

# Mazina'igan

A Chronicle of the Lake Superior Ojibwe

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SPRING 2019

## Acoustic telemetry study set for Buffalo Reef

**Mining waste enveloping premier Gichigami spawning grounds**

By Ben Michaels, GLIFWC Fisheries Biologist

Gay, Mich.—Buffalo Reef, a 2,200-acre expanse on the eastern side of the Keweenaw Peninsula in Grand Traverse Bay, continues to be an important spawning location for lake trout (chinamekos) and lake whitefish (adikameg), helping sustain commercial and recreational fishing in Lake Superior. But the productive spawning grounds are in jeopardy.

Comprised of about 22 million tons of copper mine tailings, stamp sands are migrating southward via wind and wave action along the shore of Grand Traverse Bay. This grey-colored mining waste, deposited along the northern shore of the bay in the early 1900's, poses an imminent threat to valuable fish habitat on Buffalo Reef and along the shoreline.

In response to the ever-moving sands, a multi-agency team comprised (See Mining waste, page 9)



Figure 1. Acoustic receiver array, depicted by the green circles, that will be deployed during fall 2019 across Buffalo Reef (red line). This array will allow fine-scale detection of movement upon the reef, giving biologists insight into whether lake trout and whitefish avoid spawning on areas of the reef that are currently covered by stamp sand. Figure 2. (inset) Stamp sand collected on the shore of Grand Traverse Bay, Mich. Stamp sand is the result of a mining process used to crush large rock to extract copper.

## Enakamigizid iko a'aw Anishinaabe zaagibagaanig

### What Anishinaabe does in the springtime

**Gaa-anishinaabemod:**  
Lee Obizaan Staples  
**Gaa-anishinaabewibii'ang:**  
Chato Ombishkebines Gonzalez

Megwaa omaa nanaamadabiyaan waa-bamag a'aw goon ningizod ani-ayaabawaag miinawaa ani-gikendamaan da-baakaak-wasing inow zaaga'iganiin. Mii omaa ani-mikwendamaan gaa-izhichigewaad iko o'ow apiitak gaa-nitawigi'ijig.

While I am sitting here watching the snow melt as the weather gets warmer knowing the lakes are starting to open, I remember what those old people who raised me did at this time of the year.

Mii iw gii-asigisidoowaad odayi'iimaaniwaa. Gaawiin eta-go wiinawaa gii-izhichigesiiwag. Mii-go gaye dibishkoo inow odinawemaaganiwaan gaa-izhichigenid. Mii imaa bebezhiig inow biizikiganan gii-agwapinaawaad inow asemaan. Mii imaa gii-maamawi-dakobidoowaad odayi'iimaaniwaan ingiw besho enawendaasojig. Maagizhaa bezhiig i'iw agwapijigan, mii i'iw ani-dagosijigaadenig besho enawendaasojig odayi'iimaaniwaan, maagizhaa gaye a'aw inini, owiiwan biinish gaye inow onijjaanisiwaan



Lee Obizaan Staples. (COR)

odayi'iimaaniwaan. Mii dash a'aw asemaa miinawaa wiisiniwin atoowaad. Mii dash i'iw epagizondamawindwaa ingiw Manidoog nibiikaang eyaajig. Mii dash azhigwa gaa-ni-giizhi-zagaswe'idiing, mii dash iwidi zaaga'iganiing o-atoowaad ingiw ikwewag gaa-maamawi-agwapijigaadenig. Odagwapinaawaan inow asiniin imaa gashkipijiganan weweni dash iniw odayi'iimaaniwaan da-gonzaabiimagadinig imaa zaaga'iganiing.

They collected an item of their own clothing. They were not the only ones who did that. Their close relatives also did the same. To each item of clothing they attached tobacco. Each family tied their clothing together in one bundle. A family's bundle may consist of a man, his wife, and their children's clothing. They would then put their offering of tobacco and food. The food and tobacco is offered to the Manidoog in the waters. After the feast is over the women take the bundles of clothing over to the lake. They tie rocks to the bundles to make sure the clothing would sink to the bottom of the lake.

Mii dash a'aw Anishinaabe gaa-onji-izhichiged o'ow akeyaa gii-inendang weweni imaa da-ininamawaad inow (see What Anishinaabe does in the springtime, page 8)

## Prepare for Iskigamizigan Season now

### GLIFWC can help



In addition to reservation homelands, Ojibwe treaty tribal members can tap into sugar maple stands on county, state and national forests. Permits are required.



### Need to know:

- site location
- approximate size
- your equipment
- access
- exit plan

Contact GLIFWC's Alexandra Wrobel  
715.685.2125—awrobel@glifwc.org



12" x 18" aluminum signs are available to agency staff and community resource managers at GLIFWC Central Offices in Odanah, Wis.

# Spring fishing at Mille Lacs Lake

## Drop off gigoonh waste after cleaning your catch



Fish waste disposal site: Look for orange cones and flagging tape on the north side of the road and enter the site. The fish waste repository provided by Mille Lacs Band is set into the ground at the base of a reclaimed gravel pit.

# Our favorite ginoozhe (northern pike) recipes

## Pickled Fish

- 1 cup canning salt
  - 4 cup water
- Brine**
- 1/2 tsp. whole cloves
  - 4 bay leaves
  - 1 tsp. allspice
  - 2 cups sugar
  - 2 tbsp. mustard seed
  - 2 cups white vinegar



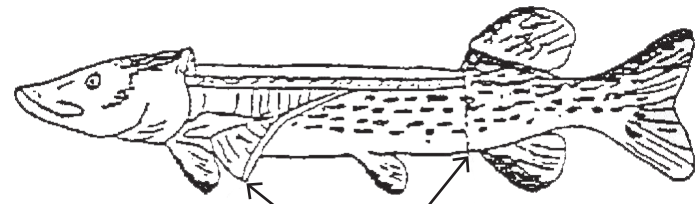
Dissolve salt in water. Filet fish and cut into serving pieces. Soak in salt water for 48 hours in glass container. Rinse and add white vinegar to cover fish and soak for 24 hours.

Boil brine and cool. Drain vinegar off fish. When cool, pack fish in glass jars layering with onion slices and cover with cooled brine. Refrigerate for seven days and then it will be ready to eat. Makes 2 quarts.

Acknowledgements: Lake Chippewa Flowage Resort Association and Genius Kitchen.

## Poor Man's Lobster

Fillet your northern pike into 1-2 inch cubes. Pour half cup of white sugar and half teaspoon of salt into a pot filled with boiling water (48oz). Stir mixture. Melt your garlic butter. Cook: Let the fish cook long enough in the salt sugar mixture that it will float to the top of the water.



Remove side fillets to here

See link for more on filleting ginoozhe: [www.youtube.com/watch?v=gez3KVixTDY](http://www.youtube.com/watch?v=gez3KVixTDY)

# The health of our lakes depends on everyone



S. Garske photo

Before leaving the lake with your catch, don't forget to check for aquatic hitchhikers! Pull any plants, mud or other material from your boat, motor, nets, bilge, lines, anchor, and trailer. Drain the water from your boat, fish boxes, and equipment. If possible, dry your equipment in the sun before heading out to other waters.

This spring GLIFWC will have a boat washing crew at several boat landings during the spearing season. Take a few minutes to get your boat decontaminated and rinsed off. Help stop the spread of aquatic invasive species!

Photo: Aquatic invasive species aide Sam Quagon cleaned the AIS survey boat and equipment last summer, before heading to the next lake.

# On the cover

From tapping sugar maple trees, to collecting sap in food-grade pails and bags, and boiling the harvest down to syrup, candies, or sugar, the iskgamizigan (sugarbush) season provides an incredibly gratifying bridge between winter and springtime. (CO Rasmussen photos)

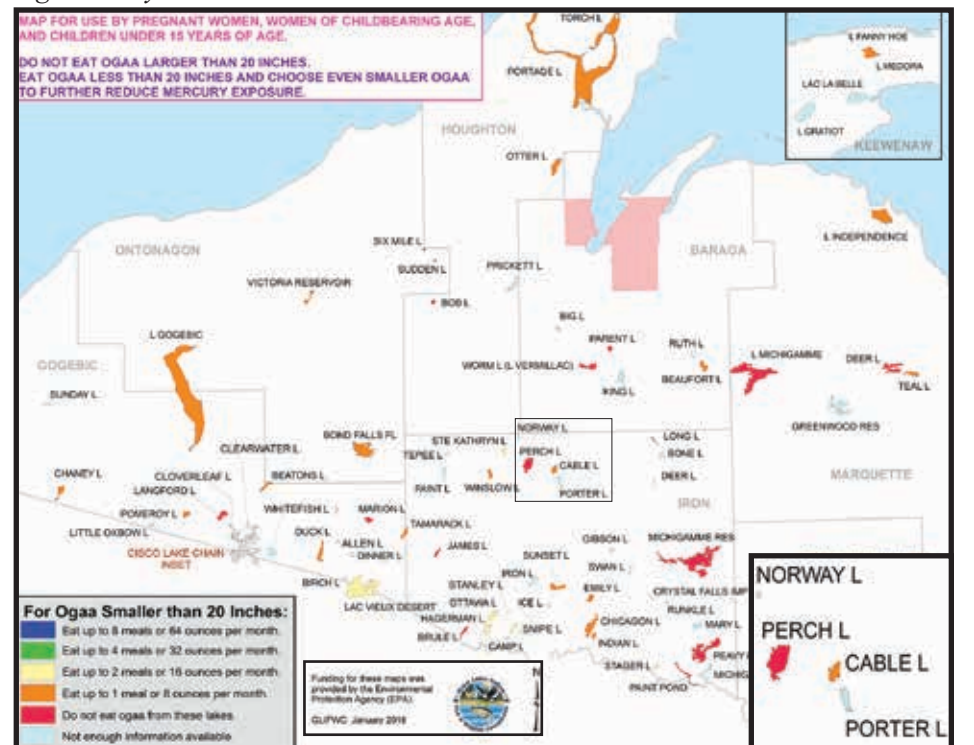
# Weweni amwaadaanig ogaawag (Let's eat walleye safely)

With spearing season rapidly approaching, remember to check out GLIFWC's Mercury Maps to help you make informed decisions about safe fish consumption. Spring spearing and netting are an integral part of the Anishinaabe bimaadiziwin (tribal lifeway).

