Mazina'igan
A Chronicle of the Lake Superior Ojibwe
Published by the Great Lakes Indian Fish & Wildlife Commission Spring 2006

Zorn appointed as GLIFWC executive administrator

By Charlie Otto Rasmussen
Staff Writer

Odanah, Wis.— A long-time tribal attorney and treaty rights expert has been named executive administrator of the Great Lakes Indian Fish & Wildlife Commission(GLIFWC).

The GLIFWC Board of Commissioners selected James E. Zorn in late January from a pool of candidates. He has been the lead policy analyst at the Commission since 1987.

"Jim has demonstrated an outstanding commitment to supporting tribal communities and treaty rights protection for more than twenty years," said Mic Isham, GLIFWC Board Chairman. "He is well-versed in all aspects of the Commission's programs and is well-suited for this position."

A northern Wisconsin native, Zorn was born and raised in Phillips, Wisconsin, graduating from Phillips High School. He continued on to become a University of Notre Dame honors graduate, ultimately earning his degree from the University of Wisconsin Law School in 1981.

GLIFWC Executive Administrator Jim Zorn. (Photo by Dale Thomas)

After several years working for a non-profit human rights organization and in private practice, he became tribal attorney for the Lac Courte Oreilles Band in 1985.

"I am deeply honored for this opportunity to serve the Commission's tribes and to protect their treaty rights," Zorn said. "The Commission is a top-notch, natural resource agency built upon a foundation steeped in Anishinaabe culture and traditions. I will do my best to further solidify that foundation so the Commission can continue to mature and grow as a trusted agency of the tribes. I begin my new responsibilities confident that we will do our part to help protect our Tribes' rights, further their sovereignty and sustain their Anishinaabe lifeways."

Zorn officially began his new post February 3. He succeeds the late James H. Schlender who died unexpectedly on August 30, 2005.

Ojibwe tribal leaders formed GLIFWC in 1984 to help administer off-reservation reserved rights in territory ceded to the United States through nineteenth century treaties. The Commission includes eleven Ojibwe member tribes in Minnesota, Wisconsin and Michigan. Organized into six administrative divisions, GLIFWC employs more than 60 full time staff members in addition to dozens of seasonal workers to assist with natural resource assessments. Policy decisions are established by the GLIFWC Board, which is comprised of tribal chairs or their representatives.

Zorn becomes only the fourth executive administrator of the Odanah-based Commission. Henry Buffalo, the first GLIFWC administrator, and Ray DePerry both served short terms in the mid-1980s. In 1986, Voigt Intertribal Task Force Chairman James Schlender filled the GLIFWC top spot, a position he held for the next 19 years.

Lac du Flambeau seeks Treatment-as-State status

By Sue Erickson
Staff Writer

Lac du Flambeau, Wis.— Approximately two hundred Minocqua and Lac du Flambeau area citizens filled the seats at the Lac du Flambeau Public School gymnasium on the evening of February 15 for the Environmental Protection Agency's (EPA) informational meeting on "treatment as state" status.

While it seems that clean water should be a priority held in common by residents, the turn-out reflected some of the controversy over the Lac du Flambeau (LdF) tribe's application to EPA for "treatment-as-state" (TAS) status.

Iron and Oneida Counties have already gone on record in opposition as have some surrounding town boards, expressing concerns that the tribe's regulations may impact non-tribal property owners and non-tribal facilities, such as sanitary districts.

The public comment period was originally set to close in January 2006, however, the EPA extended the comment period to February 21 following a number of requests to do so.

Dan Cozza and David Pfeifer, both from the EPA Water Division, provided Power Point presentations outlining the "Treatment in a Similar Manner as a State Process" and water quality standards respectively. Don de Blasio, Office of Public Affairs, acted as moderator.

Larry Wawronowicz, LdF Department of Natural Resources, completed the presentation by describing the process from a tribal perspective.

He noted that the tribe is dedicated to a "fair and open process" as it pursues protection of reservation waters, which currently have no regulatory protection. "The basic idea is that everyone needs clean water," he said. He also noted that the regulations would apply equally to everyone, Indians and non-Indians.

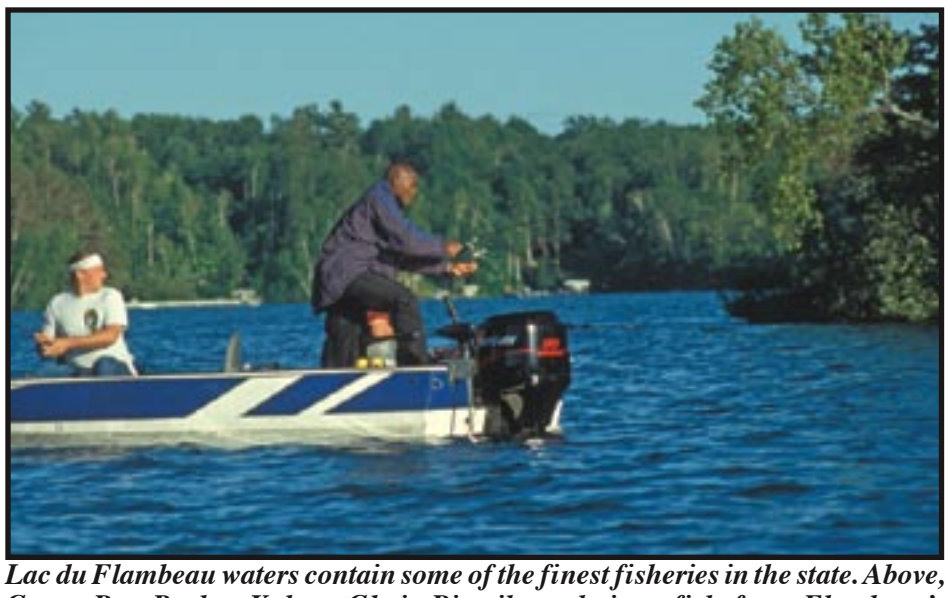
During a comment period Tom Maulson, LdF Tribal Council member, also appealed to the common interest among all area residents for clean water. "It's time to come together, to talk, to protect the waters out there," he said. "Some of you have the idea we want to put a thumb on you, have powers over you. That's not what this is about," Maulson explained. Rather, he said, it's about taking care of the water and Mother Earth.

The EPA staff fielded questions from participants following each segment of the program. Many were concerned about the scope of the regulations and what impact they would have on the surrounding community.

Several questions the EPA could not address because they had not read the tribe's application and because the standards will not actually be set until after the tribe is approved for TAS status.

An unidentified, non-tribal woman provided one of the closing comments from the floor." I hope the tribe gets this authority. We think they'll do a better job," she said.

(See LdF seeks TAS, page 14)



Lac du Flambeau waters contain some of the finest fisheries in the state. Above, Green Bay Packer Kabeer Gbaja-Biamila reels in a fish from Flambeau's Pokegama Lake. (Photo by Charlie Otto Rasmussen)

Management plan sought for Round Lake system

Multiple issues & multiple jurisdictions involved

By Sue Erickson
Staff Writer

Lac Courte Oreilles, Wis.—"It's a tangle of issues," says Wildlife Biologist Peter David, Great Lakes Indian Fish & Wildlife Commission (GLIFWC), who has attended recent meetings of the Round Lake Work Group. The group is working to resolve issues that relate to the hydrology of the Round Lake watershed and to the differing expectations and needs of a wide variety of stakeholders, including the various flora and fauna that also inhabit this valued chain of lakes in Sawyer County, Wisconsin.

GLIFWC biological staff along with Lac Courte Oreilles (LCO) Tribal Councilman Mic Isham and tribal legal and biological staff join representatives from the state, county and several lake associations in the Work Group to formulate a long-term management plan for the Round Lake system. The goal for a management plan actually sprang from several years of debate over Round Lake's water level.

Tom Aartila, Wisconsin Department of Natural Resources (WDNR) Upper Chippewa Basin supervisor,

Mic Isham, Lac Courte Oreilles tribal councilman. (Photo by Dale Thomas)

credits Isham for championing the need for a comprehensive plan and a holistic management approach.

Isham says that early Work Group meetings focused only on water level issues raised in a lawsuit filed in 2003 by Round Lake property owner Jim Hausman, but he persistently urged participants to widen their scope to the management of the entire system, which the Work Group ultimately voted to do.

