Mazina'igan
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States set wolf harvest seasons in Wisconsin and Minnesota

Tribes rally to protect ma'iingan

By Charlie Otto Rasmussen
Staff Writer

Odanah, Wis.—Wolf hunting and trapping is set to begin this fall in Wisconsin and Minnesota after authorities finalized season structures, which call for killing more than 600 animals in the two states. In response GLIFWC's Voigt Intertribal Task Force is taking a stand for ma'iingan.

On August 2 the Task Force passed a unanimous motion "opposing the killing of ma'iingan and claiming all wolves in the Wisconsin ceded territory as a necessary prerequisite to a population that would fully effectuate the Tribe's rights," wrote James Zorn, GLIFWC Executive Administrator in a letter to Cathy Stepp, Wisconsin Department of Natural Resources (WDNR) Secretary.

The statement comes after Ojibwe tribes repeatedly encouraged WDNR officials to slow plans for sport-harvesting wolves only months after the US Fish & Wildlife Service removed them from the endangered species list. Tribal representatives made the same appeals to Minnesota policymakers, calling for government-to-government discussions on the co-management of the 1837 ceded territory wolf population. Tribes said live wolves had value on the landscape.

But officials in both states pushed ahead, creating wolf harvest units that lay both inside and outside the 1837, 1842 and 1854 Treaty ceded territories. In Wisconsin, policymakers seek to pare wolf numbers from an estimated 850 down to 350 over time.

For Ojibwe as well as additional American Indian tribes, the wolf is regarded as a brother; in origin stories, ma'iingan is a teacher and companion. In tribal society, members of the wolf clan are known as guardians and providers. Through traditional teachings, many believe that wolves and Ojibwe Indian people share the same fate—what happens to one will happen to the other. Tribal representatives communicated these principles to state policymakers at length throughout much of 2012, including testimonials from Bad River elder Joe Rose Sr. and other natives before the WDNR Board on July 17 at a public hearing.

Ma'iingan will be looking over his shoulder from fall 2012 through late winter after Wisconsin and Minnesota officials enacted wolf hunting and trapping seasons only months after the animals were removed from the federal endangered species list. (Photo by Charlie Otto Rasmussen)

Tribal representatives stress that launching a harvest plan to drive down wolf numbers to 350 animals is reckless

(See Tribes rally, page 14)

Manoomin outlook discouraging

By Lisa David, GLIFWC
Manoomin Biologist

Odanah, Wis.—As the annual cycle continues, as we watch the summer weeks march by, it can only mean that the manoomin season is fast approaching. How this year's ricing season will ultimately play out on the landscape is already being revealed.

At the time of this printing, GLIFWC has completed half of its pre-season rice flights over the ceded territories of northern Wisconsin, Minnesota, and Michigan. During these flights, photos are taken of lake and river wild rice beds to make assessments of the year's rice abundance. This aerial information is then compared and added to the field observations from our wild rice intern crews who are busy evaluating rice stands at our long-term study lakes and other waters with possible suitable manoomin habitat.

This recent aerial photo shows that efforts to fence out carp (approximate carp barriers are shown in black) from a section of Burnett County's Clam Lake paid off with a nice crop of manoomin this season. Other areas of the lake, however, showed little in the way of recovery. (Photo by Peter David)

Consequently, pre-season observations are still considered preliminary and subject to refinement as we gather more ground and aerial observation data. But to date, season projections appear well below average in most areas of Wisconsin's ceded territory.

According to GLIFWC Biologist Peter David, "on reservation and off, on large waters and small, rivers and lakes, from Fond du Lac to Mole Lake, poor stands are the recurring theme of the year."

As in most rice years exceptions do exist, with an area in northeast Wisconsin showing the highest concentration of decent waters. But even here stand failures are not uncommon.

It is hard to pinpoint the precise factors leading to this year's poor crop—since rice abundance tends to be influenced by a variety of local and regional factors. Certainly localized high rain events took a toll on some waters, and at least one bed appeared to be lost to stem rot, a phenomenon not previously observed in our surveys. The very mild winter may have also caused some seeds to remain dormant, delaying germination for a future year.

One site of encouragement is Clam Lake in Burnett County. Rice beds here have been decimated in recent years, apparently the result of high carp populations. While most of the lake still shows little to no recovery, appreciable beds were observed in the one bay where carp had been excluded by fencing.

All this makes one wonder if a season like 2009 will ever be repeated—with its highest recorded harvest in the past two decades of gathering harvest data. This was followed by the bust 2010 season—a near failure that sent pickers digging deep into their manoomin stores to stretch supplies out another year. Last year was considered a partial rebound in rice abundance—where increased scouting efforts proved profitable for some pickers. Now in 2012, the warm and early spring had the potential to put us on track for an early harvest season; however, general indications are not encouraging.

In addition to the fieldwork, we've also been keeping busy with the continued writing of the first Joint State-Tribal Wild Rice Management Plan. After going through in-house review, the plan is presently in the hands of Traditional

(See Surveys indicate, page 14)

GLIFWC in pursuit of pervasive invasives

By Sue Erickson
Staff Writer

Odanah, Wis.—Keeping track of invasive species, whether it be on land or in our waters, is a monumental task these days with so many "invaders" now taking over valuable habitat and threatening native species.

While purple loosestrife and sea lamprey got GLIFWC's attention early-on, the invasive species program has grown to incorporate not only inventory/monitoring and targeted control in specific areas, but also public outreach.

"GLIFWC's member tribes expressed a great deal of concern over the impact of invasive species on valued resources such as wild rice and the fisheries on which they have long depended both for food and for cultural/spiritual purposes," said Miles Falck, wildlife biologist and invasive species program coordinator, "so we developed a more extensive inventory of invasives, both terrestrial and aquatic, in the ceded territories and actively engage with other agencies in monitoring and control."

Because the job is so immense, GLIFWC shares data with other agencies and organizations, so that the combined data can benefit all. Much of GLIFWC's data is online at *www.invasives.glifwc.org*. The website maps areas of infestations and can be viewed as overlays as well.

Inventory and monitoring involve finding out the "who, when and where" information about invasive species. Through on-the-ground or on-the-water surveys, information is gathered and entered into a data base. GLIFWC staff have an extensive online database of terrestrial invasive plants resulting from 10 years of surveying in northern Wisconsin and Michigan's western Upper Peninsula. Over 150 species have been documented with over 10,000 sites mapped.

Similarly, GLIFWC performs aquatic invasive species surveys on about 24 lakes each summer. Invasive aquatic plants are documented with a GPS reading of the site. In addition, water samples are taken and turned in for laboratory analysis to identify the presence of zebra mussels and spiny water fleas. Gathered information is also entered into a data base.

In Lake Superior, GLIFWC staff have annually assisted the US Fish and Wildlife Service's Sea Lamprey Control Program, trapping and tagging sea lamprey in order to obtain population estimates in Lake Superior tributaries, for the past twenty-six years. Coordinated by Bill Mattes, Great Lakes section leader, GLIFWC trapped three tributaries this spring and assisted with four others.

While documentation is important, GLIFWC is also involved in control measures. For GLIFWC this is a matter of prioritization, Falck says. "We are currently developing models to help us better ascertain what's at risk if action is not taken." Purple loosestrife, which can threaten wild rice and other wetlands species, is one priority. GLIFWC currently treats purple loosestrife infestations in the Chequamegon Bay/Bad River watershed, using both biological control and chemical control methods. In 2012 Falck's team raised and released several hundred thousand Galerucella beetles at loosestrife infestations in Fish Creek near Ashland. The beetles feed on purple loosestrife and can significantly reduce a stand.

GLIFWC also targets leafy spurge west of Washburn, Wisconsin in an effort to prevent its spread into the Moquah barrens, a popular spot for berry picking.

Public education and outreach is another element of the invasive program, especially as it relates to prevention measures. GLIFWC distributes a number of brochures providing detailed information on a variety of invasive species. A

GLIFWC Wildlife Biologist Miles Falck (left) and GLIFWC Invasive Plant Specialist Steve Garske release Galerucella beetles at purple loosestrife infestations in Fish Creek near Ashland, Wisconsin. Purple loosestrife can threaten wild rice and other native species. (Photo by Lee Cloud) Inset photo: Galerucella beetles feed on purple loosestrife and can significantly reduce a stand. (Photo by Miles Falck)

card detailing how to clean boats and fishing equipment was developed this year and handed out to tribal fishermen at landings during spring spearing and netting season to encourage preventative measures.

GLIFWC's annual invasive weed pull day each spring is also part of a public education effort. In cooperation with the Northwoods Cooperative Weed Management Area (NCWMA), a target site is chosen and staff spend the day pulling weeds. This spring garlic mustard was the target for GLIFWC staff, the Bad River Boys and Girls Club and NCWMA personnel.

For Falck, the key to tackling the large and looming problems presented by invasive species is to keep working with partners, keep information flowing and attack the problems jointly, sharing data and resources.

GLIFWC Wildlife Technician Ron Parisien grips a bouquet of freshly pulled garlic mustard plants as Invasive Plant Specialist Steve Garske makes his way up the bank of the upper Bad River. GLIFWC staff and others were part of an exceptional community turnout that helped clear exotic garlic mustard from forestlands near Mellen, Wisconsin on May 9. Around 30 adult volunteers, 50 kids from the Mellen School District and 20 young people from the Bad River Tribe's Boys & Girls Club combed hardwood river bottoms pulling the aggressive invasive plant from the soil—roots and all. Members of the Northwoods Cooperative Weed Management Area and GLIFWC organized the event. (Photo by Charlie Otto Rasmussen)

Sam Quagon, GLIFWC AIS aide, tosses a rake to look for aquatic invasive species (AIS) at the boat landing while conducting an AIS survey on Anvil Lake, Vilas County, Wisconsin. The rake toss comes up with the invasive banded mysterysnails attached to other aquatic plants (inset photo). Also while conducting the AIS survey, staff found an early detection population of Eurasian water-milfoil. While you are out enjoying the lakes, please be on the lookout for aquatic invasives and report any sightings to Dara Olson, GLIFWC's AIS coordinator, at* dolson@glifwc.org *or 715-682-6619. For more information on aquatic invasive species in the ceded territories go to* www.glifwc.org/invasives/ais. *(Photos by Dara Olson)

Siscowet lake trout: slow growing, abundant

Ten times more siscowet than lean lake trout

By Bill Mattes, GLIFWC Great Lakes Biologist

Keweenaw Bay, Mich.—A lake wide assessment of siscowet lake trout populations in Gichigami was carried out in June and early July by the GLIFWC Great Lakes section crew. The goal of this assessment, initiated by the Lake Superior Technical Committee (LSTC) in U.S. waters of Lake Superior in 1996, is to look at siscowet populations throughout Lake Superior to gain a broader understanding of their ecological role and determine fish abundance in the offshore areas of the lake.

Specific objectives are to estimate relative abundance, food habits, and age and size composition of siscowet lake trout. Five agencies were able to participate in the 1996 study, and the LSTC felt that another survey was warranted. In 1997 and 1998 information was collected from different seasons by most agencies, and starting in 2000, the LSTC agreed to conduct lake wide surveys of siscowet populations on a regular basis.

In June of 2000 and every three years thereafter (2003, 2006, 2009, 2012), lakewide siscowet surveys have occurred. These surveys have shown that siscowet are slow growing, mature slowly, have a high sea lamprey wounding rates, and have a low reproduction rate. Also, because they are not heavily fished, their relative abundance is more than 10 times that found for their near shore cousin—the lean lake trout.

Upper photo: Northland College interns Sarah Weed (left) and Jessica Raikes set an assessment net into the offshore waters of Keweenaw Bay in June of 2012.

To the left: Sites for the siscowet lake trout population assessment are chosen based on the proximity of docking facilities to waters of at least 600 feet deep. In Keweenaw Bay deep water is found 5 miles or more from the nearest port. (Photos by Heidi Cook)

MSU Sea Grant & Lake Superior fishing tribes partner in NOAA siscowet lake trout oil extraction study

By Jim Thannum, GLIFWC Planning & Development Director

Michigan State University Sea Grant in partnership with GLIFWC and the Chippewa Ottawa Resource Authority (CORA) completed a series of meetings with commercial fishermen and fish processors to discuss the Siscowet Lake Trout Extraction Study at Red Cliff's Legendary Waters on June 26th, at Keweenaw Bay's Ojibwa Casino Resort on June 27th, and at Bay Mills Community College on June 28th.

Dr. Paul Addis, Professor Emeritus, Food Science and Nutrition, University of Minnesota, started each meeting with an overview of omega 3 oil production, including barriers to the market, misconceptions and misinformation regarding omega 3 oil, size and scope of the fish oil industry, fish oil recovery processes, fish oil refining, and fish oil stabilization. Dr. Addis also provided a review of studies regarding relationship of omega 3 oils and health including:

- Heart and circulatory benefits including inhibition of thrombosis and vasoconstriction; lowering of blood triacylglycerols (but not cholesterol in every case) and correcting cardiac arrhythmias;
- Brain and eye benefits—(Omega 3 is now being added to infant formulas.); and
- Joint benefits by reducing inflammation.

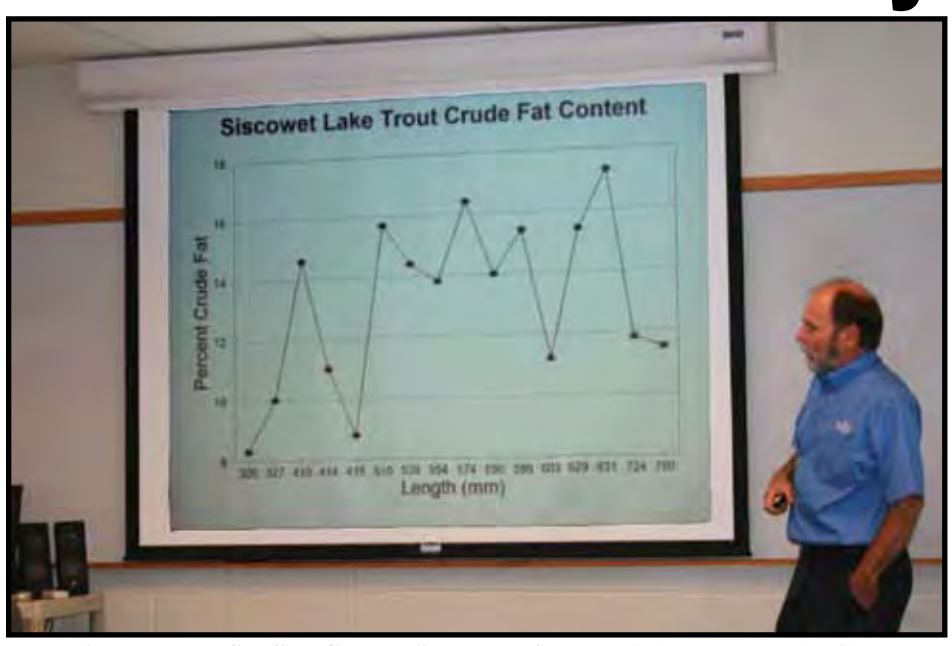
Addis also documented that Lake Superior fish contained levels of omega 3 oils equal or above those found in ocean species with siscowet trout containing the highest levels.

Species	Oil, %	EPA+DHA/100g	Omega 3/100g
Pacific Halibut	2.3	0.4	0.6
Chinook Salmon	10.4	1.4	1.7
Siscowet	25.7	3.0	6.2
Lean Lake Trout	11.0	1.5	3.0
Whitefish	10.4	1.6	3.4

Of particular interest in Addis's presentation was the ability of molecular distillation processing to remove chlordane, PCBs and other chemical contaminants from omega 3 oils. Earlier fish contaminant studies conducted by GLIFWC documented siscowet trout over 22 inches exceeded the FDA guidance of .3 ppm of chlordane even when fat was trimmed from fillets. The ability to produce a siscowet trout product that removes chemical contaminants would open new Lake Superior business opportunities.

Dr. Ron Kinnunen, MSU Sea Grant, presented information on handling, icing and freezing standards required to maintain the quality of fish oil. In addition, information was presented on the variation in siscowet trout lipid (oil) levels found through laboratory testing.

Biological information on siscowet populations was presented by Bill Mattes, GLIFWC Great Lakes section leader at Red Cliff and Keweenaw Bay and by Mark Ebener, CORA fishery biologist at Bay Mills. The presentations reviewed historical siscowet trout harvest statistics, catch rates by depth, and catch rates using various net mesh sizes.



Ron Kinnunen, MSU Sea Grant, discusses siscowet lake trout crude oil content in relation to the size of fish. (Photo by Jim Thannum)

After biological information was presented, discussions were held with fishermen to explore regulatory options to ensure a sustainable fishery. A fish oil extraction and refining operation on Lake Superior would require an extensive capital investment so ensuring a sustainable supply adequate to meet production needs is critical for the economic viability of any future operation.

The meetings ended with a review of bathymetric contour maps of Lake Superior to determine travel distances to fishing grounds and estimates of when weather conditions would permit fishermen to supply siscowet trout. Fishermen were also given the opportunity to provide input into the price per pound they would require, realizing it will only be practical to construct a fish oil plant if fishermen are paid a price that will enable them to stay in business over the long term.

Having determined the technical feasibility of the project, additional information will need to be compiled including marketing studies and business feasibility analysis in coming months.

On the cover

The cover shows a partial image of GLIFWC's 2012 poster, GINIBIIMINAAN, featuring nibi (water), and emphasizing the sacredness of nibi and our responsibility to keep it pure. For ordering information see page 22.