Tribal members reaffirm their off-reservation treaty harvest rights while providing their families and communities with a tasty and healthy food. But, as with any species of fish, ogaawag (walleye) contain mercury. To limit exposure to mercury, choose lakes with lower mercury levels.

Refer to GLIFWC's Mercury Maps for the safe number of meals of oga per month you can safely enjoy from that lake. Oga less than 20 inches and other species of fish lower on the food chain such as asaawe (yellow perch) tend to have lower mercury levels.

The Mercury Maps are distributed to member tribes and are available at tribal registration stations and other springtime events. For additional information on safe fish consumption and copies of the Mercury Maps, check out: <http://glifwc.org/Mercury/index.html>.



Map inset: GLIFWC recommends that women and children avoid eating walleye from "red" lakes—those waters like Perch Lake in the Michigan 1842 Territory where fish contain higher amounts of mercury.



# Ceded Territory news briefs

## Fond du Lac Band appeals permit allowing pollution, high sulfate discharges

**Cloquet, Minn.**—In a bid to protect manoomin and other natural resources, the Fond du Lac Band filed an appeal with Minnesota Court of Appeals in early January challenging the issuance of a permit that would allow US Steel's Minntac Mine to continue discharging high levels of sulfates into the 1854 Ceded Territory environment. "We think it is only reasonable to expect companies profiting from the extraction of Minnesota's mineral resources to comply with environmental laws and clean up any environmental damage caused by their operations," said Fond du Lac Chairman Kevin Dupuis Sr.

After the company operated its mine with an expired permit for 26 years, the Minnesota Pollution Control Agency finally issued a new permit to Minntac in late November 2018 calling for future reductions in pollutant discharges. The permit, however, fails to put a timeline on the mining operation ever meeting some state standards, particularly the state sulfate standard.

Water quality monitoring conducted by 1854 Treaty Authority, GLIFWC, state and federal specialists near the Minntac tailings basin has long-shown that sulfate levels greatly exceed the 10 mg/L limit set by state law for wild rice waters. Sulfate has averaged more than 200 mg/L for months at a time and other state water quality standards have also been exceeded for years. Once abundant, manoomin has been virtually eliminated downstream from the Minntac Mine.—**COR**

## Chronic wasting disease in wild deer across three-state region: additional positives found on captive deer farms

The first wild chronic wasting disease (CWD) positive deer in north-central Minnesota was found dead within a half mile of a Merrifield captive deer farm. This facility had tested positive for CWD in late 2016, and continues to operate. This is the first CWD detection in a wild deer in northern Minnesota. The announcement of the CWD-positive deer in Crow Wing County came just a few days after lawmakers in Minnesota proposed a series of bills to combat the spread of the disease. University of Minnesota researchers also recently requested funding to help develop a faster and easier CWD test.

In Wisconsin, additional CWD-positive wild deer were found in Oneida and Eau Claire Counties. Within private deer facilities, three more captive Wisconsin deer tested positive in Forest, Marinette and Oneida Counties. The first wild CWD-positive deer in Michigan's upper peninsula was found in Dickinson County in October 2018. —**T. Bartnick & P. Kebec**

## Minnesota 1837 Fisheries Committee sets harvestable surplus

**Brainerd, Minn.**—On January 23-24, the Minnesota 1837 Fisheries Committee met to discuss the status of Mille Lacs Lake fish populations, evaluate the walleye recovery, and plan for the 2019 fishing season. The committee agreed to a walleye harvestable surplus of 150,000 lbs., which will allow for some open water harvest opportunities for state anglers and tribes, while continuing to protect the walleye population for future growth.

In 2018, two main surveys were conducted to evaluate the status of the adult walleye population. The first, a large coordinated mark-recapture population estimate, was conducted during the spring walleye spawning period. The resulting estimate was about 727,000 walleye above 14 inches in length. This estimate shows that the walleye population has grown significantly since the last population estimates conducted in 2013 and 2014. The second survey was the annual fall gill netting survey conducted by MNDNR. This survey caught over 27 lbs/net of mature walleye, up from 18.9 lbs/net in 2017. The long-term goal for this population is 20 lbs/net or greater. —**M. Luehring**

## Crow treaty rights case in hands of Supreme Court

**Washington, D.C.**—The US Supreme Court heard arguments in the *Herrera v. Wyoming* case on January 8. In 2014, Clayvin Herrera, a member of the Crow Nation, harvested an elk off-reservation in Wyoming, within the territory ceded by the Crow in the 1868 Treaty of Fort Laramie. Herrera was convicted of hunting out of season and hunting without a state license. He claimed that his right to hunt on unoccupied federal land is protected by treaty and appealed his state court convictions to the Supreme Court.

At issue in the case is whether a case decided by the Tenth Circuit in 1995, *Crow Tribe of Indians v. Repsis*, controls the outcome, or whether the 1999 Supreme Court decision in *Minnesota v. Mille Lacs Band of Ojibwe*, upset the underpinnings of *Repsis* and demands a different result. In *Repsis*, the Tenth Circuit decided that the Crow Nation's off-reservation treaty rights were extinguished based on the *Ward v. Racehorse* decision. *Racehorse*, decided in 1896, concluded that the Bannock Tribe's off-reservation treaty rights were eliminated upon the admission of Wyoming into the Union. As Justice Breyer noted at oral arguments, while the *Mille Lacs* decision did not state that it was overruling *Racehorse*, it rejected all aspects of its reasoning. A decision is expected by the end of June. —**P. Kebec**

# Whitetail harvest drops in 2018

During the 2018 off-reservation tribal deer hunt, tribal members harvested 1,104 deer, compared to the 1,959 deer harvested in 2017 in the 1837 and 1842 Ceded Territories. Antlerless deer accounted for 52% and antlered deer accounted for 48% of the total deer harvested in the 2018 season.

Tribal hunters harvested deer from 33 counties within the 1837 and 1842 Ceded Territories (Figure 1). This included 22 counties in Wisconsin, eight counties in Michigan, and three counties in Minnesota. Similar to past years, four counties in northwestern Wisconsin accounted for over half (54%) of the total off-reservation deer harvest. Those counties included Bayfield Co. (18%), Burnett Co. (16%), Douglas Co. (11%), and Sawyer County accounting for 9% of the total harvest.

Tribal hunters were most active and successful between November 2, and November 25, accounting for just over 57% of the total deer harvest. The most off-reservation deer harvested by tribal members on a single day occurred on November 17, coinciding with the Wisconsin's state gun season opener. —**T. Bartnick**

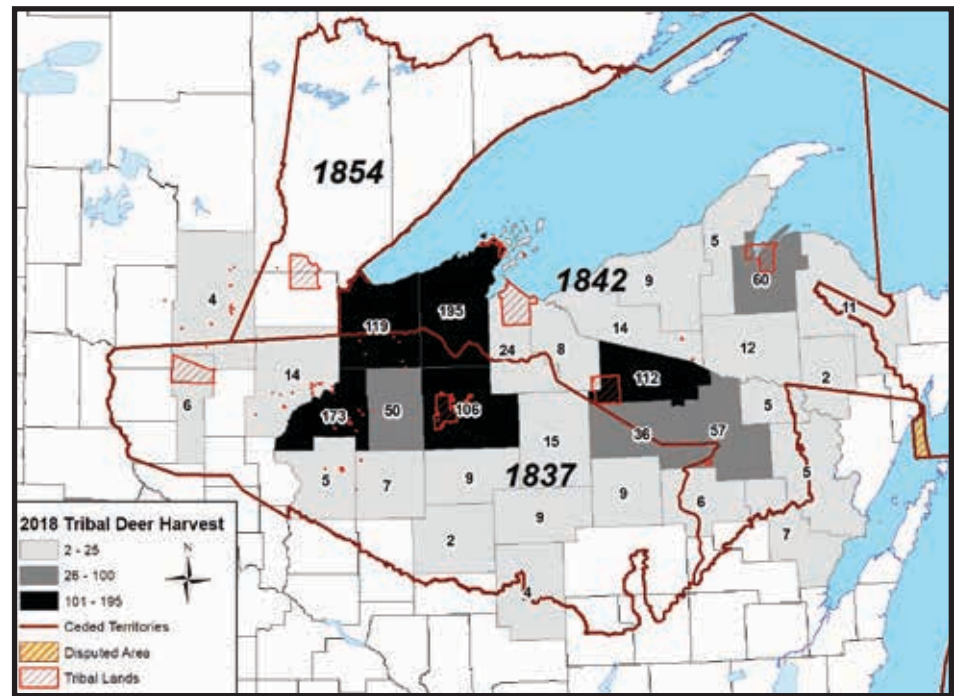


Figure 1. Distribution of waawaashkeshi (deer) harvest by GLIFWC member tribes in the 1837 and 1842 Ceded Territories during the 2018 off-reservation tribal hunting season, summarized by total deer harvested in each county.

# Minnesota legislators welcome tribes to inaugural Sovereignty Day

**St. Paul, Minn.**—As the RedBone Singers played a drum song on the floor of the House chamber, a color guard comprised of Ojibwe and Dakota veterans led off Sovereignty Day at the Capitol on February 18. At this first-of-its-kind event in Minnesota, native leaders from all 11 federally recognized tribes shared details about tribal history, culture, and language with House legislators.

"We have a term called bimaadiziwin," Mille Lacs Band Chief Executive Melanie Benjamin told legislators, explaining that for native people, living a good life (bimaadiziwin) is a core tenet. Despite social problems that plague communities like Mille Lacs, the goal is always to try to achieve bimaadiziwin, she said.

Many tribal leaders spoke of the challenges of life on reservations, the lingering impacts of past federal assimilation programs, and they also voiced future aspirations, including developing better ties with state lawmakers. The day-long event featured a question-and-answer session and discussions that helped Minnesota elected officials better understand the sovereign nations situated within the state's borders.

