the awesiiyag (animals) that help to sustain a way of life.

As Dr. Gilbert put it, "It's now up to the members to take things away from this training and apply it in their own lives and work force." A big chi-miigwech goes out to all who helped make this event a success, including all the staff, cooks, participants and volunteers. Good things and blessings come even on the cloudiest of days.



Wesley Ballinger, GLIFWC language specialist, talks about the identity of Anishinaabe people. (photo by Dylan Jennings)

## Thoughts on the spread of CWD

By Jonathan Gilbert, PhD, GLIFWC Wildlife Biologist

Chronic wasting disease (CWD) continues to make news through the midwest and ceded territories. There have been three significant developments regarding CWD either in or immediately outside the Ojibwe ceded territories in Michigan and Wisconsin.

The first incident involves the discovery of CWD in wild free-ranging deer in Ingham County, Mich., just outside of the 1836 ceded territory near Lansing, Mich. This is the first case of CWD in free-ranging deer in Mich. and will trigger several actions by the Mich. Department of Natural Resources. A CWD management zone and core areas are created in the counties surrounding this case and within that core area there will be unlimited antlerless deer tags issued. A feeding and baiting ban will be implemented within the management zone. Here, yet again, we see a case of CWD seemingly come out of nowhere far from any current CWD in free-ranging deer.

How might this occur? The next two cases may shed some light on this.

In June of this year a deer on a game farm near Eau Claire, Wis. died and according to protocol, was tested for CWD. It came back positive. This game farm is just southeast of Eau Claire and just outside of the Wisconsin (1837) ceded territory. The farm has been quarantined and depending on the results of the investigation, the herd may be euthanized. This continues a trend of CWD cropping up on game farms, despite efforts to curtail the spread.

The second case, also in June, was a CWD positive deer on a game farm in Ohio. How is this relevant to tribes in Michigan, Minnesota or Wisconsin? Rules established to regulate the captive cervid industry require that game farms keep all records on sales and transfers of captive deer. Through this record keeping requirement, we have learned that the deer that died in Ohio came from a game farm in Fredrick, Wis.

There is another interesting fact related to the Ohio game farm and the origin near Fredrick. Several years ago there was a single deer which tested positive for CWD near Shell Lake, Wis. This deer was found only about 20 miles from the game farm in Fredrick which had the positive CWD deer ultimately found in Ohio. Could these have been related? We may never know for sure, but it is suspicious.

So, now we have evidence that CWD is found on game farms on a regular basis. Since there is no live test for CWD, these deer are being sold and transferred all over the country. And now we have evidence that CWD has been transferred with those captive deer from Wisconsin to Ohio. This long distance spread of CWD may help answer the question as to how CWD got to Lansing, Mich. It seems clear that banning captive cervids and the transfer of those animals around the United States would be a prudent action to take to curb the spread of CWD.

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### 2015 GLIFWC enforcement youth activities/education

Class	Date	Place	Contact
Hunter Safety	August 31, Sept 1 & 2	Mole Lake	Roger McGeshick 715.889.3200
ATV Safety	September 5-6	Mole Lake	Roger McGeshick 715.889.3200
Hunter Safety	September	St. Croix	Brad Kaczak 715.562.0030
Trapper Education	October 17 & 18	Mole Lake	Roger McGeshick 715.889.3200
Hunter Safety	October	Bad River	Vern Stone 715.292.8862

All classes are tentative and subject to change. For updated information on these events and others, please be sure to check our website at [www.glifwc.org](http://www.glifwc.org), visit us on Facebook, or call your nearest GLIFWC warden.



# Nome restoration efforts

(continued from page 13)

in the Lake Superior basin. It is here that milt and eggs collected from spawning adults on the Sturgeon River—located 75 miles to the east—are transformed into 5-8 inch fingerlings under the supervision of USFWS biologists.

“It works out great that we can provide fish for the St. Louis while working on the Ontonagon,” Quinlan said. An intake pipe submerged into the Ontonagon circulates water through the sturgeon holding tanks—an attempt to imprint fish to the river and encourage them to return to spawn as adults.