Isham says the management plan will be similar to the comprehensive Chippewa Flowage Joint Agency Management Plan signed in 2000 and is envisioned to be permanent and comprehensive, hopefully laying to rest the contentious debates of the past several years and protecting the lakes' ecosytems and tribal sovereignty into the future.

While Round Lake is not on the LCO reservation, Isham points out that other water bodies in the controversial lake chain, including Little Round Lake, Osprey Creek and Osprey Lake, are either partially or wholly on reservation, and the system ultimately flows into the on-reservation lake, Lac Courte Oreilles. So management decisions, such as lowering Round Lake's water level, definitely impact the LCO Band.

Both Round and Osprey Lakes are also used by Band members during spring, treaty spearing season, prompting the Band's interest in the management of the walleye and musky fishery. " An effective management plan needs to address a wide spectrum of issues, many of which are important to the LCO Band, like the fishery—the musky and walleye spawning beds, the wild rice beds established in Osprey Creek, protection of wetlands, not to mention tribal sovereignty," Isham states.

In regard to sovereignty he refers to past activities on the reservation, such as a WDNR engineering study on Osprey Lake performed without informing the Band.

According to Dan Tyrolt, LCO Conservation Department, the LCO Band has a number of concerns regarding management of the lake system, of which Round Lake is the headwater. Osprey Lake, he says, is probably more sensitive to water level changes than Round Lake because it is a very shallow lake, especially in its southern third, which is only two to three feet deep. The lake's only boat landing is also located there, so the lowering of the water level would probably hamper access to the lake. He also notes that there is a very large wetland complex around Osprey Lake, which would potentially be impacted by water level changes.

Tyrolt sees no need for a change in water level. "Our main point is that the current water level is not impacting the lake or wetland in a negative way," he says. The LCO Band has taken a sediment core from Osprey Lake that indicates minimal natural erosion is occurring. Any erosion would be from overland run-off as a result of manmade sources, not natural erosion. If natural erosion were occurring, Tyrolt says the Band would have to consider lowering the water level, but the current water level is fine with no environmental degradation apparent.

Historically, in 1941 the Wisconsin Public Service Commission (PSC) authorized a maximum water level of 77.25 feet for Round Lake—a level which has apparently been difficult to maintain and has been exceeded for a variety of reasons. According to Aartilla, the water level has risen a few feet above the authorized maximum, especially after a spring thaw or a significant rain event.

The "tangle of issues" relates to the existence of several dams in the system, culverts installed by the county, beaver dams and debris, ground water levels, water levels in surrounding wetlands, and of course, the sometimes capricious behavior of Mother Nature herself.

The issue of high water levels has been a subject of sometimes heated discussion between property owners as well as at county level meetings over the past several years. While some consider current water levels appropriate, others claim property damage. Some view their land as being eroded and that there is increased sedimentation; others need higher levels to launch boats.

In 2002 talk of dredging prompted the LCO Tribal Council to pass a resolution strongly opposing any dredging or other disturbance in Osprey Creek which connects Little Round Lake and Osprey Lake. According to Tyrolt, the Band found no environmental degradation apparent at the current water level, so felt it should be left alone rather than risk actually causing harm to the sensitive environment.

The dispute was elevated in 2003 when Hausman filed his lawsuit against Sawyer County, demanding the county maintain the level authorized by the PSC in 1941.

Following a May 2005 meeting with stakeholders, the Wisconsin Department of Natural Resources proposed a process to pursue a "holistic approach" to Round Lake's management, stating the process will "clarify issues and concerns, involve tribal and public input, identify the needs of the resource and develop management recommendations." This led to the establishment of the current Round Lake Work Group, facilitated by Kris Tiles, UW-Extension staff. The Work Group is now "setting the stage for a work plan," according to Aartila and is on the road to tackling the multiple issues surrounding the management of the Round Lake chain.

"I am pleased with where we're at," Isham says, "but it wasn't easy getting there. You just have to keep on pushing."

Tribal walleye quota 100,000 pounds in Mille Lacs Lake

By Joe Dan Rose, GLIFWC Inland Fisheries Section Leader

Odanah, Wis.—The Minnesota 1837 Ceded Territory Fisheries Committee and related Modeling Workgroup meetings were held on January 26-27 in Inver Grove Heights, Minnesota to develop a 2006 harvestable surplus recommendation for walleye in Mille Lacs Lake.

As in previous years, an extensive amount of stock assessment modeling work was completed by the Minnesota DNR (MnDNR) and Great Lakes Indian Fish & Wildlife Commission (GLIFWC) in preparation for the meeting. Results from each of these models were reviewed and discussed by the Committee.

All of the state and tribal models for 2006 produced similar estimates of walleye abundance and biomass. However, these model estimates translated into a wide range of possible harvestable surplus values due to an unresolved issue as to what portion of the population this value should be based upon. Despite this difference, the Committee was able to reach consensus on a 2006 walleye harvestable surplus level for Mille Lacs Lake of 600,000 pounds. This represents a 95,000 pound increase over last year's harvestable surplus level and is largely attributed to the influence of a strong 2002 year class. These four-year-old fish, many of which are 14 to 17 inches in length, continue to mature and enter the spawning population.

Based on the Treaty Fisheries Management Plan for the 1837 Minnesota Ceded Territory for the Years 2003-2007, the 2006 tribal walleye quota for Mille Lacs Lake is 100,000 pounds. The remaining portion of the harvestable surplus level is allocated to the state.

While tribal biologists are encouraged by the continued strength of the 2002 year class, they are also concerned about the low estimated abundance of walleye between the ages of five and nine. Therefore, tribal biologists maintain that excessive harvest of the 2002 year class should be avoided since it has the potential to help increase the abundance of walleye within these age groups over the next several years.

The Committee did not consider any changes to the annual quota values for yellow perch, tullibee, or burbot in Mille Lacs Lake. Based on estimates of

(See Northern pike, page 23)

On the cover

The cover features Ojibwe beadwork that adorns an item now on display at the Madeline Island Historical Society. The piece features the traditional Ojibwe floral pattern and colors, also known as a "woodland" design. (Photo submitted by the Madeline Island Historical Museum)

Climate changes of the Great Lakes region

Possible effects of global warming on treaty protected natural resources

By Esteban Chiriboga, GLIFWC GIS Mapping Specialist

There has been a great deal of discussion and argument surrounding "climate change" and "global warming" during the past 20 years. Positions on the subject range from the denial that humans have had any effect on the Earth's climate, to those who predict apocalyptic consequences for the future of the planet. Today the position held by the vast majority of scientists and responsible policy makers is that human-induced global warming is very real, and these changes will undoubtedly bring about many problems that we all must face.

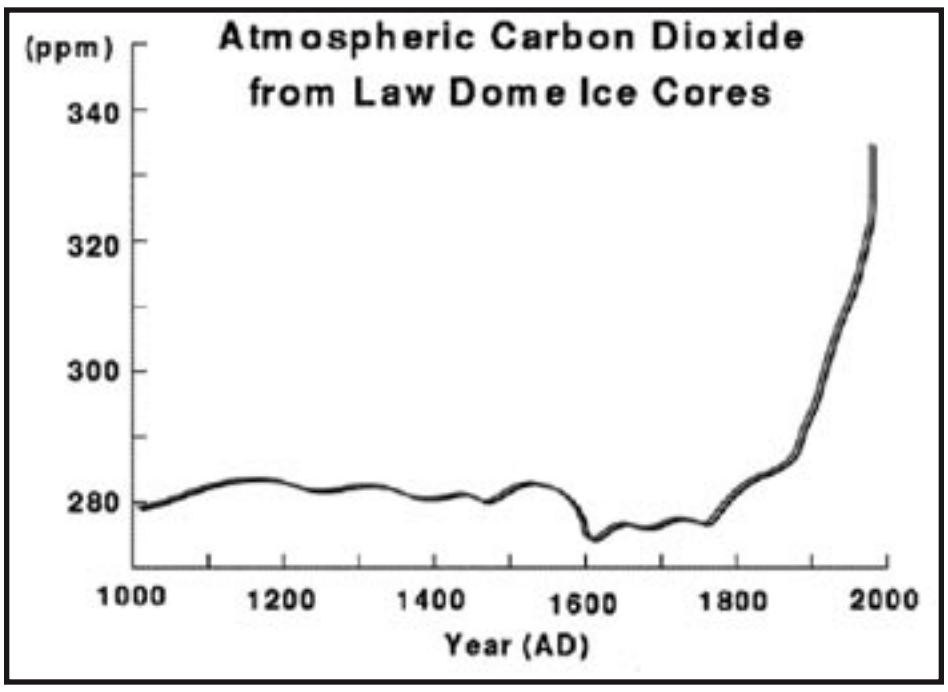
Until recently, climate models and available data were only able to provide climate change information on a global scale. This information, while valuable, did not provide much information about the effects on a specific region like the Great Lakes. However, new climate models and scientific advances now allow us to begin assessing the effects of climate change on a local scale.

