

Mazina'igan

A Chronicle of the Lake Superior Ojibwe

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Manoomin investments pay off for harvesters and wildlife

By Lisa David & Peter David
GLIFWC Wildlife Biologists

Cooperative manoomin restoration projects can be found scattered across the Ceded Territories, but some of the best examples can be found in Burnett County, Wisconsin, on the Crex Meadows Wildlife Area.

Wild rice has successfully been established on several flowages on this incredible wetland complex tucked into the sand barrens in the northwest corner of the state. Perhaps the best known of these is the Phantom Flowage—but last fall Phantom was outshone by the North Fork Flowage, which harvest surveys suggest was the most heavily harvested rice bed in the state last year.

The stories for Phantom and North Fork are similar. Both are artificial impoundments created primarily for the benefit of wildlife, especially migratory birds. Both offered the habitat requirements manoomin needs, but given wild

rice's limited natural dispersal ability, neither was colonized until they were seeded in a cooperative effort between the Wisconsin Department of Natural Resources (DNR) and GLIFWC.

North Fork was seeded nearly every year between 1990 and 1997. However, seeding amounts were generally quite modest. Over that entire period less than 1,200 pounds of seed was sown into the shallows on the upper end of the flowage.

Small amounts of manoomin showed up quickly, and the ducks with it. It took human harvesters a little longer to find the rice, but North Fork began showing up in the annual harvest fairly consistently beginning in 2000. Since then there have been good years and poor years—but nothing as good as last fall when the stars seemed to align over this water.

The stand was large; though not the largest it has been; the density good but not so thick as to make harvesting difficult or to promote disease outbreaks; (see Resources, page 4)



North Fork Flowage in northwest Wisconsin—a manoomin success story. (Peter David photo)

Storms packing rain, then wind, pound Ojibwe Country

By Charlie Otto Rasmussen, Staff Writer

A series of powerful overnight thunderstorms rolled through the heart of the Ceded Territory July 11-12 dumping up to 10 inches of rain in some locations. The dramatic weather event launched days of historic flooding that destroyed sections of roadways, isolating homes and communities including the hard-hit Bad River Ojibwe reservation.

“At first it looked like a big summer storm, something you see in most years,” said Jim Stone, Flood Incident Command Officer for portions of Ashland County, Wis. “Then it became something, much, much more.”



As highway engineers discuss repair plans in a washed out section of US Highway 2, flood relief volunteers hand-carry supplies to waiting vehicles bound for New Odanah July 14. (CO Rasmussen photo)

Bad River officials declared a state of emergency and launched a community evacuation as floodwaters flowed over the banks of every waterway in the area. Some residents along the upper Kakagon River quickly became trapped in their homes. Stone, a veteran GLIFWC warden, and Tribal Officer John Patrick belted on life jackets and waded chest-deep through pale brown floodwater, pulling three people from their homes to the safety of higher ground. Beyond the reservation, flooding claimed the lives of three people near Saxon Harbor, Cable and Marengo.

“With so many challenges, all the agencies involved really worked well together in response to the flooding,” Stone said, naming the Wisconsin Department of Transportation engineers and Wisconsin Air National Guard as standouts in a wide-ranging effort. Upon learning that five people in need of dialysis were stranded near New Odanah, the Guard dispatched a Blackhawk helicopter to rush the tribal elders to an area hospital for treatment. On the ground, highway engineers worked around the clock to repair washouts and the battered Kakagon bridge.

In east-central Minnesota where the Mille Lacs Band occupies widespread reservation land, rainfall ranged from 6.92-inches near Brainerd to 2.17 inches at Wright according the National Weather Service at Duluth. The storms dumped just over five inches in the Moose Lake area. Floodwaters engulfed portions of State Highway 48, cutting off access to tribal services around the Lake Lena Community.

“Washouts also impacted the East Lake Community,” said Monte Fronk, Mille Lacs emergency management officer. “Band services were closed in several areas to keep people off the road and safe.”

One-two-punch

Ten days later another storm produced sustained 75 mph winds, cutting off power for many residents of Bad River, Fond du Lac, and Red Cliff Communities. Meteorologists put wind speeds in perspective, noting the July 21 storm matched Category One hurricane strength based on the Saffir-Simpson Hurricane Wind Scale.

Mature trees lost any number of stout branches or were completely knocked over, exposing large circular root balls. (see Communities rally, page 2)

Amendments to LCO (Voigt) case on horizon

New rules for furbearers with court approval

By Phoebe Kebec, GLIFWC Policy Analyst

In the next few months, tribal members may be able to take advantage of some additional harvesting opportunities due to changes in the tribes' off-reservation hunting, fishing and trapping regulations.

Lac Courte Oreilles Band v. Wisconsin is the legal case that decided the nature and extent of the Ojibwe bands' reserved rights to hunt, fish and gather in the off-reservation Ceded Territories. The case began in 1975 and initially concluded in 1991. Following the court's final judgment in 1991, the tribes had no way to update their off-reservation conservation codes.

Finally, in 2001, the parties went back to court and the court approved the stipulation amendment process. This provided an opportunity for the parties to submit mutually agreed-upon regulation changes to the court for approval.

Stipulation amendments were filed in the court in 2008 and 2011, with the newest version set to be filed with the court sometime this summer. The third stipulation amendment has been approved by the state, the Voigt Intertribal Task Force and a few of the tribes, but has not yet been approved by the court. It will be submitted to the court once all the tribes have approved it. This stipulation provides for changes in Chapters 8 (Small Game) and 9 (Fishing) of the Off-Reservation Conservation Codes (Voigt Model Code) covering the Ceded Territories within Wisconsin.

The Voigt Model Code contains the minimum court-approved regulations that apply to off-reservation harvesting within the Ceded Territories located in Wisconsin. (There is a separate model code that applies to the 1837 Ceded Territory within Minnesota.) Changes to the Voigt Model Code are reviewed by the Voigt Intertribal Task Force and the State of Wisconsin, and finally approved by the court. Tribal councils can then decide whether to enact the changes within their versions of the off-reservation conservation code.



New otter regulations are under consideration for treaty harvesters. As a species of special concern, otters must be registered at an on-reservation station or by a GLIFWC law enforcement officer. (CO Rasmussen)

In the latest round of stipulation amendments, the tribes and the state agreed on changes to the Model Code Chapter 8 (Small Game Harvesting) and Chapter 9 (Fishing). These changes were approved by the Voigt Intertribal Task Force in December of 2015, the Bad River and Lac Courte Oreilles Tribal Councils, and are under consideration by the other tribes. Once approved by the court, changes to Chapter 8 will allow for an otter hunting season, modifications to the regulations for snares and restraining snares, including the retention of raccoons incidentally caught in restraining snares, increases in the length of time between checks for certain weasel traps, slightly larger jawed traps, and modifications to the definitions section. See the inset for further explanation.

The winter edition of *Mazina'igan* will provide further details on the updated fishing regulations.

The current Voigt Model Code is available at www.glifwc.org/Regulations/regulations.html. We will post an updated version once it is approved by the court. Before relying on the changed regulations, tribal members should check with GLIFWC or their tribal conservation departments to find out whether the court has approved the new regulations and whether their tribe has enacted the new version of the regulations.

Updates to Chapter 8 (Small Game) of the Off-Reservation Model Code (Ceded Territories in Wisconsin), **effective only when the court approves the stipulation:**

Establishes a tribal nigid (otter) hunting season open October 1-March 31. Limits otter hunting to the use of .223 caliber, or smaller caliber firearms.

Weasel traps, placed entirely in enclosures, with openings no larger than 1 3/8 inch openings, anchored to an immovable object, must be checked once every four days, instead of once a day.

Jawed traps, up to 8x8 inches (measured from the maximum outside points of the effective jaws of the trap) may be used.

Changes in the snaring and restraining snare regulations. Requires that snare loops are set more than six inches above the first surface (the first surface may be ground, ice, crushed or packed snow, or any other hard material) and allows for the retention of raccoons incidentally caught in restraining snares.

Communities rally for mutual assistance

(continued from page 1)

Power line poles snapped in two and the winds caused extensive damage to public and private property.

More than 100,000 customers from Sandy Lake, Minnesota to Watersmeet, Michigan were without power from one to three days.

Support and recovery

The July storms generated an outpouring of support for Bad River reservation residents from other tribes and local communities. Ashland residents organized donation drives, establishing drop-off sites for water, food, infant supplies, and other goods. Tribal officials

coordinated receipt and delivery of donations, which for a while required that volunteers hand-carry goods over a damaged bridge that could not support the weight of a vehicle.

Other contributions arrived via a four-hour detour from Ashland to Odanah even though the towns are only 10 miles apart.

Out of all the damage and destruction, many on the Bad River reserve say the assistance from other tribes and regional communities has helped ease the burdens of recovery.

Major financial support arrived from the Ho-Chunk Tribe, Stockbridge-Munsee Tribe, Forest County Potawatomi Tribe, Lac du Flambeau Band and

Keweenaw Bay Indian Community. Donations of food, fresh water and other supplies arrived from many points inside and out of the Ceded Territory including Madison, Ashland, Lac du Flambeau and other locales; faith organizations from downstate Wisconsin dispatched truckloads of goods north; the Red Cross prepared late afternoon meals for a full week at the Bad River Community Center where the aid group also distributed cleaning kits for homeowners. And professional services from Menominee and Red Cliff tribal police helped manage traffic and support public safety.

The damaging storms seemed to bring out the best in a great many people throughout the region.



Floodwaters covered portions of the US Highway 2 corridor through the Bad River reservation for several days following a series of heavy rainfall events. The Bad River crested at a record 27.3 feet. (CO Rasmussen photo)

On the cover

Ozaawaabineshiinh (goldfinch) is catching up on the adventures of his friends in the new Nenda-gikendamang ningo-biboonagak series. Each set of booklets in the series includes a monolingual storybook, a monolingual activity book, and a bilingual parent/teacher answer book. See page 23 for more information. (cover art by Wesley Ballinger)

Ceded Territory news briefs

LdF Council protects moose after on-rez shooting

Days after a tribal member killed a young moose cow on the Lac du Flambeau (LdF) reservation, the governing council passed an emergency order protecting moose and a host of other species. Resolution No.203(16) makes it unlawful to wound or intentionally take moose, elk, cougar, albino deer, wolf, badger, wolverine, marten, flying squirrel, or lynx within the exterior boundaries of the reservation. Off-reservation tribal codes already protect these animals in the Wisconsin Ceded Territory.

Shortly after midnight July 6, a LdF member shot the female moose sparking an investigation by tribal law enforcement officers. The cow had reportedly been seen with some regularity in the reservation's woods and wetlands for several months. —*CO Rasmussen*

High water thwarts sea lamprey trap

This past spring GLIFWC and the Bad River Natural Resources Department worked with the U.S. Fish and Wildlife Service's Sea Lamprey Control Program to assess the viability of capturing and removing sea lamprey on the Marengo River using a specially built weir. The weir is designed to block and trap sea lamprey as they move upstream to spawn during the spring. Sea lamprey are then removed from the trap and destroyed while non-target fish are released upstream of the trap.

Frequent heavy rains and high water, however, hindered the weir's effectiveness at catching pre-spawn lamprey. Project partners are looking to spring 2017 to potentially redeploy the weir and learn how effective the structure is under normal conditions. If the weir and trap prove successful, it will be added into an integrated approach to suppressing sea lamprey in the Great Lakes Basin. The invasive sea lamprey decimated lake trout populations in the 1960's. Since that time, agency partners have reduced lamprey numbers to about ten percent of its pre-control population. —*Bill Mattes*

Red Cliff Treaty Education Day

Red Cliff Band of Lake Superior Chippewa hosted Treaty Education Day on June 22, 2016. Over 180 people attended the morning session, held at Legendary Waters Casino, which included the telling of the Migration Story, an interactive treaty rights game presented by GLIFWC, and an elder/youth panel.

For the afternoon, participants headed to LaPointe, where they toured the Madeline Island Museum, visited the site of Treaty Hall, and viewed copies of the original 1837, 1842, and 1854 treaties brought to Red Cliff by Tribal Council members who had visited the National Archives in Washington, D.C. The day concluded with a ceremony with Chief Buffalo's pipe at St. Joseph Mission Cemetery. —*Paula Maday*

Bad River Honorable Mention for climate change award

Bad River Band of Lake Superior Chippewa received honorable mention for the First Climate Adaptation Leadership Award for Natural Resources, presented by the U.S. Department of the Interior. The award honors individuals and organizations working to reduce climate-related threats by raising awareness and addressing the impacts of climate change.

The DOI received 47 nominations, selecting seven honorees and seven honorable mentions based on criteria of effectiveness, innovative approach, potential for replication, promotion of preparation and response, and collaboration.

Bad River was recognized for their Seventh Generation Climate Change Monitoring Plan, a holistic strategy that addresses water resources, forestry, and wildlife on the reservation. The framework will help Bad River to establish priorities for climate change management and to secure additional funding. —*Paula Maday*

Biologists recruiting alligator gar in carp control effort

River running, high-flying Asian carp are on the Ceded Territory doorstep. Fisheries managers—and virtually all fishers in the region—want to keep them there. A proposal to encourage the expansion of the native predator, alligator gar, might help check the expansion of voracious silver and bighead carp, which reproduce quickly and eat the food supply that native fish species rely upon.

Biologists in southern reaches of the Mississippi River system have noted that gar—which can reach eight feet long and weigh more than 300 pounds—have a taste for the exotic Asian carp species. Since escaping from aquaculture facilities in the southern United States decades ago, carp have steadily moved north, reaching waterways near the Great Lakes including the Illinois River and St. Croix River.

In several Mississippi River states, the US Fish & Wildlife Service is assisting programs to rebuild alligator gar numbers through hatchery propagation. Like lake sturgeon in the Lake Superior region, gar were considered a throw-away fish by anglers and commercial fishermen—a nuisance that destroyed nets and occupied habitat best suited for more desirable fish.

According to Bill Mattes, GLIFWC's Great Lakes Biologist, gar live in warm, brackish water and are not known to be in Lake Superior's relatively cold, fresh water. Like the lake sturgeon, gar are covered with bony plates and hard scales or 'scutes.' Unlike the lake sturgeon, gar are predators, preying upon other fish for food, whereas lake sturgeon diets are more diverse.—*CO Rasmussen*

Early returns on TEK interviews

Treaty resources focus of GLIFWC's climate change program

By Melonee Montano,
GLIFWC TEK
Outreach Specialist

Traditional Ecological Knowledge (also known as TEK) can be defined in many ways, such as the accumulation of cultural tradition, practical experience, and adaptation to environmental changes over time.

Gathering TEK by interviewing knowledge holders, elders, and harvesters is an integral part of assessing climate change impacts on treaty rights. All interviews carried out at *Mazina'igan* press time are still being transcribed, but the following is a small sample of what interviewees have been hearing.

An Elder from the **Lac Courte Oreilles** (LCO) reservation in Wisconsin mentioned seeing less birch and blueberries these days along with a decrease in other fruits. She noted how blueberries have been much smaller compared to years ago when she gathered as a girl. She discussed how the decreased use of fire might be part of the reason but climate change may also be a factor.

Another Elder interviewed at LCO talked about how our language holds meaning that aids in cultural concepts; language explains a completely different way of looking at our world.

A couple from **Fond du Lac** who has been doing maple syrup with their family for about 30-35 years stated they tap 140-150 sugar maples per year. They carve their own taps out of maple, knowing that when they get wet they expand (allowing for a tighter seal).

These Elders also described how they bury their kettle in the fall but leave about 2" of it above ground and are then able to process their rice in the same spot. When the kettle is pulled up out of the ground, the hole that remains is used as a fire pit. To know when to carry out their activities, they utilize traditional knowledge and also a combination of environmental observations, including the weather. Due to the number of years

they have been harvesting, they were able to say with certainty that they have seen climate changes over time.

A family from the **Bad River** reservation utilizes ash for traditional crafts. They mentioned one particular swamp near their home used to have a lot more trees approximately 13 years ago. At that time, there was also a lot more standing water but unfortunately now it seems to be dryer and trees are dying.

The family also noticed an increase in mold growing after a short period of time on ash splints used for traditional crafts. They also felt that rice and syrup showing early signs of mold seemed to be an indicator of a high humidity level.