Mawinzo-giizis (berry picking moon)

By Alex Wrobel, GLIFWC Forest Ecologist

Odanah, Wis.—Mawinzo-giizis is when Ojibwe women and children would take to the woods and gather enough berries to sustain them through the winter months while maintaining the teaching to "take what you need and leave some for someone else and for the Great Spirit as well, so he can give us more next year."

This year we have experienced higher temperatures earlier in the season and some gatherers may have already begun their berry harvesting. Referring to the time of the year when berries are plentiful on the landscape, "mawinzo" means "(s)he picks berries" while "giizis" means "moon." Mawinzo-giizis does not refer to a specific month or range of dates, but rather to when the conditions are ready for the harvest.

Ojibwe families have relied on berries as a form of sustenance throughout their history. Berries that are traditionally gathered during mawinzo-giizis include (but are not limited to):

miskominag—raspberries	oshkizhaanimuk—dewberries
odatagaagominag—blackberries	miinan—blueberries
ode'iminan—strawberries	gozigwaakominag—juneberries
bibigweminan—elderberries	datgaagminan—thimbleberries
ookweminan—black cherries	asasaweminan—choke cherries
bawa'iminan—pin cherries	sewa'kominan—sand cherries
zhaabominan—currants	bagwaji bagesaanag—wild plums

Berries were then cleaned, eaten fresh and often preserved for use over the winter months. Berries were preserved in two different ways. In one method, the Ojibwe wove mats from strips of pine bark and laid the berries in the sun until they dried out. Another option was to mix the berries with maple syrup, then pour the mixture onto sheets of birch bark where they were left until dry.

Picking berries was an important activity for women of many generations. Not only were the berries nutritious and tasty, they also became a source of income. Many years ago, when there were limited opportunities for women to earn their own living, berries became a cash crop. The most common and thus most frequently harvested berries in this region are blueberries, blackberries and raspberries.

Miinan "Blueberries" (*Vaccinium angustifolium*)

According to some teachings, star berries were believed to be a gift from the Great Spirit. They were sent from the stars to feed the people and keep them healthy. He marked the bottom of each fruit with a star so that they would never forget where this fruit came from.

Miinan.

The low-bush blueberries of this region were eaten fresh or preserved for later consumption; the dried berries were used as food in stews and pounded into meat to add flavor and help preserve it. There are many documented uses for wild blueberries, and not just as food. Blueberries are also known to be high in tannins (a substance once used to tan leather) so were used to make blue dyes and teas for medicinal and spiritual uses.

The shrubs are often found in open conifer woods, sandy or rocky barrens and old fields. So when harvesting, look for low, straggling shrubs, usually six inches to two feet tall and wide. The berries are ready for harvest when they are dark blue and firm to the touch.

Miskominan "Raspberries" (*Rubus ideaus*) and Odaatagaagominag "Black Berries" (*Rubus allegheniensis*)

One of the most loved of the wild summer foods with their jewel-like fruits are raspberries and blackberries. Identifiable by their long drooping and prickly stems, the shrubs are often found near the edges of woodlands, clearings, roadsides and abandoned fields. Fruit production generally peaks between late July and August.

The leaves are taken either before or during flowering and then dried; the berries are taken when ripe and used fresh or dried. The fruits are most often eaten fresh or mixed with sugar and used as dressings.

Miskominan.

Odatagaagominag.

Recipes

Fresh Blueberry Sauce

2 1/2 cups fresh blueberries
1/3 cup sugar
1 tbsp. cornstarch
1 tbsp. lemon juice
1/2 cup water

Combine half the water and cornstarch in a small bowl. Set aside. Combine blueberries, sugar, lemon juice, and remaining water in a saucepan. Heat over low-medium heat. Stir occasionally. Bring to boil. Add cornstarch mixture. Return to boil and boil for 1 minute. Remove from heat. Cool slightly to allow sauce to thicken before serving. Makes approximately 2 cups.

Miskomin Niibish (Raspberry Leaf Tea)

Steep fresh or dried leaves in boiled water for 10 minutes. Raspberry leaf tea is full of vitamins and minerals and is known to have been used for centuries as a folk medicine to treat wounds, diarrhea, colic pain and as a uterine relaxant.

Raspberry/Blackberry Ice

1 cup water
1/2 cup sugar
2 cups crushed wild raspberries or blackberries
2 tbsp. lemon juice

For a "refreshing summer treat," in a saucepan over moderate heat, mix together the water and sugar. Heat to a full boil and boil for 5 minutes. Add berries and lemon juice. Pour the mixture into ice-cube trays or a shallow dish and place in the freezer. When water becomes slushy, stir it to reduce the size of the ice crystals. Repeat at half-hour intervals until the mixture is all coarse ice crystals. Put in the refrigerator about 15 minutes before serving. Makes: 4–6 serving

Wojapi (Pudding)

4 cups water
2 cups sugar
4 lbs. blueberries (or any other berries)
Cornstarch or arrowroot to thicken

Mash the fruit. Reserve some of the water to mix the cornstarch or arrowroot in. Put mashed fruit, sugar and water into pan and bring slowly to boil. Remove from heat and stir in cornstarch mixture. Watch for lumps! Place back on low heat and stir well until thickened to the consistency of pudding.

Note: Can eat this over frybread, ice cream, or biscuits.

Harvest Suggestions

When out harvesting your berries, they may be hot from the sun when you pick them. Wrapping them up while they are still warm can cause condensation to develop, and the moisture can cause the berries to begin to rot. For best results, allow them to cool to room temperature before packaging them for storage. Refrigerate them in a covered container. In optimal conditions, they should keep well for about a week.

Freeze berries by spreading them thinly in a single layer on a cookie sheet or in a baking pan, and placing them in the freezer. Once each berry is frozen solid, **(See Mawinzo-giizis, page 19)**

Off-reservation gathering

Through an agreement between participating GLIFWC member bands (Bad River, Bay Mills, Keweenaw Bay, Lac du Flambeau, Lac Vieux Desert, Mille Lacs, Red Cliff, and Sokaogon/Mole Lake) and the Eastern Region of the U.S. Forest Service, members of the participating Bands exercising their treaty rights may gather non-timber forest products from the Chequamegon-Nicolet, Ottawa, Hiawatha, and Huron-Manistee National Forests as well as the following state properties in Wisconsin:

- Big Bay State Park
- Brule River State Forest
- Copper Falls State Park
- Crex Meadow Wildlife Area
- Eddy Creek Fishery Area
- Flambeau River State Forest
- Governor Knowles State Forest
- Northern Highlands—American Legion State Forest
- Powell Marsh Wildlife Area
- Willow Flowage Scenic Waters

For off-reservation gathering you must:

1. Be a member of a band that has ratified the Tribal/USFS MOU Agreement
2. Obtain a tribal gathering permit through your tribal registration station or GLIFWC.
   - Your registration station or GLIFWC will use the newly adopted online permitting system (http://glifwc.nagfa.net)
   - You will be issued a permit (similar to previous years)
     -The permit will require information including the National Forest you will be gathering on and your NAGFA license number.

GLIFWC's "Mino Wiisinidaa!" Project stirs up healthy food

By: LaTisha (McRoy) Coffin
ANA SEDS Coordinator

Odanah, Wis.—Gathering and testing traditional foods recipes keeps the Mino Wiisinidaa! (Let's Eat Good)—Traditional Foods for Healthy Living" project staff hard at work. As of July 2012, the project staff has worked closely with 16 elders from seven member tribes. Discussions featured the following traditional Anishinaabe foods: fiddlehead ferns, wild ramps, venison, cranberries, hominy, smoked whitefish, wild rice, butternut squash, various root vegetables, wintergreen leaves, berries, watercress, ground sumac, and sunflower seeds.

The challenge for Molly Siegler, the ANA SEDS community dietitian, is to introduce healthy alternatives to many well-loved recipes. Using nut oils instead of butter or lard; applesauce and date paste as stand-ins for sweeteners; adding whole vegetables at every turn, and swapping puffed wild rice for croutons maintains the integrity of the original recipes while creating foods that are better for us in the long run.

Liz Nelson, Bad River, cleans the fiddleheads prior to adding them to the soup. (Photo by Zoongie Leith)

Gathering fiddlehead ferns is a rite of spring for Lac Courte Oreilles elder Dennis White. He and wife, Cleo, enjoy fiddlehead soup. (Photo by Molly Siegler)

Lunch with Cleo and Dennis White at LCO features fiddlehead fern soup and sesame seed bannock made with wild rice flour. (Photo by LaTisha Coffin)

For example, the majority of wild rice casserole recipes include the use of canned condensed soups to bind the ingredients together. Siegler, who is assisted by Steven Ante, ANA SEDS cooking/demonstration assistant, created the consistency of creamy condensed mushroom soup by using a wild rice flour roux (a cooked mixture of butter and flour used to thicken soups and sauces) with sautéed fresh mushrooms and onions and a quick homemade mushroom stock. This cooking method yielded a "creamy" soup that contains no dairy, has a very low sodium content, and has minimal fats.

The "cream" soup can be made in large batches and frozen for later use. This method is preferable to using canned soups because there are more nutrients and minerals from vegetables in the homemade soup, which canned condensed soups lose during processing. Additionally, one can of condensed cream of mushroom soup contains the maximum sodium daily intake for one person (over 2200 mg) and 18 grams of fat.

The Mino Wiisinidaa! project staff are looking for contributions specifically from the Bay Mills, Lac Vieux Desert, Mole Lake, and St. Croix tribal elders, but are always grateful for contributions from all elders and/or tribal harvesters with traditional recipes, especially for fish and game recipes.

If you have a favorite recipe or two, please contact Molly Siegler at (715) 682-6619 ext. 2147 or email: msiegler@glifwc.org, or LaTisha Coffin at (715) 682-6619 ext. 2128 or email: lmcroy@glifwc.org.

The Mino Wiisinidaa! (Let's Eat Good!)—Traditional Foods for Healthy Living grant is funded by the Administration for Native Americans (ANA), ACF and U.S. Department of HHS.

Wewaagagin Soup with Chicken & Spring Greens

(original concept from Cleo White, LCO)

Makes approximately 1/2 gallon of soup

5 cups	chicken stock
5 cups	water
4 each	bay leaves, fresh
1 tsp.	sunflower oil
1 each	medium onion, diced (about 1 cup)
2 cups	fiddlehead ferns, thoroughly cleaned and trimmed, cut into 1" pieces
2 each	skinless, boneless chicken breasts, trimmed and cubed (1" pieces)
10 each	stalks asparagus, trimmed and cut cut into 1" pieces
2 cups	watercress, thoroughly cleaned and torn into bite-sized pieces
1 tsp.	salt
1/8 tsp.	freshly ground black pepper

Add sunflower oil to a saucepan or small stock pot and heat until simmering.

Add chopped onion and cook over medium-high heat until softened, about 5 minutes.

Season onions with salt and pepper, then pour in chicken stock and water.

Add chicken to pot and bring to a simmer.

When chicken is partially cooked, add prepared fiddlehead ferns.

Add asparagus when chicken is opaque, about 10 minutes.

Continue to simmer until asparagus is just tender, about 5 minutes, then turn off heat.

Stir in watercress.

Sharing Anishinaabe stories

By Bennie Rogers, St. Croix Community Elder &
Wesley Ballinger, ANA Language Specialist

This teaching was collected as part of our ongoing Administration for Native Americans (ANA) funded language project "Gidaadizookaaninaanig—Our Stories." The task of this project is to document stories of traditional Anishinaabe cultural practices by transcribing and translating first speakers. The end goal of this project is to compile all of these teachings into a book written in our Anishinaabe language with corresponding translations. An audio CD with all the speakers will also accompany the publication. In the final months of this project, fall 2013, 5000 copies of the book will be dispersed amongst all of GLIFWC member communities.

To date 15 different speakers have contributed their teachings towards the project, representing seven regions of Ojibwe country including Canada. GLIFWC's language staff relies on the guidance of our Elders' Committee, which has provided and continues to provide direction throughout this three-year project. Four interns from four Ojibwe bands assist in the collecting, transcribing and translating the teachings.

Teachings about makwa and marriage within the clan

Ya'aw makwa, keyaa ezhi-gikendamaan, mii ya'aw genawenimik sa go weweni, da-izhi-izhiwebiziyan da-wiidookawik iw sa gegoo. Maagizhaa ge giiwaseyan ke aw asemaa omaa akiing asad gagwejimad a'aw manidoo sa go weweni da-izhi-izhiwebiziyan omaa megwekob.

Ke gaye ya'aw makwa indoodem. Ke ge a'aw bezhig ogii-gikenim. . . gikenimad ikwe maagizhaa noodenimad, mii go gaye mii naasaab makwan odoodeman. Mii ow keyaa gaa-izhi-wiindamaagooyaan, gaawiin gidaa-wiidigemaasiin a'aw ikwe. Indago aw gishiime a'aw waa-wiidigemad. Ke odoodeman gaye wiin makwan. Miish gaa-izhi-wiindamaagooyaan akeyaa gaawiin gidaa-wiidigemaasiin aw. Mii eta go minik ezhi-gikendamaan. Mii iw.

This is what I know about the bear. It is him that takes good care of you. When something happens to you, he will help you, and maybe when you are hunting, see when you put down tobacco here on the ground. You ask the Spirit for things to go good for you there, in the woods.

And also it is the bear that is my clan. Say there is one woman you know maybe you are in love with her, and she is of the bear clan too. This is the way I was told; you cannot marry that woman. It is just like you are marrying your sister. See, she too is of the bear clan. That's the way I was told. You can't marry her. That's all I know. That's it.

—transcribed by GLIFWC's language staff

Study looks at mercury levels in newborns of Lake Superior basin

By Sara Moses, GLIFWC Environmental Biologist

Catching and eating fish is not only nutritious, but for many it is also a valued tradition. As you sit down with your family or community to enjoy your catch, you should consider the fish consumption advisories issued by GLIFWC (*www.glifwc.org/Mercury/mercury.html*) and your state. The advisories are designed to help you limit your exposure to certain contaminants, while continuing to eat fish. Once familiar with the advisories for your area, you will be prepared to make wise decisions about the type and amount of fish you choose to eat.

One of the major contaminants found in fish that make consumption advisories necessary is mercury. Fish consumption is the main route of human exposure to mercury. You will notice that the mercury advisories generally provide two sets of advice: one for the general population and another, stricter guideline, for children and women of childbearing age. Why are two sets of advice needed? Mercury is a neurotoxin, meaning it can harm the brain and nervous system. This is especially true in the developing nervous system of fetuses, infants, and children. Therefore, it is recommended that children and women who are or may become pregnant, limit their mercury exposure to a greater degree than adult men or women beyond childbearing age.

Although mercury is especially dangerous to the developing nervous system, no studies directly measured mercury levels in newborns to determine if they are at risk. The Minnesota Department of Health (MDH) recently completed a study that looked at mercury levels in newborn babies in Minnesota, Wisconsin, and Michigan. Bloodspots, collected between 2008 and 2010 from a heel prick just after birth of 1,465 newborns were tested for mercury. Since mercury can cross the placenta from mother to fetus, the amount of mercury found in the newborn bloodspots reflects the mothers' mercury exposure during pregnancy. The infant's mercury levels were compared to the EPA's Reference Dose, the maximum level of mercury a person can be exposed to before there is considered to be a risk of negative health effects.

Most infants were found to have low or undetected total mercury levels. However, 8% of tested newborns had total mercury levels above the U.S. EPA's Reference Dose for methylmercury, the highly toxic form of mercury found in fish. Babies born during the summer months were more likely to have elevated mercury levels. This seasonal effect suggests that increased consumption of locally-caught fish during the warm months is an important source of pregnant women's mercury exposure in this region. No Michigan samples were above the U.S. EPA's Reference Dose, but 3% of the Wisconsin and 10% of the Minnesota infants were above this level. One possible explanation is that Minnesotans have reported eating more locally-caught fish than do people in Wisconsin or Michigan.

What can you do to protect yourself and your family? Consult the appropriate fish consumption advisory before consuming fish. Follow the advice provided for how often you can safely eat a given type of fish. In addition, consider catching and eating fish that tend to be lower in mercury, such as whitefish, herring, bluegill, sunfish, crappie or perch, rather than higher mercury species such as walleye, musky, northern pike and bass. Smaller fish also generally contain less mercury than larger fish of the same species. With this knowledge, you can confidently and safely eat fish.

More details about the mercury in newborns study are available on the MDH website: *http://www.health.state.mn.us/divs/eh/hazardous/topics/studies/newbornhglsp.html*

Army Corps tackles the stamp sand problem in Keweenaw Peninsula

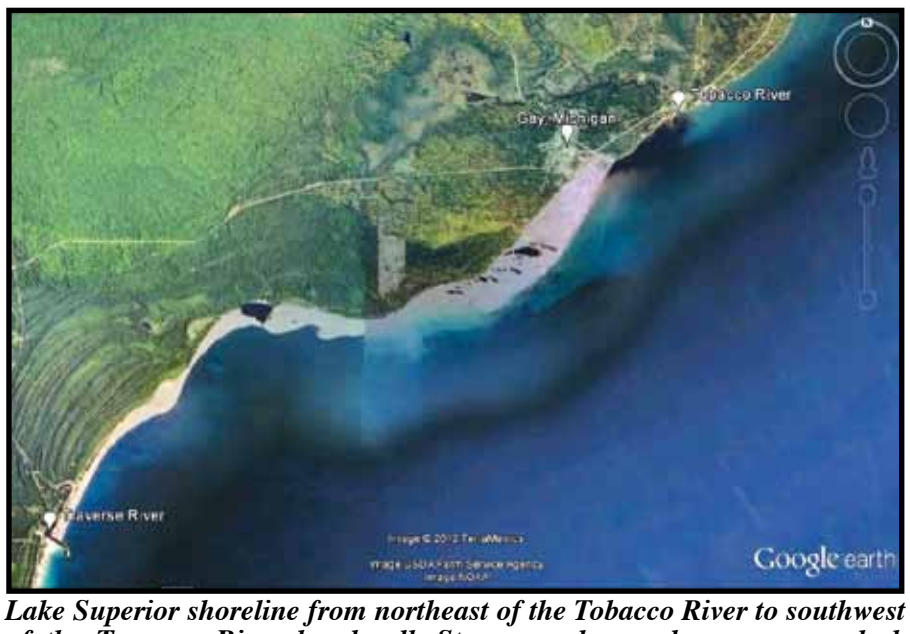
By Bill Mattes, GLIFWC Great Lakes Biologist

Gay, Mich.—Help may now be on the way to mitigate negative impacts of stamp sands lining the shores of the Keweenaw Pennisula on important spawning grounds for lake trout and whitefish.