The greenhouse effect

The greenhouse effect is the naturally occurring physical mechanism by which the Earth maintains its temperature. Global temperatures we experience are the result of a balance between incoming solar radiation and outgoing heat energy. As solar radiation comes into contact with the Earth's surface, plants, and animals, it is converted into heat energy. Greenhouse gases like carbon dioxide (CO_2) and methane (CH_4) prevent much of this heat from immediately escaping into space, thus keeping the planet warm. If the atmosphere did not have any greenhouse gases, the Earth's average temperature would be approximately -4ºF instead of the global average temperature of approximately 59°F that we enjoy[1].

Human induced global warming

The most recent evidence from Antarctic ice cores indicates that the amount of greenhouse gases in the atmosphere changed little from roughly 740,000 years ago until about 200 years ago[2]. Furthermore, the changes that did occur happened over periods of many thousands of years. This relative stability in greenhouse gas concentrations began to change during the early 1800's. The start of the industrial revolution was accompanied by a marked increase in greenhouse gases emitted to the atmosphere and the relative concentration of those gases has increased significantly (Figure 1). For example, CO_2 concentrations in 1800 were approximately 280 parts per million (ppm). Today, CO_2 concentrations have increased to



(Figure 1) Concentration of carbon dioxide found in Antartic ice cores. (Source: Carbon Dioxide Information Analysis Center web site **http://cdiac.ornl.gov***)*

378 ppm. Methane concentrations increase from around 0.75 ppm in 1800 to 1.70 ppm today and nitrous oxide (N_2O) has also increased from 285 parts per billion (ppb) to 310 ppb[3].

The increase in greenhouse gas concentrations in the atmosphere has been accompanied by an increase in temperature. Since 1800 the average global temperature has increased by 0.6 F, and half of that increase has occurred in the last 40 years alone (Figure 2, page 22). The speed of this change is unprecedented in the climate data for the last 15,000 years. According to the latest report from the Intergovernmental Panel on Climate Change (IPCC), this rise in temperature has already caused important changes at a global scale [3]:

- Melting of glaciers and ice caps.
- Rising sea levels.

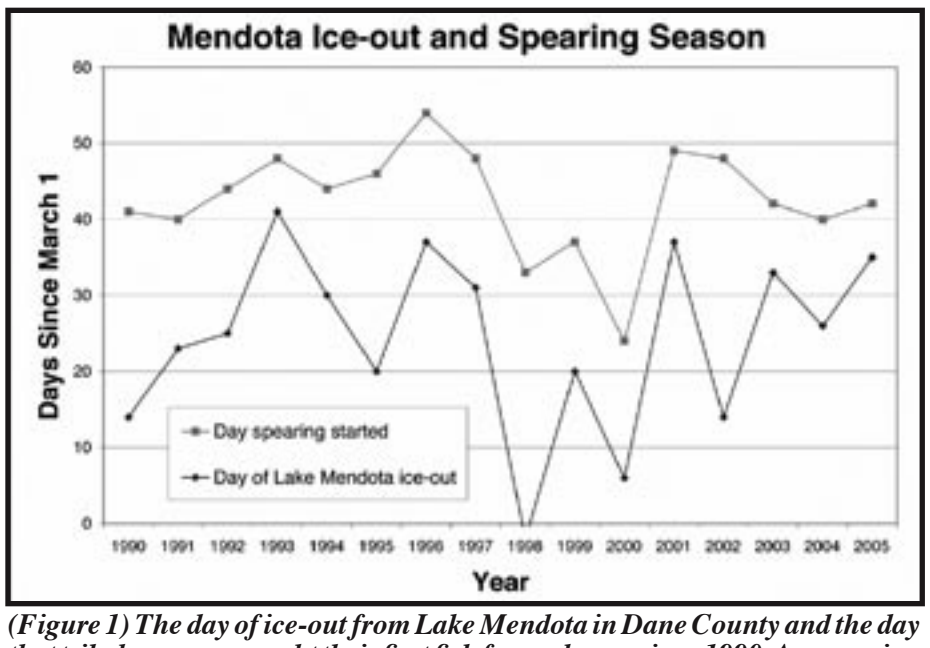
(See Climate changes, page 21)

Relationship between long-term trends in spring ice-out & the start of tribal spearing

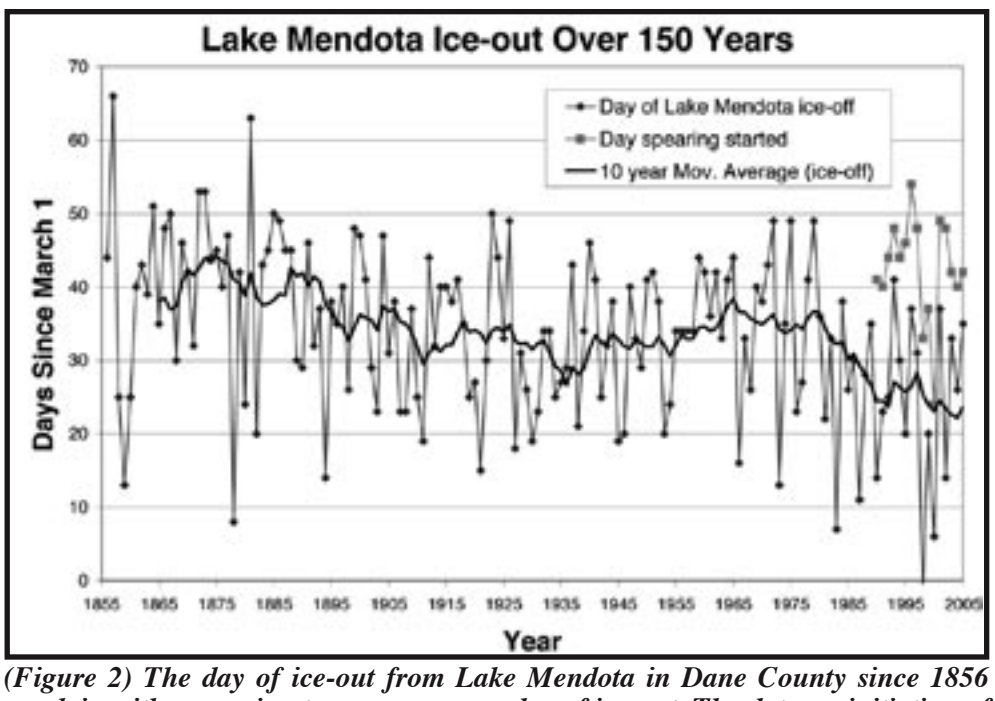
By John Coleman, GLIFWC Environmental Section Leader

The University of Wisconsin has been collecting data on the duration of ice cover on Wisconsin lakes since 1852. The lake in the state for which there is the longest ice record is Madison's Lake Mendota. Since 1852, the general trend has been a decrease in the duration of winter ice cover and for lakes to lose their ice earlier in the spring. Since the start of tribal spearing is dependent on when ice goes out in the spring, the start date for spearing season was compared to the recorded date of Lake Mendota ice-out. The dates of Lake Mendota ice-out and the start of spearing over the last 16 years were found to be correlated (Figure 1). In years of early ice-out on Lake Mendota, spearing began earlier. In the mid-1800's ice-out was approximately fifteen days later than it is now (Figure 2).

Assuming that the correlation between Mendota ice-out and the start of spearing held in the past, one can reasonably assume that in the mid-1800s the start of spearing also occurred approximately fifteen days later than it occurs today.



(Figure 1) The day of ice-out from Lake Mendota in Dane County and the day that tribal spearers caught their first fish for each year since 1990. A regression of ice-out vs. start of spearing was significant (p<0.005, r-square=0.51).