A harvester from the **Mille Lacs** reservation in Minnesota has seen a large decrease in the rabbit population, an observation noted in many other interviews. He has also seen a large increase in coyote but feels this might be due to fewer persons hunting or trapping them. The majority of other furbearers, however, seem to be significantly decreased. Another change seen by the harvester is that opossum, which are new to the Mille Lacs area, are now seen on a regular basis.

He also feels there is a consistent warming trend in the area. The person spoke of how his grandma used to make maple taffy at the same time the ice on the lake was breaking up into shards. Along with that, the sugar maples would be done running before ice out. These days the events no longer occur at the same time.

With the interviews carried out so far, some consistent environmental observations have come out: biting flies indicate that the rain is going to come, while the song of cicadas indicate that the blueberries are beginning to ripen, and seeing fireflies for the first time each season signals the opportunity to begin hunting deer.

Be on the lookout for similar observations. The climate change program plans on sharing more information in the near future.



Miinan (blueberries).

Combine two Ojibwe Country favorites for one powerful miijim

By Owen Maroney, GLIFWC Community Dietician

Before you know it the cooler dag-waagin (autumn) weather will be here and hearty comfort foods will start to appear on the table. This year, we want to share one of our favorite hearty autumn recipes that will please and nourish the ones you love.

The “Venison Wild Rice Casserole” recipe includes a lot of nutritious ingredients but the stars of this recipe have additional benefits that you might not know about.

Let's start with manoomin (wild rice). Many people know it is a whole grain which means that after it is processed it still keeps its dark outer coating called the bran, and everything underneath.

Within each grain of wild rice is a fantastic balance of slow burning carbohydrates and muscle building protein. Manoomin has 25% more protein than long-grain brown rice and 30% fewer carbs. So when your health care staff says “eat more whole grains,” drop the bread and grab a bowl of manoomin.

One cup of cooked manoomin provides you with two servings that will only set you back a total of 166 calories but will provide 12% of your daily value (DV) in fiber, 15% DV of zinc, 11% DV of folate, vitamin B6 and niacin, and a boost in antioxidants.

Translation? A bit of manoomin a day can assist your body in regulating blood cholesterol (fiber), fighting harmful bacteria (zinc), tissue growth (folate), turning food into energy (B6 and niacin), and repairing everyday wear and tear (antioxidants).

Now on to the meat of the article; waawaashkeshiwi-wiyyaas (deer meat) is a lean, low fat, free-range meat. As with all meats, it is high in protein. Protein is essential for muscle development and maintenance, but also aids in everything from immunity to hormone functions.

Waawaashkeshiwi-wiyyaas is lower in fat than beef and chicken (with the skin) and equal in fat to chicken breast (without the skin). A single serving, which is three ounces after cooking, provides 30% DV riboflavin, 37% DV niacin, and 21% DV iron. This translates to facilitating energy production (riboflavin and niacin) and moving oxygen around the body (iron). With all these benefits in mind, you can feel good about serving up a bit of “Venison and Wild Rice Casserole” this season. Wiisinidaa!

*The recipe provided is from GLIFWC's **Mino Wiisinidaa! (Let's Eat Good!): Traditional Food for Healthy Living** cookbook and uses two homemade soup recipes from the book: “Cream” of Mushroom soup and “Cream” of Celery soup.

If you do not have access to a copy of the book, you can use the following substitution. Mix ½ cup store bought Low Sodium Condensed Cream of Mushroom Soup with ½ cup of water and ½ cup store-bought Condensed Cream of Celery soup with ½ cup of water. These substitutions will alter the nutrition facts of the recipe. Miijim is Ojibwemowin for food.

All nutrition information was obtained from the USDA's National Nutrition Database for Standard Reference, Release 28.

To order the cookbook go to www.glifwc.org/publications.

Venison Wild Rice Casserole

Original concept from Rose Wilmer, Bad River

Prep Time: 30 minutes • Cook Time: 1 hour 30 minutes
Total Time: 2 hours • Serving Size: ¾ cup • Yield: 15

Ingredients

- 2 teaspoons **sunflower seed oil**
- 1 large yellow **onions**, diced (about 1¾ cups)
- 4 medium carrots, diced (about 2½ cups)
- 5 ribs celery, diced (about 2½ cups)
- ½ pound **mushrooms**, sliced (about 2½ cups)
- 1¼ teaspoon **salt**
- ¼ teaspoon ground black pepper
- 2 cloves **garlic**, minced
- 1 tablespoon fresh rosemary, minced
- 1 tablespoon fresh sage, minced
- 2 cups **wild rice**
- 6 cups water
- ½ pound ground **venison**
- ½ pound lean ground beef (93%) **☞**
- 1 cup homemade “cream” of mushroom soup
- 1 cup homemade “cream” of celery soup

Directions

1. Preheat oven to 350° F.
2. In a large stockpot, heat oil over medium high heat. Add onions, carrots, celery, and mushrooms and cook until soft, about 10 minutes. Stir occasionally to prevent burning.
3. Add salt, pepper, garlic, and herbs. Continue to cook until excess moisture evaporates, about 5 minutes.
4. Add wild rice to pot and stir to combine, then pour in water and bring mixture to a boil, about 5 minutes.
5. Reduce heat to a simmer and cook until rice has absorbed nearly all of the water, about 20 minutes.
6. While rice is cooking, brown the ground venison and beef, cooking completely. Drain of any fat and crumble into bite-sized pieces.
7. When rice is finished, take off heat and stir in cooked meat and cream soups.
8. Pour rice mixture into a 9x13 baking dish.
9. Bake 45 minutes or until casserole is warmed through and lightly browned.

Bold = Indigenous foods

Chef Note: ☞ Beef can be equally substituted for ground venison.

Nutrition Facts	
Amount/Serving	% Daily Value*
Total Fat 3g	6%
Sat. Fat 1g	2%
Trans Fat 0g	
Cholest. 20mg	4%
Sodium 280mg	12%
Total Carb. 21g	7%
Fiber 3g	11%
Sugars 3g	
Protein 11g	22%
Vitamin A 50% • Vitamin C 4% Calcium 4% • Iron 8%	
Exchanges: Bread/Starch — 1.00 • Fat — 0.0 Meat-Lean — 1.00 • Vegetable — 1.00	

Resources for 2016 wild rice season

(continued from page 1)

and the fall storms that rolled through the region all seemed to run north or south of North Fork. In the end, in this single season, rice pickers came home with about 10 pounds of harvest for every pound that was originally seeded. And with nearby Clam Lake, one of Wisconsin's flagship rice waters, still recovering from a devastating rice bed collapse due to a massive carp problem, this generous harvest was most welcome by local ricers.

This year could be a boom or a bust from a picker's perspective. In many years water levels are controlled by DNR managers (to the degree possible) to help promote rice growth; some years the flowage is drawn down to optimize conditions for certain migratory birds—and to create the periodic disturbance that helps maintain manoomin vitality in the long run. But hopefully this manoomin bed will continue to persist for as long as we care for it.

2016 wild rice season

If you were in northwest Wisconsin July 11, 2016, you may remember the day for the rest of your life, as the area was drenched with anywhere from 5-10 inches of rain, with devastating effects on local communities.

GLIFWC staff continues to assess the effects of the storm on local manoomin beds as well as abundance on other beds across the ceded territory.

Preliminary reports are that rice in river systems may have suffered the most damage as waters rose to astonishing levels. The impact on lakes may depend upon where they are located in the watershed, with headwater lakes being less impacted than those further down the system.

This flood event hit rice beds about 4 weeks later than the 2012 rain event that devastated rice beds in large parts of Minnesota that year. As a result, root systems were better developed and plants more robust, so there is some optimism the impacts will not be as severe as 2012—but we won't know for sure until aerial surveys are completed in the coming weeks.



Manoomin. (COR photo)

GLIFWC's website info

Looking for information on manoomin? GLIFWC's website (www.glifwc.org) can help inform you on the status of Ceded Territory rice waters. To view information on our website click “Harvest Regulations” at the top of the Commission's homepage. Then click on “Ricing—MN, WI, & MI—Ricing Regulations, Opening Dates, Surveys, & Aerial Photos.”

Here you will find a summary of off-reservation manoomin harvest regulations—such as permits, harvest hours, and legal harvesting equipment—revealed in drop-down text specific to each state.

Additional information on date-regulated manoomin waters in Wisconsin is displayed in both table and interactive map form. You can reposition the map and zoom in using the side scale bar to help locate your favorite manoomin water.

Date-regulated lakes will be represented with orange balloons that when “clicked” will reveal whether Rice Chiefs, working cooperatively with the DNR, have set the opening date for harvest. Opening date information is also displayed in the table below the map.

The “Survey Results” assessments in the table are subjective observations on rice abundance. The scale ranges from poor-to-very good and compares recent years at a site. A “poor” year at a large site may support more rice than a “good” year at a smaller site.

Besides date-regulated waters we may list other key manoomin waters to let harvesters know the status of the rice crop and to help direct their harvesting efforts. Remember, rice waters not on the date-regulated list may be harvested whenever the rice is ripe.

All the manoomin information is posted as an initial guide to your ricing season—your own site visit will also provide useful information as you check ripeness, rice bed conditions after a storm, or recent harvest pressure.

Here's to a safe and bountiful harvest season. Lastly, chi miigwech to all our hard-working Rice Chiefs.

A win for treaty resources in Pacific NW culverts case

By Phoebe Kebec, GLIFWC Policy Analyst

Seattle, Wash.—Last June the Ninth Circuit Court released its long-awaited decision in the Culverts Case. This is an important decision for tribes. Many of the treaty rights cases have prevented states from enforcing their fish and game laws against tribes who have reserved the right to harvest off-reservation. This is why GLIFWC member tribes hunt and



The late Northwest Indian Fisheries Commission (NWIFC) Executive Director Billy Frank Jr. examines a culvert in the upper Nooksack River watershed in Washington State in 2008. NWIFC member tribes successfully argued that the State has a duty to protect treaty resources—in this case salmon habitat in the territory ceded by 22 tribes in Washington. For decades, poorly installed culverts have blocked the passage of salmon from the ocean to inland waterways. (photo courtesy Tony Meyer/NWIFC)

fish within the off-reservation Ceded Territories under tribal regulations, not state regulations.

The decision in the Culverts Case stands for the principle that states have an affirmative duty to protect the environment to allow tribes the ability to access those natural resources they reserved in treaties.

United States v. Washington was brought by the United States on behalf of 22 Indian tribes in the Pacific Northwest against the State of Washington. For more than 20 years, the plaintiffs have maintained that culverts built and maintained by the state block the natural migration of salmon from the ocean to inland areas used by the tribes to off-reservation fishing grounds, and thus violate the treaties.

Their claims came to the Ninth Circuit Court of Appeals several years ago, but at that time the court determined that they had not provided enough particularized information to support their claim.

The case returned to court in the 2000s, with the plaintiffs bringing detailed evidence showing a strong causative link between Washington's culverts and dramatic reductions in salmon available to harvest in the tribes' "usual and accustomed" fishing areas.

The district court found in favor of the tribes in 2013, and the decision was appealed to the Ninth Circuit Court of Appeals. The Ninth Circuit examined the discussions made during negotiations of the Stevens treaties and found that treaty negotiators assured the tribes that they would always have an adequate supply of fish.

[Governor] Stevens told the Indians during negotiations for the Point Elliott Treaty, "I want that you shall not have simply food and drink now but that you may have them forever." During negotiations for the Point-No-Point Treaty, Stevens said, "The paper is such as a man would give to his children and I will tell you why. The paper gives you a home. Does a father not give his children a home? This paper secures your fish. Does a father not give food to his children?"

United States, et al. v. Washington, *10 No. 13-35474, 2016 WL 3517884 (9th Cir. June 27, 2016).

The court found that the State of Washington is also bound by those promises. In building and maintaining barrier culverts, the state blocked approximately 1,000 linear miles of streams suitable for salmon habitat, preventing the free passage of several hundred thousand mature salmon every year. These affirmative activities violated the treaties.

The district court originally ordered the state to replace many of the culverts by October 31, 2016, with others to be replaced over a period of seventeen years. The state was required to prioritize projects that would likely result in significant benefits to the tribes. The Court of Appeals found that the district court's design was an appropriate remedy.



Nashke! Azheshkaawag.
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Storytellers project moves to Lake Superior

Red Cliff, Wis.—The Ogichidaa Storytellers project continued this past June, moving from the inland Lac Courte Oreilles Reservation to the shores of Gichigami where tribal commercial fishermen challenged the authority of states to regulate treaty harvests in the 1960s into the early 1970s.

A production team comprised of GLIFWC staff and videographer Finn Ryan met with tribal members associated with the *State of Wisconsin v. Gurnoe* case (53 Wis. 2d 390 1972), and conducted a series of on-camera interviews.

The Gurnoe case stems from the fall 1969 arrest of eight tribal members who fished in Lake Superior waters near their respective reservations of Red Cliff and Bad River. The judge merged the two separate incidents into a single case to decide whether the 1854 Treaty allowed tribal members the right to fish off-reservation waters of Lake Superior without possessing state licenses and permits.

In a 1972 ruling the court found that the treaty right remained intact. Today, the State of Wisconsin, Red Cliff, and Bad River bands manage the Gichigami fishery together, negotiating multiyear agreements on harvest allocations for important species like lake trout.

The multi-year Storytellers project is, in part, designed to recognize the achievements of everyday tribal members who helped treaty tribes restore off-reservation rights negotiated with the federal government in the mid-1800s. Producers plan to make the stories available as individual vignettes and a full narrated collection. —CO Rasmussen

Forest Service, tribes preserve historic trail

By Charlie Otto Rasmussen
Staff Writer

Watersmeet, Mich.—Spanning some 80 miles between the Ojibwe communities of Kakiweonianing (L'Anse) and Kete-gitigaaning (Lac Vieux Desert), the ancient footpath played an essential role in travel, trade, and cultural exchange for centuries. Later, Europeans, explorers, missionaries, fur traders and early American residents incorporated the woodland route into their travels.

Now, a trio of stakeholders is protecting the Lac Vieux Desert-L'Anse Trail with a formal agreement to keep the corridor intact for future generations.

"For our ancestors, that was the main route. From Keweenaw Bay to Lac Vieux Desert, the trail extended all the way to Green Bay," said Giiwe Martin, Lac Vieux Desert (LVD) tribal historic preservation officer.

Representatives from Keweenaw Bay Indian Community, LVD Band and US Forest Service minted a memorandum of understanding June 23 with a signing ceremony and community feast. The new 10-year pact replaces an earlier five-year agreement between the parties.



Lac Vieux Desert Tribal Chairman Jim Williams Jr. signs the Kakiweonianing-Ketigitigaaning Trail Corridor Memorandum of Understanding June 23 in Watersmeet, Mich. (US Forest Service photo)

"The Forest Service has gone above and beyond to help us preserve that trail," Martin said. "When you partner with other agencies and everyone comes together to do good work, the outcome is going to be good."

While only a few feet wide during its heyday, the agreement establishes a half-mile buffer along the route, favoring hand tools over heavy equipment and other landscape-altering devices. A consultation process kicks in when Forest Service management activity is proposed within close proximity to the ancient trail.

"There are parts of the trail where we really don't know where it goes," Martin said. "The buffer helps keep cultural resources intact."

The north-south trail spans portions of Baraga, Houghton, Iron, and Gogebic County in western Upper Michigan. At L'Anse the trail terminates at the head of Keweenaw Bay and Lake Superior; the Lac Vieux Desert end of the trail opens up access to waterways leading to Lake Michigan and the Mississippi River system.

To help the public as well as future generations understand the significance of the trail, the tribes and Forest Service are exploring an interpretive project that may include signage at appropriate locations associated with the trail.



Walleye diet, forage at center of GLIFWC study

Interns dig into fishery menu at Lac Vieux Desert

By Aaron Shultz, PhD
GLIFWC Climate Change Inland Fisheries Biologist

In recent years, walleye stocks in many Ceded Territory inland lakes have declined, although the reasons for these declines remain unknown. GLIFWC researchers have noted that fewer and fewer juvenile and adult walleye are present in fall and spring surveys respectively. In an effort to explain these declines, GLIFWC is exploring the role of forage fish availability, or a change in diet over seasons or years.