"This day, it's the start. The start of something that should've happened a very, very long time ago," said Fond du Lac Band Chairman Kevin Dupuis Sr. "And as long as people can sit at the table and look at each other in the eye, we can maintain that dialogue." —**C. Rasmussen**



RedBone Singers play an opening drum song at Sovereignty Day February 18 at the Minnesota Capitol. The Minneapolis-based drum group is made up of Ojibwe, Lakota, and Ho-Chunk singers. (CO Rasmussen photo)



# U of M grant assists GLIFWC, tribes with manoomin research

By Paula Maday, Staff Writer

**Danbury, Wis.**—On December 18-19, researchers from the University of Minnesota met with tribal resource managers, harvesters, rice chiefs, and others at the Kawe Gidaa Naanaagadawendaamin Manoomin (First We Must Consider Wild Rice) Conference held at the St. Croix Casino in Danbury. With over 40 participants in attendance, the conference brought stakeholders together to review work that has been completed thus far on the grant, and discuss future efforts and collaboration.

The Kawe Gidaa Naanaagadawendaamin Manoomin project initially began with funding from the University of Minnesota's (UMN) Grand Challenges Initiative and Institute on the Environment. Its purpose is to engage in community-based and tribally-driven research to study the cultural, ecological, and policy dynamics of manoomin, with the aim of protecting this culturally and environmentally important resource.

Originally, 31 sites were presented as areas of concern by 10 different bands. During the summer of 2018, nine sites were visited and studied. These included: in the Mille Lacs Band area, Lake Ogechie and Swamp Lake; near the Fond du Lac Band (FdL), Perch Lake; near St. Croix, Clam Lake; near Lac du Flambeau (LdF), Bear River; in the 1854 Ceded Territory of Minnesota, Big Rice Lake, Twin Lakes, and Sand River; and in the 1842 Ceded Territory of Wisconsin, Spur Lake.

Each of these water bodies faces unique concerns. Lake Ogechie and Swamp Lake both have hydrology issues. Lake Ogechie has been restored but Swamp Lake remains impaired. At Perch Lake, competing species of pickerelweed and water lily exist in the lake. Clam Lake faces issues with carp. At Bear River, there are different levels of decline throughout the river, and the presence of pickerelweed and other competitive vegetation also affect the water and the manoomin. Lakes in the 1854 Ceded Territory are located near iron ore mining operations that may impact them—in fact, one of the questions discussed extensively at the conference was whether dust or airborne particles from local mining operations could impact wild rice water bodies and sulfide content. Finally, in the 1842 Ceded Territory, Spur Lake is affected by an ongoing, unexplained water level problem.

In addition to helping with research at the selected study sites, UMN has compiled a broad list of issues and concerns related to manoomin, as raised by tribal bands and organizations. These concerns range from habitat concerns to



**Karen Diver moderated the Elders Panel at the Kawe Gidaa Naanaagadawendaamin Manoomin Conference, where (from left) Jeff Savage, John Johnson, Sr., Brian Poupart, and Bill Wildcat shared memories of manoomin, changes they've seen over the years, and what they would like youth to know about Anishinaabe's relationship to this important plant relative. (P. Maday photo)**

management practices, climate, social, cultural, and historical considerations. During a special Elders Panel at the conference, Jeff Savage (FdL), John Johnson, Sr. (LdF), Brian Poupart (LdF), and Bill Wildcat (LdF) spoke about their concerns for manoomin, Wildcat remarking, "A lot of traditional rice beds are disappearing at a rapid pace."

As the group waded through study data and engaged in discussions about how to prevent the disappearance of such an important cultural species, tribes also shared best practices and assessment protocols they have developed to begin addressing issues faced by their local water bodies. For instance, in Fond du Lac Band, resource managers have developed a Health Impact Assessment outlining human health outcomes from a loss of manoomin. Lac du Flambeau Band has developed a climate resiliency initiative, vulnerability assessments for species and infrastructure, as well as adaptation strategies and hazard mitigation. At GLIFWC, the Climate (see **Manoomin research, page 9**)

# GLIFWC, 1854 Treaty Authority host tribal adaptation menu workshop

By Hannah Panci, Melonee Montano, and Rob Croll  
GLIFWC Climate Change Staff

A gathering of tribal and non-tribal participants, many from the Great Lakes region and some from as far away as Oklahoma and South Dakota, met at the University of Minnesota Cloquet Forestry Center on the Fond du Lac Reservation for a workshop entitled "Culturally Relevant Climate Change Adaptation Planning for Tribes and Tribal Partners."

The workshop, hosted by GLIFWC and the 1854 Treaty Authority, with the assistance of the Institute for Tribal Environmental Professionals (ITEP), was the first full field test of the Tribal Adaptation Menu, a tool designed to help indigenous communities, tribal natural resources staff, and non-indigenous partners approach climate change adaptation in a way that meets the needs of indigenous communities. The Tribal Adaptation Menu was created by a team of tribal and non-tribal collaborators and has been a work in progress for a year and a half. For more information on the menu see [www.glifwc.org/Mazinaigan/Winter2018/index.html?page=6](http://www.glifwc.org/Mazinaigan/Winter2018/index.html?page=6).



**Participants at the "Culturally Relevant Climate Change Adaptation Planning for Tribes and Tribal Partners" gathered at University of Minnesota Cloquet Forestry Center on the Fond du Lac Reservation. (submitted photo)**

Participants at the January 23-24 workshop represented a variety of indigenous communities, including Oneida Nation, Iowa Tribe of Oklahoma, Muscogee Creek, Keweenaw Bay, Red Cliff, Fond du Lac, Bad River, Prairie Band of Potawatomi, Sisseton Wahpeton Oyate, Grand Portage, Lac Courte Oreilles, Leech Lake, and Lac Vieux Desert. Additional participants came from the Natural Resources Conservation Service, and the Wisconsin and Minnesota Departments of Natural Resources. Facilitators included staff from GLIFWC, Northern Institute of Applied Climate Science (NIACS), Red Cliff, College of Menominee Nation Sustainable Development Institute, Michigan Technical University, and ITEP. Other tribes and federal partners, including the USDA Forest Service, were unable to attend due to the government shutdown.

The workshop began with an opening prayer by Ombishkebines Chato Gonzalez of Lac Courte Oreilles and opening remarks from Jeff Savage of Fond du Lac. The group then participated in an exercise led by Ziigwanikwe Katy Bresette about recognizing values in ourselves, our organizations, and our communities. Noah Saperstein, Environmental Justice Specialist for Red Cliff, felt that "spending time to think about our values and the importance of centering Anishinaabeg ways...shaped the framework for the rest of the workshop."

After a brief tour of the adaptation menu, groups began working through various management projects brought by participants, including wetland creation in Oklahoma, increasing moose habitat in Minnesota and marten habitat in Wisconsin, and examining the birch decline in Wisconsin. A variety of techniques (including a poster session and "speed dating" activity) got participants to brainstorm out-of-the-box tactics that could be used to infuse culture into climate change adaptation. An emphasis was placed on cultural practices and values, indigenous languages and community and elder involvement. In some cases, participants came with a project and left with an adaptation plan ready for implementation.

Yvette Wiley, Muscogee Creek and Director of the Office of Environmental Services for the Iowa Tribe of Oklahoma, reported that the workshop was "exceptionally helpful," and that the menu "expanded the way I think about climate change adaptation."

Feedback from this workshop, and another to be hosted by the Bay Mills Indian Community planned for early June, will be used to improve the menu. The Tribal Adaptation Menu will be released to the public later in 2019.



# Whale People: Protectors of the Sea

## Many pieces make a whole



A whale rider aloft the 16-foot image of orca whale, Tokitae, visually acknowledges the familial relationship the Lummi people possess with L Pod whales in the Northwest's Salish Sea. A cultural story relates the journey of a young Lummi boy to the watery, deep home of the orcas. Qw'e lh'ol mechen, the Lummi word for orca whales, translates to "the people that live under the sea." Carved from a single cedar tree by six Lummi House of Tears Carvers, the totem rests on two separate seal totems. (S. Erickson photo)

By Sue Erickson, For Mazina'igan

Miami, Fla.—“I want to go home!” This was the cry heard from the captured orca whale, Tokitae, a cry heard by a sensitive, young girl visiting the Seaquarium in Florida some four years ago. The whale, Tokitae, held in captivity for over 40 years, was crying out, “I want to go home,” said Doug James, Lummi House of Tears carver, who calls orca whales the miners’ canary of the sea.

Tokitae’s message was ultimately received by the Lummi Nation, the Whale People, who cherish their relatives, the resident orcas in the Salish Sea. A commitment to bring Tokitae home and to push for more protection for the Salish Sea’s diminishing orca population thus began. But the journey has not been easy.

The Lummi responded to the whale’s message with the creation of a 16-foot totem of Tokitae, known as Lolita in the Seaquarium, to be taken to Miami when asking for the return of Tokitae to her native waters and freedom.

Carved from a giant cedar pole, the totem recognizes the relationship of the Lummi to the whale and also pays respect to all creatures living both beneath and above the water.

Resting on two separate seal totems, the giant masterpiece created by six Lummi carvers from the House of Tears Carvers contains many messages and stories through its design, said James. The head is a wolf head. “Orcas are like a sea wolf. They hunt in packs and are very intelligent.”

On each side is an image of a human being showing respect to all beneath the water and all above the water. Two raven heads adorn the tail, acknowledging the role of the raven, who was directed to find food for the village. Villagers followed the raven day after day, James related, canoeing across the waters until Salmon Woman appeared. She was told (see Whale People, page 8)

# Mille Lacs Band hosts training for state agencies

By Bizhikiins Jennings

Hinckley, Minn.—Tribal sovereignty and treaty rights were at the forefront of a series of trainings hosted by the Mille Lacs Band of Ojibwe and facilitated by University of Minnesota-Duluth faculty and tribal representatives.