(Figure 2) The day of ice-out from Lake Mendota in Dane County since 1856 overlain with a running ten-year average day of ice-out. The data on initiation of tribal spring spearing since 1990 is also plotted for reference.

Toxic risk on your plate

By Sam Roe & Michael Hawthorne, Chicago Tribune

Editor's note: *The following article is being reprinted from a series by the* ***Chicago News-Tribune*** *entitled the Mercury Menace. This article ran in December 2005 and relates to walleye from Canada which is being marketed extensively in the United States.*

The Tribune ran its own independent mercury testing on the fish being marketed and found high levels of mercury in the walleye tested. A second part in the series relating to tuna will be run in the next issue of ***Mazina'igan****.*

Chicago, Ill.—Supermarkets throughout the Chicago area are routinely selling seafood highly contaminated with mercury, a toxic metal that can cause learning disabilities in children and neurological problems in adults, a Tribune investigation has found.

In one of the nation's most comprehensive studies of mercury in commercial fish, testing by the newspaper showed that a variety of popular seafood was so tainted that federal regulators could confiscate the fish for violating food safety rules.

The testing also showed that mercury is more pervasive in fish than what the government has told the public, making it difficult for consumers to avoid the problem, no matter where they shop.

It is not by happenstance that contaminated fish can be found on shelves and at seafood counters throughout the region, from small neighborhood shops on the South Side to sprawling supermarket chain stores in the northwest suburbs.

The Tribune's investigation reveals a decades-long pattern of the U.S. government knowingly allowing millions of Americans to eat seafood with unsafe levels of mercury.

Regulators have repeatedly downplayed the hazards, failed to take basic steps to protect public health and misled consumers about the true dangers, documents and interviews show.

The government does not seize high-mercury fish that violate U.S. limits. Regulators do not even inspect seafood for mercury—not in ports, processing plants or supermarkets.

In fact, federal officials have tested so few fish that they have only a limited idea of how much mercury many species contain, government data show. For example, the government has tested just four walleye and 24 shrimp samples since 1978. The newspaper tested more samples of commercial walleye than the government has in the last quarter-century.

The fishing industry also has failed consumers. The newspaper's investigation found that U.S. tuna companies often package and sell a high-mercury tuna species as canned light tuna—a product the government specifically recommends as a low-mercury choice.

The consequence is that eating canned tuna—one of the nation's most popular foods—is far more hazardous than what the government and industry have led consumers to believe.

Canadian walleye, served in many restaurants, may contain high levels of mercury—high enough to ban the fish from being sold in Canada.

Medical experts agree that, on balance, eating fish is good for most people. Seafood is a low-fat source of protein, and some fish are rich in omega-3 fatty acids, which are thought to help prevent heart disease.

And Americans have responded to the idea that fish is healthy: Per capita seafood consumption hit an all-time high last year.

But for high-risk groups—young children, pregnant women, nursing mothers and women who could get pregnant—some fish might do more harm than good. Mercury can damage the central nervous system of children, causing subtle delays in walking and talking as well as decreased attention span and memory.

Adults can experience headaches, fatigue, numbness in the hands and feet, and a lack of concentration. Some studies suggest that men also face an increased risk of heart attacks.

No one knows how many people in the U.S. have been harmed by mercury in fish. But a recent government study estimated 410,000 babies are born each year at risk for mercury poisoning because of high levels in their mothers' bodies.

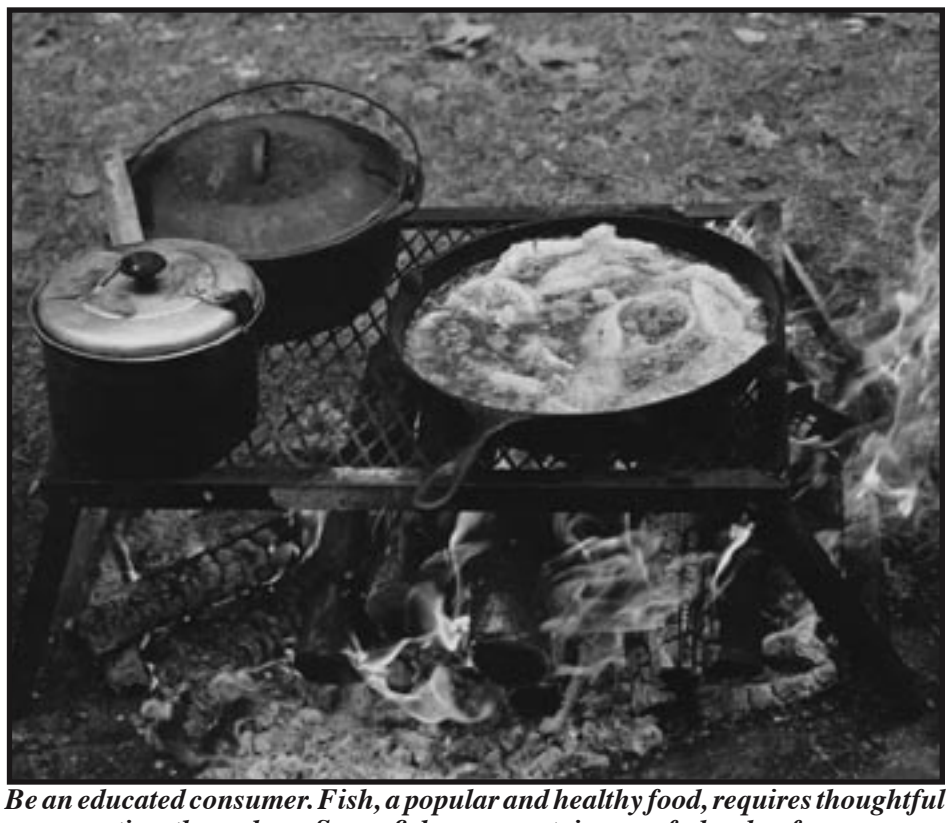
The Tribune's testing suggests that many people unknowingly are putting themselves at risk.

The newspaper randomly selected supermarket chain stores and fish markets in the Chicago area and bought 18 samples each of eight kinds of fish, including two types of canned tuna. The samples were sent for analysis to a laboratory at Rutgers University, which has performed some of the nation's only studies of mercury in store-bought seafood.

In the Tribune tests, some popular fish, such as swordfish, showed extremely high levels of mercury; other fish, such as salmon, had low amounts. Mercury levels varied widely in most kinds of fish tested, sometimes spiking far higher in individual samples than the averages reported by the government.

High levels also were found in two species for which the government has not issued consumer warnings: orange roughy and walleye.

Many of the walleye contained so much mercury that the country supplying it, Canada, could ban the fish from being sold within its borders because the contamination violated Canadian safety standards.



Be an educated consumer. Fish, a popular and healthy food, requires thoughtful consumption these days. Some fish may contain unsafe levels of mercury or other contaminants, while others are safe. Much depends on the waters where the fish are caught, their size and species. For information on mercury levels in lakes commonly speared by tribal members go to GLIFWC's website at www.glifwc.org for GLIFWC's mercury maps. (Photo by Amoose)

Some samples of grouper, tuna steak and canned tuna were so high in mercury that millions of American women would exceed the U.S. mercury exposure limit by eating just one 6-ounce meal in a week. This conclusion is based on applying a federal formula for the acceptable amount of mercury in the bloodstream to a 161-pound woman, the government's estimated average weight of a U.S. female of childbearing age.

Uncertainties pose challenge for public

The simple question "Is fish safe to eat?" depends on many factors. What kinds of fish do you eat? How much do you eat? How often do you eat it? How much do you weigh?

Avoiding mercury-contaminated fish is further complicated by the fact that the metal is ubiquitous in the world's oceans, lakes and rivers. So it likely does not matter who catches the seafood, processes it or sells it. In fact, many supermarket chains share the same suppliers.

With environmental groups and some state officials calling for mercury warnings in supermarkets, Jewel, Dominick's and other major chains have begun to post advisories. But these chains cannot tell shoppers how much mercury is in any particular piece of fish.

Shoppers have no way of knowing, for instance, if one piece of orange roughy in a supermarket display case has a widely different amount of mercury than the orange roughy fillet next to it. The same is true for canned tuna and many other kinds of fish.

No federal testing program exists for mercury, and scientists can provide only estimates of contamination based on limited sampling.