This past summer the inland fisheries team ramped up data collection on Lake Lac Vieux Desert (LVD) to gain a better understanding of potential underlying mechanisms that may be depressing walleye stocks. The team, led by veteran staff Butch Mieloszyk and Edward White, myself, and inland fisheries interns—Andre



Research biologist Aaron Shultz awaits the catch nearshore as inland fisheries interns pull a small seine net to collect forage fish in Lake Lac Vieux Desert's Misery Bay. (COR photo)

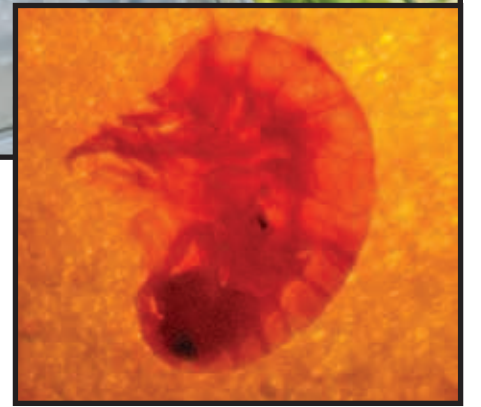
On the hunt for aquatic invasive species



Resource Specialist Sam Quagon lowers an Ekman dredge into Lake Lac Vieux Desert's Misery Bay, part of a multi-lake GLIFWC effort to detect the aquatic invasive species, spiny water fleas. The spring-loaded dredge collects a 6x6" sample of silt, which is being analyzed by laboratory technicians. (COR)



Gastric lavage, or stomach pumping, on perch (pictured) and walleye help biologists pinpoint what young fish are eating. (COR photo)



INSET: Stomach contents are examined under microscope at the GLIFWC laboratory.

Gilles and Nick Quagon—identified available forage/bait fish for both adult and juvenile walleye. To do this, the team seined sandy beaches at several locations throughout the lake. Forage fish like yellow perch were counted and measured prior to release. Taken together, this study will indicate how prey fish for both juvenile and adult walleye may change over seasons and years.

“We’re learning that many variables such as predation, available prey and harvest pressure could be affecting walleye stocks on Lake LVD,” said Gilles, a Bad River member. “It’s exciting for me to learn how to quantify available prey and potentially answer why walleye stocks seem to be declining.”

Juvenile walleye, especially young of the year, often feed on invertebrates and consume fish once they reach a large enough size. Prey availability and encounter rates will also determine which prey items walleye consume. Diets composed of mostly invertebrates may result in walleye that have poor condition relative to walleye that consume fish, a higher quality food item.

The research team piloted a technique called gastric lavage on fish in LVD, which allowed us to count and identify prey (invertebrates and fish) and release the fish alive after sampling. Unfortunately, we did not capture juvenile walleye in LVD, but we did sample perch stomachs. Surprisingly, perch consumed only invertebrates in June, with the majority of their diets composed of scuds and midges. Future work will focus on sampling several age classes of walleye across seasons and years to determine how their diets may be changing.

For GLIFWC inland fisheries interns, the work is a meaningful gateway into managing treaty natural resources. “My mind is set on working in the field,” said intern Quagon, a Lac Courte Oreilles member and nephew of longtime GLIFWC technician Sam Quagon. “The research we are conducting has been an invaluable experience for me, and has given me great hands-on skills.”

Between field study and laboratory work at GLIFWC’s central office, the research is scheduled to continue through 2017. For more information contact me at aaronshultz@glifwc.org or (715) 682-6619 ext. 2170.



Andre Gilles (left) and Nick Quagon record total length of captured forage fish. (COR photo)

GLIFWC's mercury program remains strong after nearly three decades

By Sara Moses, GLIFWC Environmental Biologist

As it enters its 28th year, GLIFWC's Mercury Program continues to provide safe giigoonh (fish) consumption information to tribal members. Mercury is a toxic contaminant that is present in all fish and throughout the environment. Within the Lake Superior watershed, mercury is primarily released from coal-fired power plants and during metallic mining and metals processing, such as during the extraction of iron and copper. But, mercury is a true "global pollutant," meaning it can remain in the atmosphere for many months, traveling great distances before it is deposited.

Globally, the burning of coal, particularly in East and Southeast Asia, still represents a major source of mercury emissions. But, as of 2010, the United Nations estimates that the largest global contributor is small-scale gold mining operations that use mercury to separate the gold from other materials. These activities occur mainly in Asia, South America, and Sub-Saharan Africa.

Mercury from both local and global sources eventually reach our waters and enter the aquatic food web, concentrating in fish. Human exposure results primarily from fish consumption.

Trending downward

The good news is that U.S. mercury emissions and, more locally, those from within the Lake Superior basin have decreased dramatically since they peaked in the 1970's. Between 1990 and 2005, total U.S. emissions due to human activities declined by approximately 59%. Emissions from the eight Great Lakes states by 50%. Even more dramatically, mercury emissions from within the Lake Superior basin decreased by 80% between 1990 and 2010.

Data from GLIFWC and other agencies shows that these national and regional emissions reductions are translating into decreasing trends in mercury deposition in North America and ultimately mercury levels in local fish, despite increasing emissions in other parts of the world such as India and China.



Coal-fired power plants are a significant contributor to mercury pollution. This facility in Ashland, Wisconsin burns both coal and woody biomass to produce electric power. (CO Rasmussen photo)

Why are fish from some lakes higher in mercury than the same fish from other lakes?

Mercury levels in fish vary significantly from lake to lake. The factors that drive these differences are very complex, making mercury concentrations hard to predict. Some of the lake characteristics that can impact the amount of mercury in the fish from that lake include:

- Adjacent wetlands
- Lake pH/alkalinity
- Fluctuations in water levels (e.g. reservoirs)
- Food web structure
- Dissolved organic carbon

Deposition of mercury to North America, which is a result of both local and global emissions, has decreased 1% to 2% per year since 1990, according to the most recent estimates. The EPA's Great Lakes Fish Monitoring and Surveillance Program, for which GLIFWC assists in collecting fish, has found that mercury in Lake Superior lake trout is decreasing at a rate of about 7% per year.

Since its Mercury Program began in 1989, GLIFWC has measured mercury levels in more than 8,100 fish from across the Ceded Territories. The program represents one of the largest and most comprehensive long-term datasets on mercury in fish in the upper Great Lakes region.

The focus of the program has traditionally centered on mercury levels in ogaa (walleye) from inland lakes, since these are the fish most frequently harvested and consumed by GLIFWC's member tribes.

But over the years, the program has expanded to include other species from inland lakes like perch, northern pike, and muskellunge, as well as several species from Lake Superior, including lake trout, whitefish, cisco, and siscowet. This spring, nearly 400 ogaa from inland lakes were sampled for mercury testing. This fall, the program will target 100 whitefish from across the south shore of Lake Superior. This work has been funded by the U.S. EPA's Great Lakes Restoration Initiative since 2010.

Smaller fish are safer

A critical component of the Mercury Program is outreach and education to tribal communities, which empowers individuals to make informed decisions about safe fish consumption practices.

For most lakes, the Mercury Maps recommend a maximum of 2 to 8 meals of ogaa per month for the general population. Because developing brains are particularly susceptible to mercury toxicity, the advice for children and women who are or may become pregnant is more restrictive. For this population, recommendations generally range from no more than 1 to 2 meals per month, with some lakes where no consumption is recommended.

You can reduce your mercury exposure by eating fish from lakes with lower mercury levels, by choosing to eat smaller fish, or by eating species that tend to have lower mercury, such as whitefish.

If you would like more information on how to continue consuming fish while minimizing your exposure to mercury, visit <http://glifwc.org/Mercury/mercury.html>. This webpage includes links to GLIFWC's Mercury Maps, which provide lake-specific, color-coded information on mercury levels in ogaa from lakes where they are typically harvested during the spring spearing season.

U.S. and Canada designate Chemicals of Mutual Concern in the Great Lakes

By Sara Moses, GLIFWC Environmental Biologist

Four years after signing a revised Great Lakes Water Quality Agreement (GLWQA) aimed at restoring and maintaining the chemical, physical, and biological integrity of Great Lakes waters, the United States and Canada have identified several Chemicals of Mutual Concern (CMCs). These are chemicals that are present in the Great Lakes environment as a result of human activities and pose a threat to human health or the environment.

The first set of CMCs, designated in May 2016, includes eight chemicals.

Two of these chemicals, mercury and PCBs (polychlorinated biphenyls), may be familiar to some because they are among the major triggers for fish consumption advisories throughout the Great Lakes and the Ceded Territory.

Mercury is a metal that occurs naturally in the earth but is released into the atmosphere through activities such as the burning of fossil fuels, metallic mining, and metals processing.

PCBs, once used in the manufacture of electrical equipment as well as heat transfer and hydraulic systems, are now banned in the U.S. and Canada, but still persist in the environment, and in fish and wildlife. The other six CMCs range from flame retardants to components

of nonstick cookware to specialized industrial chemicals.

The next step will be the development of binational strategies to reduce the releases of these chemicals into the environment. At the same time, a second set of potential CMCs will be reviewed for designation as part of an ongoing cycle.

Chemicals of Mutual Concern is one of ten focus areas, or Annexes, under the GLWQA. GLIFWC staff has a seat on the subcommittee, which assists the U.S. and Canada in identifying CMCs and in developing binational strategies for reducing their release.

GLIFWC staff also participate on the subcommittees for Lakewide Man-

agement Plans and Aquatic Invasive Species, and have also contributed to establishing and implementing the work of a Traditional Ecological Knowledge (TEK) Task Team under the "Science" Annex. GLIFWC Executive Administrator Jim Zorn is a member of the Great Lakes Executive Committee (GLEC), which oversees the work of the Annexes and the overall implementation of the GLWQA.

Additional information on the designation of CMCs, the development of binational strategies, and the process for nominating a CMC can be found at <https://binational.net> or by contacting me at (715) 682-6619 or s.moses@glifwc.org.

Juvenile whitefish and lake trout, targets of GLIFWC small net surveys

By Amanda Plucinski, GLIFWC PIO Intern

Keweenaw Peninsula, Mich.—GLIFWC has conducted assessments of juvenile whitefish since 1997. Resource managers use the information gathered through biological surveys, along with monitoring of the treaty commercial fishery, to assess the health of the fish, which support subsistence and commercial fishers on Lake Superior.

GLIFWC Great Lakes Fisheries Biologist Ben Michaels and Technician Mike Plucinski conducted beach seining for juvenile whitefish with the help of three interns: Jalyn LaBine, Callie Kopp, and Marcus Bear. The assessment was conducted this summer in Big Traverse Bay in Michigan's Upper Peninsula. The counts of juvenile whitefish, which have dropped in recent years, will be compared with results from previous years. Biologists also factor in the results from fall assessments of adult whitefish in their spawning areas.

In addition to monitoring whitefish, GLIFWC is also conducting a new micromesh gill net survey off the shores of Big Traverse Bay. The goal of this survey is to monitor the relative abundance of small-sized juvenile lake trout and assess whether the nearby stamp sands are adversely affecting the lake trout population in that area. Stamp sands are mining waste materials, which have been dumped into the lakes and rivers. They contain toxic materials and contaminate the water and change the landscape.

In this survey, a 132-foot net, divided into 33 foot panels, each with a different mesh size, ranging from 12.5 to 25.0 millimeters, were used to target fish. Once the nets are lifted, the fish are separated by the mesh size of the nets, then counted, measured, and weighed. Otoliths, hard calcium structures known as earstones, are collected from some of the fish in order to determine their ages.

This recent assessment did not yield any juvenile lake trout, however, other species such as rainbow smelt and round whitefish were captured. GLIFWC will continue to sample in different locations around Big Traverse Bay for the next several years. Results from these assessments will be analyzed over the next few months. For more information contact Ben Michaels at smichaels@glifwc.org or at 715-685-2175.



GLIFWC's Great Lakes section uses a beach sein to look for juvenile whitefish in Big Traverse Bay in Michigan's Upper Peninsula. Pictured above are Ben Michaels, GLIFWC Great Lakes Fisheries Biologist (left) and Marcus Bear, GLIFWC Great Lakes section intern. (Amanda Plucinski photo)

GLIFWC Surveys Lower Eau Claire Lake predators

This year, GLIFWC inland fisheries staff worked to estimate the walleye and bass populations on Lower Eau Claire Lake (Douglas County, Wis.) during the spring and through the early summer. The walleye mark-recapture survey was conducted shortly after ice-out with electrofishing gear. For the bass population estimate, crews electrofished around the lake on multiple days and nights to mark bass with a fin clip, and returned to finish the survey with a recapture run in mid-June.

These surveys were completed to give biologists a clearer picture on the predator community within the lake. Lower Eau Claire Lake is of particular interest to GLIFWC biologists since it has historically had strong walleye reproduction, and fall juvenile walleye surveys have shown a decline in young-of-year walleye surviving to the first fall.

GLIFWC biologists have begun to track bass populations more closely since bass have increased while walleye populations have declined in many waters. The mechanism for this fish community change remains unknown. The surveys on Lower Eau Claire will allow biologists to evaluate whether there has been a change in the abundance of the predator fish in the lake. Results will be available after they are exchanged and discussed at the August meeting of tribal and Wisconsin Department of Natural Resources biologists.

—Mark Luehring



GLIFWC Inland Fisheries Technician Butch Mieloszyk with a largemouth bass on Lower Eau Claire Lake in northwest Wisconsin. (Ed White photo)

GLIFWC, tribes complete juvenile ogaa survey on Mille Lacs Lake

By Ben Michaels
GLIFWC Inland Fisheries

Despite a round of adverse weather conditions and hordes of unruly mayflies, GLIFWC electrofishing crews, along with Fond du Lac and Mille Lacs Band personnel, successfully completed a juvenile walleye survey in Mille Lacs Lake last spring. During this survey, crews were tasked with collecting, counting, and measuring age-1 walleye that are typically found foraging near the shoreline at night. With up to 78 miles of shoreline, surveying Mille Lacs Lake is no small task!

The purpose of this survey is to determine how well walleye are reproducing and to gain a sense of walleye survivability during their first year of life. This information provides insight for fisheries biologists when predicting the future abundance of adult walleye, and ultimately informs walleye management decisions.

Currently, juvenile walleye are having a difficult time surviving into the adult stage. Although the exact cause

for low survivability remains unclear, fisheries biologists suspect that a combination of factors such as predation, presence of invasive species, changes in food availability, and changing climatic conditions could be negatively affecting the walleye population.

The data collected from this year's survey show that the 2015 year class (age-1 walleye) is relatively weak; this is consistent with survey data that GLIFWC and Fond du Lac crews collected during the fall of 2015.

However, the good news is that survey crews observed large numbers of walleye between 11 to 14 inches during the spring survey, indicating that the 2013 year class still appears to be relatively strong.

GLIFWC, Fond du Lac, and Mille Lacs personnel plan to conduct a fall juvenile walleye survey during fall of 2016 in order to evaluate the strength of the 2016 year class.

On behalf of all the crew leaders, a huge miigwech to everyone involved with the spring 2016 juvenile walleye survey! All your good work is much appreciated!



Whitetail numbers on upswing in Ceded Territory

Hunting opportunities include Minnesota State Parks

By **Charlie Otto Rasmussen**
Staff Writer

Seeing is believing. Through late spring into high summer, does with fawns in tow made frequent appearances along roadsides and field edges. Seemingly absent from many highways over the last few years, vehicle-killed deer are again keeping scavengers and road crews busy. Consecutive mild winters and lower deer kill totals during recent hunting seasons has resulted in more whitetails on the landscape.

"Reduced harvests during state seasons by limiting antlerless tag availability coupled with good overwinter conditions has numbers continuing to rise," said Nick McCann, GLIFWC Wildlife Biologist.

For treaty hunters, the Ceded Territory contains some of the best whitetail hunting on Turtle Island. Ceded lands are often synonymous with the "northwoods" moniker, but agriculture has a major presence in and around county, state and federal woodlands where tribal members hunt. While private land hunting is restricted in most areas outside the Michigan 1836 Territory, forests near row crops and hay fields often support higher deer densities than large,

contiguous forests. Managed forests also produce nutritious browse through rotational timber harvests that maintain mixed-age stands.