In an effort to create a better working relationship between tribal and state governments, panelists and various experts assembled January 14-15 to share history, and common experiences. Mille Lacs Band Chief Melanie Benjamin opened up the gathering with a warm welcome, following an invocation from elder Obizaan Lee Staples.

“We are hopeful that these trainings will increase the awareness of the relationship between tribal, state, and federal government, but also compel attendees to be aware of federal policy and its impacts on tribal-state relations,” remarked Chief Benjamin.

Professor Joseph Bauerkemper acted as the facilitator for the training and transitioned the 300 participants through the multiple speakers, exercises and panels. Bauerkemper currently serves as an Associate Professor of American Indian Studies at UM-Duluth. As he began to stress the importance of understanding tribal communities he also highlighted, “The more efficient and effective we are at creating this common level of understanding, the less of a chance there is to become an adversarial or counterproductive partner.”

Many representatives across various state departments engaged in multiple topics ranging from tribal sovereignty, trust responsibility, treaty rights, self-governance to modern day tribal operations and meaningful consultation. State departments in attendance included public safety, health, transportation and many others.

In multiple instances, attendees were asked to participate in activities to demonstrate their understanding of negotiations and treaties. Mille Lacs Band Natural Resources Commissioner Bradley Harrington led an activity, which negotiated with department heads on behalf of the whole group. This particular activity was done only in Ojibwemowin. Participants had to make decisions on the spot for their whole delegation, which provided a comical, yet deep level of understanding for all in attendance.



Leadership from various state departments joined Professor Joseph Bauerkemper (right) in a treaty negotiating simulation. To make things trickier, everything was done in Ojibwe. (B. Jennings photo)

“Cross-cultural diplomacy is sometimes not a balanced negotiating table. Our leaders still managed to reserve the things that give them life, through treaty-protected rights and resources,” Harrington remarked.

Professor Tadd Johnson spearheaded the historical background surrounding Indian Country. He elaborated on the historical timeline for tribal communities and resonated federal Indian policy starting with allotment and assimilation, reorganization, termination, and eventually self-determination.

Johnson is an enrolled member of the Bois Forte Band of Ojibwe and also an accomplished attorney, and professor at the University of Minnesota, Duluth. He is also the Director of Graduate Studies program in the American Indian Studies Department. Johnson implored the crowd to think about the power of treaties and negotiations.

“The United States entered into about 400 treaties with tribes. Therefore, the United States is obligated in many cases to offer perpetual services,” he said.

The sound of the drum ended the two-day training and presenters and participants made the journey to their homesteads, each of them having been enlightened by the intricate relationship and responsibilities that tribal communities hold. This series of Tribal-State Relations Trainings will continue to equip state and federal employees with the knowledge and sensitivity that will only help to build bridges with tribal nations in the future.

**“We are hopeful that these trainings will increase the awareness of the relationship between tribal, state, and federal government, but also compel attendees to be aware of federal policy and its impacts on tribal-state relations.”**  
**— Chief Executive Melanie Benjamin, Mille Lacs Band of Ojibwe**



# Frigid Maashkinoozhe tournament provides opportunity to collect data

Lac du Flambeau, Wis.—Inland Fisheries Section at GLIFWC collected tissue and cleithra (bony structure posterior to the gill plate) from male and female maashkinoozhe (musky) taken during the Donnie “Musky Man” Allen, Sr. 1st Annual Memorial Musky Spearfishing Tournament. The family-oriented event provided a unique opportunity for GLIFWC scientists to acquire samples for biological testing. Lakes open to the tournament included North Twin Lake, Big Arbor Vitae Lake, Little Arbor Vitae Lake, Big St. Germain Lake, Little St. Germain Lake, Big Lake, Clear Lake, plus all Lac du Flambeau (LdF) Reservation lakes.

“I held the tournament in honor of an elder, my uncle, who was greatly admired for his love for spearfishing and hunting,” said great niece and organizer Brittany Allen. “The tournament was also a great event to hold for the community itself, showing the importance of exercising our tribal treaty rights.”

On a chilly 5°F afternoon January 26, GLIFWC fisheries biologists removed muscle from muskies just behind the head for mercury testing at University of Wisconsin–Superior. Biologists also measured the total length of six fish 31-47” and removed cleithra to determine the age of the fish.

“Although none of us got any fish, it was about being together as a family,” said LdF’s John Johnson, who participated with his children and grandchildren. “We shared in a feast and giveaway with a lot of the Lac du Flambeau membership, and a few stories were shared in [Donnie’s] honor.”

Johnson also said he was honored that Brittany Allen asked his grandson’s drum to attend the event and sing a number of songs.

—Aaron Shultz, Sara Moses, Adam Ray, Mark Luehring, and Joe Dan Rose



Dr. Aaron Shultz measures the total length of a maashkinoozhe. (Dr. J. Curtis-Quick photo)



Charlie Theobald holding up his catch from the day. (Dr. J. Curtis-Quick photo)

# 11th Annual Bad River garlic mustard pull is fast approaching

By Steve Garske

GLIFWC Invasive Species Coordinator

Twelve years ago, garlic mustard (*Alliaria petiolata*) was found just north of the town of Mellen, on the Bad River floodplain. The next summer GLIFWC and Wisconsin DNR staff, the Northwoods Cooperative Weed Management Area (NCWMA) and some wonderful volunteers (including two very helpful landowners) worked together to pull garlic mustard across the 70-acre site. The task seemed impossible, but the group was undaunted.



Weed warriors in a sea of garlic mustard in May 2009. This is how most of the 70-acre site looked when we started. (S. Garske photo)

Year after year these determined people persisted. Students from the Bad River Head Start, Bad River Boys and Girls Club, and the Mellen School District pitched in too. It often seemed like all their hard work was having little effect.

Then last year, the garlic mustard population appeared to have collapsed. Areas that once supported dense stands now had so few garlic mustard plants that you had to look carefully to find them. In many areas thick stands of garlic mustard had been replaced with a carpet of mostly native forest plants, including makopiniig (cut-leaved toothwort), ojidimo miskishmandauminiig (Dutchman’s

## Pesto Petiolata (Garlic-Mustard Pesto)

3/4 cup extra-virgin olive oil  
1 garlic clove  
2 tbsp. pine nuts or walnut pieces  
1/4 tsp. salt  
1/3 cup (about 1 ounce) freshly grated parmesan cheese (A pinch of nutritional yeast can be substituted for cheese)  
4 cups garlic mustard leaves, or 2 cups garlic mustard and 2 cups basil leaves

Wash and dry garlic mustard and (optional) basil leaves. Place all of the ingredients except the greens in a blender or food processor. Blend until smooth. Add the garlic mustard and/or basil a handful at a time. Blend until all of the greens are incorporated and the pesto is grainy to smooth (as you prefer). Makes about 1 cup.

breeches), namepiniig (wild ginger), meskojibikakag (bloodroot), bezhigojibikag (blue cohosh), shining clubmoss and many others.

Garlic mustard is a strict biennial, which means the plants sprout in the spring, grow through the summer and fall, and then bolt, flower and go to seed the following spring. Typical plants produce several hundred seeds, with large ones producing thousands. Most seeds sprout their second spring, but some may lay dormant in the soil for five years or even longer. It seems likely that our yearly hand pulling and herbicide treatment has depleted the plant’s “seed bank” of dormant seeds. Flooding, natural decline or other factors may also have played a role.

There’s still plenty of work to do. A large population of garlic mustard was found upstream from Mellen in 2016. Part of the population is on the Chequamegon-Nicolet National Forest (CNNF), and CNNF crews have been

controlling it there. The rest of the newly found population has yet to be treated, though partners at the NCWMA are working on a strategy.

## A biological control option?

A natural predator of garlic mustard (a root-mining weevil or “snout beetle”) from Europe has undergone years of testing to make sure it only attacks garlic mustard. This beetle has recently been released in Canada, and may be approved for release in the US within the next few years. If approved, this beetle could be helpful in suppressing garlic mustard populations, protecting the ecological integrity of the Bad River floodplain and other areas where garlic mustard has become established in the Ceded Territories.

This spring will mark the 11th annual garlic mustard control week on the Bad River floodplain tentatively scheduled for May 13-17. We will begin the week by offering asemaa (tobacco) to the garlic mustard manidoog (spirits), asking for permission and explaining our actions. We will also have a free cookout in the Park on one of those days, to catch up on things and just enjoy the day.

Anyone can volunteer! Just call NCWMA director Ramona Shackelford at 715-373-6167 or [info@northwoodscwma.org](mailto:info@northwoodscwma.org) or GLIFWC Invasive Species Coordinator Steve Garske at 715-663-0922 or [steveg@glifwc.org](mailto:steveg@glifwc.org).

Garlic mustard was brought to Turtle Island more than 200 years ago, as a medicinal and salad plant. Since then people have come up with a number of recipes for it. Here’s a simple one from the Whitewater Valley Land Trust of Indiana (<http://blog.wavehill.org/2010/06/04/from-pest-to-pesto-a-garlic-mustard-delight/>):



# Ceded Territory SCIENCE

## Are juvenile ogaa (walleye) on a diet in Lac Vieux Desert Lake?

Fisheries biologists use a variety of tools to help them understand what might be driving population trends. To evaluate the condition of fish, biologist can use the weight of a fish at a specific length and compare it to the expected weight for fish of that length in a region.

This method is similar to body mass index (BMI), a weight-to-height ratio, that has been developed for humans. Fish in good condition will be heavier than fish in the reference population, which may indicate prey is plentiful.

Conversely, fish in poor condition will be lighter than the reference population, and may not have enough food (Image 1).