Officials with the Food and Drug Administration, which is responsible for the safety of commercial seafood, told the Tribune that the agency has neither the time nor the money to routinely test fish. They also said the government's task of protecting consumers is complex.

"If fish were only bad, this would be easy," said David Acheson, the FDA's chief medical officer. "But fish have many benefits."

Last year, the FDA and the U.S. Environmental Protection Agency jointly issued an advisory that told pregnant women, young children and other at-risk groups not to eat shark, swordfish, king mackerel and tilefish because of high mercury levels. The warning also cautioned those groups to limit their overall fish consumption to 12 ounces a week, including no more than 6 ounces of canned albacore tuna.

The nation's overall food safety system has been repeatedly criticized for flawed inspections and limited enforcement. But several government studies have singled out the FDA for not doing enough to ensure fish is safe to eat.

The FDA, for instance, does not require exporting countries to maintain safety, sanitation and inspection programs comparable with the U.S. system, even though 80 percent of the seafood that Americans consume is imported. By contrast, the Department of Agriculture, which monitors meat and poultry, requires every exporter to meet such standards.

For its part, the seafood industry stresses the health benefits of eating fish. Industry representatives told the Tribune that tough mercury warnings would not encourage consumers to eat fish that are less contaminated. Instead, the industry fears such warnings would simply scare people away from seafood altogether.

"If you stop eating tuna, it's not like you start eating a salmon sandwich. No one does that," said John Stiker, who until recently was an executive vice president of Bumble Bee Seafoods, a leading canned tuna company. "They end up eating some other kind of sandwich. And I got to tell you, there's nothing good about ham for a pregnant mom and her baby. Nothing."

(See Banned in Canada, page 23)

Superior brook trout lured to southern waters

Red Cliff Hatchery diversifies in aquaculture

By Charlie Otto Rasmussen
Staff Writer

Red Cliff, Wis.—It's a crunch heard 'round the lake—the sound of constricting budgets that fuel natural resource programs in the Gichigami region.

Tribal, state and federal officials are increasingly challenged by how to maintain projects like indigenous species restoration as operating costs rise and funding evaporates.

In one effort to manage this trend, the Red Cliff Tribal Fish Hatchery in far northern Wisconsin is broadening its client base and dabbling in the emerging aquaculture trade. Essentially underwater farming, aquaculture operations produce fish, animals and plants for human uses including food.

"Our sole purpose in this program is to restore native fish populations in the area, but as funding dollars continue to dwindle we look for other avenues to keep it going," said Hatchery Manager Sean Charette.

Some of those avenues are southbound, leading to Middle America where fish farmers buy Red Cliff's coaster brook trout for restaurants, private fishing ponds and taxidermy mounts. A new 900-gallon hatchery truck Red Cliff acquired through a Bureau of Indian Affairs grant is capable of transporting everything from months-old fingerlings to hefty five-year-old fish.

Before export to other facilities, however, U.S. Fish & Wildlife Service (USFWS) biologists test for ailments that can occur in hatchery-raised stock including whirling disease and infectious pancreatic necrosis. The USFWS La Crosse Fish Health Center certifies Red Cliff's hatchery as a Class A, disease-free facility.

"There are only two sources in the U.S. that I am aware of that meet the stringent health inspections standards to allow me to import live brook trout into the state. Red Cliff is one," said Indiana entrepreneur Cecil Baird.

Hook and line harvester Tom Steele with 6 lbs. 4 oz. brook trout caught in a private pond in Indiana. The fish left the Red Cliff Hatchery a few years earlier only a few inches long. (Photo by Cecil Baird)

Primarily a full-time taxidermist, Baird discovered a niche market purchasing coaster fingerlings from Red Cliff in 2003 and growing them to trophy size—around 20" or so—in earthen ponds on his property. After packing on approximately five pounds in a two-year span, brook trout are captured, frozen whole and shipped to other taxidermists, taxidermy schools and fish replica makers around the country.

"I have a very strong demand for frozen fish," said Baird who also 'grows out' hatchery-born brown trout, yellow perch, bluegill and largemouth bass in his ponds. "Taxidermists use the frozen fish I sell for their show rooms and mount them up for state, national and world competitions which are a very big thing."

Charette said he also sells mature brook trout that died at the Red Cliff hatchery, charging $5 a foot. Hatchery staff freezes the belly-up fish—often older brood stock—and ships them to taxidermists.

In cooperation with state and federal resource agencies, the Red Cliff hatchery has produced Nipigon-strain brookies for more than a decade. In the fall of 1997, broodstock originating from Ontario's Lake Nipigon region began producing eggs at Red Cliff. Over the following years, the tribe produced more than a million brook trout, stocking the vast majority in Lake Superior along the reservation shoreline. Charette expects the 2006 yield to be around 190,000 fish.

More to come

While Red Cliff is selling fewer trout eggs and hatchery stock to regional natural resource agencies, Charette is thinking toward future projects with help from increasing aquaculture revenue. If budgets and cash flow allow, Charette said the tribe hopes to add a new hatchery building to raise more native species including perch and lake herring. Perch production could help replenish declining wild stocks and herring eggs—a Japanese delicacy—may be the tribe's first international export.

"With herring you don't have to kill the fish. We'd stagger spawning times throughout the year to have a constant supply of eggs to ship out," Charette said.

For more information on Red Cliff's hatchery program call (715) 779-3750.

A new hatchery truck fitted with with a 900 gallon tank can transport everything from fingerlings to five-year-old fish. Purchased with assistance from a Bureau of Indian Affairs grant, Red Cliff hatchery staff will utilize the vehicle to transport fish like coaster brook trout hundreds of miles for stocking in public waters and private ponds. Pictured are technicians Daryl Boyd and Brian Bainbridge; Office Manager Shelly Gurnoe and Hatchery Manager Sean Charette. (Photo by Charlie Otto Rasmussen)

Name that fish

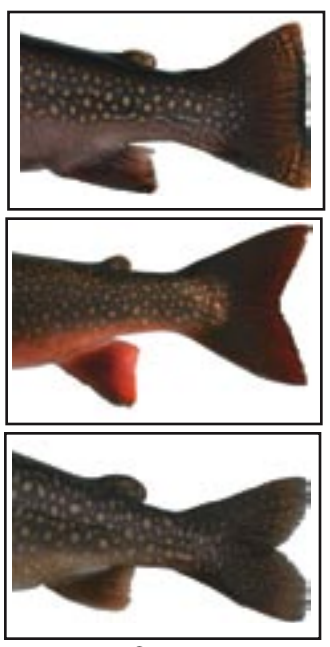
From the western corner of Lake Superior to Black River Harbor, Michigan, fishermen are reeling in colorful trout marked with tiny tags no bigger than a short link of spaghetti. Labeled with the Red Cliff Tribal Hatchery name, telephone number and promise of a reward, the tags are yielding a growing curiosity among fishermen: are these fish splake—a popular hybrid trout stocked in Lake Superior? Or something else?

"Yep, they're brook trout," said Sean Charette, hatchery manager at Red Cliff. "Sometimes it can be hard to tell."

Prior to releasing coaster brook trout into Lake Superior, hatchery staff attaches a small floy tag to the fish to help track their movements and habitat preferences. Red Cliff staff relies on anglers to report where they caught tagged coasters. Fishermen receive a small reward, generally a fishing lure or five-dollar bill for sharing the information. Charette said anglers often report catching the native trout species along rocky near-shore areas like the Black River Harbor coastline and closer to the reservation around Cornucopia.

A hatchery-produced cross between a female lake trout and a male brook trout, a splake's appearance can be dominated by one of the parent fish making them difficult to identify. As coaster brook trout populations gradually increase in the region, fisheries managers hope to raise public awareness of restoration efforts and help anglers recognize the sometimes subtle differences between Lake Superior trout. One of the best ways to pick out a brook trout is look for the "square" tail in fish at least a foot long as illustrated in the following images:

Lake Superior
Brook Trout, Splake, Lake Trout
(for fish at least 12 inches in length)



Brook Trout
Tail is very square, not forked.

Splake
Tail is moderately forked, between brook and lake trout.

Lake Trout
Tail is fully forked.

Generally color is not used for definitive identification.

Reprinted with permission from Wild River Chapter of Trout Unlimited.