In the Minnesota 1837 Territory, McCann said special hunts in state parks provide a unique option for tribal members. For the first time since 2012, a weekend deer hunt returns to Wild River State Park, which snakes along 18-miles of the St. Croix River only 45 minutes from the Twin Cities Metro area.

"Many state parks in Minnesota have very high deer densities," McCann said. "With that comes an overconsumption of plants, so these hunts both provide a good opportunity at venison and help provide relief for vegetation, giving plants a chance to recover."

In addition to Wild River, limited hunts open to both treaty and state-licensed hunters are scheduled for Banning, Crow Wing, and St. Croix State parks. One of St. Croix's two hunts is restricted to muzzleloaders only, and the lone Crow Wing State Park hunt is also just for "smokepoles."

At the July 28 Voigt Intertribal Task Force meeting in Carlton, Minn., Fond du Lac and Mille Lacs Band resources managers discussed harvest declarations. For details on specific hunts contact your tribal natural resource department.



Waawaashkeshiwag. (©Linda Freshwaters Arndt photography.)

Ceded Territory waawaashkeshi seasons

Michigan 1836: Sept 6 through January 8, 2017

Minnesota 1837: Sept 6 through December 31

Wisconsin & Michigan 1837, 1842: Sept 6 through January 8, 2017

Waawaashkeshi night hunt

GLIFWC authorities are anticipating increased participation in tribal deer night hunting in the Wisconsin Ceded Territory this fall. After a quiet inaugural season in 2015, it won't take a lot to bump up hunter and harvest numbers.

A marathon of advanced hunter education classes led by Sokaogon's Chris McGeshick last fall, plus a challenging nighttime shooting course supervised by GLIFWC enforcement officers, produced 31 qualified night hunters. From that group, two tribal members shot one deer apiece. Enforcement officers reported no problems associated with the hunt.

Q&A: Deer night hunting in the WI Ceded Territory

Compiled by **Phoebe Kebec**, GLIFWC Policy Analyst

When can tribal members go deer night hunting?

For the Wisconsin Ceded Territories, the deer night hunting season starts on November 1, 2016, and ends on January 2, 2017, but there's a break November 19-27, 2017. No night deer hunting is allowed during the state gun season for deer.

Deer night hunting hours begin one hour after sunset and end one hour before sunrise. Hunters can occupy night hunting locations outside of night hunting hours, but must not be in possession of a loaded firearm, have a bolt in a crossbow or possess a bow with a notched arrow.

Who is eligible to receive a night hunting permit?

For the Wisconsin Ceded Territories, only those tribal members of the following tribes (tribes who have duly enacted the Night Hunting Regulation as of the time of publication): Red Cliff, Bad River, Lac du Flambeau, St. Croix, Lac Courte Oreilles and Sokaogon Bands. For members of other bands, contact your Tribal Conservation Department to check if your tribe has enacted the regulations.

Can youth participate in the deer night hunt?

Yes. Tribal members 16 years old or older can participate in the night deer hunt if they are certified (see question on hunter safety education requirements below). Tribal members under 16 years old must be supervised by a tribal member parent or adult tribal member designated by the parent or guardian (see the tribal mentored hunting regulations) while deer night hunting. Both the parent or mentor and the mentored hunter are required to have successfully completed Advanced Hunter Safety Course and passed a Marksmanship Proficiency Test using the type of bow, crossbow or firearm they will use for the mentored hunt.

What are the hunter safety education requirements for deer night hunting?

Hunter Education certification is generally required for hunters born after January 1, 1977. Additionally, for deer night hunting, successful completion of Advanced Hunters Safety Course and the Marksmanship Proficiency Test is required. The Marksmanship Proficiency Test takes place at night. Hunters are required to score 80% or better (8 out of 10 shots) within a 6¼ inch inner circle using type of cross bow, bow or caliber-weapon they will use for night hunting.

Dates and locations for the Advanced Hunter Safety Certification and Marksmanship Proficiency Test are forthcoming. Stay tuned at www.glifwc.org and GLIFWC's Facebook page for more information.

If I took Advanced Hunter Safety and passed the Marksmanship Proficiency Test last year, do I need to take it again?

No. Hunters who received their Advanced Hunter Safety Certification and passed the Marksmanship Proficiency Test in 2015 and 2016 can apply for night hunting permits this year.

Anyone who received certification before 2015 will be required to retake the Advanced Hunter Safety Certification course and the Marksmanship Proficiency Test before receiving a deer night hunting permit.

How can I get a permit to night hunt deer?

Tribal members who are eligible to hunt deer at night (see above), must take the following steps in order to get a night hunting permit:

1. The member must visit the area during the day sometime after September 5, 2016, and before January 2, 2017.
2. The member must complete and sign a Shooting Plan (see Tribal Night Hunt Shooting Plan, page 17).
3. Some shooting plans require inspection and preapproval by a Commission warden or Tribal Conservation Department. All shooting plans that include disabled, stationary vehicle or ground stands must be pre-approved. Additionally, shooting plans that include elevated stands less than 10 feet high, or where hunters intend to shoot farther than 50 yards in distance from an elevated stands, must be preapproved. If you need preapproval, bring your completed shooting plan to the Tribal Conservation Department and staff will contact a warden to conduct a site visit. If the shooting plan meets all requirements, the warden will sign off on it. The member is responsible for submitting the shooting plan to the registration station.
4. All shooting plans must be submitted to the registration station. Each shooting plan is checked to make sure it's not too close to any other deer night hunting locations and that there's only one active shooting plan per location. This check can take at least one business day.
5. In order to receive a deer night hunting permit, tribal members must bring their tribal ID, Advanced Hunter Certification and Marksmanship Proficiency certificate and shooting plan to the registration station.

Can I shoot from my vehicle?

Members who qualify for disabled hunting permits can shoot from their vehicle, however only one shooting plan at a time is issued with disabled hunting permits. Additionally, vehicles must be stationary while firearms are loaded, have a bolt in a crossbow or possess a bow with a notched arrow.

(see **Waawaashkeshi night hunting**, page 17)



National conference brings honors, views and news from afar

NAFWS in the Great Lakes region

By Charlie Otto Rasmussen, Staff Writer

Green Bay, Wis.—With an eye to reclaiming its bedrock identity as a grassroots organization, the Native American Fish & Wildlife Society (NAFWS) convened for its 34th annual national conference on the Oneida reservation May 16-19.

Complete with familiar science-based sessions on tribal natural resources programs and a social pow wow, the convention also yielded time for heart-to-heart discussions on how to improve advocacy for NAFWS's 225 member tribes.

"Natural resources should be the basis for being a tribal people," said National Tribal Liaison for the US Fish & Wildlife Service, Scott Aiken. "And when it comes to getting word to [Washington] DC about tribal natural resources needs, that should come from us, the Society."



Fred Matt, NAFWS Executive Director

The sentiment seemed broadly shared among the 150-plus participants including Norm Jojola, a NAFWS founding father who said the Society has lost touch with Federal agencies—crucial partners in funding and managing shared natural resources. In recent decades, the National Congress of American Indians (NCAI) has taken on much of the Society's liaison role of building working relations between tribes and federal agencies. As observers pointed out, however, natural resources is only one of many pressing concerns that NCAI representatives bring to Washington DC.

NCAI additionally promotes economic development, education, tribal governance, and health and human services. Members of the NAFWS Board of Directors affirmed that they took the comments seriously and pledged to explore strategies for a revitalized presence in the nation's capital.

Sounds familiar

Despite the vast distances between some tribal communities, many natural resources issues are very much similar. Wildlife diseases, native species restoration projects, and exotic invasive organisms all occupy key niches in local environments. With nearly 20 members in attendance, the Yakama Tribe was well represented at the conference, sharing research and perspectives on natural resources.



Sara Sohappy, Yakama fisheries technician, breaks down a project that tracks blue heron predation on salmon. (COR photo)

One Yakama presenter, Fisheries Technician Sara Sopappy, detailed efforts to track the success of hatchery-raised salmon in the Yakima River Basin.

The granddaughter of Columbia River treaty rights pioneer Richard Sohappy (see *Sohappy v Smith* 302 F.Supp. 889), she's become familiar with blue heron rookeries along the Roza Reach—places that yield tangible clues as to the fate of salmon smolts.

What the project lacks in glamour is easily countered by innovation. Prior to release into the river system, fisheries staff embed tiny PIT (passive integrated transponder) tags into each fingerling salmon. Over the following months rubber-booted technicians armed with portable antennas patrol rookeries—large heron colonies featuring stick-built nests near treetops. There within the bird droppings underneath nests, PIT tags await detection.

Over a five-year period, Sohappy said that the Selah Rookery produced 3,100 hits. At another site, the Wapato Wildlife Rookery, tribal staff detected 4,097 PIT tags. That's a lot of young salmon.

"We've learned which areas smolts are more vulnerable to predation," Sohappy said. Herons are near-shore waders, feeding in the shallow waters of rivers, backwaters and lakes. Data from the project is helping the tribe and its fisheries co-managers select the best locations to release hatchery-reared smolts, which are crucial in the effort to restore Pacific-run salmon.



Michael J Isham Jr. (left), Lac Courte Oreilles Tribal Chairman and chair of the GLIFWC Board of Commissioners, received NAFWS's highest honor, the Chief Sealth Award, on May 19. Menominee's Don Reiter, who presented the Sealth Award, was earlier named NAFWS president. (COR photo)

What's good?

In a region where walleye is the ogimaa (king/chief) of fish dinners, the words stung like the barbs of an upraised dorsal fin. The elder from southern Washington's Yakama Tribe would have nothing to do with a NAWFS lunch featuring a rough fish like walleye.

"No, I like to taste my fish," said the discerning woman, part of a delegation from the Columbia River region of the Pacific Northwest. Several of her companions nodded deeply in agreement.

A few Midwestern jaws dropped and the Oneida Radisson Hotel lobby momentarily threatened to whirl uncontrollably. What!? But it didn't take long to understand that where we grow up, how wild food is valued, is worthy predictor of what tastes good. A Yakama fisheries specialist further pointed out that walleye were considered a trash fish in the Columbia River system. Just another invasive species.

"Most, if not all, introduced species negatively impact salmon," she said. In the Columbia River region where salmon is the ogimaa, that includes the mild-flavored walleye.

Accolades

The highest honor of the conference—the Chief Sealth Award—went to Michael J Isham Jr., Lac Courte Oreilles Tribal Chairman as well as chair of GLIFWC's Board of Commissioners. During a May 19 ceremony Isham said he shares the award with many individuals that have shaped his career, including the late Nisqually leader Billy Frank, Lac Courte Oreilles elders George Morrow and Frank Lynk, and a host of others.

Additional accolades went to Brian Saluskin of the Yakama Nation who received the NAFWS Biologist of the Year. Mariano Conley, Gila River Community, won the Conservation Law Officer of Year Award. Out on the target range, the Great Plains team took top honors in the Law Officer Shoot Competition.

The NAFWS Board of Directors selected the Menominee Tribe's Donald Reiter as the organization's next president. NAFWS presidential terms run for one year. The NAFWS Board of Directors represent seven regions throughout the US; two board directors serve each region.



Representatives from GLIFWC's Camp Onji-Akiing explained outreach strategies for tribal youth at a conference session entitled "Cultural Preservation: Getting Youth Involved." Pictured from left: GLIFWC Chief Fred Maulson, student counselors Cole Chapman, Rashawn Bell, and Maranda Maulson, and GLIFWC Outreach Officer Heather Naigus Bliss. (COR photo)

New and expanded oil pipelines in the Ceded Territories

By *Esteban Chiriboga*
GLIFWC Environmental Specialist

GLIFWC staff continue to track the progress of new and expanded pipeline projects in the Ceded Territories. Enbridge Energy has proposed to construct a new pipeline called Sandpiper to transport oil from the Bakken oil fields in North Dakota to Superior, Wisconsin. Enbridge is also proposing to replace the aging Line 3 pipeline that transports oil from Canada to Superior.

Environmental Impact Statements (EIS) are being developed for both pipeline proposals by the Wisconsin Department of Natural Resources (WDNR) and the Minnesota Department of Commerce (MDOC).

After receiving guidance from the Voigt Intertribal Task Force on pipeline issues, GLIFWC staff submitted comments during the scoping phase of the EIS process in Minnesota and Wisconsin. The WDNR has completed the Draft EIS and GLIFWC staff have submitted comments on that document as well.

Proposed Enbridge pipelines *Sandpiper Line*

This would be a new pipeline that would transport oil from the Bakken oil fields in North Dakota to the terminal in Superior, Wisconsin. This pipeline is the alternative to the Keystone XL pipeline that was rejected by the US State Department. In Minnesota the EIS will analyze impacts along several proposed routes. In Wisconsin this pipeline largely follows the existing pipeline right-of-way from the Minnesota border to Superior (see map).

Line 3 replacement

Line 3 has been in operation since the 1960's transporting oil from Canada to Superior. This pipeline is maintained under Enbridge Energy's long term maintenance plan. Recently, the amount of oil that moves through the pipeline has decreased because there is concern that the pipeline can no longer withstand the pressure of the oil under maximum operating conditions. Because of the age of this pipeline, Enbridge is proposing to abandon this pipeline and construct a new Line 3 along the same right-of-way.

The two options that Enbridge has put forward for analysis in the EIS process for Line 3 are: a) construct a new pipeline using modern technology, updated environmental safeguards, and applying current monitoring techniques; b) continue using the existing Line 3 and continue maintenance under the long term management plan. The reduced capacity of the pipeline would be compensated for by using tanker trucks and transporting oil by rail.

Major issues of concern

Climate change is the primary environmental impact of these pipelines to the Ceded Territory. The DEIS developed by the WDNR states that the oil transported by the new Sandpiper line and the Line 3 replacement pipeline would account for 2.77% of the carbon emitted by the United States. This is a significant amount in light of the large percentage of global emissions that the U.S. generates and the international agreements the United States has made to curb the effects of climate change by reducing carbon emissions.



In addition to climate change, the threat of an oil spill is a serious concern in the water-rich Ceded Territories. From 1999 to 2010, Enbridge pipelines spilled over seven million gallons of crude oil in over 800 different incidents across the United States and Canada.

The most notorious spill involved a ruptured pipeline that spilled over a million gallons of heavy crude oil into the Kalamazoo River in the lower peninsula of Michigan in July of 2010. Thirty-five river miles downstream of the spill were closed by the EPA. Cleanup activities at this site continued until 2014 with costs exceeding \$675 million dollars. Cleanup efforts were complicated by the heavy crude oil that, when spilled, sank to the bottom of the river and into the sediment.

Line 3 replacement pipeline could transport this type of oil and the proposed Sandpiper pipeline could potentially transport heavy crude as well.

The proposed Sandpiper pipeline would cross thousands of rivers and wetlands and any spill would cause lasting environmental damage to aquatic environments and the plants and animals that depend on those environments.

GLIFWC staff will continue the technical review of EIS documents for the proposed pipelines in cooperation with the natural resource departments of our member tribes. The Final EIS for the Wisconsin section of the pipeline is expected to be finalized by fall 2016. The EIS process in Minnesota is expected to be completed in 2017.

From 1999 to 2010, Enbridge pipelines spilled over seven million gallons of crude oil in over 800 different incidents across the United States and Canada.

Back Forty brought to the front

Water resources, Menominee River adjacent to planned sulfide mine

By *Dylan Jennings, Staff Writer*

Mining has been a contentious topic for quite some time in Indian Country. It certainly doesn't take rocket science to understand the potential implications of these large-scale projects. Tribal members, much like anyone else, have the right to a clean and livable environment. Of course mining yields resources that are widely utilized in everyday life, however, many tribes and communities are asking if it's really worth the health of the surrounding environment.

Currently, a company known as Aquila Resources, a Canadian exploration company, has submitted a partial permit application to get the ball rolling on an open-pit sulfide mining operation, located along the Penokean Volcanic Belt in Michigan's Upper Peninsula.

According to Aquila Resources, the Back Forty Project has already invested more than \$70 million in this endeavor alone. Their research has shown that the proposed mine site contains extensive deposits of gold, zinc, copper, and silver. The potential ore mining operation will deal with rock that is highly reactive with considerable potential for acid rock drainage, which will perpetually result in future water monitoring even after the project is completed.