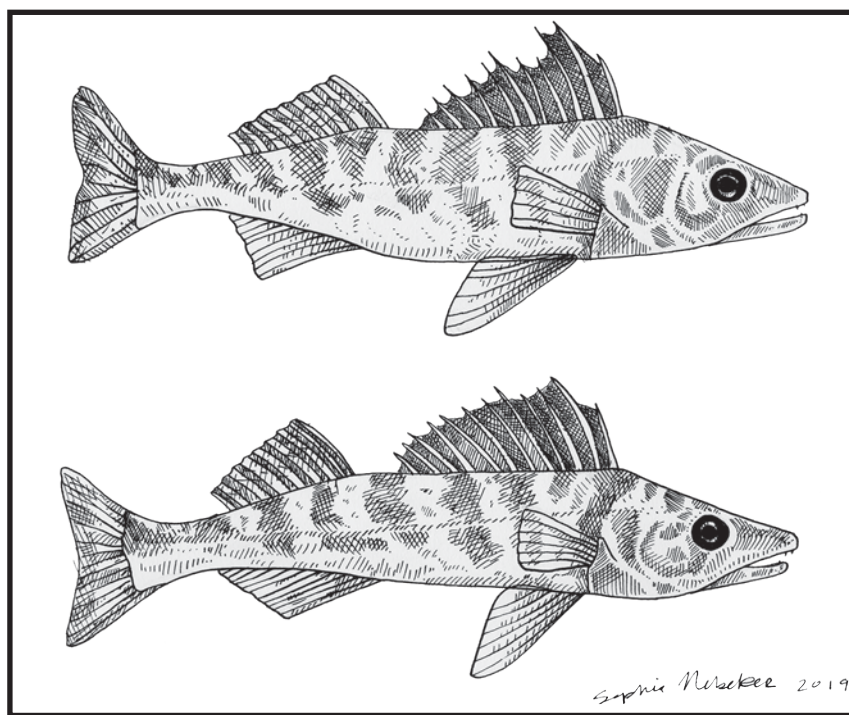
Overall, fish in good condition are more likely to survive the winter months and may have energy reserves needed to avoid predators.

Lac Vieux Desert Lake is a 4,300 acre flowage in the 1842 Ceded Territory that is located within the Wisconsin River basin on the border of Michigan (Gogebic Co.) and Wisconsin (Vilas Co.).

The ogaa (walleye) population of Lac Vieux Desert Lake has experienced a well-documented decline in abundance and recruitment (juvenile ogaa surviving to adulthood) over the past decade (*Mazina'igan*, Summer 2017, pg. 10).

Sherman Lake is a 123 acre lake (Vilas Co.) in the Wisconsin portion of the 1842 Ceded Territory. Despite relatively high exploitation rates, the ogaa population of Sherman Lake has been stable over the years with regular recruitment.

The Inland Fisheries Section at GLIFWC conducted a two-year study to evaluate the relative condition of juvenile ogaa in these lakes by collecting stomach contents and comparing the prey quality and quantity to their condition.



**Image 1.** An illustration showing the difference in the condition of juvenile ogaa. Both fish are the same length, but the fish on top is larger around the midsection relative to the fish on the bottom. This means the fish on top weighs more and is in better condition (i.e., has more energy reserves) than the fish on the bottom, and likely has a better chance of surviving to adulthood. (Illustration credit: Sophie Nebeker)

In June 2017, age-1 ogaa in LVD Lake (most likely stocked as extended growth ogaa in late 2016) were in better condition (higher relative weight) than the reference population, indicated by the dashed line on Figure 1.

As the summer progressed, the condition of these fish slipped below the reference population in July and remained below average in September.

In Sherman Lake, the condition of both age-0 and age-1 ogaa was similar throughout the summer, with the average being at or near the condition of reference population.

Overall, juvenile ogaa in Sherman Lake were in approximately average condition relative to the reference population, while age-1 ogaa in Lac Vieux Desert Lake in 2017 were in poorer conditions as the summer progressed. Several factors may be responsible for the poorer condition of Age-1 ogaa in Lac Vieux Desert Lake.

First, prey (e.g., small perch) for age-1 ogaa may be low in abundance or in quality (e.g., lots of invertebrates but few fish). Second, prey may be abundant but difficult to find and capture.

Anecdotally, many people familiar with LVD lake have commented on the improved water clarity and an increase in submerged lake weeds. Both conditions likely make it more difficult for ogaa to capture its prey because ogaa have an advantage over its prey in low light conditions with limited areas to hide.

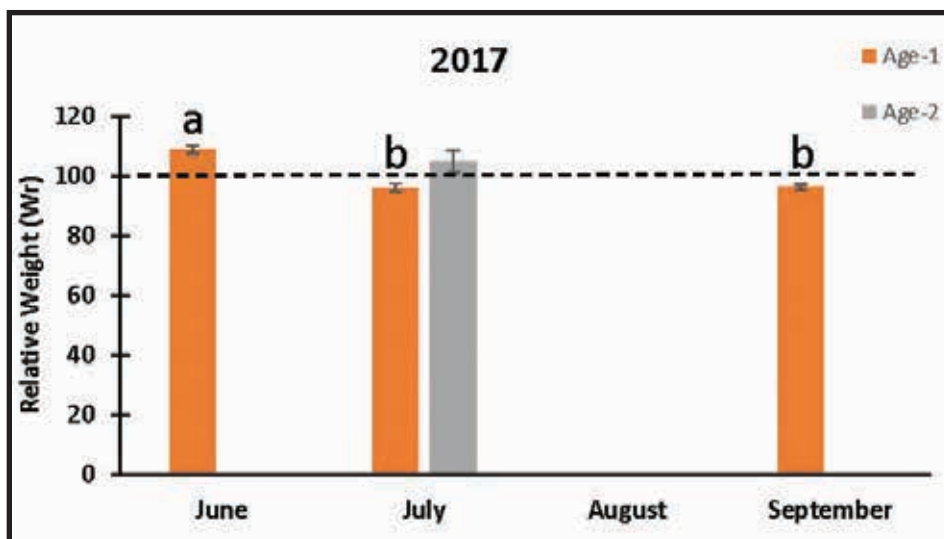
Third, warmer water temperatures in the summer may restrict ogaa movements to cooler parts of the lake, thereby limiting their access to prey.

Fourth, extended growth ogaa raised in a hatchery did not learn how to find and capture their prey in the wild, which might decrease their ability to capture wild prey after being stocked.

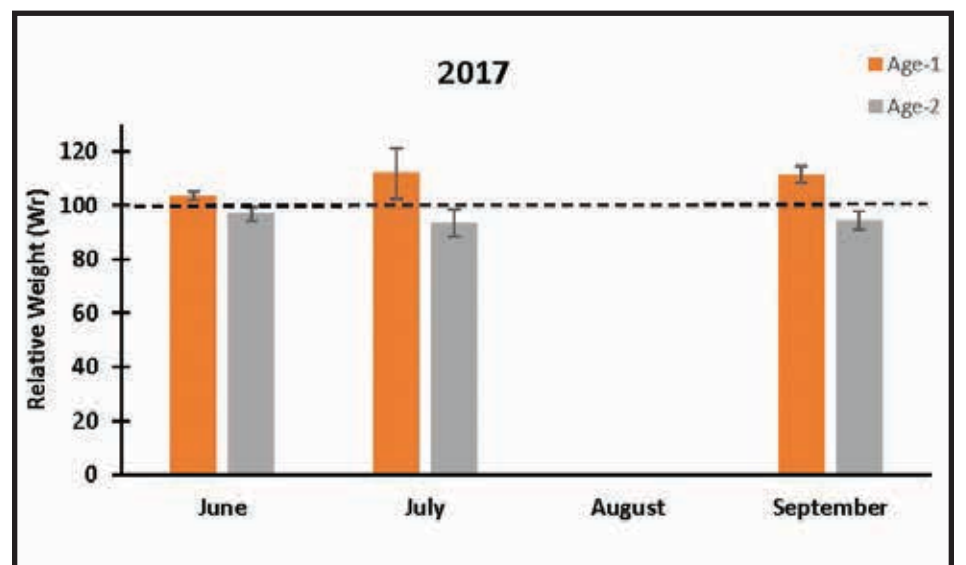
Lastly, these young fish might be avoiding predators, which can decrease the amount of time they spend foraging.

One or all of the previously mentioned factors may be responsible for the poorer condition of age-1 ogaa as the summer progressed in 2017. Look for another update on this study in the next edition of the *Mazina'igan*.

—Aaron Shultz, Adam Ray, Mark Luehring, and Joe Dan Rose  
GLIFWC Inland Fisheries Staff



**Figure 1.** Relative weight (Wr—weight of each sampled fish compared to a length-specific reference weight) of juvenile ogaa (age-0, age-1, and age-2) during open water in Lac Vieux Desert Lake in Vilas and Gogebic County in 2017. The equation used to calculate Wr for ogaa was derived from 228 populations and over 48,000 walleye in Wisconsin (Sass et al. 2004). A Wr greater than 100 indicates that the fish are in good condition or plump relative to other walleye in this region. Dissimilar letters indicate a statistically significant difference in relative weight for an age group. Age-1 ogaa were in worse condition in July and September relative to June. Note: Age-1 ogaa are likely extended growth fish stocked in late fall 2016.



**Figure 2.** Relative weight (Wr—weight of each sampled fish compared to a length-specific reference weight) of juvenile ogaa (age-0, age-1, and age-2) during open water in Sherman Lake, Vilas County in 2017. The equation used to calculate Wr for ogaa was derived from 228 populations and over 48,000 walleye in Wisconsin (Sass et al. 2004). A Wr greater than 100 indicates that the fish are in good condition or plump relative to other walleye in this region.



# What Anishinaabe does in the springtime

(continued from page 1)

Manidoo inaa nibiikaang eyaanijin inow asemaan, wiisiniwin, miinawaa odayi'iimaaniwaan, mii dash gaa-inendang a'aw Anishinaabe; mii ingiw Manidooog da-debisewendamooog weweni i'iw akeyaa da-doodawindwaa. Gaawiin awashime da-misawendamawaasiwaawaan inow odanishinaabemiwaan. Gaawiin da-mamawaasiwaawaan inow Anishinaaben obimaadiziwinini gaawiin dash imaa Anishinaabe da-dapinesiin imaa nibiikaang. Mii-go iw da-debisewendamowaad gaa-izhi-ina'oonigowaad inow Anishinaaben, gaawiin dash da-mamawaasiwaawaan obimaadiziwiniwaa odanishinaabemiwaan.