Once widespread along Lake Superior shorelines and its tributaries, coaster populations were reduced to small remnant populations by the middle of the twentieth century from overfishing and habitat degradation. Partnerships over the last dozen years between tribal, state and federal agencies and clubs like Trout Unlimited are helping restore brook trout populations to portions of their historic range.

Fishermen take advantage of January open water

GLIFWC monitors catch on Lake Superior

By Charlie Otto Rasmussen
Staff Writer

Saxon Harbor, Wis.—For the first time in 17 years, tribal commercial fishermen set gill nets in Lake Superior waters off Little Girls Point during the formerly frigid month of January. Warm weather beginning in late December and into the new year made it possible for fishing tugs to access whitefish stocks in Michigan's far western portion of Lake Superior near the Wisconsin border.

"In the past Black River and Saxon Harbors have been iced-in during January because predominantly northwest winds push ice-packs into shore and keep fishermen off the lake," said GLIFWC Fisheries Biologist Bill Mattes. "This year there were a lot of southerly winds and little ice on the lake."

For the second consecutive season the tribal tug, Thomas C. Mullens, fished western 1842 Treaty waters in Michigan from the nearby Wisconsin port, Saxon Harbor. Compared to the wild fluctuations of temperature and ice conditions last season, crew members had a relatively easy time reaching their gill nets during the 2005-06 winter.

"The fishing was good and the weather was great. The prices were better than last year, too," said Peter Andrews, Mullens crewman. Andrews said they were able to get a better return on their whitefish by trucking to high-paying buyers in central and eastern Upper Michigan, rather than limiting sales to the local market.

Andrews said they also caught a number of lake trout, some of which were sold right off the boat to local residents waiting at the dock. Since the tribal harvest is restrictive, however, tugboat fishermen generally avoid lakers, which are regulated by quotas and must be individually marked with a plastic tag.

Talking fish at Saxon Harbor

Two-man teams from GLIFWC's Great Lakes Section periodically monitored the winter catch at landings used by commercial fishermen exercising 1842 Treaty rights. Based on preliminary data including scale samples, length and weight, Mattes, Great Lakes Section Leader, estimates that whitefish stocks northeast of Saxon Harbor are experiencing a 34% mortality rate—or about half the number of fish that can be safely taken without potentially harming spawning populations.

Following concerns voiced by some local residents over commercial fishing activity, Mattes addressed approximately 30 members of the Saxon Harbor Boating Club on February 12. During the two-hour presentation that included question-and-answer breaks, Mattes explained Ojibwe treaty history, biological communities related to the Lake Superior fishery and cooperative interagency resource management. The meeting helped area fishermen—largely concerned about the exploitation of popular sport fish like trout and salmon—better understand the fishery and how tribal harvests are conducted and regulated. Mattes said that through conversations with Club members he gained new insights into diets and habits of fish species commonly caught by anglers in late-summer, a time period that has historically received little attention by biologists that conduct routine assessments on fisheries' populations.

GLIFWC's Great Lakes Section Biologist Bill Mattes (left) and Great Lakes Technician, Mike Plucinski, monitor the winter catch at landings used by commercial fishermen exercising 1842 Treaty rights. They appear above aboard the Thomas C. Mullens in Saxon Harbor. (Photo by Charlie Otto Rasmussen)

Fishermen, fish processors wrestle with HACCP plans

By Sue Erickson
Staff Writer

Red Cliff, Wis.—HACCP (pronounced has-sip) stands for Hazard Analysis and Critical Control Point. Twenty-six tribal and non-tribal commercial fishermen and fish marketers received HACCP certification after completing a three-day training session at Red Cliff last January. During the intensive workshop they learned the "ins and outs" of federal HACCP requirements for seafood handlers. This includes those who process and/or market fish from the Great Lakes.

HACCP procedures, implemented through the US Food and Drug Administration (FDA), target prevention of seafood contamination as seafood moves from the water to the consumers' plates. This places more responsibility on fish handlers to stop contamination at pre-identified sources.

Since the 1997 FDA mandate that all fish processors implement HACCP plans, Michigan Sea Grant and the Great Lakes Indian Fish & Wildlife Commission (GLIFWC) have collaborated to provide a number of intensive HACCP workshops. Their aim has been to assist treaty and non-tribal Great Lakes fishermen, fish processors and marketers bring their businesses into compliance, standardize production practices of their value-added products, limit their business liability, and put their businesses in a position to better compete in a world economy.

Workshop presenters, Ron Kinnunen, Michigan Sea Grant certified HACCP trainer; Mike Erdman, Michigan State University Extension, along with Jim Thannum, GLIFWC natural resource development specialist, have offered HACCP training on several reservations during the last few years to assist tribal and other fishermen in implementing HACCP plans. The plans require considerable record-keeping and adherence to seafood safety and sanitation standards as fish are brought from the boat to land and ultimately to market.

Several thick manuals provided to participants attest to the fact that the "simple days" of a hardworking fisherman are gone. As explained by Thannum, the HACCP process asks fish handlers to first identify the points of production where the fish product is most likely to become contaminated and from what. This would be the "hazard analysis." The second step is to identify at what junctures in the processing or handling of the fish these hazards can most efficiently be eliminated and by what methods.

The fish handler is required to maintain written logs that describe when and how preventive measures are taken. They then must record when those actions have been completed. For example, it could be checking the temperature and timing in the process of smoking fish, making sure that the smoker maintains a temperature of 145 degrees or above for at least 30 minutes in the process to kill various bacteria and control botulism spores.

(See HAACP goal, page 7)

Lots of manuals and methods are part of the training on Hazard Analysis and Critical Control Point (HACCP) for the commercial fish industry. Learning the ins and outs of HACCP at a training session in Red Cliff this winter were Steve Newago, Bad River member, and Kathy Newago, who operates a family-run fish shop in Bayfield during summer months. (Photo by Sue Erickson)

Bad River treatment takes a bite out of lamprey numbers

By Charlie Otto Rasmussen
Staff Writer

Odanah, Wis.—Fewer parasitic sea lamprey will worm their way out of the Bad River streambed this year following a round of treatments by the U.S. Fish & Wildlife Service (USFWS). In cooperation with Bad River tribal natural resources staff, the USFWS Sea Lamprey Management team deposited a lamprey-killing toxin into Bad River watershed streams last September, including Vaughn Creek and the Potato, Marengo and White Rivers.

"This program continues to be a highly effective means of controlling sea lamprey numbers," said Terry Morse, USFWS's lamprey program leader. "We have a very good relationship with the tribe and working together has benefited the resource." Known as TFM, the unique toxin used by aquatic managers targets and suffocates sea lamprey while having little or no impact on other species in river systems.

U.S. Fish & Wildlife Service Chemist David Johnson conducts lampricide tests from a mobile lab along the White River. (COR)

Following spring spawning runs by adults in many Lake Superior tributaries, lamprey eggs hatch and the juveniles burrow into the river bottom. Over the next three to six years, they filter feed on algae and tiny organisms before emerging and swimming downstream into the lake. In this parasitic stage, lamprey grow up to 18-inches long and attack fish like lake trout, sucking blood and fluid from their bodies. Even though the population of the exotic eels is only 10 percent of the historic high from the 1960s, lamprey still kill far more lake trout than anglers and commercial fishermen combined.

Fine-tuning toxins

Prior to treating a riverway, USFWS chemists test up to nine concentrations of TFM onboard a mobile laboratory that is trailed to each treatment site. A pump draws water from the river, distributing it through small holding tanks containing captured juvenile lamprey. Each tank receives a graduated amount of a TFM and water solution. Chemists carefully monitor how the TFM performs at killing the two-inch lamprey in relation to the river water's pH and alkalinity. The higher the pH and alkaline levels, the more TFM is needed to do the job.

"Once we establish the correct level of treatment, we 'feed' TFM into the river for up to 12 hours," said USFWS Chemist David Johnson from a portable lab along the White River. "The juvenile lamprey live in u-shaped burrows and you'll see them come out and swim around but there's really no place to go."

In order to assess the effectiveness of the treatment and document any potential impacts on other species, Bad River staff watched from points along the bank as the toxin spread downriver. Over the ten-day monitoring period, the crew observed no mortality of non-target aquatic organisms during the lampricide treatment.