Speaking of *nibi* (water), the Back Forty Project depth will exceed 700 feet in depth. The potential for groundwater contamination and decreased water levels of

surrounding water bodies such as wetlands, lakes, and rivers from pit dewatering are big concerns. The project proposal has the pit boundary located less than 150 feet from the Menominee River's edge and discharge of treated water will flow directly into the river. Ironically, the Menominee River has received \$28.6 million of Great Lakes Restoration Initiative funding through the EPA for the cleanup and restoration of this critical sturgeon spawning and rearing habitat.

Much like other mining companies, Aquila is promoting the idea of stimulating economic growth in the area and supporting local and state infrastructure. In addition complying by all State and local regulations to ensure environmental longevity is at the forefront of their application. "Reclamation and returning the land to a naturally appropriate and useful state is an important part of mining and a top priority for us," states Aquila Resources.

However, many local residents and neighboring tribes feel otherwise. The proposed mine is located in the middle of a culturally significant hub for tribal communities. The Menominee Nation regards this area as the root of their existence. The mouth of the Menominee River is considered to be the origin of creation for the Menominee people as the five ancestral clans were created in this area. Likewise, several mounds and ancient garden beds reside in the proposed mining site. The Menominee Nation Tribal Government, located in Keshena, Wisconsin passed a formal resolution in opposition of this project.

(see **Back Forty Project**, page 19)

Moose to walleye, tribes lead resource recovery in MN

Moose research in a changing landscape

1854 Treaty Authority, partners seek clues to moose recovery

By Marne Kaske, 1854 Treaty Authority

Mooz (*Alces alces*) is an iconic species to Minnesota's Arrowhead region. When graced with a glimpse of these majestic creatures in the flesh, it is quite breathtaking. It leaves one silent and speechless for a moment, and without explanation the phrase "as big as a moose" all seems to make sense.

It is no joke that the size and stature of these individuals is symbolic of their ecological and cultural significance on the landscape. The current range of the core Minnesota moose population lies almost entirely within the boundaries of the 1854 Ceded Territory, and because 400-700 pounds of meat can be harvested from one animal to feed a whole community, moose serves as an emblem for subsistence harvest and treaty-reserved resources in northeastern Minnesota.

The 1854 Treaty Authority puts substantial emphasis on managing treaty resources that tribal members traditionally rely upon. Managing for moose is a high priority. Recent declines in the moose population coupled with signs and projections of a warming climate for the region has led to concerns about their long-term future in the Ceded Territory.

As wildlife biologists investigate and try to further our understanding of the challenges facing moose, they find that many strands of a complex web regulating the moose population are either strengthened or weakened as the result of climate change.

Since 2002, 1854 Treaty Authority has collaborated with the Grand Portage Band, Bois Forte Band, Minnesota Department of Natural Resources, University of Minnesota, National Park Service, Minnesota Zoo, and other groups to conduct research and monitor the moose population. Biological and geographical data from over 200 collared individuals has aided in drawing conclusions and will continue to provide baseline information on reproduction and survival rates, non-hunting mortality, habitat use, and the general movement of individuals.

While continuing to assist partners on research projects, 1854 Treaty Authority has recently focused its moose management efforts to evaluating moose habitat use and availability for forage, or "moose food." This critical area of research will almost certainly impact the composition, distribution, and quality of vegetation sustaining our moose.

Moose utilization of changing habitat

There are a variety of landscape disturbances that create moose foraging habitat. Mechanical timber management techniques such as timber harvest, shearing, and prescribed fire can create and enhance moose foraging habitat. Likewise, wildfire and windstorms are natural disturbances creating habitat for moose to forage in. Areas



Bull moose. (Brian Borkholder photo)



An interagency group of biologists are collaborating on research to better understand the factors involved in the moose decline in northeast Minnesota. In hopes of helping create a turnaround, resource managers are considering logging techniques as a way improve moose health. (submitted photos)

with these types of disturbances are evaluated for moose utilization at different time scales, like how soon after a disturbance an area can produce suitable foraging habitat, and for how long an area can sustain its foraging suitability. Starting with a general knowledge of what moose require in relatively early successional forage (i.e., few years after a timber cut), 1854 Treaty Authority wildlife biologists are investigating what species of vegetation moose are eating over different seasons, which tree and shrub species respond quickly to varying types of forest management, and for what period of time each of these species are important. For instance, the data is suggesting that birch happens to be a yummy moose treat if between the height of .5 and 3 meters high. The investigation of disturbance and succession will result in data needed to inform land managers of what is needed to maintain appropriate moose foraging habitat on the changing landscape.

Climate effects support species competition and parasitism

Not only will a shift in seasonal climate effect the types and abundance of vegetation on the landscape, it will also open the opportunity for different species to roam about. Historically there were few deer or moose in Minnesota's Arrowhead Region. Oral history tells us there were more caribou on the landscape. Logging and settlement made conditions more favorable for moose, and now a variety of factors are favoring white-tailed deer over moose. As the abundance of deer on the landscape grows, the overlap of deer and moose range can cause problems for moose. There is a higher prevalence of the parasites carried by whitetail deer expanding into moose range, taking a toll on their health.

"Brainworm" (*Parelaphostrongylus tenuis*) is a nematode parasite infecting ungulate species (members of the deer family) in the northern temperate forests. Most commonly it is carried by whitetails, and although rarely negatively affecting deer it is problematic when it infests moose. Adult worms develop in deer and then shed larvae through deer fecal pellets. Gastropods (tiny land snails) encounter the larvae on the pellets, become infected, and serve as an intermediate host. When foraging moose accidentally ingest infected snails, the larvae develop into adult worms that often cause neurological issues by damaging the central nervous system.

Liver flukes (*Fascioloides magna*) are also carried by whitetail deer and move through gastropod species as intermediate hosts and ultimately to moose. While liver flukes are generally not thought to be fatal for moose, heavy infestations can significantly reduce liver function by leaving scar tissue and result in chronic poor body condition. This is particularly important as expected trends in climate change are generally favorable for deer and parasites they carry.

As our partners in wildlife management work to get a better understanding of deer and moose habitat overlap, 1854 Treaty Authority is investigating the presence of both brainworm and liver fluke parasites in whitetail deer to better understand (See Moose research, page 15)

Mille Lacs debuts new fish hatchery

Pilot year a successful learning experience

By Paula Maday, Staff Writer

Onamia, Minn.— If you're thinking of undertaking a fish-hatching operation, you're going to want to talk to Carl Klimah. Klimah—an energetic, resourceful fisheries biologist hired by the Mille Lacs Band in November 2015—helped the Tribe get a hatchery going in just four short months. Plus, he's full of useful tips, such as: using a wedding veil stapled to a rake handle doesn't make the best seine. Trust him. He's tried it.

Prior to Klimah's hire, Mille Lacs Band had never had a fish hatchery. Klimah joined Kelly Applegate, a Mille Lacs fisheries/wildlife biologist and the department set out to see if they could make good on the Tribe's desire to raise fish.

Mille Lacs Lake has been suffering from a declining walleye population since the early 2000s. "There's no clear answer on why this is happening," says Klimah. "The habitat in Mille Lacs Lake is a really good spawning habitat and the walleye aren't having any trouble reproducing. But for some reason, when juvenile walleyes hit 5-8 inches, right around their first fall, they start disappearing."

Klimah points to several theories as to why this may be happening. One theory is that invasive species such as the spiny waterflea and zebra mussel are entering the lake. The presence of these species can be harmful to walleye, both physically and by altering their food webs.

The zebra mussel, for example, attaches to hard surfaces, such as rocks. It has a razor-sharp shell that can injure walleye spawning in water with a rocky bottom. Young walleye also eat less when zebra mussels are present because the mussels filter out algae, taking food eaten by zooplankton, the food eaten by walleye.

The spiny waterflea also affects walleye food supply by eating zooplankton. This change in the aquatic food web leads into the second theory, which is that walleye are not getting enough to eat.

Biologists have observed a lack of shiners and cisco in the lake, and they are sometimes located in areas of the lake that are inaccessible to walleye. This potentially causes the walleye to start eating one another. "Invasive species change everything in the habitat. You have to keep going down the chain. There's a lot of factors affecting the decline," Klimah stated.

In March 2016, the Mille Lacs Band completed the hatchery thanks to a small amount of funding from the Bureau of Indian Affairs and some donated equipment (including the wedding veil). Klimah started mixing speared walleye eggs and milt in a bucket. Three months later, 1.3 million frye were stocked into rearing ponds repurposed from old wastewater treatment ponds that hadn't been used in 10 years. The ponds were tested to ensure they were safe, and on July 6, the Mille Lacs Band harvested its first hatchery walleye.

The first day, the pull from a small rearing pond was so high that the 3-man boat crew had trouble lifting it into the boat. The next day, however, a larger pond yielded much fewer fish. Klimah said this could be attributed to several different possibilities. "Maybe we didn't get at 'em good. Maybe the stocking density wasn't as high. Maybe the fish were full and weren't moving more," he said.

Walleye captured from the rearing ponds were transferred into a cooler in the back of a pick-up truck. The cooler was filled with water and an oxygen stone, and then

transported to a large outdoor tub nearby. The fish remained in the tub for 12 hours amid a steady stream of water, to reduce the risk of invasive species contamination. After those 12 hours, they were counted, weighted, and transferred to a large tank on the back of another pick-up truck and driven to either Nammadhers or Sullivan Lake for release.

Klimah estimates that 5,000 walleye were stocked in Nammadhers Lake and 7,500 were stocked in Sullivan Lake, a lake that is open to all 1837 bands for fishing. Other lakes, including Mille Lacs Lake, may be stocked in the future depending on how many walleye survive. Susan Klapel, Commissioner of Natural Resources for the (see Mille Lacs hatchery, page 19)



Mille Lacs Aquatic Biologist Chad Weiss stocks walleye into Sullivan Lake on July 7, 2016. The walleye were reared from ponds converted from abandoned wastewater treatment ponds on the Mille Lacs Reservation. INSET: One of many walleye that was harvested via the efforts of the Mille Lacs Fish Hatchery's pilot year. (Paula Maday photos)

Red Lake Tribe, partners plan for climate resiliency

By Charlie Otto Rasmussen, Staff Writer

Red Lake, Minn.—The Red Lake Band of Chippewa Indians has several plans of action related to climate change adaptation.

Beginning in 2014 the tribe partnered with the Model Forest Policy Program and joined their Climate Solutions University cohort in order to develop a climate adaptation plan. This process identified current water and forest resources, related ecosystem services, economic and cultural impacts, and developed a work plan based on the tribe's needs.

Additionally, interviews were held with community members who depend on the natural resources of the reservation. Hunters, fishermen, berry pickers, and elders were polled for their opinions and thoughts on climate change and resource management.

The work of the Model Forest Policy Program (MFPP), Climate Solutions University (CSU), and the Red Lake Department of Natural Resources (RLDNR)

is focused on the forest and water systems of the Red Lake Indian Reservation in Minnesota. Development of the plan came about because all parties, led by MFPP, recognized the critical need for local community resilience against the impacts of climate change by protecting forest and water resources.

This climate adaptation plan for the Red Lake Reservation is a team effort, with deep and broad information gathering, critical analysis, and thoughtful planning.

The RLDNR Water Resources team took a local leadership role to engage with CSU's Forest and Water Strategies program and guide the program toward climate resilience featuring an adaptation plan that addresses local climate risks.

Importantly, the plan recognizes Red Lake conditions and culture. This achievement was made possible through guidance and coaching from CSU in partnership with the RLDNR.

The goal of CSU is to help rural, underserved communities become leaders in climate resilience using a cost effective distance-learning program. The result of this collaborative effort is a powerful climate adapta-

tion plan that the RLDNR can support and implement in coming years.

This plan will eventually be expanded into a guideline for other environmental, development, and planning programs on the Reservation. The outcome will be a community that can better withstand impacts of climate upon their resources, economy and cultural structure in the decades to come.

In addition, Red Lake's climate change monitoring initiative is associated with a partnership of tribes from the Environmental Protection Agency's Region 5 area. The purpose of this is to give tribes an opportunity to set up a regional monitoring strategy that is relevant to their natural resource goals, while contributing to other regional efforts at the same time.

As a part of the bioassessment portion, select invertebrates and fish species will be monitored. There is also a phenology portion that will focus on culturally important species like wild rice and sugar maples.

The goal of this initiative is to have a functional draft of the monitoring strategy completed by winter 2016-17 so that tribes can start implementation next spring.



“Critters of the Northwoods” comes to Keweenaw Bay

By GLIFWC Enforcement Staff

Baraga, Mich.—Do you know the Ojibwe word for beaver? Or the different wildlife habitats that are in and around your community? How about which mammal runs with their tail straight-out, differentiating them from other related species? This, and a whole bunch more, is what the children at the Niiwiin Akeaa Recreational Facility learned at a July 7 event on the Keweenaw Bay Ojibwe Reservation.

GLIFWC conservation wardens work with the Keweenaw Bay Indian Community Summer Youth Program each year. This summer Officers Christina Dzwonkowski and Steven Amsler had the pleasure of working with 24 children (ages 5-12) and four adults at Niwiin Akeaa, and boy was it fun.

Many people think that a job of a conservation warden is mostly writing citations and working in the woods or on the water. That is correct at least for a portion of the job. But another crucial component is teaching and educating the communities where we live and work. GLIFWC officers teach safety classes including canoeing, hunting, ATV, and boating, in addition to classes about the environment and our relatives that live there.

The children at the Niiwiin Akeaa started out thinking that the wardens standing before them were the police. Officer Dzwonkowski explained that they may look like police officers they see on the street but they are actually more like police in the woods. She explained that wardens are there to help protect the animals, plants, water and the woods, and also to keep people safe while they are out in the outdoors.

Dzwonkowski then delivered a presentation called “Critters of the Northwoods,” teaching the excited children about the mammals that live in central Upper Michigan. She covered different habitats, whether the mammals were herbivores, omnivores or carnivores, how to identify the mammals, facts about the mammals, and the Ojibwe names for each animal. The children were very anxious to learn



Officer Christina Dzwonkowski presented a “Critters” program at Keweenaw Bay Indian Community and Camp Nesbit (pictured) this summer. (Heather Naigus photo)

about the furs displayed on a table. Waving hands stirred the air during a round of questions-and-answers. Many stories were shared of the children’s encounters with beaver (amik) and deer (waawaashkeshi) that their families had hunted or had seen around their houses and community.

Based on information learned that day as a springboard, Dzwonkowski also led two games. The first game involved reading clues to the kids so they could guess which animal was being described. After the child guessed the animal, they had to identify the animal hide that was amongst 15 hides presented on a table. Everyone was actively guessing as she explained the detailed descriptions of the mammal. The second game got everyone up and on their feet. The children were split into teams and given a large flashcard. Their card either had an Ojibwe word or a description of an animal on it. The children had to use what they learned earlier to match the description with the Ojibwe word for the animal. Participants ultimately all matched-up while having fun doing it.

The children then got to go hands-on with all the furs and ask the officers more questions. Everyone had a great time and learned along the way! (CD)

Essential Ojibwemowin

beaver—amik

deer—waawaashkeshi

G-WOW making educational impacts for the next generation

By Cathy Techtman, for Mazina’igan

Ashland, Wis.—Do culture and science agree that climate change is happening? By 2007 it was becoming apparent that climate change was affecting Wisconsin’s Lake Superior’s communities, cultures and economies. Both Great Lakes and inland lake levels had dropped to almost record low levels, only to rebound to recent record highs. Intense storms and “gusher” rain events, like the recent flood that devastated Bad River and the Chequamegon Bay region, were becoming more common.

Overall seasonal temperatures were increasing, punctuated by the number of high heat days. These “place-based” observations were supported by climate research from the Wisconsin Initiative on Climate Change Impacts (WICCI) which projected these trends would increase as Wisconsin’s climate warms.

GLIFWC realized the impacts climate change could potentially have on treaty reserved hunting, fishing, and gathering rights. The Chequamegon-Nicolet National Forest-United States Forest Service and Apostle Islands National Lakeshore-National Park Service were concerned about how climate change might affect resource management and public safety. A University of Wisconsin-Extension education specialist suspected that “science-only” educational models were not effective.

Individuals from these diverse agencies teamed up with a vision to create a culturally relevant climate education model that would increase people’s confidence in communicating about climate change and help them take action to address the issue. The model was given the name Gikinoo’wizhiwe Onji Waaban (“Guiding for Tomorrow”) by Jim St. Arnold, a GLIFWC program director. It was nicknamed “G-WOW.”