The U.S. Army Corps of Engineers–Detroit District (Corps) has completed a preliminary restoration plan to address stamp sand deposits along the east side of Keweenaw Bay near Gay, Michigan under the Great Lakes Fishery and Ecosystem Restoration program with funding by the Great Lakes Restoration Initiative. It is estimated by the U.S. Environmental Protection Agency and the Corps that the stamp sands cover 1,426 acres of shoreline and lake bottom lands. The most affected shoreline extends from the Tobacco River to the Traverse River breakwall (see photo courtesy of GoogleEarth), and can be seen as a dark shoreline compared with the lighter colored native sands located southwest of the Traverse River breakwall and northeast of the Tobacco River.

GLIFWC previously obtained funding to collect baseline data on the location of stamp sands in relation to Buffalo Reef, an important spawning ground for lake trout and whitefish, which is assessed bi-annually by GLIFWC's Great Lakes Section. This study concluded that the stamp sands were encroaching upon the reef as was first reported by tribal commercial fishermen.

Since this study, Michigan Technological University has worked with the Corps, the Keweenaw Bay Indian Community, and others to further define the migration and effects of the stamp sands. Additionally, the Corps has collected samples of stamp sands to conduct tests of methods to stabilize and reduce toxicity of the stamp sands.



Lake Superior shoreline from northeast of the Tobacco River to southwest of the Traverse River breakwall. Stamp sands can be seen as a dark shoreline compared with the lighter colored native sands located southwest of the Traverse River break wall and northeast of the Tobacco River. (Photo courtesy of GoogleEarth)

Juvenile fish swim in the estuary of the Tobacco River (inset) just north of Gay, Michigan and the stamp sand deposits. The large deposit of barren stamp sands can be seen in the distance some of which have migrated to the mouth of the Tobacco River—note the black sands in the foreground. (Photos by Bill Mattes)

What are stamp sands?

Shallow deposits of copper enabled the Keweenaw Peninsula to become one of the most productive mining regions of the country between 1864 and 1930. During this period, stamp mills were built near lakes and rivers to crush the ore and separate the copper from the rock by flotation. The waste material from these mills, referred to as stamp sands, was deposited in vast quantities in the vicinity of the stamp mills. These deposits of fine grained mine tailings (sand size particles or smaller) were deposited into nearshore environments of Lake Superior or piled along the shores of the Keweenaw Peninsula.

While copper mining activities ended at most sites many decades ago, stamp sand deposits persist and have had a marked effect on the region. After initial deposition, waves and currents rework the stamp sands leaving the coarsest materials along stream banks and lakeshores.

Of these features, the Gay Peninsula is among the most prominent. This peninsula, located immediately south of the town of Gay (and its copper smelter), is composed almost entirely of stamp sands. Weathering processes have caused this extensive stamp sand area to erode, and stamp sands have moved south along the coast and into Lake Superior away from the area of initial deposition.

Problems posed by stamp sands

Migration of stamp sands may pose significant environmental hazards. Leaching of trace metals from stamp sands has been well documented and research has shown that many areas of stamp sands are unable to support vegetation.

In addition, lakes into which stamp sands have been dumped have been found to be nearly devoid of benthic (bottom dwelling) animals and concentrations of

(See Stamp sands at Keweenaw Bay, page 16)

On the hunt for Asian carp

Intensive monitoring in Lake Calumet

By Bill Mattes, GLIFWC Great Lakes Biologist

Chicago, Ill.—The Asian Carp Regional Coordinating Committee's (ACRCC) Monitoring and Rapid Response Work Group (MRRWG) began intensive monitoring action in Lake Calumet and surrounding areas on July 10th, after three consecutive rounds of Environmental DNA (eDNA) sampling yielded positive results for Asian carp DNA. While Lake Calumet is regularly monitored for the presence of Asian carp, this intensive effort adds commercial fishing crews as well as additional electrofishing boats, seines, and additional sampling gear to the area during an intensive four day fishing period.

"Finding three or more consecutive sets of positive eDNA results triggers us to use significant resources to determine if any Asian carp are present," said John Goss, Director of the White House Council on Environmental Quality. "In addition to significant commercial fishing and electrofishing crews, this response will include brand new netting technologies, and we remain vigilant throughout the region in monitoring to keep Asian carp out of the Great Lakes, developing cutting edge technologies, and investigating all possible sources of Asian carp DNA."

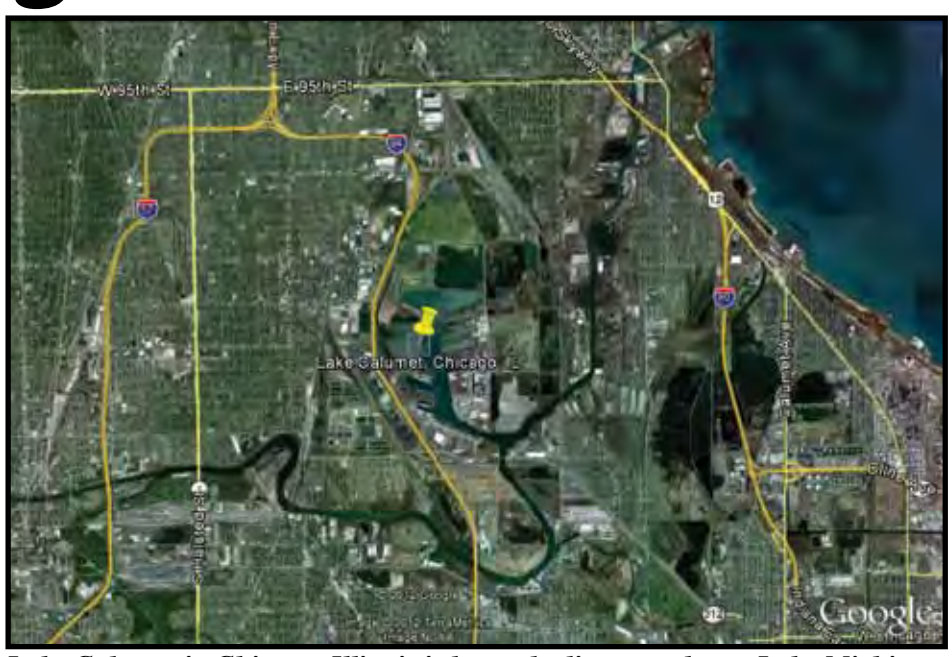
Biologists from the U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers and the Illinois Department of Natural Resources will be on the water with commercial fishermen. The crews will lay several net types throughout the Lake Calumet area, including half-mile long seine nets to sweep large portions of the area. Electrofishing boats will sample fish in shoreline areas and will be used to drive fish towards the nets. The response will deploy new net technologies including, for the first time, pound nets to isolate Lake Calumet and prevent fish movement in and out. Additionally, other new gear being developed for Asian carp detection, including deep water gill nets and six-foot hoop nets, will be deployed as part of the response action.

The Obama Administration has invested more than $150 million to protect the Great Lakes from Asian carp, and formed an Asian Carp Regional Coordinating Committee (ACRCC) in 2009 to ensure a comprehensive and effective response. Ongoing efforts of the ACRCC include aggressive tracking, monitoring and removal of Asian carp; strengthening the electric dispersal barriers in the Chicago Area Waterways System to prevent Asian carp from reaching Lake Michigan; and developing new technologies to control the abundance and distribution of Asian carp.

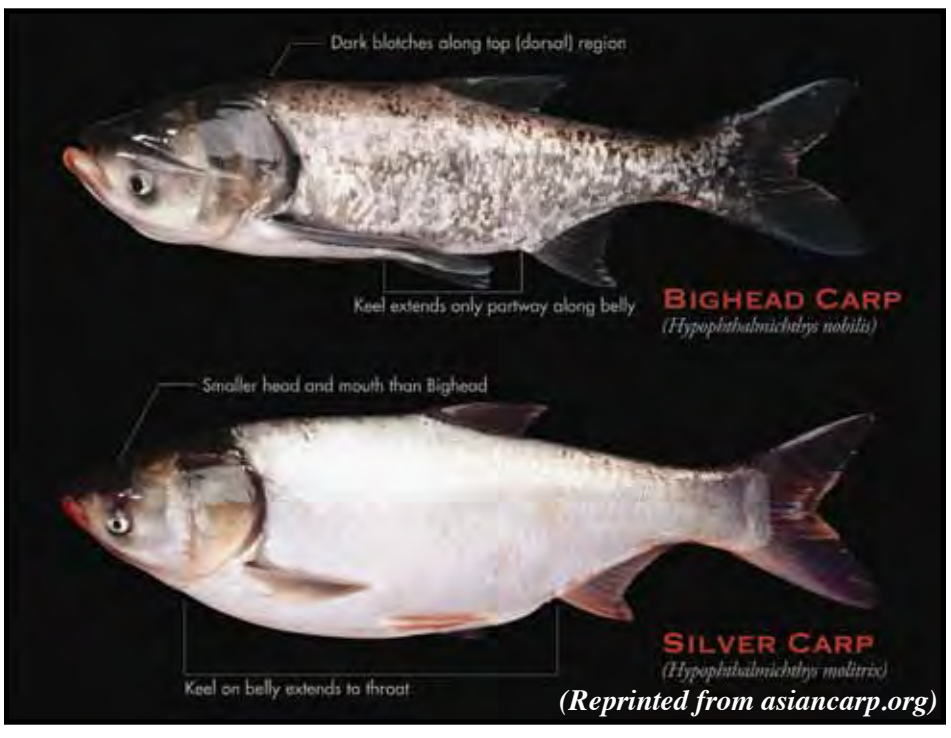
Led by the White House Council on Environmental Quality, the ACRCC includes the U.S. Army Corps of Engineers, U.S. Coast Guard, U.S. Fish and Wildlife Service, U.S. Geological Survey, U.S. Environmental Protection Agency, the National Oceanic and Atmospheric Administration, U.S. Department of Transportation, and all Great Lakes states, as well as the Great Lakes Fishery Commission, the Metropolitan Water Reclamation District of Greater Chicago, and the City of Chicago.

Reprinted in part from the Asian Carp Regional Coordinating Committee press release found at: www.asiancarp.us/news/rapidresponse0712.htm.

A video about Asian carp has been created by the U.S. Fish and Wildlife Service's Midwest Region. This video will teach you how to identify bighead and silver carps using grass carp and common carp as points of comparison. You can find the video at *http://youtu.be/B49OWrCRs38*.



Lake Calumet in Chicago, Illinois is located adjacent to lower Lake Michigan, as seen in the right hand side of this photo, and is connected to Lake Michigan via the Calumet River. (Photo courtesy of GoogleEarth)



(Reprinted from asiancarp.org)

Ceded Territory News Briefs

Wisconsin elk management plan under review

Clam Lake, Wis.—In the ongoing effort to increase the size of northern Wisconsin's elk herd, state and tribal wildlife managers are considering amendments to the elk management plan. Revisions include supplemental releases of additional elk, expansion of elk range, the assisted dispersal of current elk, and the recognition that tribal involvement in the plan is needed.

Based on consultation with other eastern states that manage elk and annual herd monitoring in Wisconsin, biologists are interested in adding around 200 animals to the Clam Lake herd over five years. Designated elk range would expand with the new arrivals—mainly to the south—to include the Flambeau River State Forest and adjacent county forests. A plan amendment also calls for continuation of the assisted dispersal project launched in 2010.

The proposals come as officials update the Clam Lake Elk Management Plan. State wildlife managers are seeking to revive the dormant Black River Falls elk reintroduction plan as well. Kentucky, which has a robust, disease-free elk population, is a likely source

Jonathon Gilbert, GLIFWC wildlife biologist, cautions that elk introductions should only occur if disease, like chronic wasting (CWD), does not threaten new elk. Imported elk must pass rigorous health checks and more should be known about CWD detection in Washburn County, Wis. he said. A deer in that county tested positive for CWD earlier this year. It was the first wild deer discovered with the fatal disease in the Wisconsin ceded territory. **(COR)**

Mille Lacs walleye population studied

Carlton, Minn.—The Minnesota 1837 Ceded Territories Fisheries Committee (Fisheries Committee) met at the Black Bear Resort and Casino in July to share data and to discuss the management of the shared fishery in Mille Lacs Lake.

The male walleye population in the lake was the subject of some discussion. A working committee composed of both tribal and state biologists was formed to further study the status of male walleye and report to the next meeting of the Fisheries Committee in January. **(SE)**

Judge rules Flambeau mine violated federal clean water laws

Ladysmith, Wis.—On July 24 U.S. District Judge Barbara Crabb ruled that the Flambeau Mining Company violated the federal Clean Water Act at the site of its former copper mine near Ladysmith, Wisconsin.

The company was sued for allowing copper and zinc to enter Tributary C, a small stream that feeds into the Flambeau River.

Judge Crabb issued a fine of $275 but also noted the discharges were small and commended the company for its management of the site.

"The infiltration basins that Flambeau Mining Company has recently installed to control contaminated runoff look like an improvement. We hope that the basins work and that copper levels will continue to decline," said John Coleman, GLIFWC Environmental Section leader.

The suit was filed by Wisconsin Resources Protection Council, the Center for Biological Diversity and Laura Gauger. **(SE)**

Wisconsin Democrats to revisit mining law

Madison, Wis.—Democrats in the Wisconsin Senate are considering a new mining bill for the next session—one that would not relax environmental standards, but would speed up the permit process, according to a WTAQ report on August 4.

Tim Cullen (D-Janesville) will head the Senate Select Mining Committee. Cullen says he will seek input from all affected parties, including Indian tribes, whom he claims the Republicans neglected in an earlier attempt to revise the mining bill.

The earlier bill to revamp mining laws was killed in the Senate when Republican Dale Schultz broke from his party's stand and voted against the bill in opposition to the relaxation of environmental protection laws.

The defeat of the Republican sponsored bill was followed by Gogebic Taconite abandoning its plans to open a taconite mine in the Penokee Hills in a location that could significantly impact the Bad River watershed. **(SE)**

Tribal hatcheries boost fish stocks

Inland lakes, rivers and Gichigami benefit

By Sue Erickson, Staff Writer

Odanah, Wis.—In 2011 tribal fish hatcheries in the northern Midwest stocked 43,006,077 walleye fry and 2,248,381 walleye fingerlings in inland lakes, rivers and Lake Superior. And in 2012, they are in the process of doing it over again.

Like the spring treaty fishing season, the collection of eggs for tribal hatcheries was drawn out this season. The unprecedented early ice out put many hatchery staff in motion in May, but their nets captured few walleye ready to spawn at the onset.

Collection of eggs is, of course, critical to the success of hatchery operations, so persistence over a period of weeks finally helped fill bell jars and incubators. "What normally took us several days to collect, took us several weeks this year," says Tim Wilson, Bad River fisheries biologist.

At Lac du Flambeau, Hatchery Manager Butch Chapman reported egg collection significantly lower this spring. "We're down about 10 to 12 million eggs, probably because of the early ice-out. The fish were still hard and just not ready," he comments. "Collection of musky eggs was also way down."

Eggs are milked from female fish before they are returned to the water. The eggs are fertilized and then carefully incubated until the fry hatch. It is a watchful procedure as any failure in the system can easily bring the whole process to a catastrophic end.

Thirteen tribes in the Midwest region maintain hatcheries, including seven of GLIFWC's eleven member bands.

While walleye remains the primary target species for many tribal hatcheries, other species are also reared, including yellow perch, muskellunge, brook trout, brown trout, and rainbow trout. Both Keweenaw Bay and Red Cliff produce coaster brook trout in a long-term effort to restore the species in Lake Superior tributary rivers, and Keweenaw Bay's hatchery still turns out lake trout in addition to other species.

2012 stocking efforts

At this date, many of the tribal hatcheries have released fish, but have also retained some for extended growth, so the figures below do not always include the total for the 2012 year stocking effort.

The **Lac Courte Oreilles hatchery** stocked 104,000 fingerling walleye into seven Sawyer County waterbodies this summer, but also continued to rear fingerlings for a fall stocking of 6 to 8-inch walleyes. According to Paul Christel, LCO fisheries biologist, on average the tribe stocks about 18,615 extended growth walleyes annually, and it looks like the hatchery will either maintain or exceed the average this season.

Christel says they generally stock the extended growth walleye in waters with poor natural reproduction, apparently due to predation from and competition with largemouth bass, a growing problem in walleye lakes. "One such area would be the Chippewa Flowage," he says. "The number of lakes falling into this category impacted by largemouth bass continues to grow. We have seen little evidence of survival of small fingerlings stocked in such waters, making the stocking of extended growth walleye necessary."

Christel notes that production of extended growth fish is expensive. "The farther the 'scales tip' towards largemouth bass domination in these waters, the more expensive attempts to restore balance become…and the more questionable the success of such efforts become," he says.