The reason why Anishinaabe did this was they thought if they gave their offering of tobacco, food, and clothing to the Manidooog in the water, Anishinaabe believed that the Manidooog would be content with this offering being made to them. They would not want more from their Anishinaabe. They would not take the Anishinaabe's life, and Anishinaabe would not lose their life in the water. They would be content with what the Anishinaabe has given them, therefore not taking the life of the Anishinaabe.

Mii omaa gaye ge-nandodamaagengiban weweni da-ni-maajiiging imaa zaaga'iganiing ziibiing ge-aabajitood a'aw Anishinaabe. Anaakanashkoon miinawaa i'iw mashkiki wendinang a'aw Anishinaabe.

What can also be asked for at this time is that all those things that grow in the water be plentiful that Anishinaabe uses. That is where Anishinaabe gets their bulrushes and their medicines.

Mii imaa gaye ge-ni-gagwedwepan nebowa iniw giigoonyan da-ayaanid imaa zaaga'iganiing ziibiing miinawaa da-baatayinadinig i'iw manoomin da-wawaanijitood a'aw Anishinaabe ge-miijid.

Anishinaabe can also request that they have a lot of fish in the lakes and rivers, and also to have plenty of wild rice to eat.

Mii-ko gaye gaa-izhichigewaad imaa, mii iw giishkiga'waawaad inow giizhikaandagoon. Mii dash imaa gii-padakishimaawaad jiiigayi'ii endaawaad. Mii dash iwidi wanakoowid a'aw mitig gii-agoonaawaad inow miigwanan miinawaa inow zenibaan. Ishke dash gaa-ikidod a'aw Gete-anishinaabe; bimi-ayaawaad ingiw binesiwag da-waabamaawaan niibawinid inow mitigoon, mii dash imaa da-gikenimaawaad Anishinaaben endaanijin. Mii dash iw da-bimi-ayaawaad weweni. Gaawiin da-niiskaadasinooon.

What they also did at that time was go out and cut a cedar tree. They would stand it near their house. They would then attach a feather and ribbons at the top of the tree. This is what the old Anishinaabe said; when the thunder-beings would go by they would see the tree standing there. They would know that Anishinaabe lived in that home and go by in a good way. It would not storm.

Ishke gaye a'aw mindimooyenyiban gaa-nitawigi'id, mii imaa ani-zaagibagaanig ishkodewaaboo miinawaa asemaan gii-asaad imaa ziibiing biindaakoon aad inow Manidooon imaa eyaanijin nibiikaang. Ishke dash mii inow Manidooogaa-apenimojin da-naadamaagod mino-ayaawin da-miinigoowizid oniigaaniiming. Ishke dash a'aw menidoowaadizid a'aw Anishinaabe nenaandawi'iwed, mii a'aw gaa-wiindamaagod da-izhichiged i'iw akeyaa. Mii dash apane gaa-izhichiged a'aw mindimooyenh gii-ni-aabawaanig gii-ni-zaagibagaanig.

That old lady who raised me also put tobacco and whiskey into the river each spring making her offering to that Manidoo in the water. This was the Manidoo she relied on to give her good health in her future. It was an Indian who was gifted and a healer that had told her to do that. That old lady did that every spring when it got warm.

Mii gaye apii zaagibagaanig ani-aabajichigaazowaad Manidoo-dewe'iganag omaa ishkoniganing. Ashi-bezhig omaa ayaawag. Ishke dash omaa ani-baakishimindwaa ingiw Manidoo-dewe'iganag nebowa a'aw Anishinaabe inow odasemaan, wiisiniwin, miinawaa bagijigan, mii iw etamawaawaad inow Manidooon miinawaa epagizonjigaadenig iwidi enabinid apii ani-baakishimimindwaa iniw Manidoo-dewe'iganan.

Every spring the ceremonial drums are used here on this reservation. There are eleven of them. As each ceremonial drum is used, there is a huge offering of tobacco, food, and blankets that they put for those Manidoo whenever they are used.

Ishke dash mii imaa apii ingiw akiwenziyibaneg ani-gaagiigidowaad apii apagizonjigaadenig etood a'aw Anishinaabe nanaandogeng nebowa da-ayaama-gadinig gaa-miinigoowizid a'aw Anishinaabe da-inanjiged wenjida imaa bagwaj imaa maajiiging biinish gaye giigoonyan miinawaa manoomin miinawaa inow awesiinyan gaa-miinigod inow Manidooon da-inanjiged a'aw Anishinaabe.

It is at that time that those old men would talk and offer the blankets, food, and tobacco to the Manidoo asking that Anishinaabe have plenty to eat in particular, that which grows in the wild, like the fish, wild rice, and the animals that were given to the Anishinaabe by the Manidooog to eat.

Mii-ko apii ani-zaagibagaag aanind a'aw Anishinaabe agoodoowaad inow obiizikaaganiwaan imaa bagwaj maagizhaa imaa mitigong. Mii gaye a'aw Anishinaabe akawe imaa weweni inow asemaan miinawaa wiisiniwin atood. Ishke dash gaa-onji-agoodoowaad inow odayi'iimaaniwaan; gego imaa da-bi-izhaamagasiniini aakoziwin imaa gii-kabeshiwaad. Mii imaa obiizikiganiwaan gii-noogishkaajigaadenig i'iw aakoziwin.

It is also in the springtime that Anishinaabe would hang their clothing out in the woods on a tree. They would also put tobacco and food at this time. The reason why they would hang their cloths was to keep the illnesses away from their dwellings. It is then that the sickness would stop at their clothing.

# Whale People: Protectors of the Sea

(continued from page 5)

the people were dying, so she sent her salmon people to feed the villagers, saving them from starvation.

The whale rider perched on Tokitae's back is "seeking dreams, vision and power," James explains. "Diving deep into the water creates an opening of spirituality. As you go darker, deeper, your inner spiritual power increases and spiritual vision and songs are received."

In May 2018 representatives of the Lummi Nation brought the totem over 3000 miles in their quest for Tokitae's release. But to no avail. The Seaquarium refuses to release the orca to its home waters, insisting she is safer in captivity.

Meanwhile, back at home more messages were brought from qw'e l'hol mechen (orca whale) to the Lummi. The people saw a mother orca pushing a baby across the waters for seventeen days. The baby was dead. "She was telling my world, 'Look what is happening to us! Dead babies,'" James said.

Known as the L Pod population, the number of the once-abundant resident orcas dropped from 75 to 74 with the death of the baby. The population is considered threatened. Many, like Tokitae, were taken to be part of aquariums or aquatic shows in the 1960s and 1970s.

Salmon, a principal food source for the orcas, are declining. Both salmon and orcas are victims of toxic and sound pollution from development and shipping, climate change, and environmental degradation.

While still fighting for the return of Tokitae to the Salish Sea, the Tokitae Totem has become a traveling exhibit with a mission to promote awareness of the jeopardies faced by the seas' residents and to spur people to action. The Whale People: Protectors of the Sea traveling exhibit resulted from a joint effort between the Natural History Museum and the Lummi Nation. While the totem is the primary feature, a wrap-around, informative video shows the orcas in their natural habitat.

Unlike most exhibits in a museum, this one was made for touching, feeling. Lummi Councilman Fredrick Lane emphasized that many pieces can be brought together to create a whole; many individuals can come together to become the force needed to promote changes needed to protect this world's creatures.

Currently, the Lummi are pushing to get the Salish Sea designated as a sanctuary, to provide necessary protections for the orcas and salmon, both species intimate to the Lummi and many other Northwest native nations.

Totems, like the one first made by the House of Tears Carvers after 9/11 and brought to the New York site, are made for healing, Lane explained.

At the conclusion of opening ceremony for the exhibit, everyone was encouraged to gather around the totem and touch it to heal, to be empowered. A circle of hands on the totem resulted. The many pieces became one, as Doug James, accompanied by his hand drum, shared a haunting song given to him from a beached, dying orca—"Be of one heart and one mind."

Are we really listening, listening to the messages nature sends to us? Can we hear those voices? And importantly, can we join our voice with others to help protect our relatives who live under the water?

Many pieces can make a whole!



*Bringing their story and their plea to the world through the exhibit, Lummi representatives, Douglas James, House of Tears carver and Fredrick Lane, Lummi Councilman, eloquently encouraged individuals to take a stand for the creatures that cannot speak for themselves. They stressed the need for the many pieces to come together as a whole in order to protect not only the whale and the salmon, but also the myriads of other creatures impacted by environmental degradation. (S. Erickson photo)*

**All people are invited to attend the Paddle to Lummi, July 24-28. The Lummi expect hundreds of canoes to converge during this festive event and cordially invite all to attend. For more information: [lummi-nsn.org](http://lummi-nsn.org)**





# JFK Memorial Airport serves as a training ground for a day

During GLIFWC Enforcement Division's annual winter training February 22, wardens completed ice rescue recertification on Chequamegon Bay, and headed inland to John F Kennedy Memorial Airport in Ashland, Wis to engage in driving maneuvers and participate in instructional scenarios.



While managing the weight of a snowmobile, GLIFWC Warden Pat Retzlaff takes a corner on the airport tarmac on an emergency vehicle operations course. Left, dressed street clothes Officer Lauren Tuori (centerframe) leads a debriefing session following a vehicle contact scenario. Tuori roleplayed as a motorist for a number of training sequences. (CO Rasmussen)

## New staff

### Kristen Thannum, Receptionist

Whether you contact GLIFWC's central office in Odanah, Wis. by phone or make a visit in person, odds are you'll speak with Kristen Thannum. GLIFWC's latest addition is a receptionist, mailroom manager, and all around proprietor of traffic coming through the second floor of the Chief Blackbird Center.



A Bad River member, Thannum went from Ashland High School to Chippewa Valley Technical College where she earned an Associate Paralegal Degree. Around the same time that she was considering a job offer at a local law office, she learned of the opening for the GLIFWC receptionist position.

"This is a job I was super excited for," Thannum said. "Following the internship I had with GLIFWC, I fell in love with the people, and work that GLIFWC does."