The Bad River system is the largest remaining sea lamprey producing tributary on the south shore of Lake Superior, said Tom Doolittle Bad River tribal fish & wildlife biologist. Other lamprey producing river systems along the south shore such the Brule and Middle Rivers historically produced large numbers of lamprey prior to the installation of low-head barrier dams, which prohibit spawning migrations. Had the watershed not been treated in 2005, Doolittle estimates that more than 11,000 parasitic-stage lamprey would have entered the lake. The Bad River system was last treated in 2001.

The Great Lakes Fisheries Commission—an international organization comprised of Canadian and American agencies—directs sea lamprey control efforts across all five Great Lakes. The Great Lakes Indian Fish & Wildlife Commission and its member tribe, Bad River, work on lamprey assessment and management on the Lake Superior watershed in coordination with the USFWS.

HACCP aims to provide safe Great Lakes fish

(Continued from page 6)

Compliance to this procedure is checked off in the log. All records must be kept available for federal investigators who may periodically audit the business and check for HACCP compliance. The HACCP workshop provides hands-on opportunity to work with the various forms and provides model HACCP plans as guidelines.

While somewhat daunting in terms of information and paperwork, tribal members who rely on commercial fishing for income, such as Kathy Newago and nephew Steve Newago who participated in the January workshop, both realize the workshop provides critical information for their family-operated businesses. "This is a lot of information, but it's important," Kathy commented. "My husband told me if we are going to run the fish shop, I better get to this workshop and understand what's going on."

The HACCP process builds upon the sanitation activities required under "Good Manufacturing Practices" (MPS) and could deal with the proper cleansing and sanitation of surfaces and equipment, or packing freshly caught fish with adequate amounts of clean ice, or even organizing refrigeration units so that fresh fish cannot cross-contaminate processed smoked fish.

Emphasis is placed on proper handling of delicate seafood products to ensure that contaminated products likely to cause illness do not reach the market.

In this way HACCP is proactive on prevention versus randomly testing products already on the market for contamination and then taking action to recall a product.

A more saleable product is the result

HACCP approval is critical to marketing fish because the buyer will know the standard under which the fish has been handled, increasing its value as a seafood product where deliberate measures have been taken to decrease risk of contamination and deliver a safe, healthy, fresh product to the consumer.

Thannum also notes that the Lake Superior fishermen are now competing with a global fish market, which has driven prices for fresh, Lake Superior fish down while operating costs, such as fuel, skyrocket. This, in turn, may require fishermen to process and market their own fish rather than simply sell their catch at the dock to a wholesaler. Consequently, the importance of adhering to HACCP becomes even more significant in terms of mandatory compliance with federal regulations, offering a product the consumer knows is safe and limiting personal liability.

Gilane fills new position with GLIFWC grant

By Sue Erickson
Staff Writer

Tony Gilane. (Photo by Sue Erickson)

Odanah, Wis.—Tony Gilane is not new to GLIFWC; he's just back on deck with a new hat. This time he is filling a new position under an Administration for Native American (ANA) grant program, GLIFWC Treaty Fisheries Intertribal Community Food Program, focused on marketing tribally caught Lake Superior fish. His position as an office assistant/student intern began in December 2005 and will run through September 2007.

Gilane worked for GLIFWC in several capacities during 2005, assisting the Biological Services Division to complete telephone harvest surveys and prepare fish sampling kits as well as assist with fishery assessments in Lake Superior.

Currently a junior at Northland College with a biology major, Tony, a Bad River tribal member, juggles work with school. He works part time when college is in session and full time when on break.

In his current position to date, he assisted with the Hazard and Critical Control Point training workshop at Red Cliff last January, helping to compile several of the training manuals used during the workshop and also contacting tribal fishermen who had not yet completed the training in order to encourage their attendance.

He has also surveyed tribal restaurants as well as tribal programs regarding the kind of fish they serve and from where they obtain it. The idea behind the grant is to assist tribal commercial fishermen market their catch directly to local establishments because the wholesale price has taken a plunge.

He will also be assisting with fish boils and fish frys this summer, another marketing initiative. In preparation he will be attending a training session in Rice Lake this April to obtain certification in food preparation.

"I'm proud and honored to be a part of this effort to help restore a viable income for our tribal commercial fishermen," he remarks. "I'm learning a lot, being exposed to new experiences and assisting in a very worthwhile project."

Knotweeds: Knot your average weeds!

By GLIFWC Staff

Odanah, Wis.—One sometimes hears amazing reports of "bamboo" growing in our area. True bamboo is native to warmer parts of eastern Asia, though, and can't survive our harsh winters! These reports can usually be traced back to a group of plants called knotweeds.

Japanese knotweed *(Fallopia japonica)* is native to Japan, Taiwan, Korea, and eastern China, where it is found in a variety of habitats, including lava flows. Giant or Sakhalin Island knotweed *(Fallopia sachalinense)* is native to northern Japan and Sakhalin Island. Both were introduced to North America over 100 years ago.

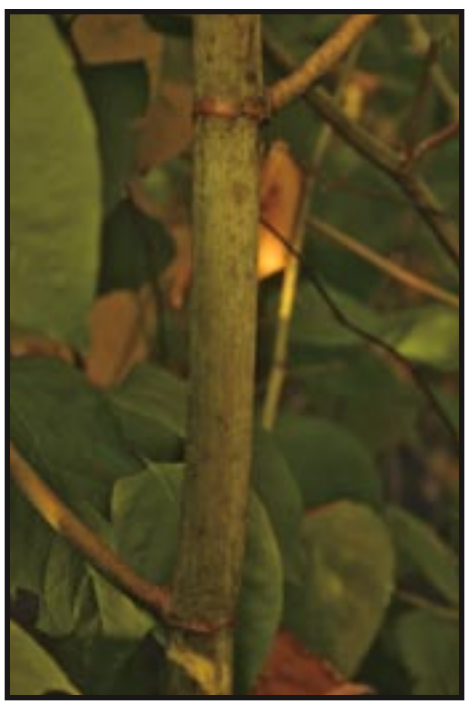
Japanese knotweed was brought to Europe from Japan in the mid-1800s by a fellow named Phillipe von Siebold, who owned a commercial nursery in the Netherlands. Within a few decades it was being sold and planted as an ornamental in much of Britain and Europe, and by 1877 it had made its way to the eastern US. Giant knotweed was introduced to North America in 1894 as an ornamental and forage plant. These knotweeds are still occasionally planted as ornamentals today.

Past (and present) confusion concerning the classification of these knotweeds is due in large part to Japanese knotweed's history of "discovery" by western botanists. Japanese knotweed was first described by Houttuyn in 1777, who gave it the latin name of Reynoutria japonica. It was rediscovered around 1840 by Siebold and Zuccarini, who named it Polygonum cuspidatum. Recent taxonomic work has supported Meissner's 1856 classification of these knotweeds in the genus Fallopia. Common names include Japanese bamboo, Japanese fleece flower, Mexican bamboo, donkey rhubarb, Sally rhubarb, German sausage, and pea-shooter plant.

Branches produce lacy white flowers. (Photo by Steve Garske)

An impressive and aggressive plant

Knotweeds are some of the more noticeable plants around. The stems are hollow, jointed, an inch or more thick, and resemble bamboo. Mature stems are green with reddish streaks and spots, while smaller, immature stems may be dull reddish purple. Japanese knotweed can grow to ten feet tall, with leaves seven inches long and almost as broad. Giant knotweed gets even bigger—its stems can reach 16 feet, with leaves a foot long! Japanese and giant knotweed can hybridize, producing offspring called "hybrid" or "Bohemian" knotweed *(Fallopia x bohemicum)*, that are intermediate in size and other characteristics.



Bamboo-like stems. (Photo by Steve Garske)

Japanese, giant, and hybrid knotweeds are all vigorously rhizomatous perennials. (Rhizomes are really underground stems, but most people think of them as roots.) Well-established plants develop a deep central taproot with a woody crown, that can penetrate as deep as 6.6 feet into the soil. Stout rhizomes grow horizontally from these crowns, forming an underground network that may eventually extend as much as 60 feet!

All the knotweeds produce lacy clusters of small, creamy-white flowers along their upper branches in midsummer. The flower clusters of male Japanese knotweed plants are said to extend upward, with the tip of the cluster higher than the base, while those of the female plants droop, with the tip often lower than the base. The outer "petals" of the flowers are broadly winged at maturity.