By mid-June, the **Bad River hatchery** successfully seined thousands of walleye fingerlings from its four huge rearing ponds to once again stock the Kakagon and Bad Rivers. This year the tribe stocked 391,000 walleye fingerlings in June and 2.5 million fry earlier this spring. In addition, 58,800 yellow perch fingerlings were released in July.

The **Red Cliff hatchery** stocked 6,000 two-year old coaster brook trout and 2,000 one-year old coasters in May and June, while also carrying 161,435 walleye fry in the hatchery for later release.

For its part, the **Sokaogon/Mole Lake hatchery** stocked 3.1 million walleye fry into Lake Metonga and 400,000 walleye fry into Post Lake this summer.

By mid July the **Lac du Flambeau hatchery** released 13,350,000 walleye fry into 23 lakes and 200,142 walleye fingerlings into 11 lakes; however, more were retained in the hatchery for extended growth prior to release.

The **Keweenaw Bay (KB) hatchery** in Michigan reared about 42,000 Jumbo River strain brook trout yearlings. In addition about 30,000 coaster brook trout were reared and stocked by the US Fish and Wildlife Service on behalf of Keweenaw Bay Tribe to date.

KB's hatchery also reared and stocked two strains of lake trout, planting about 36,000 fry into Keweenaw Bay. This was complemented by the stocking of 700 lake trout brood stock from the Iron River National Fish Hatchery on behalf of

(See Tribal hatcheries, page 23)

Fresh fish for Lake Superior! Red Cliff hatchery crew transport and release hatchery reared brook trout into Gichigami! (Photo submitted)

A total of 6,000 two-year old brook trout were released by the Red Cliff hatchery, about half of those are tagged fish. (Photo submitted)

Seining for walleye fingerlings in one of four rearing ponds, Bad River's hatchery crew transported and stocked 391,000 fingerlings in the Bad and Kakagon River in June. Earlier 2.5 million walleye fry were also planted. (Photo by Sue Erickson)

Bad River-reared walleye fingerlings. (Photo by Sue Erickson)

St. Croix's farm-raised walleye program to upgrade

Includes new water, new recruits

By Charlie Otto Rasmussen, Staff Writer

Siren, Wis.—Nestled in the rolling hills of St. Croix Ojibwe country, an unlikely pothole of water lays claim as the onetime home to nearly 2.4 million walleye.

"The water quality is good; the access is good. It's been a winner," said Don Taylor, St. Croix natural resources supervisor.

Now after 22 summers of service as a walleye nursery, the pond is being put out to pasture. Actually, it's already there. While it appears on maps as a named lake, it's essentially a farm pond replete with wandering cattle inside a barbed wire pasture fence. Taylor said contractors are finishing construction of two new fish-rearing ponds for the 2013 season in the tribe's Gaslyn Lake Community.

"The landowners here have been very gracious," Taylor said from the shore of 'Hedlund Pond.' "I don't know what we'd have done without this spot." Shaped like a figure eight, the shallow half accommodates cows and frogs while the deeper circle of water is the summer home of freshly hatched walleyes called fry. For access to the deep end, which covers about 10 acres, St. Croix pays a $500 annual rental to the Hedlund family.

In an exceptional year, the pond yields more than 325,000 walleye fingerlings for stocking into area lakes. But that number has trended downward in recent years. Taylor said the drop in production seems to mirror changes in the aquatic plant community and an elevated volume of heavy mud sediment.

St. Croix's fingerling net-and-transfer efforts annually run from early July to the end of August. Fisheries technicians employ a 500-foot seine net to corral walleyes that average around two-inches long on early pulls and can extend out to eight inches by the end of the stocking season. Prior to release into local waters, fingerling samples must first pass a pair of health checks from the La Crosse Fish Health Center and a veterinarian.

"Our walleye stocking focus is on lakes speared by St. Croix. Lakes without natural walleye reproduction are the priority lakes," said Taylor. From a 280-gallon hatchery truck, tribal staff distributes fish throughout the region including lakes in Burnett, Washburn, Polk and Barron Counties. The releases afford harvest opportunities for treaty spearers and state-licensed anglers alike.

Learning opportunity

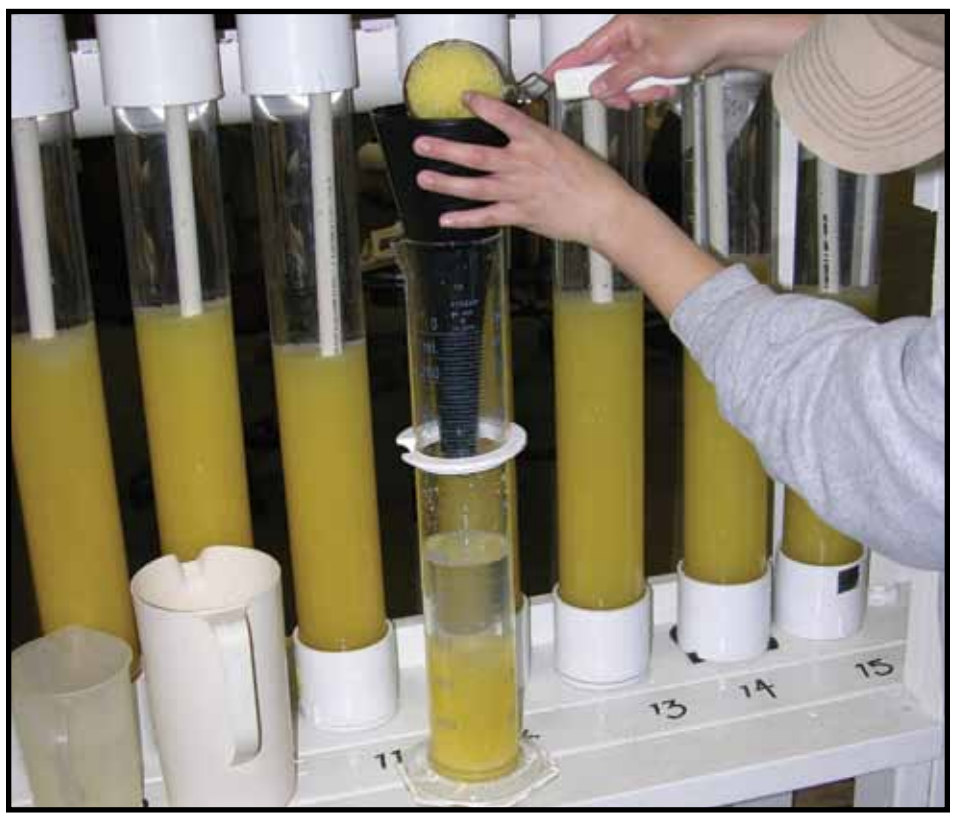
A pair of St. Croix teens—Damon Bearheart and Jade Merrill—worked alongside fisheries staff twice weekly for much of the past summer. Participants in a tribal youth employment program, the young men said that the opportunity to work outdoors drew them to the fisheries program.

"I like to hunt, to fish, to be outdoors," said 16-year-old Merrill. "Working here can be pretty tough, walking and slipping on rocks. It's a new experience. I like that it [work duty] isn't always the same; it changes."

At Hedlund Pond, Merrill and Bearheart took to the water in chest waders, guiding the seine to shore where trapped fingerlings are weighed and loaded onto the hatchery truck. In another wader-wearing task, they helped conduct a fisheries survey on Loon Creek using shocking equipment and dip nets.

(See Farm-raised walleye, page 22)

St. Croix fisheries staff employ a 500-foot seine net to capture walleye fingerlings from Hedlund Pond near Siren, Wisconsin. (Photos by Don Taylor)



Incubators hold millions of walleye eggs to be tended and hatched at the St. Croix Tribe's hatchery. Many will be reared to fingerling size and stocked in lakes commonly used by the tribe during the spring spearing season.

Tribal hatcheries stock over 50 million fish into on and off-reservation waters in 2011

Tribe Hatchery/Rearing Component	Walleye Fry	Walleye Fgl.	Muskellunge Fry	Yellow Perch	Lake Sturgeon	Whitefish	Brook/ Brown Rainbow Trout*	Lake Trout	White Sucker	Largmouth Bass	Total
Bad River	3,100,000	612,111		188,375							3,900,486
Grand Portage	200,000					200,000	50,000				450,000
Keweenaw Bay	306,500	41,370					141,064	78,282			567,216
Lac Courte Oreilles	1,200,000	69,637	112,000						725,300		2,106,937
Lac du Flambeau	30,000,000	238,242	60,000		217		43,286		4,000,000		34,341,745
Leech Lake	8,099,577	112,712				1,141,315					9,353,604
Menominee	100,000	7,059			70						107,129
Mole Lake		4,000									4,000
Red Cliff		5,500					13,500				19,000
Red Lake		10,000			5,000		10,000			18,000	43,000
Sault Ste. Marie		889,854									889,854
St. Croix		115,263									115,263
White Earth		142,633			13,000						155,633
TOTALS	**43,006,077**	**2,248,381**	**172,000**	**188,375**	**18,287**	**1,341,315**	**257,850**	**78,282**	**4,725,300**	**18,000**	**52,053,867**

**Total number of one or combination of trout species*

A study of giizhik in nine northern Wisconsin counties

By Erin LaFaive, For Mazina'igan

Eau Claire, Wis.—I have studied northern white cedar (giizhik) in a way most scientists do not. I drank of its tea, inhaled its smoke, put it in my home, harvested it, smudged and prayed with it. I dreamt about it, studied it, wrote about it and talked about it. It became a part of my life.

In 2005 on the Lac Courte Oreilles (LCO) Reservation I attended a conference hosted by Abiinooji Aki about using aspects of the Ojibwe culture to cope with death and grief. I thought this conference would help me identify an area of research for my master's degree that would incorporate my interests in ethnobotany, Great Lakes Indian culture, and Geographic Information Systems.

One component of the conference was to take part in a sweat lodge ceremony, which I had never experienced before. Prior to the ceremony, I was given some idea of what to expect. For example, if I needed relief from the heat, I was to put my face near the giizhik lying on the ground. At one point I did just that, and instead of smelling giizhik, I smelled balsam fir. After the ceremony I asked why balsam fir was used instead of the cedar. It was explained to me that there wasn't enough time to find cedar before the ceremony because it was too far from our location. I thought that was curious since we were surrounded by ideal habitat for giizhik to grow—swamps and forests. I knew I wanted to learn more about giizhik uses and population dynamics in the area surrounding LCO. It was from this conference that I decided to pursue a project on giizhik.

Karen Danielsen's 2002 GLIFWC study about giizhik became my guide for this research project. She used a combination of USDA Forest Service (USFS) data and interviews with tribal members for her data collection, and I used the same method. For Danielsen's study, data were available for Wisconsin for the years 1983 and 1996. By the time my research project began, data were available from giizhik surveys taken over a period starting in 2000 and ending in 2004 (known as the 2004 throughout this article). After my master's thesis was completed, I monitored the USFS site for updated giizhik numbers and I was able to include data taken from a period starting in 2005 and ending in 2009 (known as the 2009 throughout this article).

County	1983	2009	Percentage
Ashland	10,782,608	9,671,127	-10%
Bayfield	2,752,174	2,595,183	-6%
Douglas	3,329,533	1,953,058	-41%
Price	4,775,394	4,209,427	-12%
Rusk	411,697	130,127	-65%
Sawyer	1,906,105	1,314,921	-31%
Washburn	680,607	33,347	-95%

Table 1: A decrease of live giizhik stems on timberland from 1983 to 2009.

Given the data we have, it suggests that these counties shown in Table 1. have seen a decrease in giizhik when comparing the 1983 to 2009 data, from as low as 6% in Bayfield to as high as 95% in Washburn (Table 1). Barron County hasn't had giizhik in study plots for any of the study years. Ashland and Price County maintained the highest number of giizhik trees during each study year, although they experienced decreases as well. From 1983 to 2009, Washburn and Rusk County had the greatest reduction of giizhik stems at a reduction of 95% and 68% respectively. A 95% reduction of giizhik seems staggering; however, we must keep in mind the limitations of the USFS sampling process. Only the trees within the study plots are counted rather than every tree in the county.

However, looking at the same study plot year after year is hopefully representative of the same conditions county-wide. FIA inventories are commonly designed to meet the specified sampling errors at the state level of a 67% confidence limit (one standard deviation). At the county level the maximum allowable sampling error is 9.5% at the 67% confidence level.

The numbers from the 2004 and 2009 dataset are the most encouraging of all the data because they show a slight increase in giizhik trees (with the exception of Washburn and Douglas County albeit a much smaller decrease). However, giizhik populations are still far from 1983 levels.

After examining the population of giizhik trees, I wanted to analyze the population in more depth by looking at the number of trees within certain diameter size classes. These results can provide information about regeneration. I used the same diameter size classes as Danielsen did in her 2002 study. Small diameter is considered a sapling (less than 5 inches), medium size is considered poletimber (5-9 inches), and large diameter is sawtimber (over 9 inches).

From 1983 to 2004 data, all counties experienced a decrease in saplings and poletimber trees ranging from a 25% to 100% decrease. Sawtimber trees show the slowest decline from 1983 to 2009; in fact some counties have shown an increase (Table 2). If sawtimber trees are surviving and in some cases thriving, why are saplings decreasing? It seems that sawtimber trees would provide seeds to make saplings, but that's not what the data suggest. Danielsen's study reveals that giizhik populations are affected by high intensity of white-tailed deer browsing, loss of habitat due to land development, and various other environmental threats. These findings are consistent with other studies that have examined the decline of giizhik populations.

Giizhik is a native shrub or tree growing to a height of 33-36 feet tall. Its bark is gray to reddish-brown, fibrous, and separated into flat, connected ridges. Leaves are evergreen, scale-like and flattened into sprays opposite in alternating pairs (in 4 rows), bright green above and pale green below, sometimes becoming yellow-brown in winter, with a spicy fragrance when crushed. The small oblong cones are less than an inch long. (Photos reprinted from treeplantflowerid.com and Florafinder.com)

County	1983	2009	Percentage
Ashland	2,337,386	3,450,491	+48%
Bayfield	699,469	1,496,287	+114%
Douglas	672,461	949,759	+41%
Price	757,941	1,273,783	+68%

Table 2: Sawtimber giizhik trees on timberland from 1983 to 2009.

When comparing the most current study years, 2004 and 2009 showed an increase in saplings in some counties: Ashland (+25%), Douglas (+18%), and Price (+6%). For medium-sized trees an increase is taking place in Ashland (+24%), Bayfield (+6%), Price (+15%), and Rusk (+94%). These are encouraging numbers because it reveals that some regeneration is taking place. The 2004 and 2009 data reveal an increase in sawtimber-sized trees for all counties except Douglas (-77%) with Washburn having the largest increase at 89%.

Maryellen Baker, Founder and Director of Abiinooji Aki, assisted with this project by finding local tribal members interested in identifying their concerns, uses, meaning, and harvesting activities of giizhik. In 2006, we interviewed six tribal members living in the LCO area. Five out of the six interviewed said they remember more cedar availability in the past than they currently encounter while harvesting.

I voice taped each interview and subsequently transcribed each interview. One technique I used to analyze the interviews was to count the frequency of key words. For example, the term "cedar" was used the most at 174 times. This was important to determine the interviews were on target with the subject at hand. Other key words in order of frequency used were: medicine(s)/medicinal, spirit(s), deer, Sweat Lodge(s), tobacco, Great Spirit/Creator/God.

What was the reasoning behind this method? It quantifies for the scientific community how important giizhik is to the tribal members interviewed. During the interviews I came to understand the deep importance of giizhik as a sacred medicine. With this understanding combined with the knowledge that population numbers have declined significantly since 1983, giizhik continues to be a great concern of mine.

These interviews were conducted in hopes of incorporating Traditional Ecological Knowledge (TEK) and the scientific data above. I found it was difficult to quantify what people feel in their hearts, lessons taught by oral traditions, and what they observe on a daily basis and fit it into a scientific paradigm where numbers and objective data are held in high regard.

Even with this difficulty there is great value in using both of these methods at the same time. Having various perspectives meeting side-by-side allows input from all stakeholders of the land to be heard. Stakeholders may have different ideas about how to manage land and natural resources and what the definition of "land" means to them. Partnerships are especially important in an area that contains multiple governing bodies such as tribal and state governments.

I will continue to monitor the USDA website and analyze the giizhik population in the counties surrounding LCO. I'm lucky to have four giizhik trees in my new backyard. They provide good medicine and remind me to keep watching.

***(Editor's note: Erin LaFaive lives in Eau Claire, Wisconsin, tending to her family and garden. She is the Horticulture Educator for Eau Claire County UW Extension and can be reached at* elafaive@gmail.com.)**

Lac Vieux Desert fish community gets a close look

By Mark Luehring
GLIFWC Inland Fisheries

Odanah, Wis.—Lac Vieux Desert Lake is one of the most popular lakes in the 1842 ceded territory, drawing interest from Lac Vieux Desert (LVD) and Mole Lake (MLK) band members exercising treaty rights, anglers from Wisconsin and Michigan, and a variety of recreational users. This year marks the 10th and final year of a plan to restore wild rice to the lake.

As part of this plan, partner agencies including Great Lakes Indian Fish and Wildlife Commission (GLIFWC), LVD, MLK, Michigan Department of Natural Resources (MDNR), United States Forest Service (USFS), UW-Stevens Point (UWSP), and Wisconsin Department of Natural Resources (WDNR), are working together to conduct the end of the plan sampling to determine whether there have been any major changes to the fish community.