In mid-July FdL fisheries technicians joined USFWS staff at the hatchery trailer to prepare nearly 1,500 fingerlings for their release into the upper Chigamiiziibi near Brookston. Quinlan and Glenn Miller, USFWS fishery biologist, inserted a tiny PIT (Passive Integrated Transponder) tag just underneath the skin near the third scute—one of the bony plates that takes the place of scales found on most fish. A team of FdL technicians measured, weighed, and “barcoded” each individual sturgeon fitted with a PIT tag before their trip to the St. Louis River release site at Brookston. In future sturgeon assessments, fisheries technicians will pass a handheld receiver over the PIT site (like checkout line barcoding in a store). Quinlan said PIT tags help biologists monitor growth rates and better understand habitat preferences.

The remaining lake sturgeon fingerlings from the hatchery trailer are due for release below the Victoria Dam on the Ontonagon River later this summer.

## Keweenaw Bay tracks sturgeon in Gichigami

By KBIC Staff

The Keweenaw Bay Natural Resources Department (KBNRD) has a vested interest in Lake Superior lake sturgeon populations. For over a decade, passive data collection by the KBNRD regarding this valuable species has led to the compilation of important information from fish captured by licensed KBIC commercial and subsistence fishers in their harvest efforts, which typically target lake trout and lake whitefish. KBNRD has also assisted in additional limited lake sturgeon research efforts while coordinating with the U.S. Fish and Wildlife Service, Michigan Department of Natural Resources, Ottawa National Forest, and Michigan Technological University.

Since 2002, lake sturgeon have been captured and assessed by KBNRD staff during intensified survey efforts specifically targeting this species. Captured lake sturgeon are tagged with a unique Floy-Tag, and tag numbers are recorded as well as total length, fork length, girth, and weight (if possible) prior to the fish being released. A tissue sample is also collected from each lake sturgeon (small flesh sample cut from the left pectoral fin) for genetic research. Sturgeons are scanned for potential presence of coded wire and/or Pit Tags with a handheld metal detection unit.

The primary objectives for KBNRD lake sturgeon management include:

- 1) Continuation of long-term lake sturgeon population monitoring
- 2) Continuation of periodic fish community abundance data collection
- 3) Continuation of the 1-week fall survey of lake sturgeon abundance near certain rivers in the Western U.P.



*The Keweenaw Bay Indian Community continues monitoring the lake sturgeon population in Michigan waters of Lake Superior, recording data on captured sturgeon. Data is shared with other fishery management agencies. (photo submitted by KBIC Natural Resources Department)*

## Preserving the Power of Plants

(Continued from page 21)

made their canoes, they would use huge pieces of birch bark, which was usually found on 200-300 hundred-year old trees; however, it is difficult to find birch bark trees that are that old and big today.

The balsam fir tree was also highlighted. When the sap from a balsam fir tree is boiled in water and mixed with charcoal from a fire, it will create a very sticky black material which the Ojibwe used to patch their canoes. The sap is also used to cure sinus infections by taking a heated rock out of the fire and putting the sap on the rock, then inhaling the steam from the rock. Mark also explained that on long hikes a person can suck on the needles from balsam fir and this will give them energy. Also discussed were cattails and their use in cradleboards.

Preserving the Power of Plants is funded through a grant to UW-Superior designed to both preserve wild plants and connect people with the knowledge about their uses. Currently Danielle Lake-Diver, is the grant assistant and can be contacted for information about the program at 218-260-5675.

## Sturgeon return to Red Lake

By Pat Brown, Red Lake Fisheries Program Director

Lake sturgeon were once abundant in the Red River of the North watershed, including the Red Lakes and tributaries, through the late 1800's. By the early 1900's lake sturgeon were nearly extirpated from the Red River Basin due to overharvest



*Red Lake Fisheries Technician Herman Lussier stocks sturgeon in Lower Red Lake in 2008. Red Lake youth Teiasha Fairbanks (far left) and Jared Spears look on. (photo by Pam May)*

and loss of habitat. The construction of dams on the mainstem Red River, many of the major tributaries, and numerous lake outlets was the primary causative factor.