Since then G-WOW has been changing the way people learn about climate change because it integrates place-based evidence that people can observe climate effects on cultural practices. G-WOW uses traditional cultural practices of the Ojibwe to demonstrate how climate

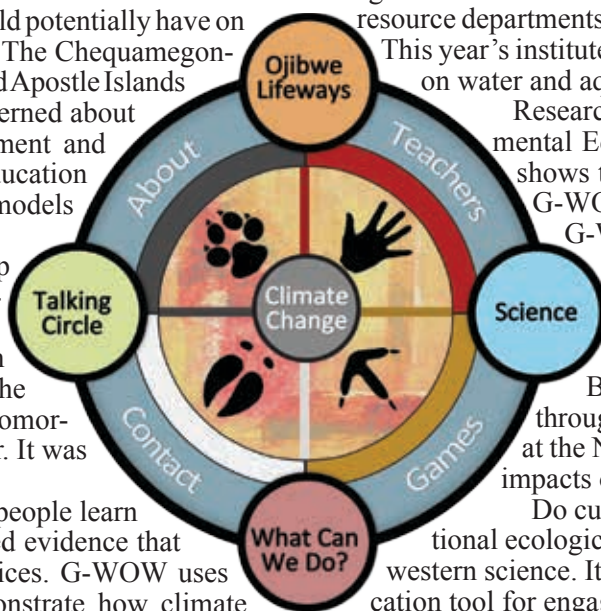
change is affecting all cultures. GLIFWC staff were instrumental in integrating TEK, Ojibwe language and cultural components, and management research into the four seasonal units that make up the G-WOW curriculum. These include maple sugaring and birch bark harvesting (spring), fishing (summer), wild rice harvesting (fall), and respecting culture (winter). The G-WOW model also prompts learners to move from awareness to taking action to reduce climate change impacts within their communities.

Since 2012, the G-WOW Team has offered a summer professional development opportunity to train educators in using the model in their classrooms and communities. Participants study place-based evidence of climate change impacts through field investigations within Wisconsin’s Lake Superior communities and tribal lands. GLIFWC Public Information staff provide guidance in developing and outreaching the institute while natural resource and TEK specialists offer training sessions and field investigations, often in partnership with local tribal natural resource departments. Climate research is integrated into the field investigations. This year’s institute, titled “Hear the Water Speak,” focuses on climate impacts on water and aquatic ecosystems.

Research conducted by Patty Carpenter for her Master of Environmental Education-University of Minnesota-Duluth graduate degree shows that the G-WOW model is accomplishing the vision of the G-WOW Team. Carpenter found that educators attending the 2015 G-WOW Climate Institute increased their confidence in teaching about climate change and all were using the model to teach about climate change. The educators saw the G-WOW model’s use of climate change impacts on the Ojibwe as being transferable to their students no matter the location.

Besides the institute, the G-WOW model is also outreached through an online curriculum (www.g-wow.org) and a major exhibit at the Northern Great Lakes Visitor Center that focuses on climate impacts on manoomin.

Do culture and science agree? The G-WOW model weaves traditional ecological knowledge of the Ojibwe and place-based evidence with western science. It has created a culturally relevant climate change communication tool for engaging all people in this critical issue.





Elders, TEK to form backbone of new manoomin plan

By Jen Ballinger, GLIFWC Outreach Specialist

In an effort to promote Anishinaabe culture in all aspects of GLIFWC work, Traditional Ecological Knowledge (TEK) is incorporated into various natural resource management plans and harvesting rules and regulations. TEK is a source for understanding what constitutes proper respect of a particular resource.

Under the recently completed wild rice project, various manoomin harvesters were interviewed about manoomin TEK. Knowledge shared during this project included harvesting techniques, best management practices, historic and current manoomin habitat and distribution, and explanations of consequences and ecological effects on manoomin harvest.

Many of the harvesters interviewed expressed their views on the best ways to respect manoomin, why manoomin is important to the Anishinaabe, and concerns for the sustainability of manoomin for seven generations in the future.

A recent interview with Fred Ackley and Fran Van Zile (Sokaogon Mole Lake) will be used to help GLIFWC more effectively manage, restore, and rehabilitate manoomin in the Lake Superior basin and other areas of the Ceded Territories. As Fred and Fran talked about why they harvested manoomin, the respect and love Anishinaabe should have for such a valuable resource became apparent. This excerpt of the importance of manoomin to Fran helps highlight why GLIFWC needs to manage manoomin in a culturally appropriate and relevant way.

“So our first thought was that when that hail came, it knocked it [the manoomin] down. When you looked at the stalks of the rice, it had like brown burnt marks in it but it was lying down, like something had come along and pushed it down. It wasn't standing up like it was when we saw it the night before. It was lying down. So once again maybe they called that climate change or change in the weather at the time but then one o'clock ice storms that come do a lot of damage to the lake and to the rice, but we can't stop that. We can't stop that. There isn't any way we can stop what happens.

All of those kinds of things we have to take into consideration when we talk about the manoomin, because on account of we found out that no matter where you go in the world, there isn't no substitute for that manoomin. Nobody's got no substitute for that. When the Creator told us that we have to take that manoomin to our doings, to our ceremonies, he told us when we take that rice there we are feeding him because that's God's food. God told us to go where the rice grows on the water.

It'll take care of you as long as the water is healthy. Everything that grows on there, everything that goes in there that stays in there, you can eat that too. That's how we learned how to survive and that's what we were told by our relatives. Those are the stories that our grandmother shares with us at our time when we are sitting there. Those are the stories that we share with our children and our grandchildren.



Fred Ackley and Fran Van Zile. (Jen Ballinger photo)

Because during ricing season, one of the most beautiful sights as an Indian person is going to the village and seeing them campfires. It tells me that our relatives are joining us because we're all going to be eating. Whenever we go and do that, when we do that, we all know that everybody's going to have food. We all know that as Indian people, they didn't have no refrigerators, no freezers in their teepees back in those days. We had to learn how to smoke that fish, how to can that deer meat, how to clean and store wild rice.

Those are the things that we had to learn, pick those berries before they spoil, put them in a jar put them on a shelf because we have ceremony during the winter time and you got to have that food in order to thank the Creator.”

Fred shared why harvesting and sharing manoomin is important to him and the good feelings that come from it.

“All the things that you thought and the sweat you did and the muscle aches and pains it goes away for another year. About four days after that goes, you start craving for the next year. So your mind and your body starts thinking well, it was a good year now what am I going to do for the next year? I hope the rice is better. I hope it's there. I hope I don't do nothing wrong to break any bad medicine, taboo or whatever on the people, on the food. Then I go back out again thinking about it all year round in the winter.

When I do give it out, like when somebody comes in and says 'hey, we got a naming ceremony here can you make some rice or casserole?' They could pay me if they want but most of the time I'll just give to them. Other people I'll give to for Christmas time because they're workers and they can't get out there. But that one pound of rice to all those workers that time of year, that brings that rice spirit and that Anishinaabe spirit in there. It's not for Christmas though. It's for winter solstice; where it really calls for us to eat that food at that time of the year. For us, it's good because we're all in the atmosphere of Christmas giving presents and enjoying happiness.

That's why I like to do it then because also I know when I see on their faces, that the spirit's in them yet. That's when they were little kids growing up until they die, they are all going to taste that rice, where it comes from. Then the people who really go out there and get it for them, they all could but everybody doesn't have the gifts. So whatever else other people do, they do that the same time of the year. Then what you got is everybody starts that for the rice. It starts a whole different system around the whole community from young and old.

Somebody says what are they doing over there? What are they doing? What are they doing? Then they all start getting involved somehow some way seeing the whole community starts moving for that harvest. I'll help you out; I'll go out there. I'll do this. Because you don't even have to advertise it but it comes by knowing you're out there, seeing someone's fire in the backyard and smelling parched rice all over the air. Then you know God is blessing us then as Indian people because everybody is busy collecting it and harvesting it and it's really the satisfaction of the gift from the Great Spirit. Everything that earth does for it, the water, everything, the air and the sun, all that birds and bugs, everything all pays off when you eat that rice that way and think about it that way.”

Staff will be conducting additional interviews under the current Great Lakes Restoration Initiative's capacity grant in order to provide the basis for a new GLIFWC manoomin management plan based upon TEK and western ecological knowledge.

Moose research in a changing landscape

(continued from page 12)

examining deer fecal pellets. Deer pellets are collected when actively shedding brainworm larvae and liver fluke eggs—from February through mid-April. The results from parasite presence, or absence per location, is valuable in identifying hotspots of parasite transmission, and suggests areas to target reductions in deer population that could minimize risk to moose.

Warmer, shorter winters improve winter tick survival

Climate change will influence daily temperature thresholds by curbing cold nights and intensifying the peak daytime heat. Likewise, climate change in northeastern Minnesota will result in seasonal extremes. As a boreal forest evolved species, not only are moose stressed by and struggle to deal with increased temperatures, but conditions are becoming more favorable to survival rates of a common moose parasite known as winter tick.

Although they will parasitize any ungulate, winter ticks (*Dermacentor albipictus*) almost undoubtedly favor and are most effective at parasitizing moose. Hundreds of feeding ticks substantially draw down moose energy by taking about three blood meals throughout the winter. Adult ticks take their final blood meal around March, which also happens to be when food is most scarce for moose. Pest-ridden moose spend a multitude of time (time they would usually spend on feeding) grooming, and rubbing on trees with the intention of scraping off the irritating ticks. This grooming also results in individuals rubbing off their fur and reducing their energy by lack of food consumption and reduced insulation.

When engorged winter tick females drop off moose in the spring, they need to reach bare ground to successfully lay their eggs. With warmer winters (warming 3.5 to 6°F on average) we should expect to see earlier snow melt and more winter precipitation falling as rain (see 1854 Ceded Territory Climate Change Vulnerability Assessment and Adaptation Strategies report).



Moose suffering from winter ticks. (submitted photo)

These expected conditions are key to successful egg and larval tick survival. What we used to remember as endless winters are becoming few and far between.

Ultimately, climate change will cause dramatic shifts in regional temperatures and precipitation regimes, resulting in changes to vegetation composition, unexpected competition, and concentrated pressures effecting the overall fitness of moose. 1854 Treaty Authority will continue to investigate these impacts on moose through monitoring and research. We must take care of moose, as they are an essential to mino-bimaadiziwin.



Ancestors remembered at Sandy Lake

GLIFWC staff, tribes, and local communities gathered for the annual Mikwendaagoziwag ceremony on Wednesday, July 27th. Lac Courte Oreilles Tribal Chairman Mic Isham acknowledged this day as an important time to “remember our relatives and the sacrifices they made for us to have our treaty rights today.”

GLIFWC interns scoured the crowd and assisted with setup and also made plates for the elders. Sokaogon Mole Lake Tribal Chairman Nigig Chris McGeshick acknowledged the Mole Lake youth and all of the youth that came to the historic event. “We can rest assured knowing that we are in good hands, our future is right here.”

The day was a little damp as was the paddle across the lake; however, everyone that chose to paddle made it safely, a testament to the resiliency of Anishinaabeg.

Please stay tuned for logistics for the 2017 Sandy Lake Mikwendaagoziwag remembrance ceremony.
—Dylan Jennings



The Mikwendaagoziwag Memorial draws people from throughout the region, with many travelers coming to Sandy Lake from Wisconsin. In 2016 retired Wisconsin State Senator Robert Jauch (pictured left next to James Zorn, GLIFWC executive director) attended annual ceremonies July 27. (Jen Ballinger photo)

Walking On

Distinguished educator and Ojibwe cultural advocate John Little Bird Anderson died July 12 at his home in Springbrook, Wis. He was 80 years old. Anderson inspired many young natives throughout a career that spanned decades, including chairmanship of the Lac Courte Oreilles Band at age 23.

Anderson served as professor at the College of St. Scholastica from 1971-77. He also worked as a traveling professor, driving around a circuit of on-reservation classrooms at Red Cliff, Bad River, St. Croix and LCO where he taught American Indian history and other courses.

In 1982 Anderson joined the effort to establish the Lac Courte Oreilles Community College and became its first president four years later. In the late 1980s, during the backlash against Ojibwe treaty rights, he served as facilitator between the LCO community and Hayward Lakes Association in addition to service on the Ad Hoc Commission on Racism.

At Mount Scenario College, Professor Anderson headed up the American Indian Program from 1993 through the end of the century.

An accomplished distance runner, Anderson joined other natives in creating the Solidarity runs of the late 1980s and early 1990s. He completed the Boston Marathon in 1987.

Anderson was also known as Bonajonce, a name rooted in his earliest years growing up in an Ojibwe foster home at New Post. When the young Anderson grew crabby and irritable, his mother would say in Ojibwemowin “Giikiibingwashi banajaah,” or the “little bird is sleepy.” Anderson most recently participated in GLIFWC’s Ogichidaag Storyteller’s project last March. Little Bird will be missed.

—CO Rasmussen



Core runners led by Animikiins Stark of Bad River, walk with determination as they pass through Radisson, WI to finish up the 2016 Healing Circle Run. The vision of the next generation leading the people is in full effect. (Jenny Krueger-Bear photo)

Historic flooding interlaced with Healing Circle Run

By Dylan Jennings, Staff Writer

The 2016 Healing Circle Run was an unprecedented journey to say the least. Core runners, community members and Lac Courte Oreilles representatives gathered at Pipestone Creek on Saturday, July 9th for the opening ceremony.

“This event isn’t only about exercise, it’s about connecting our communities and spreading the healing that is needed,” said Lac Courte Oreilles Band Tribal Chairman Mic Isham. The seven-day run, July 9-15, connected eight Ojibwe reservations in Wisconsin, Upper Michigan and Minnesota.

This year during the morning ceremony at Lac du Flambeau, a miigwan (feather) for past leader Zaagajiwe or Jim Schlender Sr. was placed on the staff to commemorate him and his work for the people. Also a miigwan was offered up for Little Bird John Anderson and will be placed on the mitiganabe staff during next year’s Healing Circle Run.

On day four as the core group left Getegitiganing (Lac Vieux Desert), the morning of Tuesday, July 12, there was uncertainty and concern about arriving in Red Cliff. The Lake Superior south shore had gone through severe thunderstorms the previous evening, which caused torrential rains and a flood warning for the area. The group traveled to Bad River, praying for the community. Once in Bad River, the core group made it safely through the community just as the waters began to rise and major flooding ensued. This inhibited many people from physically participating in the run, however, the thoughts and prayers could be felt for miles. Communities and GLIFWC staff pulled together along the journey to send donations and assistance to the Bad River community.

In the wake of the disaster, communities and families dropped everything to help in some way shape or form. This will be an event in history that nobody will forget. Despite the adversity, the water brought forth healing in an unexpected manner; a way in which families and communities worked together to rebuild and mend Bad River and the surrounding townships.

The Healing Circle Run originally began as an act of solidarity for Anishinaabe bands seeking to reaffirm their treaty reserved rights in court. Decades later, original participants and a new generation of runners have emerged to keep the run going strong. Every morning participants begin with a ceremony, utilizing the sacred articles that were given to the Commission. Opwaaganag (pipes), dewe’iganag (drums) and asemaa (tobacco) are an integral part of GLIFWC and its mission to infuse culture and Anishinaabe lifeway into everything it does. To finish the day, core runners and community participants end with a ceremony and talking circle.

Please stay tuned for more information regarding the 2017 Healing Circle Run. Healing comes in many shapes, and sizes. Healing also operates on its own time. Keep the circle going throughout the year by keeping relatives and communities in your thoughts and prayers.

Changing Leaves Camp

Planning is underway for a two-day youth camp at Lac du Flambeau this October. Keep an eye on www.Facebook/GLIFWC for details or call GLIFWC Outreach Officer Heather Naigus Bliss for more information at 906.458.3778.

2016 Partners in Fishing



Read about the Wisconsin oga Ceded Territory research of the “Partners” or Joint Assessment Steering Committee at: www.glifwc.org/publications/pdf/FisheryStatus2013.pdf.