Fish community sampling started this spring with WDNR and MDNR conducting a fyke net survey that began around ice-out. Fyke nets were set to gather information on relative abundance of gamefish species and to mark walleyes for an adult population estimate. Shortly after the peak walleye spawn, WDNR and GLIFWC coordinated an electrofishing survey along the entire shoreline for the walleye recapture run. Biologists will use this information to calculate adult walleye abundance.

A second electrofishing run was conducted in mid-May by GLIFWC and WDNR crews to sample gamefish and panfish during a time when bass are more likely to be in the shallows. GLIFWC and WDNR crews will return this fall to sample juvenile walleye.

While wild rice restoration has generally been successful during the 10-year period, concerns have been raised in recent years about failing walleye natural reproduction. Biologists hope to continue to evaluate contributions of natural reproduction to the walleye year-class this fall. Despite poor natural reproduction in the last few years, early returns from the walleye population estimate conducted this spring suggest that the adult population is relatively stable, perhaps thanks in part to stockings of extended growth walleye by the Lac Vieux Desert Lake Association and walleye fry by LVD.

In addition to the fish community sampling, recreational use and fishery harvest will be monitored in 2012. GLIFWC creel clerks and wardens monitor the spring spearing harvest yearly by the LVD and MLK bands. This year, otoliths were collected from some of the speared walleye to be aged at UW-Stevens Point. MDNR will conduct a creel survey to estimate angling effort and harvest. Recreational users on the lake will also be counted and numbers will be compared to previous surveys to see if there have been any major changes in use patterns.

All of the fish community, fish harvest, and recreational user information can be compared to the baseline data gathered in 2000-2001 and the mid-plan data collected in 2006 to see whether there have been major changes in the fish community during the wild rice restoration process.

During the 20th Partners in Fishing gathering June 6-7 at Lac Courte Oreilles, tribal leaders recognized event co-creator Robert Jackson (center) for his support of tribal natural resource management efforts. Jackson, a Bureau of Indian Affairs biologist, developed Partners with Dick Rose following the launch of joint walleye fisheries assessments by tribal, state and federal biologists. The annual gathering helps develop better working relationships between agency personnel, resulting in high quality fisheries across northern Wisconsin. Active and retired Green Bay Packers football players have participated in the 2-day events since 1998. Jackson, flanked by Tom Maulson and Mic Isham, tries on a Packers helmet signed by a number of players. (Photo by Dan Soulier)

PENOKEE: Explore the Iron Hills exhibit

By Sue Erickson, Staff Writer

"Our exhibit is a collective exploration of the past present and possible futures for the Penokee Hills."
penokeearts.wordpress.com

Ashland, Wis.—The sights, sounds and spirit of the Penokee Hills are transported through the **PENOKEE: Explore the Iron Hills** exhibit showing at the Northern Great Lakes Visitors Center, Ashland, Wisconsin through February 1, 2013. A program and reception kicked-off the show on June 23rd with many of the 20 participating artists present.

Inspired by the recent controversy over the proposed taconite mine in the Penokee Range, the artists decided to explore their own relationship to the Penokees. "Our goal was to share our artistic expressions about the Penokees and help people think about this beautiful region with a long term view. We wanted to help diffuse some of the rhetoric around the iron mining issue and engage peoples' hearts and minds," states Terry Dalton, exhibit coordinator.

A steel sculpture by artist Sara Balbin entitled Waved Washed highlights a waved-washed granite stone.

The resulting exhibit encompasses a wide range of responses using a variety of artistic mediums including visual, audio, and written. Numerous paintings and photographs capture the many moods, scenes and inhabitants of the Penokees, while actual recordings of nature's voice in the hills add another dimension to the experience. Pieces also include sculptures and jewelry composed of elements from the Penokees—all viewed with the background sound of Frank Montano's flute.

The exhibit offers the viewer a history of the region as well as a guided tour map with directions to specific scenic sites in the Penokee Range, many of the places where contributing artists found inspiration for their work.

"For me the Penokees are a touchstone of what's valuable in the northwoods," says Dalton, who is both an artist and a biologist. "Whether I am hiking along the tumbling waters of Tyler Forks or sitting on the windblown outcrop on top of Corrigan's Lookout, from the Penokees I always return home with a sense of hope."

Iron in the Hills painting by Terry Dalton depicts the energy of an iron mine worker, but catches some indecision in his expression. Also, shown is one of several weavings on a jacquard loom by Mary Burns. The fine, intricate weavings are based on photos from the mining era.

Inset: Inukshuk Inspiration composed by Diane Dalton of pieces found in the Penokee Range is modeled after stone trail markers used by the Inukshuk. Dalton says it reflects her hopes and fears for the future of the Penokee Range.

(Photos by Sue Erickson)

Sharing traditional knowledge—harvesting black ash

By Kathy Kae, For Mazinaigan

Brutus, Mich.—At black ash gatherings, grandmothers smile as they hear the pounding of the log begin. You can see a happy look in their eyes as they tell stories of when they were little watching their grandmothers weave baskets with all their splints spread out around them. More and more we are returning to our traditional ways, and we value our elders' stories as they see younger generations continuing what was once a part of their lives.

There are all types of baskets such as pack baskets, market baskets, hamper-style baskets and smaller fancy baskets. Some basket-makers use color either from natural dyes or store bought dyes. Others prefer to stay with the original color of the wood, which allows the baskets to be cared for properly by dipping in water at least once yearly to keep it from becoming brittle. (Dyed baskets bleed when dipped.) Over time, the sun deepens the natural color to a beautiful golden brown hue, and if the basket is well cared for, it can last up to 100 years!

The black ash log is being scored to determine the width of the growth ring that will be lifted.

With the flat rounded edge of the axe, every inch of the strip is pounded at least two times.

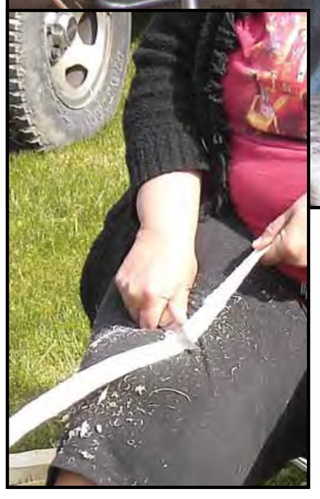
So what does it take to make a basket? You start with a few friends and laughter and mix that with a lot of hard work, commitment and creativity. But first, you start with the tree.

There are several different types of ash, as well as crosses of ash. White ash is commonly used to make handles but is difficult to process and use for weaving. White and black ash is a common mix but what you are looking for when weaving is a true black ash.

Using an increment borer, a small sample of the growth rings is taken from the trunk to determine the proper thickness of the rings. This is the least invasive way to check them. Before cutting, asemaa (tobacco) is put down to show proper respect and to thank the tree for its gift of life. The proper tree is then cut to desired lengths and carried out.

When considering a beautiful black ash basket, it is important to remember that the processing of materials is 75% of the work. Depending on the size of the log, it can take several days to pound and prepare all the splints. Therefore, it is wise to show great appreciation to those who are willing to help pound and process, not only to value their hard work, but so you don't find yourself alone next time it comes to pounding!

To keep the log as fresh as possible, the bark is left on until the pounding begins. (In the spring, the bark pops nicely off the tree and is used for making bark baskets.) Next, the log is scored to determine the width of the growth ring that will be lifted. With the flat rounded edge of an axe (some people use a metal pipe) every inch of the strip is pounded at least two times, sometimes three. This not only makes the growth rings pop off the log, it also processes the strip and will help with the splitting. Traditionally, a wooden club was used for this. However, it required that the log be pounded much more intensely than with metal.



Upper photo: Strips are separated and each put into a "splitter." The top of the strip is scored halfway across with a knife and the strip is pulled up and outward, splitting the growth ring down the middle. These are called splints.

To the left: Each splint is left with a smooth inner side and a rough outer side. A knife is used to shave the outer side smooth.

Photos by Kathy Kae

For each strip that is pounded down the length of the log, several growth rings pop off together. The strips are then separated and each put into a "splitter" which is a wooden vise held between the knees. The top of the strip is scored halfway across with a knife and the strip is pulled up and outward, splitting the growth ring down the middle. These are called splints.

Each splint is left with a smooth inner side and a rough outer side. A knife is used to shave the outer side smooth. Today, a rotating sander is often used but it is important to know how to shave the strips manually with a knife to honor the traditional knowledge that our ancestors passed to us.

Finally, the splints are ready to cut for weaving, and you're equipped to make baskets. Oftentimes, sweetgrass is added to trim the top of the basket and basswood cordage is sometimes used for handles—especially for the bark baskets.

There you have it in a nutshell. If you are determined and dedicated enough, you'll do the hard work that will give you the materials needed to make wonderful black ash baskets that will last a lifetime!

A note on the responsibility of basketry: My mentor, black ash basketry master artist and Michigan Heritage Award recipient, Wasson (Renee) Dillard from the Little Traverse Bay Band of Odawa in northern Lower Michigan stresses the importance of honoring the traditional knowledge of our ancestors and of making sure we show proper respect for the gifts the Creator has given us. We do this by offering asemaa to the tree and telling it what we are going to do with it and that it will live on in the form of baskets.

If there are leftover parts of the log that we don't use, we burn it in a clean fire and never in a fire that contains trash. The tree has given its life so we can make baskets, and we should honor it by respectfully disposing of what we don't use.

We also, as basket-makers, have a responsibility to educate others concerning the emerald ash borer and the devastating effects this invasive species has on ash stands. Before harvesting, you should have a clear understanding of what an infected tree looks like and if so, that it should not be moved. To find out more about the emerald ash borer, please see: *http://datcpservices.wisconsin.gov/eab/index.jsp*.

Kathy Kae is available to do black ash basket workshops. Phone—989-436-3403; email—*kathykae47@gmail.com*.

Surveys indicate a struggling manoomin crop

In 2008 Gary Lake, Oneida County, produced a healthy crop of manoomin. Not so in 2012. (Photo by Peter David)

In 2012 Gary Lake, Oneida County, appears to be a near failure in manoomin production. (Photo by Peter David)

(Continued from page 1)

Ecological Knowledge experts and other natural resource agency specialists for their comments and input. If all stays on schedule, we will have another draft version completed later this fall.

And finally, new this ricing season is a brochure called *"Harvesting Wild Rice in a Good Way,"* aimed as an introductory guide for novice ricers. Laid out in a series of questions and answers about the ricing season and the technique involved in harvesting, the brochure will hopefully create a deeper appreciation of the ricing culture and help ensure that proper and respectful care is exercised during harvesting. Addressing basic rice harvesting questions, as well as showing traditional finishing techniques, this brochure will act as a complement to the wealth of other educational materials made available through GLIFWC. Brochures and other publications are available online at *www.glifwc.org* click "Educational Materials."

So, just as we patiently anticipated the first sign of the floating leaf stage in the spring, we will have to patiently wait with push poles at the ready to realize what our 2012 ricing opportunities will be. In the meantime, you are encouraged to get out, scout, and enjoy your traditional rice bed or maybe find a new one. Be sure to visit our website *(www.glifwc.org)* for more information and updates as the season gets closer. See sidebar for help in accessing the manoomin website.

Go to www.glifwc.org

Find up-to-date info on manoomin beds

Wondering about the status of rice on your nearby, date-regulated wild rice lake? Wish you had some insight into the potential ricing conditions? This information is just a few clicks away.

Go to GLIFWC's website at *www.glifwc.org* for information on rice waterbodies. Toward the bottom of the homepage (under GLIFWC's Focus Areas section), click on "Wild rice (manoomin)." Once on the new manoomin webpage, click "Manoomin Regulations" (on the left side). From here you will find a summary of off-reservation manoomin harvest regulations specific for each state revealed individually in drop-down text for Wisconsin, Minnesota, and Michigan. Included you will find regulation information on ricing permits, ricing sticks, boats, ricing hours, and general season openings.

Additional information on Wisconsin manoomin waters is displayed in maps that you can zoom in on using the scale bar on the left side of the image. Date-regulated lakes are represented with orange balloons that, when clicked on, will tell you the lake name and whether rice chiefs have determined an opening date.

This opening date information is also displayed in a table below the interactive map. You can scroll through the list of date-regulated waterbodies for lake opening information. Remember, rice waters not listed may be harvested whenever the rice is ripe.

It is important to remember that the "survey results" listed in the table are subjective observations regarding wild rice abundance. Sites are rated on a rough scale ranging from "poor to fair, average, good, and very good," *which is in comparison to other recent years for that site*. Understand that a "poor" year at a large site may support more rice than a "good" year at a smaller site.

Please use this information as an initial guide. You are encouraged to make your own visits to the sites you are most interested. Remember that an abundance of plants does not necessarily mean an abundance of seed produced, since weather, disease, pollination, and other factors can greatly influence seed production and harvest levels. HAPPY RICING!!! ***(Lisa David)***

Wisconsin's "Dr. Deer" recognizes tribes as co-managers

By Jonathon Gilbert, GLIFWC Wildlife Biologist

Odanah, Wis.—In June, James Kroll, (Deer Trustee) along with Review Committee members David Guynn and Gary Alt issued their final report and recommendations on Wisconsin deer management. The report is very expansive and covers a wide variety of topics from chronic wasting disease to population estimation techniques. There is much to consider in the report, some of which is easy to implement; others will prove more difficult.

Dr. Kroll met with the Voigt Intertribal Task Force twice, once in early spring and the second time in July. The tribes provided Dr. Kroll with their view of deer and deer hunting. Dr. Kroll took his experience with the tribes and tried to incorporate these views into his report. Although tribal co-management was a relatively new topic for Dr. Kroll and his committee members, it was well addressed in the report. In the list of final recommendations, the report states that the tribes serve as co-managers and their rights must be considered in the management of Wisconsin's deer. This is repeated elsewhere in the report, and it is these recommendations that are most important to tribes.

However, there are other places within the report that are worthy of mention. The report spends some time discussing the impacts of deer on forests and the impact of forests on deer. Deer management is seen as a balance between enough deer to meet tribal needs, but not so many as to diminish their access to forest plants. This is consistent with the tribal view of the forest as providing many different types of resources for harvest. Dr. Kroll maintains that the tribes must be involved in developing metrics to forest health and deer abundance.

The Wisconsin DNR has begun a process to implement the recommendations contained in the report. As was stated above, there is much contained in the report, some of which can easily be implemented, some of which cannot. As the WDNR moves forward with implementation, it will be critical that the tribes continue to act as co-managers of the deer in the Wisconsin ceded territories.

Dr. Kroll's full deer report is available online at *www.doa.state.wi.us/section.asp?linkid=239&locid=0*.

Tribes rally to protect ma'iingan

(Continued from page 1)

and unnecessary, especially since scores of wolves are already being removed from the landscape through poaching, accidental kills, and the legal take of wolves that depredate on livestock. From January through July, more than 40 depredating wolves have already been killed in Wisconsin alone.

"The tribes' goal is for all suitable wolf habitat to be fully occupied, thus enabling wolves to perform their appropriate ecological function on the landscape," Zorn said. "The State's goal is to reduce the population to a level the tribes consider ecologically unsound, culturally inappropriate, violative of their rights and potentially unsustainable."

Wisconsin officials divided the state into six management zones, each with a harvest goal established by the WDNR. Tribal leaders helped secure zero-quota zones for wolves on the state's largest reservations: Menominee, Stockbridge-Munsee, plus GLIFWC members Lac du Flambeau, Bad River, Red Cliff and Lac Courte Oreilles. Wolf hunting is prohibited inside these reservations—even where non-Indians own alienated tribal lands.

Michigan officials have not established a wolf season.

At their low-point in the western Lake Superior region, wolves were extirpated from Wisconsin by the late 1950s through taxpayer-funded bounties. What animals remained found refuge on Isle Royale and far northern Minnesota. Federal protection in the mid-1970s encouraged population growth, and packs from Minnesota recolonized Wisconsin and Upper Michigan through the end of the 20th Century.

Changing Climate, Changing Culture Institute brings teachers to Bad River & Apostle Islands National Lakeshore

By Sue Erickson, Staff Writer

Ashland, Wis.—"When I saw that we would be teaching about climate change this fall, I thought Ugghhh!!! How will we make this tolerable for the kids? Now I see that the cultural impact of climate change is how to approach middle school kids with this topic. I am anxious to bring kids up from central Wisconsin to see how climate change is impacting this region." Marathon County teacher Mia Chmiel's Tera Fieri's comment was one of 25 closing remarks following a four-day "Changing Climate, Changing Culture" teacher institute in July designed to look closely at climate change in the Lake Superior region, specifically the Apostle Islands National Lakeshore (AINL) and how climate change affects culture.

Beginning in a good way with a Water Ceremony led by Sue Nichols, Bad River Ojibwe, participants took a few moments to appreciate the sanctity of clean water prior to delving into the facts, figures and science of climate change. Hosted at the Northern Great Lakes Visitors Center (NGLVC), presenters focused on providing teachers the resources needed to include climate change in their curriculums. The workshop combined scholarly presentations with place-based observations in the AINL and on the Bad River reservation.

The potential for climate change to impact Ojibwe culture was a theme that ran through the workshop's agenda, beginning with a presentation by Jim St. Arnold, GLIFWC program director, and Damon Panek, AINL, on the inter-relationship of Native culture and the environment. Manoomin (wild rice) and wiigwaas (birch bark) were examples of resources traditionally relied on by the Ojibwe for food, utility and/or spiritual/medicinal needs. Both are resources impacted by climate change such as warming temperatures and flood and drought events.

Just to get a feel of it, teachers worked on assembling a small birch bark basket, guided by Lac du Flambeau's Joe Graveen. Using bark, sinew and awls, teachers' success varied widely, lending truth to the adage that it can be "harder than it looks!"