In 1931, a dam was constructed at the outlet of the Red Lakes on the Red Lake River to assist in flood protection of agricultural land adjacent to the river downstream of the Red Lake Indian Reservation. This structure removed the connection between the lake and the river and cut off the spawning migrations of sturgeon up the river into the lake. The last verifiable sighting of sturgeon in the Red Lakes was in April of 1941 in the Minnesota Department of Natural Resources (MDNR) walleye spawning trap at Waskish of a single individual weighing over 140 pounds and measuring over 6 feet long.

### Cultural connections to name

Sturgeon were used by the Red Lake people prior to the coming of the western settlers. Evidence of this has been found at numerous archeological sites on the reservation where sturgeon bones have been found along with tools made of these bones.

Sturgeon likely migrated up the Red Lake River as part of their annual spawning migration into the Red Lakes and its tributaries to spawn in the spring and then descended into these rivers after spawning. At the same time there was likely a resident population of sturgeon that remained in the lakes year round. It is likely that tribal members harvested the majority of sturgeon during migration. These fish were used as food and trade goods with other tribes and settlers. All parts of the fish were used including dried meat for trade, and the skin and oil for glue and paint.

### Red Lake's restoration begins

In 2007, the Red Lake Band received its first of three Tribal Wildlife Grants to assist in restoring lake sturgeon to the Red Lakes and its tributaries. In the past eight years Red Lake has cooperatively stocked approximately 72,000 six-inch lake sturgeon. The Red Lake Band purchases eggs annually from the Rainy River First Nation. The eggs are transported to and incubated by the Genoa National Fish Hatchery in Wisconsin. The newly hatched sturgeon are raised throughout the summer months. In early fall, the fingerlings are tagged, for future identification, and transported to the reservation for release in the Blackduck River.

Red Lake has used the Blackduck River for a release site because there is a fairly deep estuary where the sturgeon can acclimate before entering Lower Red Lake. These efforts have the potential to reestablish lake sturgeon in the 285,000 acres of the Red Lakes, 187 miles of tributaries upstream, and 70 miles downstream in the Red Lake River where they once existed.

### Restoration is a cooperative effort

The Red Lake Band is not the only agency working on the restoration of sturgeon in the watershed. The MDNR, the White Earth Band, and the U.S. Fish and Wildlife Service have been working on restoring this species in other parts of the watershed since 1997. These agencies have a common goal, which is to restore a reproductively successful population of sturgeon to the Red River watershed. It is anticipated that it may take 20 to 30 years to achieve this goal because female sturgeon do not first spawn until 20 years of age and may live to be over 100 years.

Stocking is only one part of this effort. Restoring fish passage by removing or modifying dams has been a major effort throughout the Red River Basin. In order to fully protect introduced lake sturgeon there is no open angling season for this species throughout the basin. By using a watershed-based approach to recover this species, coupled with a public outreach program, the likelihood of this effort being successful has increased.

### Signs of success

Lake sturgeon were found throughout the reservation waters of Upper and Lower Red Lake by 2010 and have been caught by state anglers in 2013. Eight year classes are currently present, and the largest sturgeon caught and released to date was 46 inches weighing just over 20 pounds during fall survey netting in 2014.

Currently, both on and off the reservation sturgeon are fully protected and must be returned upon capture. However, we would greatly appreciate pictures, lengths and capture location of any captured sturgeon in the Red Lakes or tributaries to document range expansion and success of this effort. This information can be sent to [rldnr@redlakenation.org](mailto:rldnr@redlakenation.org).