Nearly a quarter century after a handful of northern Wisconsin fisheries managers got together for some laid back angling, Partners in Fishing continues to expand. Over one hundred participants gathered at the Chippewa Flowage on the Lac Courte Oreilles Reservation June 8 for the 24th rendition of the event that brings together tribal, federal and state representatives.

The Partners welcomed a new addition this year—Trout Unlimited—a conservation organization dedicated to high water quality and fisheries habitat. Regional Trout Unlimited Officer Bob Rice (inset) fished with a fly rod during the afternoon, landing a number of species including this northern pike.

Special guests from the Green Bay Packers Super Bowl XXXI championship team joined the Partners again this year and stressed the importance of teamwork to accomplish mutual goals. (CO Rasmussen photos)

Waawaashkeshi night hunting in the WI Ceded Territory

(continued from page 9)

Is my shooting plan from last year still good?

No. You're required to visit the area you want to hunt at night at least one time during the day after Labor Day before submitting your shooting plan. Even if you're using the same location, you need to submit a new shooting plan each year.

What is the purpose of the shooting plan?

The shooting plan is a visual depiction of the safety features of a particular location, designated for deer night hunting. The shooting plan should be carried with the hunter and used to locate the “safe zone of fire” or area where the hunter's weapon may be safely discharged in the “intended direction of fire.” Temporary markers, like reflective ribbon tied to branches, can also be placed within the area to remind the hunter about the safety features of the night hunting location.

If I am walking toward my shooting plan area and see a deer, can I shoot it?

Not at night. During the nighttime deer hunting season, members can only discharge their weapons from a stationary location within the “safe zone of fire” described in the shooting plan, and going in the direction indicated in the shooting plan.

If a member wounds a deer, the deer can only be dispatched by a weapon if the member and the deer are still within the “safe zone of fire” and the weapon will be fired in the “intended direction of fire.” If the deer is outside of the “safe zone of fire,” the member can use another means to dispatch the wounded animal (such as a knife). Otherwise, the member must wait until daytime hunting hours to dispatch the wounded deer.

Unless you arrive at your location during daylight hours, you must illuminate the entire safe zone of fire and adequate backstop area prior to hunting.

Is there any special equipment required for night hunting?

Yes. A light is required for night hunting, and it should be a white light. Lights can be hand-held, headlamps or lights affixed to the weapon. Only soft or expanding types of bullets are allowed. Members may only use the type of weapon he or she qualified with during the Marksmanship Proficiency course.

Tribal night hunt Shooting Plan

To prepare your Shooting Plan, you should draw a diagram of your site on the Plan (you may also attach other maps or aerial photos if you wish, but please make sure to draw a diagram of the site). On the diagram you must clearly show:

1. The “Safe Zone of Fire” (that is, the area in which you may safely discharge your weapon);
2. The stationary position from which you will hunt;
3. The “Adequate Backstop,” which means: earthen terrain that will stop discharged projectiles under hunting circumstances, considering a reasonable margin of error. The maximum distance that an adequate backstop should be from your established stationary position at night is 125 yards;
4. The direction of intended fire;
5. Any of the following that appear within ¼ of a mile:
 - a. The grounds of a school, plus 1,000 feet in all directions;
 - b. School forest, public landfill, or public gravel pits where hunting is prohibited and where notice of the prohibition is clearly posted;
 - c. Road;
 - d. Residence, building or dwelling;
 - e. Designated public campgrounds, public beaches, or public picnic area;
 - f. Lake or waterbody;
 - g. ATV trail, snowmobile trail, or other designated trails (such as hiking, biking, or cross country ski trail);
 - h. Open area;
 - i. Private property;
 - j. All closed portions of state parks as described in the *Tribal State Park Hunting Opportunities in the Wisconsin portion of the 1837 and 1842 Ceded Territories* document;
 - k. Another tribal shooting plan area;
 - l. Any other area as determined by the tribal conservation department.

For a copy of the shooting plan go to: www.glifwc.org/Regulations/ShootingPlan_v23Nov15.pdf.

Find us on Facebook!



Milestones at Onji-Akiing make for outstanding youth camp *Dewe'igan, campers-turned-counselors shine*

By Charlie Otto Rasmussen, Staff Writer

Camp Nesbit, Mich.—The flagship of the GLIFWC Enforcement Division's summer youth outreach events, Camp Onji-Akiing made a significant cultural step in 2016 with the construction of a dewe'igan, or drum. For Fred Maulson, chief GLIFWC warden and camp co-founder, the drum represents an important step in the camp's growth.

"Having a drum is a great thing. It's inspiring to our young people, especially those who don't have strong connections to their culture," said Maulson, who campers chose as Keeper of the new drum. "The kids are equals here. Some may have knowledge that others don't, but sharing is central to what we do here."

In an exceptionally diverse summer at Onji-Akiing, 44 campers representing 16 tribes were in attendance. The annual event is a US Forest Service-GLIFWC initiative designed to develop outdoor and leadership skills in tribal youth from the upper Great Lakes region.

Now in its eighth season, Onji-Akiing is increasingly benefitting from the presence of veteran campers who return as junior counselors, joining the ranks of tribal elders, GLIFWC wardens, and Forest Service staff who run the camp. GLIFWC Outreach Officer & Camp Director Heather Naigus Bliss, said camp organizers also added a special group this year.

"We've got the camp's first four junior counselors from back in 2011 as full counselors this year. Three of them are recent high school graduates on their way to college," Bliss said. "It's really an amazing thing to see the growth in these young people."

From catching and filleting fish to team-building exercises on the high ropes, youth are on the move and learning. Morning runs through pine-scented forests jumpstart the day, silent walks provide time for reflection in nature.

At mid-week, campers met with representatives from multiple agencies and institutions during an afternoon career fair. Professionals from the Forest Service, Department of Natural Resources, Keweenaw Bay Indian Community Natural Resources, Lac Vieux Desert Conservation Corps, GLIFWC, and five colleges offered advice and insights into a host of career opportunities and the coursework required to get there.



KBIC's Rodney Loonsfoot looks on as a camper cuts lacing for the Onji-Akiing drum. (Fred Maulson photo)

Maulson said he's proud to work with all the dedicated individuals that again helped make the camp a success. KBIC's Rodney Loonsfoot and Mole Lake's Wayne LaBine played an integral role in the new dewe'igan this year, Maulson said. Loonsfoot supervised drum construction—which included stretching a moose hide, making drum sticks, and painting the base—and he shared some entry-level songs for the kids to sing. Saginaw Chippewa's Howard Kimewon taught Anishinabemowin while Steve Perry, Wayne LaBine and Roger LaBine worked with campers across a broad spectrum of Ojibwe know-how.

"Coming to camp feels like a homecoming," said Kolton Houlton, Navajo Nation, a former camper and a camp lifeguard in 2016.

Look for more from camp Onji-Akiing in early 2017 on the program Native Report from PBS television. In the meantime, see photo galleries of camp life at <https://www.facebook.com/Full-Circle>.

Regional officers, first responders prepare for deadly scenario



Ashland, Wis.—Multiple law enforcement and emergency response agencies converged at the Northland College campus June 3 in a coordinated drill to confront an active shooter and manage care for gunshot victims. GLIFWC officers joined Ashland Police Department (APD), Ashland County Sheriffs (ACS), and Bayfield County Sheriffs (BCS), along with fire departments from Ashland, Washburn and Mason on the campus-wide exercise to prepare for a possible attack in far northern Wisconsin.

Said Ashland Police Chief James Gregoire: "The importance of this collaborative effort cannot be stressed enough. We can't pretend that it could never happen, and

there's no way to prepare unless we bring all the agencies together." Representatives from Ashland-based Memorial Medical Center also participated, focusing on coordinating emergency care for casualties.

Pictured from left: Sheriff Mic Brennan and Sgt Nate Delegan (ACS); Mark Campy, Nick Ovaska, Matt Rooney, Jeremy Page, Bill Hagstrom, and Ty Juoni (APD); Justin Gilbertson (ACS); Dan North and Gale Smith (GLIFWC); Cory Chard (APD); Steven Amsler (GLIFWC); Steve Goodlet (ACS); Mike Kastern and Andy Runis (BCS); Sgt. Gene Brinker (APD); Matt Kniskern (GLIFWC) and Chief James Gregoire (APD). —COR

Youth fishing event draws hundreds



Good weather and a great line-up brought a record number of participants to South Shore Fishing Association's annual Kids and Families Fishing Day June 18 in Marquette. GLIFWC Officer Matt Kniskern joined the festivities, helping kids tie fishing lines and managing hooked bluegills from a pond at Lakeneland.

The Chocoy Raptor Rehabilitation Center drew a lot of attention when they introduced an owl, falcon, and hawk to the gathering. The Center also delivered a well-received presentation on raptors of the Upper Peninsula.

With lunch sponsored by Elks of Marquette and free fishing gear for all the kids, it was an exceptional event that helped lure more youngsters into fishing and a better appreciation of the outdoors.

National wetlands award to GLIFWC wildlife biologist



Veteran Biologist Peter David received the prestigious National Wetland Award for Conservation & Restoration last month at a ceremony in Washington DC. A selection committee comprised of more than a dozen natural resources experts called David “one of the country’s foremost experts in wild rice ecology” who has “for 30 years, fostered partnerships between federal, state, county and tribal agencies, NGOs, and concerned citizens.” David (center frame) accepts the award from John Schmerfeld US Fish & Wildlife Service, Branch of Habitat Chief. (Kathryn Campbell photo)

GLIFWC receives National Park Service award



GLIFWC was awarded the 2016 Midwest Region Excellence in Partnership Award by the National Park Service on June 14, 2016. The award recognizes the partnership efforts of GLIFWC’s Conservation Enforcement Division during the 2014 ice cave season. Bob Krumenaker and Chris Smith of the National Park Service presented the award to GLIFWC Chief Warden Fred Maulson and Western District Supervisor Mike Popovich at the Northern Great Lakes Visitor Center. The 2014 ice caves season saw 138,000 visitors, with over 40 organizations partnering to ensure visitor safety. As a comparison, the previous season that the ice caves were open to the public (2009) saw 8,400 visitors. (Paula Maday photo)

Back Forty Project

(continued from page 11)

The Back Forty Project requires a land exchange between the company and the state, which both entities are in negotiations at this time. The application that Aquila has submitted is currently not administratively complete, missing crucial pieces such as wetland permits. Once the state has determined the application is complete, the state will schedule a public hearing, which will occur at Stephenson High School in Stephenson, Michigan. The comment period will begin 28 days from the date of the hearing.

Please check out these links to read more about the Menominee Indian Tribe of Wisconsin’s perspective (www.menominee-nsn.gov) and Aquila Resources (www.aquilaresources.com/projects/back-forty-project) for their project information.

New staff: Accomplished PhD biologists focus on inland fisheries

Aaron Shultz, GLIFWC Climate Change Inland Fisheries Biologist

After nearly a decade in the balmy climes of Eleuthera Bahamas, fisheries biologist Aaron Shultz joined GLIFWC in June. Shultz is splitting time between GLIFWC’s expanding climate change program and the inland fisheries section, focusing on walleye research as well as investigations into other cool water fish communities.

He graduated with a M.S. in Natural Resources in Environmental Sciences in 2007. Shultz then went on to work for the Cape Eleuthera Institute (CEI) as a research associate, and became Director in 2011. He also completed his PhD dissertation while working at CEI, focusing on the response of subtropical near-shore fish to climate change. He graduated with a PhD in Natural Resource and Environmental Sciences from the University of Illinois in 2015.

Shultz and his partner Dr. Jocelyn Curtis-Quick live in Ironwood. They look forward to playing in the snow this winter.

—CO Rasmussen

Adam Ray, GLIFWC Inland Fisheries Biologist

R. Adam Ray joined GLIFWC’s Biological Services Division on June 20. As an inland fisheries biologist, his main work is in statistical analysis of fisheries data.

Ray brings a wide array of knowledge and experience to his position. He completed a Bachelor’s Degree in Wildlife Ecology and Zoology at the University of Wisconsin-Madison, and went on to earn a Master’s of Science and PhD in Fisheries and Wildlife at Oregon State University.

As a post-doctoral research assistant at OSU, Ray served as the lead author on a book chapter modeling the effects of climate change on disease dynamics. He also has over three years of experience working with the Wisconsin Department of Natural Resources as a fisheries technician and fish health specialist.

Ray lives in Ashland with his wife Katie, two children—Caleb, five and Sydney, three—and a dog. He enjoys hiking, exploring lakes, and fishing, all of which he will have plenty of opportunity to do with his move from Madison to the Wisconsin northwoods.

—Paula Maday



Fisheries Biologist Aaron Shultz (left) joined GLIFWC in June. Shultz is splitting time between GLIFWC’s climate change program and the inland fisheries section, focusing on walleye research as well as investigations into other cool water fish communities. Adam Ray also joined GLIFWC’s Biological Services Division in June. As an inland fisheries biologist, his main work is in statistical analysis of fisheries data. (Charlie Otto Rasmussen photo)

Mille Lacs hatchery

(continued from page 13)

Mille Lacs Band said she has been “exceptionally impressed by her crew and the work they are doing.” Additionally, she is happy to have fish that will carry on the genetic line of the walleye in Mille Lacs Lake, should anything devastating happen to that population (walleye eggs came from speared walleye on Mille Lacs Lake).

Overall, Klimah called Mille Lacs’ pilot hatchery year a “successful learning experience” for which the team had to have humor. “We learned some things about what to do and a lot of things about what not to do,” he chuckled.

The learning experience encompassed practical things like equipment use, but also process, procedure and co-management with the state. This year, the Band elected to get a permit and health certificate through the state, but acknowledged that the health certificate may be sought at the federal level next year and that there are some grey areas. “We’re working to learn and balance out that co-management,” Klimah said, “but it was very important for the Band’s tribal sovereignty that we did this ourselves.”

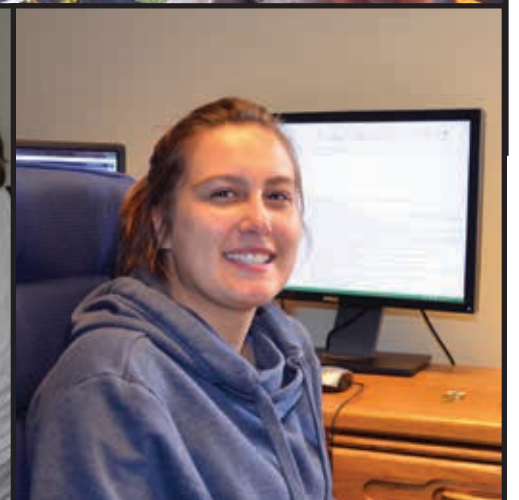
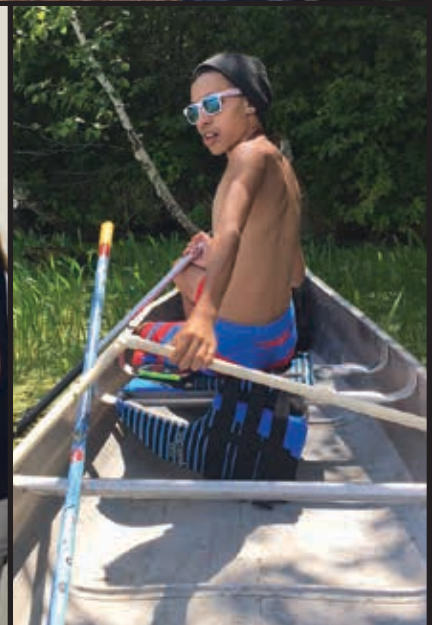


GLIFWC hosts 20 interns

This summer GLIFWC hosted 20 interns from eight different tribes. 2016 interns included: Darcie Powless, Kristen Thannum, Andre Gilles, Amanda Plucinski, Florence Powless, Hailee Cadotte and Thomas McCutcheon, Bad River; Paul Soulier, Madison Bear and Marcus Bear, Red Cliff; Jalyn LaBine, Sokaogon/Mole Lake; Cole Chapman, Lac du Flambeau; Nicholas Quagon, Lac Courte Oreilles; Brandon Barnes, Red

Lake Descendent; Catherine Carlson, Bois Forte Descendent; Rashawn Bell, Menominee Nation; Jake Oster, Ysleta del Sur Pueblo; Callie Kopp, Anya Janssen and Jason Rabotski.