Dr. William Bland, UW-Extension, UW-Madison Department of Soil, and Wisconsin Initiative on Climate Change Impacts, brought the nitty-gritty science and research elements into the discussion during segments scattered throughout the four days. Along with discussion, Bland provided a host of resources for teachers to research and share with their students.

Outside the "classroom" setting, the workshop found its way to the Bad River reservation for a stop at GLIFWC offices where Jim Thannum, planning and development director, shared information on the impacts of climate change on numerous resources valued by the tribes, including waawaashkeshi (deer), waabizheshi (pine marten), and giigoonh (fish). Jim St. Arnold also shared language and culture resources developed by GLIFWC through Administration for Native Americans grants.

This was followed by a guided tour down the pristine Kakagon Sloughs with Bad River environmental staff, Cyrus Hestor and Naomi Tillison, who discussed issues relating to a changing climate as well as potential mining impacts on the sloughs, prime habitat for manoomin (wild rice) as well a host of wildlife. Manoomin is particularly sensitive to water level changes as well as susceptible to damage from invasive species, including carp and invasive aquatic plants.

Following a day at Bad River, the workshop headed to the Apostle Islands National Lakeshore office in Bayfield for a detailed presentation on climate change impacts on National Parks by Robert Krumenaker, AINL superintendent. Then it was off to Stockton Island for a "Climate Change Impact Walk" guided by Neil Howk, AINL assistant chief of interpretation and education. Teachers were able to observe how the island has already been impacted by climatic changes, such as falling lake levels as evidenced at docking facilities and changes in the Island's "tombolo," a unique shoreline feature.

Teaching the teachers, Joe Graveen, Lac du Flambeau, demonstrates birch bark basket assembly techniques as one segment of a four-day institute discussing climate change and its potential impact on cultures. (Photo by Sue Erickson)

By the end of the four days, teachers felt energized and prepared to return to classrooms, using the resources and information gathered. Commenting on the experience, Bayfield teacher Rick Erickson said, "The emphasis on place-based education in the classroom is crucial. We must focus on teaching about where we are."

A teacher from Madison noted that the "key to teaching climate change is through the humanities. I'm excited to go back to Madison and use what I've learned as a case study about what is happening. Climate change is here and you can see it in your own backyard."

Charged with developing a climate change service project for the classroom to be posted on the Parks Climate Challenge website *(www.parksclimatechallenge.org/)*, this group of dedicated teachers left for home with resources in-hand and inspiration to share some new-found information with students.

A "Traveling Song" by Bad River drummers Joe Dan Rose and Jerome Powless concluded the four-day workshop, sending everyone on their respective journeys with good thoughts and wishes for safe travel.

Catherine Techtmann, UW-Extension environmental outreach specialist, assisted by Sarah Traaholt, UW-Extension office operations manager, and Neil Howk, assistant chief of interpretation and education AINL coordinated the institute, which was developed cooperatively by UW-Extension, AINL, NGLVC, and GLIFWC. Interns Megan Brown and Evan Flom assisted throughout. The workshop was made possible by a Park Climate Change Challenge Grant from the National Parks Foundation, with additional support from the Wisconsin Coastal Management Program.

Wanted: more native scientists

UW program working towards filling the gap

By Sue Erickson
Staff Writer

Odanah, Wis.—How do we encourage students, especially native students, to pursue careers in science, technology and math (known in the educational paradigm as the STEM subjects)? This is an important question as tribes and tribal agencies like GLIFWC seek qualified native staff in the areas of biology, environmental science, research, and data analysis, have difficulty finding enough trained native people to fill these positions.

Why? And what needs to be done to get more native students into these important fields? Are there ways of learning that can better engage native youth?

Finding the answer (or answers) is one of the goals of the Earth Partnership for Schools (EPS) Indigenous Arts and Science (IAS) program from the UW-Madison Arboretum. In pursuit of this goal, EPS staff arrived at both the Red Cliff and Bad River reservations this spring to talk about methods of teaching and learning that may be more likely to engage native students specifically.

If change is needed in teaching methods, what should be done? This was the center of discussion during dialogues with native educators and community members. Among several themes was the need for students to feel respect for and an interconnectedness between themselves, the environment and the community.

Increased hands-on, outdoor activities were also suggested where students are led to investigate and form conclusions. Incorporating traditional native practices and exposure to indigenous knowledge sources and culture was another strong recommendation.

In order to engage each community, "Meet and Greet" sessions featuring an array of learning activities were hosted at both Red Cliff and Bad River by visiting EPS staff, including Crystal Tourtillott, IAS coordinator; Rick Hall, EPS program manager, and Fawn YoungBear-Tibbetts, EPS student intern.

Similar sessions will be held in all Wisconsin tribal communities as the team seeks input and suggestions to help develop curriculum that will be more native friendly and compel more native youth to enter scientific fields. "We are going to have to spend more time in the communities," YoungBear-Tibbetts acknowledged, "in order to get even more input from a range of people and better understand all the resources available in each community. It's obvious that to incorporate traditional ecological knowledge, teachers must come from the communities as well as the schools. The challenge will be to effectively mesh these two experiences and to help our children reach their potential in these fields and succeed as strong earth stewards."

Some of the careers available at GLIFWC based on STEM knowledge and training include: environmental biologist, botanist, fisheries biologist, wildlife biologist, manoomin biologist, data analyst, accountants, and conservation enforcement officers.

Ceded territories language revitalization going strong

By Jennifer Burnett, GLIFWC Outreach Specialist

Cloquet, Minn.—As Wezaawaabinesiik (Lucia Bonacci) completed the University of Minnesota-Twin Cities' Ojibwe Language undergraduate program, she wanted a way to continue her education in Ojibwemowin. As many language learners have discovered, the best way to learn Ojibwe is to be in an immersion setting with first language speakers, which is why she decided to start Ojibwemotaadidaa Omaa Gidakiiminaang (Let's speak Ojibwe here on our earth) Immersion Academy Camp. The camp is a way for language learners to spend an extended amount of time in full Ojibwemowin immersion with elders to build everyday Ojibwe speaking skills and create relationships with elders.

The second annual academy camp at the Fond du Lac Tribal and Community College (FDLTCC) was attended by 15 language learners of all ages. Participants had to write an essay and submit a video speaking about why they wanted to attend the academy, all in Ojibwemowin. Although students can earn credit at FDLTCC, there is no requirement to be currently enrolled in college to attend the immersion camp.

From breakfast to dinner every day for three weeks, there is no English spoken between the elders and students. Some of the daily activities include: nature walks, talking circles, language tables, grammar lessons, ceremonies, arts and crafts, joke telling, and elders sharing cultural stories as well as their own stories. These activities empower and honor the elders who love speaking their language and teaching it. Many students are excited to have an opportunity to reconnect with their Anishinaabe culture, both through the language and activities.

Wezaawaabinesiik and GLIFWC Language Assistant and Camp Co-director Zhooniyaa-ikwe (Michelle Goose) are not immersion teachers, but did receive some training from the Concordia Language Villages and the Consortium of Indigenous Language Organizations. They hope this camp will "inspire other language learners to continue their education and share the love of the language."

Netaa-niimid amoo-ikwe (Persia Erdrich, Academy Coordinator) believes this experience has a deep impact on everyone involved and credits it to the multigenerational aspect of the camp. Student Ode-amik (Maya Chacaby) speaks Ojibwe to her daughter. However, after her mom, Ma-nee Chacaby came to the camp and saw firsthand the passion of the language learners, she started speaking Ojibwe at home too. Netaa-niimid amoo-ikwe thinks stories like Ode-amik's are exactly why the Camp was started. "We want people to start their own [camp], their own learning opportunities, since no one else is going to do it for us."

Ojibwemotaadidaa Omaa Gidakiiminaang is funded and supported by the Minnesota Indian Affairs Council, Title III, and the Fond du Lac Band of Lake Superior Chippewa.

Gaagizhiikwazhiwed-bwaananaabekwe (Mary Moose) talks about how plants can be used as mashkiki (medicine) while on a nature walk. (Photo by Jen Burnett)

Learning the language at FdL

By Jennifer Burnett, GLIFWC Outreach Specialist

Fond du Lac Reservation, Minn.—The motto for the 4th Annual Ambe, Ojibwemodaa Language Camp is "Gidaa-aabi-jitoomin Anishinaabemowin Jibimaadiziimagak Anishinaabe izhitwaawin!" (We are here to keep the Ojibwe language and traditions alive!). With even more participants and activities than last year's successful camp, the Ojibwe language and traditions were very much alive over the four-day camp at Naagajiwanaang (Fond du Lac).

Demonstrating the construction of cornhusk dolls during the language camp is Steven Naganashe Perry. (Photo by Jennifer Burnett)

Each day at camp began with a talking circle so people could practice their Ojibwemowin with fluent speakers. After lunch, campers were able to participate in a variety of Anishinaabe izhitaawinan (Ojibwe customs) tents like making makakoon (birch bark baskets), bawa'iganaak (rice knockers), and baaga'akokwaanan (drumsticks) as well as trying their hand at embroidery beading and makizinikewin (moccasin making). There was also a rotating activity tent that featured one-day sessions on how to make flutes, dreamcatchers, and tobacco pouches.

This year's camp also featured corn husk doll making with Steven Naganashe Perry. According to Iroquoian legend, the corn spirit woman gifted the children with a corn husk doll. The doll entertained them as well as taught them to respect the corn. One day, the doll saw its reflection in the water and afterwards began to ignore the children in order to think about her beauty. The Creator decided to take the doll's face away so she would learn humility and help the children again. This is why corn husk dolls are made without faces.

Friday night featured an open mic night while Saturday's special event was a canoe race and small powwow. Coverage of the canoe race can be found on IndianCountryTV's website at *www.livestream.com/indiancountrytv/video?clipId=pla_50a94b64-7112-4807-a44f-2970479280ee&utm_source=lslibrary&utm_medium=ui-thumb*.

GLIFWC Board of Commissioners' Vice Chairman Chris McGeshick, Mole Lake/Sokaogon, and Heidi Cook, Misipawistik Cree Nation, Ontario, arrive at the Sandy Lake Recreation Area for the 2012 Sandy Lake feast and ceremonies. Cook, a student at the University of Winnepeg and also manager of her tribe's Traditional Lands and Waters Office, interned with GLIFWC's Division of Intergovernmental Affairs this summer for about ten weeks. She was particularly interested in observing the intergovernmental management of natural resources, so attended a number of meetings between GLIFWC tribes and federal and state agencies. (Photo by Jen Burnett)

Stamp sands at Keweenaw Bay

(Continued from page 6)

mercury and copper in sediments are high compared to uncontaminated areas of the lake.

Of equal concern are the effects that the addition of large amounts of fine material may have on the habitat of the region. Fish species often depend on spaces and small openings in and between rocks to provide shelter for eggs and young fish. The filling of these spaces by an influx of stamp sands could drastically reduce suitable habitat.

Tribes maintain a commercial whitefish and lake trout fishery, and harvest of these fish is an important cultural and economic activity for tribal members. Tribal fish harvesters have become increasingly concerned about the effects that the stamp sand deposits may have on Buffalo Reef.

Evidence shows that the sands are moving toward the reef, which will likely impact the continued ability of the reef to support ample spawning sites for whitefish and lake trout. The impairment of this reef could lead to a decline in these important species, impairment to federally guaranteed treaty reserved-rights, and an impact on the tribal communities that depends on this resource.

For more information on ACOE GLFER projects visit *www.glfc.int/glfer/projects.htm*

Teaching the children about the woods...

By Heather Naigus, GLIFWC Warden

"If you do not teach the children about the woods….if you do not teach them about our plant sisters and animal brothers…if they do not know their ways and their relationship with the outdoors, they will say there is no more Indian."

—An Anishinaabe elder

Sidnaw, Mich.—Over 75 campers and staff gathered in the heart of the Ottawa National Forest to honor their relatives and reconnect with the traditions of those who came before them. GLIFWC and the United States Forest Service (USFS) were proud to bring together 57 Native American youth from Michigan, Wisconsin, and Minnesota this summer for our fourth annual Onji-Akiing cultural camp experience. Nestled deep in the Ottawa National Forest in Sidnaw, Michigan, campers submerged themselves in indigenous knowledge and walked in the ways of their Native ancestors, while developing leadership skills and having fun.

Onji-Akiing, meaning "from the Earth," opened with a traditional ceremony, in which respect for "all our relations" was emphasized. Held beside the beautiful Lake Nesbit, home to the calling loons, students participated in both a pipe ceremony and a water ceremony, and some of the campers even drummed.

Throughout the week, students were treated to several hands-on activities that highlight treaty rights, such as fishing, archery, and native plant gathering. This year, b-b guns were introduced and offered students a chance to hone their skills on gun responsibility and hunting ethics. Students practiced the importance of teamwork with the low ropes course and overcame their fears with the challenge of the high ropes course. All the activities are based on the Medicine Wheel, addressing the physical, spiritual, mental, and emotional connections that are discovered through student involvement, and how they are related to our life on Mother Earth.

Students also participated in a service-learning project, where each clan constructed a bench from scratch. These benches will be placed around Lake Nesbit for visitors to enjoy and have a plaque on them that says "Onji-Akiing 2012." It touched the heart to witness how hard the students worked at the benches, in order to give back to the community of Nesbit, and they turned out beautifully.

GLIFWC warden Adam McGeshick shows Joslyn Beaulieu-Newago, Red Cliff, how to clean fish.

Another highlight this year was the focus on natural resources career exploration. Students participated in a "Career Fair" that consisted of various job stations in natural resources. Over 17 professionals from the USFS put their jobs on hold to travel to the camp and give the students experience in their careers in managing the outdoors. Students were encouraged to gather information in hands-on displays, ranging from wildfire, law enforcement, budget analysis, and soil science to recreation maintenance, botany, and water management careers—to name a few. Internships were also discussed with interested students. Next year, two more agencies have already signed on to participate.

Onji-Akiing also included the popular "Warrior Games," an Anishinaabe game traditionally used to teach skills in protection and homeland defense. The camp concluded with a feast and a Sweat Lodge experience, but the family of Onji-Akiing will never end; rather it continues to grow each year.

Jumping the high ropes is Asa Naigus mentored by Junior Counselor Kolton Houlton, Navajo. The high ropes course is one of several leadership experiences offered by GLIFWC at Camp Onji-Akiing.

During one of Camp Onji-Akiing's cultural components, campers and GLIFWC staff constructed a sweat lodge. Later, campers were introduced to a sweat lodge ceremony. (Photos by Heather Naigus)

The Creating and Learning Art In Native Setting (CLANS) Camp took place at Lac Vieux Desert from July 16–20, 2012. Approximately 35 participants, ages 10-17 attended the camp. Campers learned skills including quillwork, making black ash baskets, sewing moccasins, drumming, dancing, brain tanning, and beadwork from visiting elders and artists. GLIFWC provided logistical support for this camp by bringing the Youth Trailer with tents, sleeping bags, and tanning supplies for use by the campers. In addition, two GLIFWC wardens, Matt Kniskern and Lauren Tuori, assisted the instructors and acted as backup First Responders for the duration of the camp. (Photos by Lauren Touri)

On Monday, July 16, 2012, GLIFWC Conservation Officer Steven Amsler facilitated a canoe safety class for the Youth Conservation Corps (YCC) program in Huron Bay on Lake Superior near Skanee, Michigan. The YCC program is a collaborative effort between the Keweenaw Bay Indian Community Natural Resources Department and the Lake Superior Watershed Program to work on projects on and around Lake Superior to enhance the lake and its natural resources. Officer Amsler instructed four young adults from the YCC, along with their crew leader Joy Bender Hadley, and several staff from the Keweenaw Bay Indian Community Natural Resources Department. Topics Officer Amsler discussed and demonstrated consisted of: proper entrance and exiting of a canoe, life jacket use, different paddle strokes, and what to do in the event a canoe tips. Along the trip down the Silver River into Huron Bay, the group was able to locate and discuss wild rice efforts by the Keweenaw Bay Indian Community Natural Resources Department to plant and reintroduce the valuable staple to the area. Pictured above are, from the left, Joy Bender Hadley, Devin Chosa, Sierra Ayres, Brittany Nieskes, Jimmy Veker, and Derek Geroux. (Photo by Steven Amsler)

Connections: Northland College & GLIFWC

Promote Native Americans in natural resource careers

By Sue Erickson, Staff Writer

Odanah, Wis.—Encouraging Native Americans to take up careers relating to natural resource management continues to be a mission shared by both the Great Lakes Indian Fish and Wildlife Commission (GLIFWC) and Northland College (Northland), located in Ashland, Wisconsin. The two entities have been long-time friends and over the years found ways to move forward on that mission.

From its inception in 1892, Northland has welcomed Native students. This commitment is evidenced by Northland's vibrant Native American Studies program and the Native American Indigenous Cultures Center which is dedicated to supporting Native families in a way that encourages pursuit of higher education.

While offering a full spectrum of course work and career choices, Northland's star seems to shine brightest on preparing students interested in sustainability and preserving Mother Earth—an effort that requires trained experts in a variety of fields.

Located on the Bad River reservation and about twelve miles from Northland, GLIFWC, formed in 1984, is committed to assisting its eleven member tribes implement affirmed off-reservation treaty rights and protect the natural resources upon which the tribes depend. With common threads of purpose to promote sustainability, the two entities have assisted each other and benefited each other over the years through the Native American Studies program.