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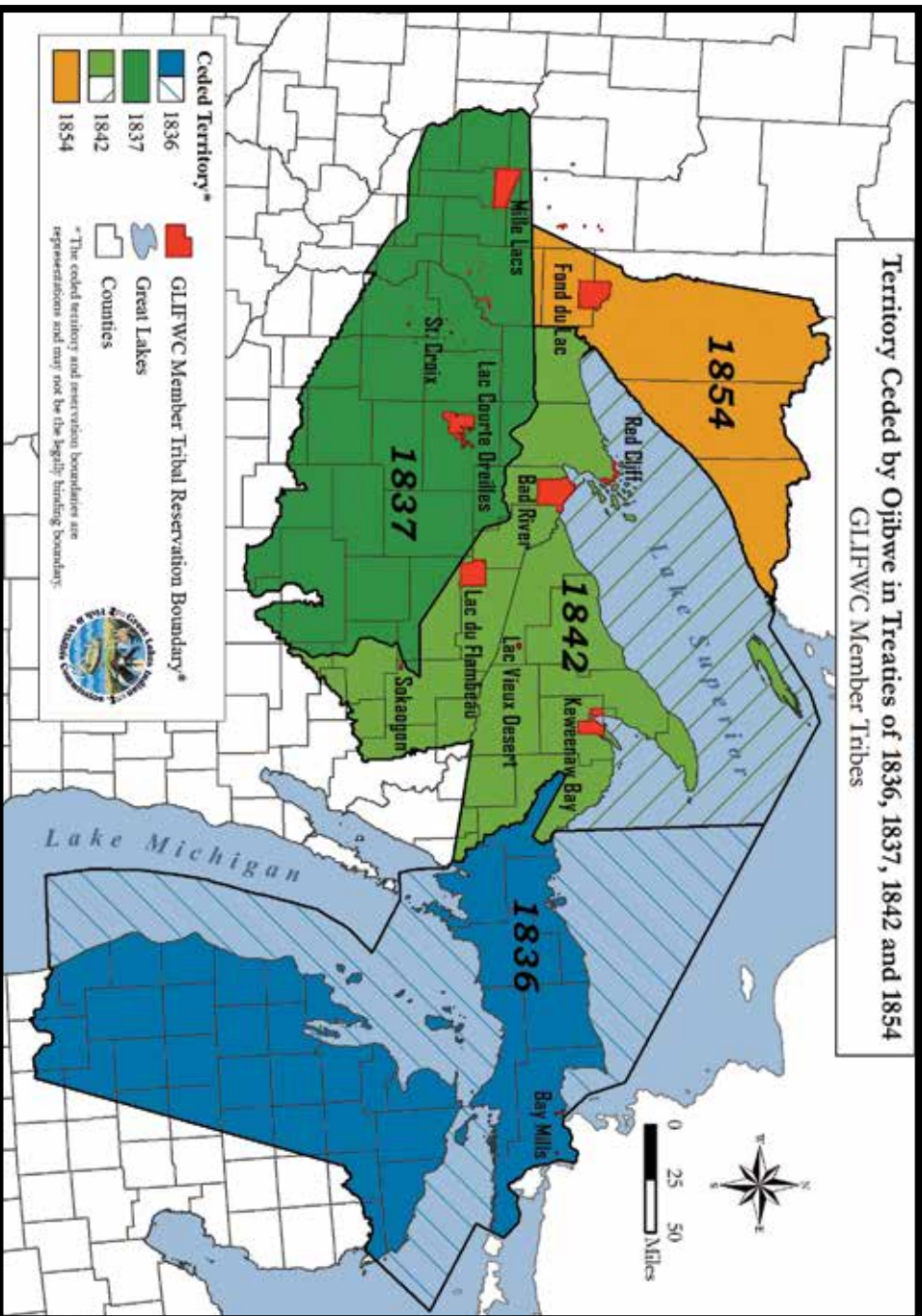
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**Territory Ceded by Ojibwe in Treaties of 1836, 1837, 1842 and 1854**  
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# Mazina'igan

A Chronicle of the Lake Superior Ojibwe



**Daywaagin 2015**