Thannum is a collector of vinyl records from just about every musical style and hunts down old albums at garage sales and thrift shops. She's looking forward to springtime and green-up to resume a newfound interest in golfing. —COR

### Jill Miller, Administrative Assistant

The GLIFWC Conservation Enforcement Division welcomed Jill Miller as the new administrative assistant on November 19. In her role, Miller will provide assistance to the chief warden, contract compliance administrator, and GLIFWC wardens in a variety of capacities.



Miller comes to GLIFWC with an Associate's Degree in Business Management and 11 years of experience working as an Administration Assistant for Bad River Head Start.

"It's definitely a different pace than my old job," she says, "but I love it."

Miller is a Bad River tribal member originally born in Oklahoma. Her warm, genuine smile welcomes you to the Conservation Enforcement office like a friend you have known forever. In fact, in high school, she was voted "Most Unchanged since Kindergarten," even though she only moved to Bad River in the fourth grade!

These days Miller is a busy mother of four, who enjoys spending time with her children: Justin, 18; Amber, 16; Phoebe Ann, 11; and Trinity, 7. She also cares for three dogs, a cat, and four fish.

If you are around the GLIFWC office, stop in and say hello to Miller in the Conservation Enforcement office. But don't worry if she doesn't respond when you say her name. Instead try calling out to her as "Mugs," a nickname affectionately given to her by her grandmother when she was little, and the name almost everyone knows her by. —P. Maday

## Mining waste enveloping premier Gichigami spawning grounds

(continued from page 1)

of biologists and researchers from GLIFWC, Keweenaw Bay Indian Community, Michigan Department of Natural Resources, United States Geological Survey, and Great Lakes Fishery Commission are currently developing a study that's aimed at determining the effect that these sands have on lake trout and whitefish spawning behavior and movement.

Specifically, the team is interested in determining whether fish avoid spawning on habitat that has been covered with stamp sand, and what behavioral response might be expected in the future if action is (or is not) taken to impede the encroachment of stamp sands onto Buffalo Reef. About 30% (660 acres) of the reef's area is currently covered by stamp sand.

In order to accomplish this task, the team has decided to implement a study design that uses acoustic telemetry to track fine-scale movement and habitat usage across the entire reef. Starting in the fall of 2019, an array of 50 acoustic receivers (Figure 2) will be deployed across the reef and at least 40 adult lake trout and 40 adult whitefish will be surgically implanted with small transmitters that periodically emit sound waves.

As fish return to Buffalo Reef to spawn each year, the acoustic receivers will be able to detect the presence of the acoustically-tagged fish and determine their position on the reef to within a few

meters. This will allow biologists to determine the spatial extent of spawning activity in relation to the presence of stamp sand. In addition, researchers will assess whether there are changes over time as the stamp sands continue to encroach upon the reef, or in the event stamp sands impact is mitigated through remediation actions.

It's estimated that 60% of the area on Buffalo Reef will be covered by stamp sand if no action is taken to stop its migration onto the reef. Under a no-action scenario, biologists hypothesize that lake trout and whitefish will avoid areas covered with stamp sand, and spawning activity will become more spatially limited over the next ten years as stamp sands continue to cover a greater area of the reef.

Alternatively, if action is taken to remove and thwart stamp sand movement, the area of suitable spawning habitat could increase.

Dredging and removal activities by the US Army Corp of Engineers is expected to occur this year in an area adjacent to Buffalo Reef. This will slow the migration of stamp sand onto the reef in the short term. However, a long term, permanent solution is still needed to control stamp sand movement throughout the entire area of Grand Traverse Bay.

If you would like more information on stamp sands research and management, please contact Ben Michaels at [smichaels@glifwc.org](mailto:smichaels@glifwc.org).

## Manoomin research

(continued from page 4)

Change Vulnerability Assessment takes a hard look at how climate change affects various species important to the Ojibwe, including manoomin.

The conference was a testament to the important work being done around Wisconsin and Minnesota to protect manoomin, and also the way it is being done. As part of the project, the University of Minnesota developed the Protocol for Responsible and Accountable Research, a directive for undertaking research between the university and tribal entities. This protocol ensures the

highest standards of research, develops accountability, and helps build trusting relationships between those involved.

As this project and other projects like it move forward, tribes will be able to use this protocol as a template for creating their own review boards, statutes, and requirements for outside institutions wanting to conduct research within their communities. It is a way for tribes to exercise and protect their data sovereignty as they make important decisions about the future of manoomin and physical, plant, and animal relatives, in the face of grand challenges.



# Ojibwemotaadiwag Anishinaabewakiing.

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

Boozhke giin. Ojibwemodaa! Giin, ookomisan, miinawaa omishoomisan gimaajinaawaag ikwezensag gwiiwizensag idash. Gidaa-giigoonyike. Gidaawim “gekino’amaagewaad”. Daga ikidon, “giigoonh.” Daga ikidon, “jiimaan.” Ikidon miinawaa. Ojibwemon. “Izhaadaa imaa zaaga’iganing!” Daga ikidon, “daga naadin weweganaagaan.” Howah! Ginitaa-objibwem. Gizaagi’in noozhis, (ninjiiaan), (nitamoozhaan). Gigiikaj ina? Daga objibwem. “Eya’, ingiikaj.” gemaa “Gaawiin ingiikajisiin.” Miigwech!

(It is up to you. Let’s all speak Ojibwe! You, his/her grandmother his/her grandfather, you all take the girls and boys along. You all could go fishing. You all are “the ones who teach.” Please say, “fish.” Please say, “canoe.” Say it again. You speak Ojibwe. “Let’s all go to the lake!” Please say it, “please go get the fishing rod.” Wow! You really know how to speak Ojibwe. I love you my grandchild, (my child), (my first-born child). Are you cold? Please speak Ojibwe. “Yes, I am cold.” or perhaps “No, I am not cold.” Thank you!

<p><b>Bezbig—1</b></p> <p>Double vowel system of writing Ojibwemowin. —Long vowels: AA, E, II, OO Waa<sup>oo</sup>booz—as in father Miigwech—as in jay Aaniin—as in seen Mooz—as in moon</p> <p>—Short Vowels: A, I, O Dash—as in about Ingiw—as in tin Niizho—as in only</p> <p>—A glottal stop is a voiceless nasal sound as in A’aw. —Respectfully enlist an elder for help in pronunciation and dialect differences.</p>	<p><b>OJIBWEMOWIN (Ojibwe Language)</b></p> <p><b>NAD: Nouns Animate, Dependent</b> Indinawemaaganag My relatives, My Mother, Your, His/Her Nimaamaa or Ninga, Gimaamaa or Giga, Omaamaayan or Ogiin My Father, Your, His/Her Nindede, Gidede, Odedeyan or Imbaabaa, Gibaabaa, Obaabaayan My Older Sister, Your, His/Her Nimisenh, Gimisenh, Omisenyan My Older Brother, Your, His/Her Nisayenh, Gisayenh, Osayenyan For Male and Female: My Younger Sister or Brother, Your, His/Her Nishiime, Gishiime, Oshiimeyan (I) Niin, (You) Giin, (Him/Her) Wiin</p>	<p><b>Niizh—2</b> Circle the 10 underlined Ojibwe words in the letter maze. (Translations below)</p> <p>A. Maamakaajichigedaa noongom! Aaniin <u>ezhichigeyan</u>?</p> <p>B. Niwiidookaage inzhoomiingwen <u>dash</u> endaso-<u>giizhik</u>.</p> <p>C. Maamakaajichigedaa <u>wayiiba</u>! Aaniin waa-izhichigeyan?</p> <p>D. Inga-nanda-gikendaanan ojibwe-<u>ikidowinan</u>.</p> <p>E. Maamakaajichigedaa! <u>Aaniin</u> gaa-izhichigewaad?</p> <p>F. Ogiin-chiibaakwaadaa-naawaan <u>wiisiniwinan</u>.</p> <p>G. Gii-piinichigewag oodenaang.</p> <p>H. <u>Bezbig</u>, <u>niizh</u>, <u>niswi</u>! Wiidookagedaa oodenaang.</p> <p>Z C N E T A N I S W I G I I Z H I K B O Z O W A N G E A H ‘ J A A S O Z D A S H B Y A H G H I K I D O W I N A N I D A W ‘ H G S I I H A G Y I J S A P A O B I O E Z H I C H I G E Y A N W I I S I N I W I N A N</p>
<p><b>Niswi—3</b></p> <p><b>IKIDOWIN ODAMINOWIN (word play)</b></p> <p><b>Down:</b></p> <ol style="list-style-type: none"> <li>please</li> <li>Say it!</li> <li>I am cold.</li> <li>your younger sibling</li> </ol> <p><b>Across:</b></p> <ol style="list-style-type: none"> <li>canoe</li> <li>Go get/fetch it!</li> <li>his/her mother</li> <li>my younger sibling</li> <li>my dog</li> </ol>	<p><b>Online Resources</b> <a href="http://ojibwe.lib.umn.edu">ojibwe.lib.umn.edu</a> <a href="http://ojibwe.net">ojibwe.net</a> <a href="http://glifwc.org">glifwc.org</a> <a href="http://glifwc-inwe.com">glifwc-inwe.com</a></p>	<p><b>Niiwin—4</b></p> <p>Gizaagi’aawaag.—You all love them. VTA—Animate—Transitive—Verb patterns Gizaagi’in Nimaamaa.—I love you Mom. Nindede Nishiime gaye gizaagi’<u>ininim</u>.—Dad and Little brother I love you all. Abinoojiyens gizaagi’<u>igoo</u>.—Baby we all love you. Ty nizaagi’<u>ig</u>.—Ty (s/he) loves me. Gizaagi’ ina?—Do you love me? Nizaagi’<u>aa</u>.(-g)—I love him/her. (them) Gizaagi’<u>aa</u>.(ag)—You love him/her. (them) Ozaagi’<u>aan</u>.—S/he loves him/her/them. Nizaagi’<u>aanaan</u>.(-ig)—We love him/her. (them) Gizaagi’<u>aawaa</u>.(-g)—You all love him/her. (them) Ozaagi’<u>aawaan</u>. They love him/her/them.</p> <p>1. Bijiinaago gii-ikido “_____ gii-zaagi’_____”. Ingiin-maw. 2. Memindage moozhag _____ga-zaagi’_____, nindaanis. 3. _____ zaagi’ _____ inday. Miika izhinikaazo. Zaagi’idewin. 4. Ningozis _____ wii-gaagige-zaagi’ _____ wiiwan. 5. _____maamaa gekino’amaaged memindage wiidookaage. Ingichi-zaagi’aa.</p> <p>O— -aan Nin— -aa Gi— -igo Nin— -ig Ni-</p>