The interns were exposed to a wide variety of tasks ranging from gutting fish to archiving photos and newspaper clippings. This 10-week internship helps the interns know and understand more about GLIFWC as well as helps define a career path.





Waawaashkeshiwayaan Let's use the whole deer!

By Dylan Jennings, Staff Writer

Boozhoo niijiwag (hello friends)! It is dagwaagin (fall)! Fall is a beautiful time of the year. Fall is also a time when the Anishinaabe hunt and trap awesiinyag (animals). Hunting and trapping is a big part of the Anishinaabe life-way. A long time ago successful hunters could feed his or her family for many weeks with one waawaashkeshi (deer).

Today, Anishinaabe still rely upon waawaashkeshi and the other awesiinyag for survival. Many of our relatives use the whole animal. Meat can be either stored or dried into jerky and it will last for a long time.

Anishinaabe have always been able to use everything on the animal. For example, bones can be used as tools and jiishaakwa'iganag (hide scrapers). Dried tendons can be used for sewing. We call this sinew.

One of the most used pieces, besides the meat on a waawaashkeshi, is the bashkwegin (hide). As winter begins, deer hides become thicker as the animal prepares for the cold weather.

Once a deer is harvested, the hunter will skin the animal. The hide peels away much like taking off a jacket. The hide is fleshed and scraped to get all of the meat off. After soaking for a few days the hair will loosen up and it can be scraped off as well. The waawaashkeshiwayan (deer hide) is usually put onto a naazhiiga'igan (hide stretcher). This process will create rawhide, which can be used to make drums, moccasin soles and even snowshoe lacing.



Color the picture of aseke (s/he tans hides).



(drawing by biskakone)

What did you learn?

Waawaashkeshi bones can be used as _____ and _____.

Dried tendons can be used for _____.

Besides the meat, what is the most used part of the deer? _____.

Name three things rawhide can be used for

1. _____
2. _____
3. _____

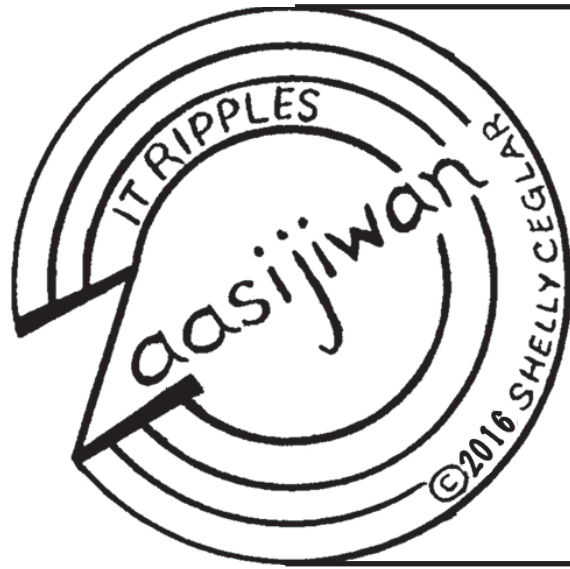
What part of the deer is usually put onto a hide stretcher? _____.

Once the deer is harvested, what does the hunter do next? _____.

Draw a line to match the Ojibwe word to the English word

- | | |
|-------------------|----------------|
| waawaashkeshi | hide stretcher |
| jiishaakwa'iganag | hello |
| niijiwag | animals |
| naazhiiga'igan | deer |
| bashkwegin | friends |
| awesiinyag | hide |
| dagwaagin | fall |
| boozhoo | hide scraper |






Aaniin ezhiwebak dagwaaging? What is happening as it is autumn?

“Apegish waa-objiwemoyeg. Noongom maajisedaa! Mikaw wiijiwaagan! Ojibwemotawidig. Gagwejim: “Aaniin ezhichiged?” Aazhidem: “Nimanoominike. Jiime.”
Gagwejim: “Aaniin ezhichiged ma’ingan?” Aazhidem: “Ma’ingan giyose.”
Gagwejim: “Aaniin ezhichigewaad nikag?” Aazhidem: “Animisewag ingiw nikag.”
Gidaabijitoominan iniw aabajichiganan dagwaagig: binaake’iganan, akandoowin, makakoon, miinawaa ishkode. Miigwech”

I hope you all want to speak Ojibwe. Let’s begin! Find a friend! Talk Ojibwe to each other.
Ask him/her “What are you doing?” Answer him/her: “I am ricing. I am canoeing.”
Ask him/her: “What is the wolf doing?” Answer him/her: “The wolf is hunting.”
Ask him/her: “What are the geese doing?” Answer him/her: “Those geese are flying away.”
We use these tools in the autumn: rakes, hunting blind, baskets, and fire. Thanks.

Bezbig—1

OJIBWEMOWIN (Ojibwe Language)



Gidayaana ina bimiwanaana?

VTI’s & verb transitive, inanimate “to it” verbs


Learn command roots:
Ayaan!—Have it!
Nindayaan(an).—I have it(those).
Gidayaana(an).—You have it(those).
Odayaan abwi.—S/he has a paddle.
Nindayaanin abwiin jiimaaning.—We have paddles in the canoe.
Gidayaamin.—We all have it/those.
Gidayaanaawaa(n).—You all have it(those).
Odayaanaawaa(n).—They have it(those).
Inanimate nouns—NI—only! There plurals end in N!
mookomaan(an)—knife(knives)
babagiwayaanegamig(oon)—tent(s)
Aabajitooon!—Use it!

Niizh—2

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

A. Wegonen i’iw? Waagaakwad i’iw. Nindaabijoon agwajjig.
B. Wegonen o’ow? Giishkiboojigan o’ow. Manisaadan!
C. Nimanise. Wegonen i’iw iwidi? Gaandakii’igan i’iw imaa.
D. Naadin! Daga biidoon gwaa-ba’aawangwaan gitigaaning!
E. Ningii-piidoon i’iw binaakwe’igan bijiinaago gitigaaning.
F. Inashke! Omaa ningii-mikaan migis-kanaak.
G. Aaniindi eyaag wiig waasi-makak?
H. Niwaabandaan i’iw makak agwajjig.

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



Makazin(an)

Niswi—3


IKIDOWIN ODAMINOWIN (word play)

Down:

- Over there
- Knife
- Canadian geese
- basket/box
- S/he dances.

Across:

- what
- pail
- that (inanimate)
- question marker
- canoe paddles



Asemaa-mashkimodens

Online Resources
ojibwe.lib.umn.edu
umich.edu/~ojibwe
www.glifwc.org

Niiwin—4

Inaande—It is colored so

Miskwaande.—It is colored red. (VII)
Miskwaa.(wan)—It is black (plural).
Ozaawaande.—It is colored yellow/brown.
Ozaawaa.—It is yellow or brown.
Ozhaawashkwaande.—It is blue/green.
Ozhaawaashkwaa.—It is blue/green.
Waabishkaande.—It is colored white.
Waabishkaa.—It is white.
Aaniin enaandeg makak?—What color is the box/basket?
Makak gidagaa.—The box is multi-colored/spotted.
Mii’iw.—That’s all.

1. ___ aabajitooon ___ makkoon gitigaaning.
2. Waakaa’iganing apabiwinan ___ aabajitoo ___.
3. ___ waabandaan binaakwe’igan. Ozaawaande.
4. Izhinoo’an! ___ waabandaan ina bimiwanaana?
5. ___ wii-ayaan ___ babagiwayaanegamig-zaaga’iganing. Giwii-manoominikem. Manoominikaa.

Translations:
Niizh—2 A. What’s that (inanimate)? That is an ax. I use it outside. B. What’s this? This is a power saw. Cut something for firewood! (VTI) C. I cut firewood. What’s that over there? That is a canoe push pole there. D. Go get it! Please bring the shovel to the garden! E. I brought a rake yesterday to the garden. F. Look! Here I found a fishing pole. G. Where is it the birchbark basket? H. I see that basket outside.
Niswi—3 Down: 1. Iwidi 2. Mookomaan 4. Nikag 5. Makak 8. Jiime Across: 3. Wegonen 6. Akik 7. I’iw 9. Ina 10. Abwiin
Niiwin-4 1. They use the boxes in the garden. (Od- -aawaan) 2. In the house, we all use the chairs. (Gid- -min) 3. I see a rake. It is colored yellow. (Ni-) 4. Point to it! You see it backpack? (Gi) 5. You all will have it a cloth stucture/tent at the lake. You all will do wild rice work. There is a lot of wild rice.

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



Nenda-Noojimojig

The Ones Who Seek Healing



GLIFWC's 2016 poster features the artwork of Elizabeth LaPensée, Anishinaabe & Métis. One 18 x 24-inch poster is available free upon request. Additional copies are \$2.50 each plus postage. Posters can be ordered online at www.glifwc.org/publications/index.html#Posters; email lynn@glifwc.org or phone 715.685.2150.

The poster focuses on climate change and offering good thoughts for healing to some of those most affected recently, including nibi (water), wiigwaas (birch bark), mooz (moose), namegos (trout), and manoomin (wild rice). We are all connected and impact on one eco-system echoes to another.

Wiigwaas is fused with water in the landscape. Wiigwaasatigoog (birch trees) grow in many ways across many eco-systems. Birch is used for many things including makakoon (baskets), jiimaan (canoes), and mashkiki (medicine). Wiigwaasatigoog are disappearing so fast that some jiimaan need to be made from wiigwaas from other territories. Properly gathering wiigwaas so as to not kill wiigwaasatigoog and planting wiigwaasatigoog in places that still have deep winters can help.

Made of wiigwaas is a flower with five petals, the floral representing women, sitting within Nookomis Giizis (Grandmother Moon). We are grateful for our Anishinaabekweg (Anishinaabe women) who walk and sing for the water. Sharing water teachings and songs is vital for us all. Nookomis Giizis influences the movements of the waters, which rise each day from melting land ice and expanding sea water. In turn, all movements on and around Nookomis Giizis can change the direction and motion of the waters.

In the stars beside Nookomis Giizis is the Mooz constellation, who returns in the fall and watches over the ones who walk, swim, crawl, and fly below. Mooz represents ongoing survival. Mooz looks down at namegos, who swims and leaps. Namegos has long provided nourishment to our people and for this we honor them today through restoration efforts and climate change research. Namegos thrive best in cool water.

Namegos swims towards shallower water where manoomin grows. Manoomin is essential as food and medicine for our people. We are here at these waters thanks to this sacred nourishment. We respect manoomin by caring for the waters, removing invasive plants to allow the stalks to grow, and being gentle when we knock the stalks for rice.

While there is change, there is also hope for healing.

Nigig and friends are back!

Niibin (Summer), the third set of booklets in the Nenda-gikendamang Ningo-biboonagak (We Seek to Learn Throughout the Year) series, will soon be ready for distribution. In the Niibin storybook, Nigig and friends explore traditional Anishinaabe cultural activities, working together to garden, harvest birch bark, and gather berries.

Nenda-gikendamang Ningo-biboonagak (We Seek to Learn throughout the Year) is a project funded through a grant from the Administration for Native Americans. The project's goal is to promote Ojibwe language learning to ensure continued preservation. By creating the materials for immersion learning environments, we will increase access to the language for a younger audience. This three-year grant will produce a set of booklets for each of the four seasons, and a dedicated website.

Following the format of "Biboon" (the first set of booklets distributed to GLIFWC member tribes), the "Ziigwan" and "Niibin" seasonal set of booklets contains: a monolingual storybook, a monolingual activity book, and a bilingual parent/teacher answer book. The "Ziigwan" sets have been delivered to all 11 GLIFWC member tribes and project partners. The "Niibin" sets of booklets are in the final layout process. You can expect the "Niibin" sets to be distributed in late summer and early autumn.

Each of the 11 GLIFWC member tribes will receive 660 books, including 220 of the storybook, 220 of the workbook, and 220 of the parent/teacher edition. Each community will distribute these sets as they see fit to ensure that the limited number of sets reach the appropriate audience. The project's website, www.glifwc-inwe.com, provides interactive language games as well as valuable resources available to download and/or print. If you have any questions, contact Wesley Ballinger, project supervisor/language specialist wesley@glifwc.org.



Order Form

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Ingii-kikendaan da-Ojibwemoyaana noongom!
(I learned to speak Ojibwe today!)

www.glifwc-inwe.com

Nenda-Gikendamang Ningo-Biboonagak



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Charlie Otto Rasmussen..... Editor
Lynn Plucinski Assistant Editor
Dylan Jennings Cultural Advisor
Paula Maday Writer/Photographer

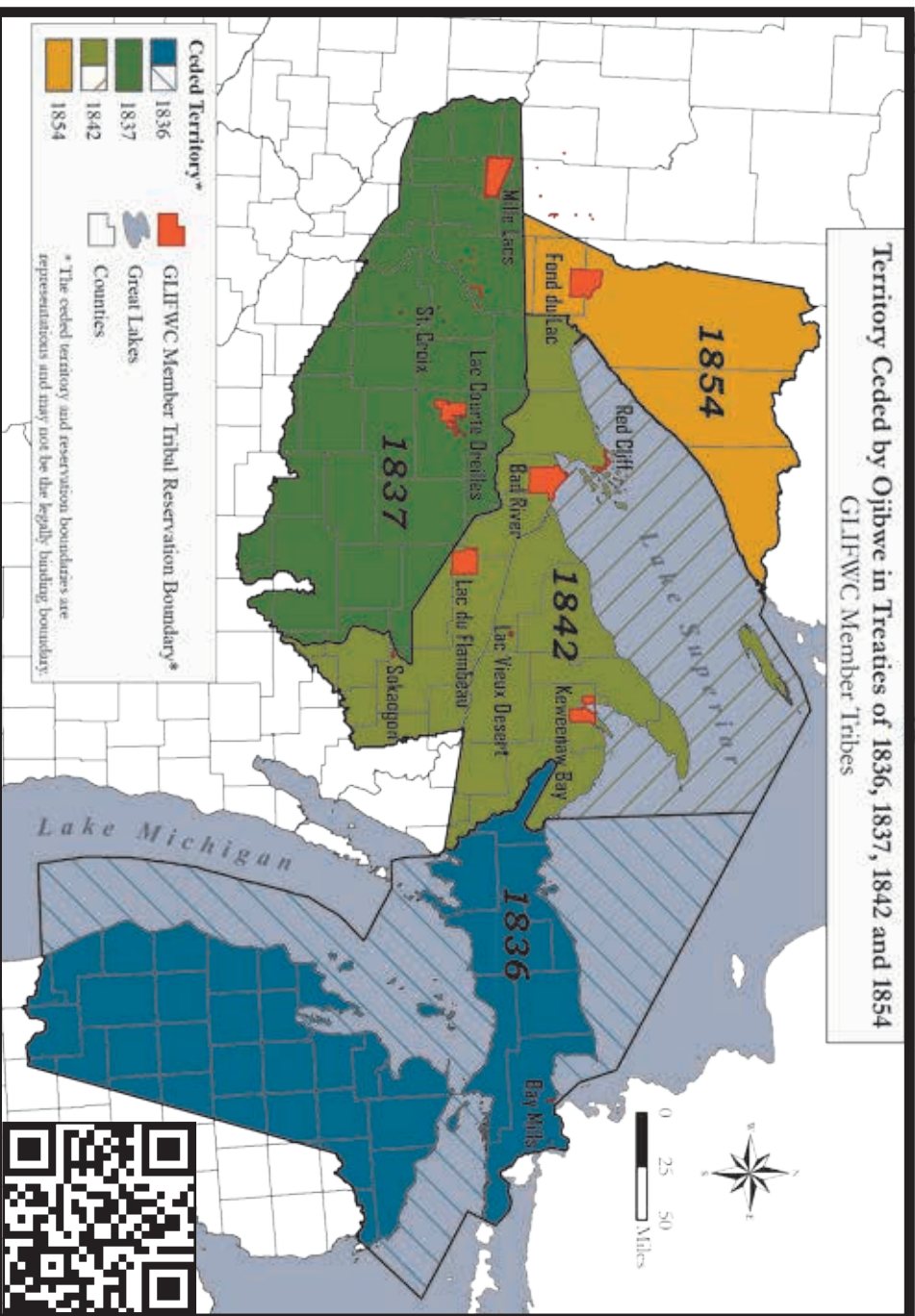
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Mazina'igan

A Chronicle of the Lake Superior Ojibwe



Dagwaagin

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