Internships is one example of mutual benefit, with GLIFWC supplying hands-on field experience for students while receiving needed extra help. GLIFWC's Great Lakes Section relies extensively on interns to perform the annual siscowet assessments in Lake Superior. Starting in 1996 with one Northland intern, the program has hired two student interns since 1998. The interns also assist with sea lamprey control as well as juvenile lake sturgeon assessments and harvest monitoring.

"The cost saving is significant for us," states Great Lakes Fisheries Section Leader Bill Mattes. "We wouldn't even be able to do the siscowet assessments without the benefit of interns."

Similarly, GLIFWC's wild rice monitoring program gets a significant boost from Northland interns. Over the past twenty-five years, most have seen Northland interns surveying about 40 ceded territory wild rice lakes each summer, monitoring the growth and abundance of wild rice beds.

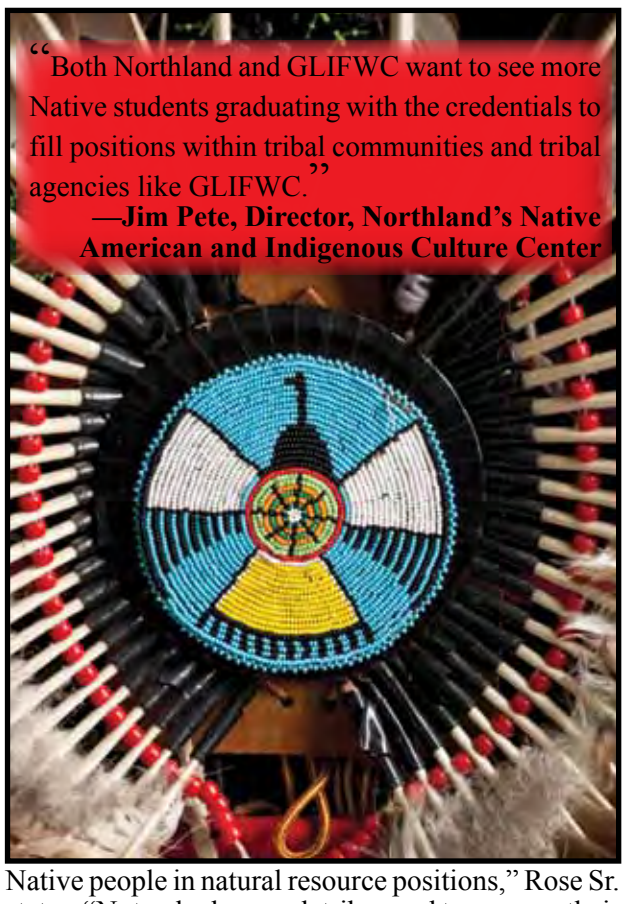
Several current GLIFWC staff worked first as Great Lakes Fisheries interns from Northland College, including Dan North, hired first as a wildlife technician and currently as a conservation officer, and Ben Michaels, now a GLIFWC fisheries biologist.

While not all serving as interns, ten Northland grads have joined the GLIFWC team as permanent, full-time employees. Northland graduate Mic Isham (1987 Northland graduate) from Lac Courte Oreilles serves as GLIFWC's Board of Commissioners Chairman and Joe Rose Sr. (1958 Northland graduate) and Ervin Soulier (1982 Northland graduate), Northland graduates from Bad River, also serve on the Board.

Joe Dan Rose, Inland Fisheries Section leader and 1985 Northland graduate, worked as a biologist for the Bad River Tribe prior to coming to GLIFWC. "Working in tribal natural resources management, both on and off reservation, I have seen a growing need for tribal personnel to provide the expertise required for tribes and organizations like GLIFWC to effectively manage and protect tribal resources. I believe this need will continue to grow," Rose comments.

The connections between GLIFWC and Northland College were substantially strengthened through Professor Joe Rose Sr. who provided leadership as director to Native American programming from 1974 to 2012, a thirty-eight year stint devoted to building the program. Rose also served as a Bad River representative to GLIFWC's Voigt Intertribal Task Force, so recognized how the two organizations could complement each other. He was also aware of the various career opportunities for Native students within their tribes and with GLIFWC.

"Natural resource management issues are front and center for tribes these days, and we need qualified Native people in natural resource positions," Rose Sr. states. "Not only does each tribe need to manage their own on-reservation resources, but we must be involved with the protection of off-reservation resources in the ceded territories. Without resources or with resources that are unfit for consumption, the treaty rights reserved for us by our ancestors are worthless. We need biologists, environmental biologists, geologists, botanists, policy folks, conservation officers—you name it—just to protect this Mother Earth and leave a promising future for our grandchildren. It would be great to see more of our Native people with the expertise to fill these positions!"



"Both Northland and GLIFWC want to see more Native students graduating with the credentials to fill positions within tribal communities and tribal agencies like GLIFWC."
—Jim Pete, Director, Northland's Native American and Indigenous Culture Center

This is where Jim Pete (1979 Northland graduate) steps in as the director of the Northland's Native American and Indigenous Culture Center. The Center represents Northland's commitment to further promote outreach into tribal communities and help pave the way for more Native students to pursue the careers and qualifications Native communities need.

Pete, whose Anishinaabe name is Guyaushk (or Seagull), is a member of the Red Cliff Tribe. He has a bachelor of arts degree in an integrated major in Native American studies/business administration. He also went on to obtain a masters of arts in organizational management and a doctorate in business administration.

"When I was selected as the Director of the Native American and Indigenous Culture Center, it represented many things to me," Pete states. "One aspect is having the opportunity to come back to the Northland and work with current and potential Native American and Indigenous students. Another aspect is to achieve a stronger tribal presence on the Northland College campus, and also for Northland to have a stronger presence in local tribal communities."

Pete says he is pleased with the support shown by Northland College President Mike Miller and other members of the Northland College staff. "This kind of support allows further and future planning for expansion of cultural teaching, support to the student population, expanding connections between the college and tribal elders and leaders, and coordination with all the available resources at the tribal and college level to address diverse needs."

Pete says he looks forward to continuing the strong relationship already established with GLIFWC. "Both Northland and GLIFWC want to see more Native students graduating with the credentials to fill positions within tribal communities and tribal agencies like GLIFWC," he says. "The need and strong commitment are certainly there!"

For more information: Jim Pete at *jpete@northland.edu*.

Clip & Save

2012 GLIFWC enforcement youth activities/education

Class	Date	Place	Contact
Hunter Safety	August 13 and August 20-21	Lac du Flambeau	Jonas Moermond (715) 562-0026 Riley Brooks (715) 562-0300
Hunter Safety	August 22-24	Lac Courte Oreilles	Mike Popovich (715) 292-7535 Lauren Tuori (715) 292-8343
Hunter Safety	August 22-25	Lac Vieux Desert	Dan North (906) 292-5165
Hunter Safety	August 25-26	St. Croix	Brad Kacizak (715) 562-0030
Hunter Safety	September 7-8	Mille Lacs	Robin Arunagiri (715) 889-0734
Hunter Safety	September 10 and September 14-16	Red Cliff	Mike Soulier (715) 209-0093 Jim Stone (715) 292-3234
Learn to Hunt	September 15-16	St. Croix	Brad Kacizak (715) 562-0030
Hunter Safety	September 17 and September 19-22	Bad River	Vern Stone (715) 292-8862
Hunter Safety	September 17-20	Marquette, Michigan	Heather Naigus (906) 458-3778 Matt Kniskern (715) 292-5320
Learn to Trap	September 29	Mole Lake	Roger McGeshick (715) 889-3200 Adam McGeshick (715) 209-7217
Trapper Education	October 20-21	Mole Lake	Roger McGeshick (715) 889-3200 Adam McGeshick (715) 209-7217
Trapper Education	December 8-9	St. Croix	Brad Kacizak (715) 562-0030
ATV	December 15-16	Mille Lacs	Robin Arunagiri (715) 889-0734

For updated information on these events and others please be sure to check our website at ***www.glifwc.org*** or visit us on **Facebook**.

Summer interns help get the jobs done in the field and office

By Dan Soulier, GLIFWC Intern

Odanah, Wis.—This summer was packed with good experiences for the six interns who joined GLIFWC staff for the season, working in the Enforcement, Administration, Public Information, Biological Services Division, as well as the ANA Foods Program.

In the Biological Services Division two interns worked with the Great Lakes Fisheries Section and two worked as wild rice surveyors. Assisting with the Great Lakes Fisheries projects were Sarah Weed from Afton, Minnesota and Jessica Raikes from Blaine, Minnesota. Sarah studies at Northland College and is going for a natural resources degree in fish and wildlife management. She put in her second year with the Great Lakes Section. Jessica also is a student at Northland College and is pursuing a biology degree.

Jessica Raikes. (Photo by Mike Plucinski)

Their primary tasks were helping with lamprey population assessments/management, sturgeon tagging and monitoring, and population assessments of whitefish and siscowet. Both report having a great time with GLIFWC and really enjoyed the field work.

Jessica and Sarah applied for the internship because of the many opportunities that would come their way from being a part of GLIFWC and the experiences they gained. Surveying the fish and more importantly, being on the water, was definitely the best part of the job according to the two. Both felt like they learned a lot about fishery science while being with GLIFWC, and they know that they will be putting that knowledge to work in their future endeavors.

Sarah Weed. (Photo by Mike Plucinski)

Wild Rice Interns Sara Woodie and Scott Hartle. (Photo by Micah Cain)

Also interning with the Biological Services Division were Sara Woodie and Scott Hartle, both Northland College students. Sara, originally from Park Falls, Wisconsin, is majoring in biology with a minor in chemistry. Scott, who is also majoring in biology with a minor in chemistry, is on a student visa from Birmingham, United Kingdom and has loved his time in the US and with GLIFWC. The two interns are responsible for data collection on forty lakes and streams in Wisconsin's ceded territories. They travel to each of the wild rice sites to map rice beds, test water depth and temperature, gather rice samples and take stem density and other plant measurements.

GLIFWC's ANA Foods Program got a boost this year from Stephen Ante, a limited term employee with GLIFWC. Stephen is a business management major at Wisconsin Indianhead Technical College, Ashland, Wisconsin and has worked with GLIFWC during several summers in a variety of capacities. This summer his time has been split between Administration and as the ANA food-testing assistant. He helps with prepping the food for testing, cooking, recording, harvesting, and other ANA program activities. He also helps Administration with general office work. Stephen enjoys the variety the position offers and the opportunity to learn different aspects of GLIFWC as an intertribal organization. This year, Stephen appreciated the opportunity to work in a business setting so he could apply the lessons

Stephen Ante ANA food testing assistant helps Liz Nelson, Bad River, with making fiddlehead fern soup. (Photo by Dan Soulier)

he learned from his WITC program, but he also enjoys learning about traditional foods and hopes to have recipes for future use. As a "jack of all trades," Stephen also worked extensively in storage buildings and happily partook in various harvesting activities, like berry picking and harvesting watercress. He looks forward to continuing his work with the food testing in the coming months.

And lastly there's me, Dan Soulier, the final intern for 2012 summer. I have been helping several GLIFWC divisions with a variety of tasks. A student at UW-Stevens Point with a double major in history and social science education, I have been with GLIFWC a good part of my life unofficially, but this was my third summer as an intern. I have helped Public Information with photos and stories for the *Mazina'igan* and also manned informational booths. With the Enforcement Division, I helped organize inventory in preparation for a new system they intend to begin this fall, and on a technical level, upgraded Administration's recording system used at meetings and gatherings. I have been able to expand my understanding of GLIFWC's many facets and am grateful for the opportunities that I have been given.

The summer quickly came and went, but the interns gained a great deal of knowledge from experiences that are uniquely GLIFWC. All interns enjoyed their time working and learning from the dedicated staff —gaining knowledge which will benefit them wherever the future takes them.

Dan Soulier provided assistance to many GLIFWC divisions throughout the summer. Above Dan kayaked across Sandy Lake as part of the Sandy Lake Memorial ceremonies which took place in July. Also pictured is Sara Moses, GLIFWC environmental biologist. (Photo by Jen Burnett)

Mawinzo-giizis

(Continued from page 4)

pour them into plastic freezer bags or storage containers, label and date, then return to the freezer. They will keep at least a year.

Berries can also be dried. Again, spread a thin layer of berries on a baking sheet and place it in the sun for four or five days, or you can choose to dry them in the oven on low heat (150 degrees) for four or five hours. Dried berries should be so dry they rattle; otherwise they will mold. They keep a very long time in a glass jar or plastic bag.

Name the plant: good and bad

Spot the invasives

Use the word bank (see below) to fill in the common name of these plants; then circle whether the plant is good or bad. Some of these plants are bad (invaders). These bad plants have been brought here from other countries or habitats on purpose or by accident. These plants are dangerous because they drive out our native plants and animals that have always lived here. To learn how to identify the invaders and how to get rid of them before they take over, go to *www.glifwc.org/invasives/index.html*.

Word Bank

blueberry
broadleaf cattail
garlic mustard
narrow-leaf cattail
purple loosestrife
strawberry
sweet grass
wild rice

(answers on page 23)

Common name _____
Ojibwe name miinan
Good or bad

Common name _____
Good or bad

Common name _____
Ojibwe name ode'imin
Good or bad

Common name _____
Ojibwe name manoomin
Good or bad

Common name _____
Good or bad

Common name _____
Ojibwe name wiingashk
Good or bad

Common name _____
Good or bad

Common name _____
Ojibwe name apakweshkwayk
Good or bad

Dagwaaging—When it is Autumn

Dagwaaging, ninzhizhoobii'ige. Nimaamaa, ninzhizhoobii'aan mazina'igan. Mitigoog ingiw. Zaaga'iganiin iniw. Anishinaabeg jiigewe'amoog imaa. Jiimaaning bawa'amoog. Agoodakikwaan ninzhizhoobii'aan agamiing. Awiiya, inini, ataasowigamigong manise. Ingiw mitigoog ozaawiziwag idash miskwoziwag. Wiigwaasimitigoog idash ininaatigoog. Bezhigo mitig michaakozi. Anishinaabeg ozaagitoonaawaan zaaga'iganiin. Gichi-anokiiwag dagwaagining. Mii'iw.

(When it is autumn, I paint. My mother, I paint her a picture. Those are trees (those are). Those are lakes (those are). Ojibwe people they paddle along the shore there. In the canoe, they are knocking wild rice. A kettle hanger, I paint it on the shore. Someone, a man, by a shed, he is cutting wood. Those trees they are yellow and they are red. Birch trees and maple trees. One tree, she is big. Ojibwe people love the lakes. A lot—they work in the Fall. That is all.)

Bezhig—1

OJIBWEMOWIN (Ojibwe Language)

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

—Short Vowels: A, I, O
Idash—as in about
Mitig—as in tin
Niizho—as in only

—A glottal stop is a voiceless nasal sound as in A'aw.

—Respectfully enlist an elder for help in pronunciation and dialect differences.

When/If... B-Form-VAI-Verbs Animate, Intransitive

Biindige.—S/he comes in.
Anokii. —S/he works.
Zhizhoobii'ige.—S/he paints.
Gikinoo'amaagozi.—S/he goes to school.
Manoominike noongom.—S/he goes ricing now/today.
Anokii**yaan**,—**When/if I** work,...
Anokii**yan**,—**When/if you** work,...
Anokii**d**,—**When/if s/he** works,...
Anokii**waad**,—**When/if they** work,...
A B-form statement is a dependent clause, not a complete sentence.

Niizh—2

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

A. Agwajiing. Daga bimosedaa <u>agwajiing</u>. Nanda-gikendan!

B. <u>Bimibaatoog</u> agwajiing! <u>Gizhaazh</u> ingiw awesiiyag!

C. Wiindamaagen! "<u>Nibi</u>, biinitawangwa <u>abinoojiiyag</u>."

D. Gichigamiing Onizhishin iwidi. Nimbabaamaadizimin <u>waasa</u> iwidi.

E. <u>Ziibiwan</u>, ziibiinsan, zaaga'iganiin, onda'ibaanan, giganawendaamin.

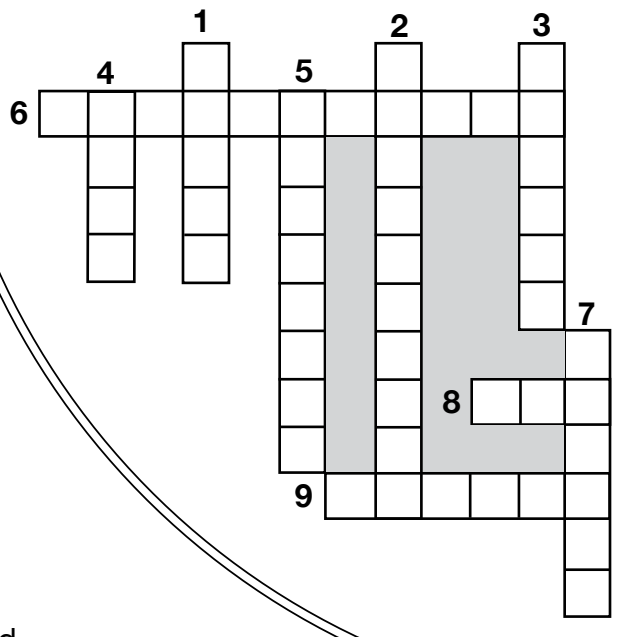
F. <u>Daga</u> gibiidawaa a'aw abinoojii jiimaaning, <u>Gaagiigidon</u>!

G. Ogimaag, gaganoozh. <u>Aaniin</u> waa-izhichigeyan?

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

Niswi—3

IKIDOWIN ODAMINOWIN (word play)



Down:
1. Wow! Alright!
2. It is nice, pretty.
3. one
4. that (animate)
5. trees
7. She/he cuts wood.

Across:
6. S/he wild rices.
8. question marker
9. S/he works.