**Translations:**  
**Niizh—2** A. Let’s all do amazing things now! What are you doing? B. I help people and I smile every day. C. Let’s all do amazing things soon. What do you want to do? D. I will seek to learn Ojibwe words. E. Let’s all do amazing things. What did they do? F. They cooked the foods. G. They cleaned in the town. G. One, two, three! Let’s all help people in the town!  
**Niswi—3** Down: 1. Daga 2. Ikidon 3. Ningiikaj 6. Gishiime Across: 4. Jiimaan 5. Naadin 7. Ogiin 8. Nishiime 9. Inday  
**Niiwin-4** 1. Yesterday he said, “He loves me.” I cried. (Nin- -ig) 2. Above all, we will always love you, my daughter. (gi- igoo) 3. I love my dog. She is named Miika. Love. (Nin- -aa) 4. My son will forever love his wife. (o- -aan) 5. My mother is a teacher and especially helps people. I really love her. (Ni)

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

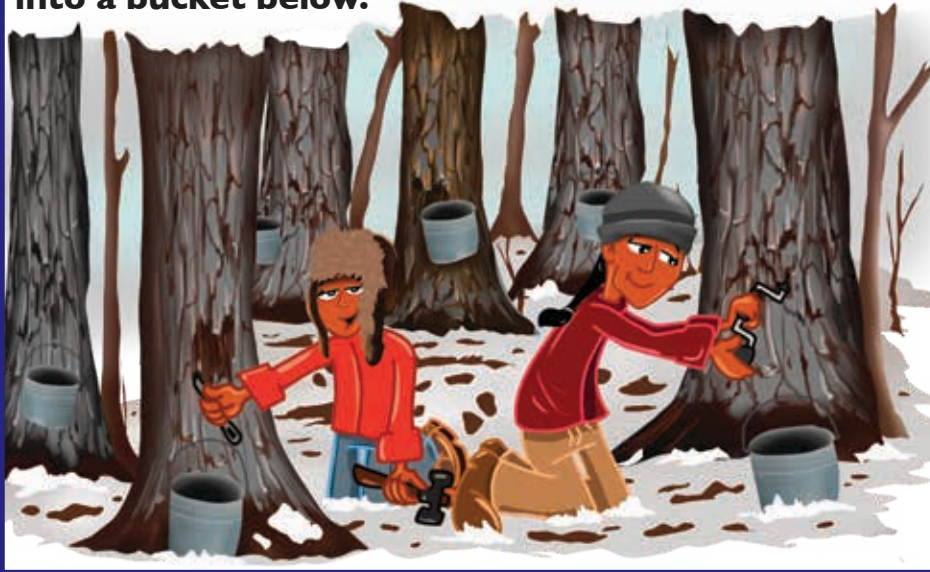


# Educational resources

## Growing Up Ojibwe

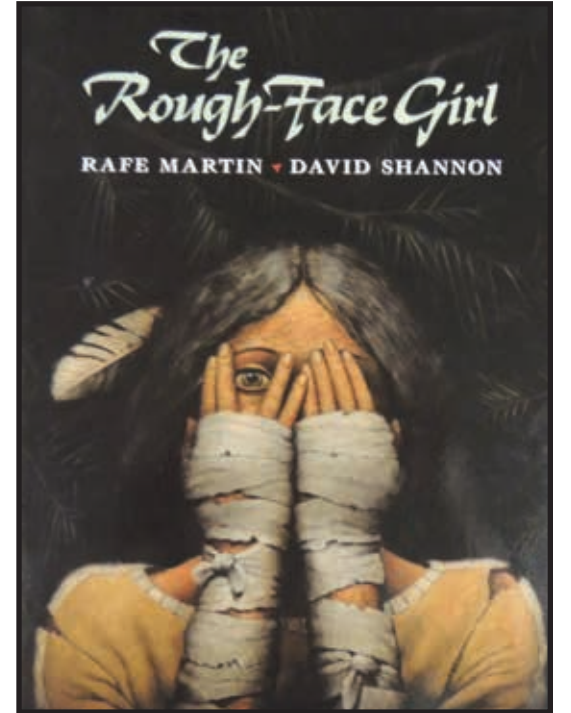
GLIFWC recently revamped our edition of Tommy Sky: *Growing Up Ojibwe*. Join Tommy as he continues his journey to learn his language and culture. A revised story line with brand new illustrations by tribal artist Josh Whitebird, this is a must have for the classroom. The following illustration and text are from the booklet. First copy is free of charge, additional copies can be ordered through our website at: [www.glifwc.org/publications/#YouthPublications](http://www.glifwc.org/publications/#YouthPublications), by emailing [lynn@glifwc.org](mailto:lynn@glifwc.org), or filling out the order form below.

**In early ziigwan (spring), when the snow first starts to melt, my dad and I go to our sugarbush (a stand of maple trees) to collect ziinzibaakwadwaaboo (maple sap). We put small taps beneath the bark of the aninaatigoog (maple trees), and the sap runs into a bucket below.**



## The Rough-Face Girl

**Written by Rafe Martin**  
**Illustrated by David Shannon**  
**Ages: 4-8**  
**Grade Level: 3 and up**  
**32 pages**  
**illustrated with color**



We've all heard and know the familiar stories of fairy tales. A young girl falls into a deep sleep, only to be awoken by true love's kiss. A woman finds inner beauty within a beast, and breaks a spell placed upon him by an enchantress. But perhaps no fairy tale is more widely known, than that of Cinderella—a girl treated poorly and unfairly by others, only to triumph in the end by winning the heart of the prince. It is a story of oppression, and a story of justice.

As a folk tale, Cinderella has been traced all the way back to ancient Greece, and the story of Rhodopis, a Greek slave girl who ends up marrying the king of Egypt after an eagle snatches her sandal and drops it into his lap. Probably the most famous version of this story is the literary tale *Aschenputtel* published by the Brothers Grimm in 1812 (*Grimm's Fairy Tales*). Many film and theater adaptations have been based upon this telling. But countless variations of Cinderella exist all over the world, and across cultures. *The Rough-Face Girl* gives to us an Algonquin Indian version, passed on by award-winning author and storyteller Rafe Martin.

In his author's note, Martin writes, "To see good rewarded and evil punished, or justice, is rare. Stories, however, pass on the realities not of the everyday world but of the human heart. One way in which the universal yearning for justice has been kept alive is by the many tales of Cinderella."

*The Rough-Face Girl*, in its original form, is part of a longer and much more complex traditional story. "Grown on native soil, its mystery is rooted in our own place," Martin says. And indeed it is. Set on the shores of Lake Ontario, the story introduces us to a great Invisible Being, whom all the women of the village want to marry. But there is a catch. Only the one who can see him can marry him.

A poor man with three daughters lives in the village. As you might guess, the two older daughters are cruel, forcing their youngest sister to sit by the fire and feed the flames. Over time, as burning branches pop and sparks fly, the youngest daughter's hands, arms, and face become scarred, her hair charred. She becomes the rough-face girl.

The two older daughters prepare to present themselves to the Invisible Being for marriage. Wearing beautiful necklaces, buckskin dresses, and beaded moccasins, they strut through town, haughty and proud. But when they arrive to the great wigwam, and cannot answer simple questions about the Invisible Being's appearance, they are forced to slink away, ashamed. They have never truly seen him.

The youngest daughter goes before her father next to ask for necklaces, a dress, and moccasins to present herself to the Invisible Being, saying, "wherever I look, I see his face." Her father has little to give her but she makes do, constructing a cap, dress, and leggings out of birch bark, and a necklace out of broken shells. Everyone in the village sneers and makes fun of her as she walks to the lakeshore to meet the Invisible Being's sister. But the rough-face girl remains unmoved by their coldness, her faith strong in what she has seen.

When the rough-face girl arrives and is asked the same questions asked of her sisters, she describes the Invisible Being's bow, made of the curve of the rainbow, and his sled, made of the Milky Way stars that run across the sky.

In hearing her description, the Invisible Being's sister knows that the rough-face girl has seen him, and that she will be his wife. When he returns to the wigwam later that day, he sees her, exclaiming, "And oh, my sister, but she is beautiful."

The rough-face girl is given new clothes and instructed to bathe in the lake. After she does, the scars vanish from her body and her hair grows long and glossy. The beauty of her heart, what the Invisible Being has seen all along—now reflected in her face and body.

*The Rough-Face Girl* is an entrancing, wonder-filled rendition of a familiar story, one whose age and authenticity you can feel as you read it. With illustrations by David Shannon that complement the broody and striking tone, it is a version of Cinderella that you will never forget, one that reminds us, that though our stories might sound a little different, the realities of the human heart, are the same.

—P. Maday

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## Mikwendaagoziwag

GLIFWC recently released the fourth video in a series known as the "Ogichidaa Storytellers" project. "Mikwendaagoziwag—They are remembered," [2018 short film] features the Sandy Lake Tragedy and explains the history, while simultaneously highlighting the modern day efforts to remember the ancestors that were lost.



GLIFWC teamed up again with videographer Finn Ryan to produce the latest video. Ryan also helped produce the popular short series from *theways.org*. "Mikwendaagoziwag—They are remembered" video can be viewed on YouTube at [www.youtube.com/watch?v=u6VaiLfy3CE](http://www.youtube.com/watch?v=u6VaiLfy3CE) or accessed on the [glifwc.org](http://glifwc.org) webpage under the "Educational Materials" tab. We at GLIFWC sincerely hope these videos are utilized and shared widely.