Niiwin—4

VAI (s/he verbs) B-form:

Biindige**yaan**,—When/if **I** come inside,... –yaan,
Biindige**yan**,—When **you** come inside,... –yan,
Zhizhoobii'ige**d**,—When/if **s/he** paints,... –d,
Gikinoo'amaagozi**waad**,—When/if **they** go to school,... –waad,
Manoominikeyaan, niminwedam. –Howah
When I go ricing, I am happy.
Manoominikeyan, zaagitoon!
When you go ricing, I love it!
Manoominiked, minose.
If s/he rices, s/he is lucky.
Manoominikewaad, Howah!
When they rice, Alright!

Goojitoon! Try it!
Translation below.

1. Wayiiba ina? Aaniin apii waa-gikinoo-amaagozi_____?

2. Zhizhoobii'ige_____, ni-namadib adoopowining omaa.

3. Biindigen! Biindigeyan, niminwendam. _____!

4. Nindede idash nimishoomis izhaawag ziibiing manoominike_____. Ningii-bidoon i'iw jiimaan.

5. Zaaga'iganing apane ikidon, "Miigwech." Nookomis ikido, "Miigwech." Izhaa_____ iwidi.

Translations:

<u>Niizh—2</u> **A.** Outside. Please lets all walk. Seek to know about it. **B.** You all run outside! Watch over those wild animals! **C.** Announce it to people, "The Water, we all clean it for the children." **D.** On the shores of Lake Superior it is nice over there. We travel as a group far over there. **E.** Rivers, streams, lakes, water wells, we take care of them. **F.** Please bring a child in a canoe. Talk! **G.** Leaders, talk to someone! What will you do?

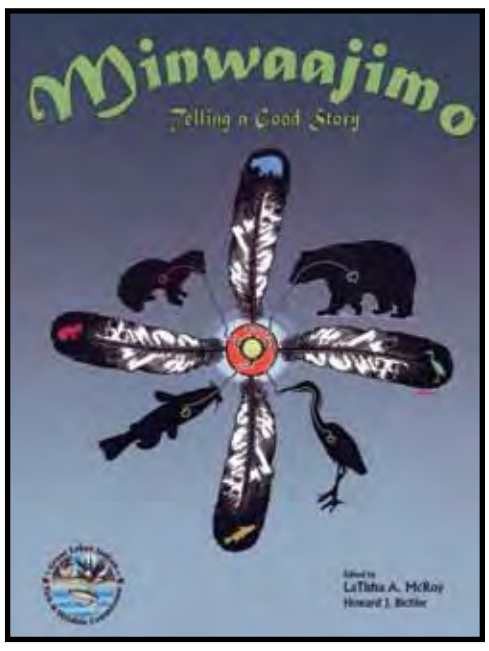
<u>Niswi—3</u> ***Down:*** **1.** Howah **2.** Onizhishin **3.** Bezhig **4.** A'aw **5.** Mitigoog **7.** Manise. ***Across:*** **6.** Manoominike **8.** Ina **9.** Anokii

<u>Niiwin-4</u> **1.** Soon? **When** (time) will you go to school? **2. When I** paint, I sit at the table here. **3.** Come in! When you come in, I am happy. **Alright, Wow! 4.** My Dad and my Grandfather they go to the river, **when they** wild rice. I brought the canoe. **5.** At the lake always say it, "Thank you." My Grandmother says, "Thanks," **when she** goes over there.

Educational Resources

Stories of the treaty struggles available in book and CD

Minwaajimo: Telling a good story *relates GLIFWC's first 25 years*



Minwaajimo means "telling a good story." In this instance, it is the good story of the Great Lakes Indian Fish and Wildlife Commission's (GLIFWC) first twenty-five years. These were years in which GLIFWC struggled and flourished due to the commitment of member tribes to it's mission—to implement treaty rights for its member tribes and to protect and preserve those rights and resources for future generations.

An invaluable resource, the Minwaajimo book and companion DVD relate the many stories behind the treaty struggles of the 1980s and 1990s on the boat landings, in the court rooms, and across negotiation tables as told at the 2009 Minwaajimo Symposium on the Bad River reservation in Wisconsin.

Related through the presentations of five panels, the book contains both the verbal presentations and the papers submitted by the panelists. Panel discussions include: Legal Issues and History Panel; Natural Resources Management Impacts—Harvest Impacts; Natural Resources Management Impacts—Co-management; Social, Economic & Political Issues; and Tribal Communities.

The book contains a wealth of information shared by people involved in the treaty struggle from all sides and perspectives and invites people to understand the historical basis of treaty rights, the struggles involved in the implementation of the rights, and the critical link between treaty rights and the Ojibwe lifeways.

The companion CD features recordings of the symposium proceedings.

The book was funded by an Administration for Native Americans SEDS grant and is available along with the CD for $20.00 online at GLIFWC's website—*www.glifwc.org*, click Educational Materials. ***—Sue Erickson, Staff Writer***

Newly released *Spirit of the Ojibwe* captures faces, lives and times of LCO elders

"These extraordinary portraits of Ojibwe elders convey the warmth, the kindness, the humor, and the ongoing endurance of our people. What a thoughtful celebration."

—Louise Erdrich (Turtle Mountain Ojibwe), recipient of the Nelson Algren Award, the National Book Critics Circle Award, and named a finalist for the Pulitzer Prize in Fiction.

Unique and inspiring, *Spirit of the Ojibwe: Images of Lac Courte Oreilles Elders* by Sara Balbin, James R. Bailey, and Thelma Nayquonabe is fresh-off-the-press at Holy Cow! Press, Duluth, Minnesota. Featuring Sara Balbin's marvelous, allegorical portraits of 32 Lac Courte Oreilles (LCO) tribal elders that compose LCO's Hall of Elders, the book also includes a biography of each elder, pointing out the endurance and accomplishments of each.

The biographies in themselves create a portrait of the person and the times they lived. Their stories are tales of survival and the struggle to preserve Ojibwe culture and language in times of forced assimilation.

While the portraits and biographies are the heart and soul of the book, they are surrounded by historical accounts, revealing how the portraits and book came into being. The book also includes a interesting historical account of the Lac Courte Oreilles band by Dr. Rick St. Germaine, who relates how the band slowly grew at Odawasagaegun, the place where they found the dead Ottawa.

The book actually contains a wealth of unexpected information and details, like information on the clan system and a very nice, illustrated discussion of floral patterns and Ojibwe designs. Historical as well as contemporary photos enliven the text throughout.

Spirit of the Ojibwe presents a fascinating read and delights the eye and soul with the stunning portraits of the 32 elders.

Spirit of the Ojibwe can be obtained through the publisher at *www.holycow-press.org* or at *www.amazon.com* and will also be distributed in local bookstores.

—Sue Erickson, Staff Writer

Ginibiiminaan poster

GLIFWC's 2012 poster, (see cover) GINIBIIMINAAN "our water," features nibi (water), emphasizing the sacredness of nibi and our responsibility to keep it pure. Ojibwe artist, Wesley Ballinger, used the central image of a woman for the poster because within Ojibwe teachings, women are the "keepers of the water." Like water, women are lifegivers. Our children are carried in water prior to birth. The female image also reminds us of the contemporary Water Walkers, founded by women who journeyed around the Great Lakes, carrying water in their copper bucket and calling attention to the need to protect our waters.

The circles flowing down the river represent pollution from human activities, such as mining and industrialization, those that threaten the purity of nibi, our source of life and the lives of all plants and animals that share this earth.

Water is the lifeblood of Mother Earth, coursing through her streams and rivers like blood through giant vessels. For earth to be strong and healthy, capable of sustaining life for generations, we must keep that water clean.

18" x 24" posters are available through the GLIFWC main office at PO Box 9, Odanah, WI 54861, or by phone 715-685-2150. They can be ordered on-line at GLIFWC's website: *www.glifwc.org*, click Educational Materials, then Posters, or by e-mail: *pio@glifwc.org*. The first poster is free, and there is an additional charge of $2.50 plus postage (please call or email for postage rates) for each additional poster.

Farm-raised walleye

(continued from page 9)

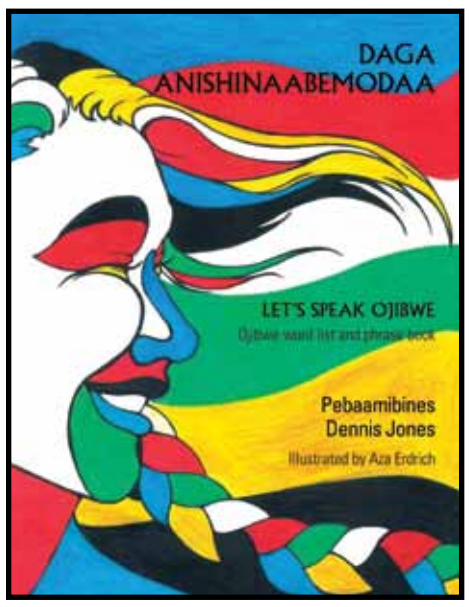
"We try to give the kids a little taste of everything," said Taylor. "It's helpful as they start thinking about future career possibilities."

With the pond set for retirement, student workers will find firmer footing next summer when the half-acre nursery ponds come into service. A combination of grants from the Natural Resources Conservation Service, Bureau of Indian Affairs and St. Croix Tribe is funding the new pond construction. Taylor said that the tribal fisheries program would continue to feature walleye fingerlings.

"The fingerlings give us better survival than the smaller fry," Taylor said.

GLIFWC's six Wisconsin member tribes plus the Keweenaw Bay band in Upper Michigan maintain fish-rearing facilities, contributing millions of fry and fingerlings into area waters each year. Additional American Indian tribal hatcheries in the region contribute millions more fish into lakes and rivers.

Ojibwe words, phrases for beginners



A recent offering from veteran Ojibwe language instructor Dennis Jones supplies students and teachers alike with an exceptional learning tool. In the illustrated workbook, *Daga Anishinaabemodaa*, Jones helps beginning Ojibwe language students lay a foundation for a lifetime of learning.

"This is a really nice book for beginners," said Jim St. Arnold, GLIFWC language program director. "The methods have been proven in Pebaamibines' classroom and language camps. It's something you'd want at a language table." Pebaamibines is Jones' Ojibwe name.

St. Arnold said language tables are simply places where aspiring students gather—with or without a teacher—to speak, read and help each other learn. A home, coffee shop, or park—anywhere people get together—can accommodate a language table.

In *Daga Anishinaabemodaa*, students learn the basics: counting, common words and phrases, calendar dates and time, and more—all based on the increasingly standard, double vowel system. Sample quizzes throughout the 125-page volume provide a format for individual or group testing.

Pebaamibines also takes care to highlight the inseparable relationship between Ojibwe culture and language. Names for animals and places, for example, are oftentimes associated with traditional teachings that help define the Ojibwe lifeway.

Jones has taught Ojibwemowin to beginners for more than 20 years and is currently an instructor at the University of Minnesota. He is a band member of Nigigoonsiminikaaning First Nation, located in the Treaty Three territory in northwestern Ontario. Turtle Mountain Ojibwe Aza Erdrich penned the book's illustrations. For more information see *www.birchbarkbooks.com*.

—Charlie Otto Rasmussen, Staff Writer

Healing Circle Run

The 12th Healing Circle Run finished its circuit of eight Ojibwe tribes in the ceded territory on July 20. The run begins and concludes at the Lac Courte Oreilles reservation each year. Above Healing Circle Run coordinator Neil Kmiecik does one of many stints down the road during the seven-day run/ walk which is intended to be a prayer for healing. Kmiecik is one of the run's founders and has completed the circle every year.

Each day of the Healing Circle Run begins and concludes with a ceremony and a time for reflection. Above runners and walkers gather at Red Cliff prior to starting the leg between Red Cliff and Fond du Lac. About 150 runners and walkers participated during the journey.

Photos by Dan Soulier

Sandy Lake ceremonies

During a time for reflection, Leo LaFernier, Red Cliff elder and Voigt Intertribal Task Force representative, shares his thoughts during the 2012 Sandy Lake Ceremonies at the site of the Mikwendaagoziwag (We remember them) Memorial on July 25. The Mikwendaagoziwag monument recognizes the sacrifice of the ancestors, 400 who perished there or on the journey home in 1850. The first Sandy Lake ceremony took place in March of 1999. The Mikwendaagoziwag monument was dedicated in 2000, and in 2001 the Sandy Lake Ceremony grew to include the annual paddle across Sandy Lake.

Sandy Lake ceremonies are enhanced with the voices and drum beat of the Mole Lake Drum. The Drum has been a part of the ceremony since its inception.

Kids page answers

(Answers from page 20)

From left to right: blueberries (good), purple loosestrife (bad), strawberry (good), wild rice (good), garlic mustard (bad), sweet grass (good),narrowleaf cattail (bad), broad leaf cattail (good).

Tribal hatcheries

(Continued from page 8)

Keweenaw Bay. Gene Mensch, KB fish and wildlife biologist, notes that KB's lake trout rearing program is temporarily on hold until a new recirculation system is completed in one of the hatchery's coldwater hatchery operations.

Keweenaw Bay also stocked 850,000 walleye fry and 9,599 walleye fingerlings this year. Efforts still pending at KB include coaster brook trout and extended growth walleye plants with numbers yet to be determined.

The **St. Croix hatchery** stocked walleye fingerlings into the following lakes in 2012: Wapogasset, Polk County 23,943; Balsam, Polk Co. 21,590; Beaver Dam, Barron Co. 22,182; and Bear Lake, Barron Co. 23,691—for a total of 91,406.

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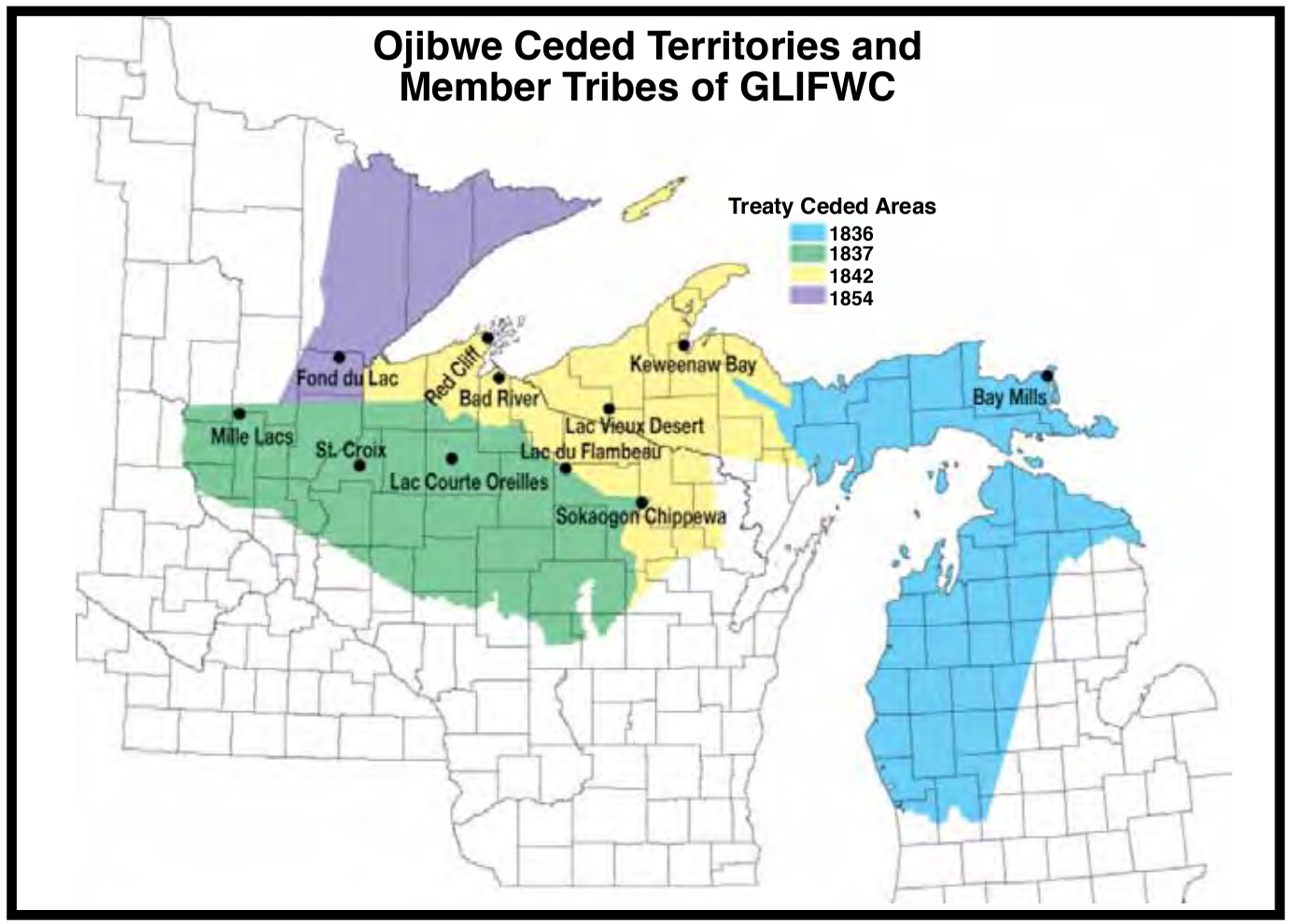
Although **MAZINA'IGAN** enjoys hearing from its readership, there is no "Letters to the Editor" section in the paper, and opinions to be published in the paper are not solicited. Queries as to potential articles relating to off-reservation treaty rights and/or resource management or Ojibwe cultural information can be directed to the editor at the address given above.

For more information see GLIFWC's website: **www.glifwc.org**.



Mazina'igan

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