The knotweeds are functionally dioecious, which means that some plants produce only male-fertile flowers while others produce only female-fertile flowers. Because they were apparently all derived vegetatively from a single female plant, all the Japanese knotweed plants in North America are female. Both male and female giant and hybrid knotweed plants are found in North America.

Because there are no male Japanese knotweed plants in North America, the female plants must cross with giant knotweed or hybrid knotweed males to produce viable seeds. But because of the different chromosome numbers of the two parent plants, resulting hybrids generally have low fertility. Also, any seedlings that are produced must reach a certain critical size to survive the winter, and are therefore sensitive to early frosts. This inability to reproduce effectively by seed has undoubtedly limited the dispersal of knotweeds in North America.

The typical mode of dispersal to new sites is vegetatively, through deliberate planting or the dumping of yard waste. Rhizomes as short as three inches long can root and start new colonies. Shoots can reroot as well. Rhizomes, shoots, and any viable seed may be dispersed by construction equipment or by natural forces such as flowing water. Beaver find knotweed stalks large and woody enough to use for construction, and have been known to move live stalks and other plant parts to new sites. Once established, knotweeds are tough, tenacious competitors that spread relentlessly in suitable habitats.

Knotweeds can be found along roadsides, railroad tracks, woodland edges, shorelines, floodplains, and other sunny, moist to wet, disturbed areas. They thrive in riparian areas and readily spread along streams and rivers.

The problem with knotweeds

Knotweeds typically form dense stands that quickly shade out any plants below. Shoots can grow as fast as three inches per day in early spring, quickly overtopping and shading out competitors. The dead stalks and leaf litter are resistant to decay and build up on the ground, further inhibiting competition from other plants.

Knotweeds are sometimes planted for erosion control. But despite their extensive rhizome systems, they do a poor job of controlling erosion, and can even increase erosion by displacing grasses and other plants. Increased streambank erosion leads to siltation of spawning beds and reduced fish habitat. Dense stands along streambanks can also reduce stream flow and increase flooding. Japanese knotweed has been shown to reduce diversity of plant-feeding insects, though large numbers of bees and other nectar-feeders are attracted to the flowers. Knotweeds are of little use to most wildlife.

Economic costs of knotweeds have included repair of flood control structures and replacement of cracked paving and asphalt through which the plant has grown. The rhizomes are capable of emerging from three feet below ground and have been observed breaking through two inches of pavement. Dense stands of knotweed also restrict access to streams and rivers, reducing recreational opportunities. Japanese knotweed is even considered a significant "weed of field crops and pastures" in Missouri. Knotweed mitigation and control in Britain is estimated to cost tens of millions of dollars per year.

While still relatively uncommon in the upper midwest, knotweeds are poised to spread here. New hybrid strains are likely to arise that are highly fertile. And as the frost-free season continues to lengthen due to global warming, seedling survival and vigor of established plants can be expected to increase.

(See What to do about knotweed, page 9)

Japanese knotweed patch on power line right-of-way. (Photo by Steve Garske)

Ceded territory news briefs

Compiled by Sue Erickson, Staff Writer

Great Lakes Strategy ready for implementation

Dollars needed

The Great Lakes Regional Collaboration unveiled its strategy to protect and restore the Great Lakes at a December 12, 2005 summit in Chicago. The Collaboration was formed following a 2004 Executive Order from President Bush to create a federal inter-agency task force to improve federal coordination on the Great Lakes.

The final strategy resulted from the work of eight strategy teams each providing information to guide restoration efforts. The eight teams included: Areas of Concern; Restoration/Sediments; Coastal Health; Habitat/Species; Indicators and Information; Invasive Species; Nonpoint Source; Persistent Bioaccumulative Toxics Reduction; and Sustainable Development.

The Strategy also includes a section entitled "Tribal Nations Issues and Perspectives," which provides information unique to tribal governments and communities. Thirty-five tribal nations are within the Great Lakes Basin with a total enrollment of about 175,000 people, according to the Strategy.

Federal funding for implementation of the Strategy remains an issue.

The Great Lakes Strategy can be viewed at its website: *www/glrc/us*.

40 rivers, creeks or river segments proposed for increased protection

The Wisconsin Department of Natural Resources (WDNR) provided additional time for public comment on its proposal to designate 40 northern rivers, creeks or river segments as Outstanding Resource Waters (ORW) or Exceptional Resource Waters (ERW) designation by extending the comment period to February 28th. Acting on an August 2004 petition prepared by Midwest Environmental Advocates in collaboration with the River Alliance of Wisconsin that requested 100 river segments in northern Wisconsin be afforded increased legal protection, the WDNR released a proposal recommending 40 of the 100 listed rivers, creeks or river segments be considered for ORW or ERW status.

Under ORW or ERW levels of discharge released into the water cannot exceed historic levels of pollutants. The designations act to preserve water quality, primarily by preventing wastewater discharge directly into the streams from new sources.

The proposal has come under fire from the Wisconsin Manufacturers and Commerce who say the new bill will discourage new employers from coming to the northern region due to the high cost of water treatment. Currently, in Wisconsinover 2,000 miles of stream, 97 lakes and six flowages have an ORW designation and 3,661 miles of streams have an ERW designation.

A list of rivers and creeks under consideration can be found on the WDNR website at *http://dnr.wi.gov*

CWD testing continues

No occurrences outside of eradication or herd reduction zones

In 2005 the Wisconsin Department of Natural Resources (WDNR) sampled a total of 24,136 wild deer and analyzed 23,102 of them, finding 112 deer positive for chronic wasting disease (CWD). All those testing positive were from either the Eradication or Herd Reduction zones in southern Wisconsin. Of those sampled, 5,000 plus were taken from outside the two designated zones, but none came up positive.

Since testing began until February 14, 2006, a total of 99,495 deer have been sampled with 98,471 of those analyzed. A total of 582 deer tested positive for CWD—all from either the Eradication or Herd Reduction zones. CWD was first found in the southern Wisconsin deer herd in February 2002.

(Information taken from the WDNR website.)

What to do about knotweed

(Continued from page 8)

Getting rid of existing patches

Eradicating even small patches of knotweed takes persistence and determination. And large patches can be almost impossible to eradicate. Plants must be dug up and/or cut to ground level every few weeks throughout the growing season for several seasons to have any hope of starving the roots and eradicating the plants. Any letup will allow the plants to quickly recover.

Any live plant parts left on the site after cutting and digging should be destroyed. If they are in an area where humans, animals, or water are not likely to move them, they can be dried and/or burned. Turning them with a rake will hasten the drying process. Extreme care should be taken to keep them out of floodplains or other high-risk habitats.

A variety of herbicides have proven useful in controlling knotweed, including glyphosate (Rodeo, Aquamaster, Gly Star, Round-up among others), triclopyr (Garlon 3a and many "shrub-killers"), 2,4-D, and Imazapyr (Arsenal). The best time to apply herbicides is around flowering time. Good results have been achieved by using a special syringe to inject the stems with glyphosate. Several treatments will be needed over several years to eradicate the plants.

Whenever herbicides are used, care should be taken to avoid spraying surrounding (and competing) vegetation and to minimize human contact. Any attempt to control knotweeds in wet habitats must be done using herbicides formulated for use over water. Permits are required for herbicide application over water in many states, including Wisconsin, Michigan and Minnesota. Consult your local resource agency for advice before treating knotweed infestations with herbicide and follow the label instructions.

Biological control

Within its native range, a wide variety of insects and fungi attack Japanese knotweed, often defoliating the plants by the end of the growing season. But when knotweeds were imported, their natural pests and pathogens were left behind, giving them an advantage over the native plants. North American stands of knotweed rarely exhibit significant damage from insects and pathogens.

Scientists from the Centre for Agriculture and Bioscience International (CABI) carried out an initial survey for knotweed pests in Japan in August 2000 (CABI 2005). With the help of several funding partners, including Cornell University in New York, research into the biology of insects and diseases infesting Japanese knotweed began in May 2003. Three insects—a "jumping plant louse," a weevil and a chrysomelid beetle—have passed preliminary screening and are being studied further. A rust fungus and a leafspot organism have also shown promise. The goal is to find insects and other natural pests that are host-specific (only attack knotweeds) and that will effectively control these plants outside their native range.

Avoid spreading knotweeds

The best way to avoid spreading knotweeds to new areas is to avoid planting them! As mentioned above, knotweeds may be sold under a variety of names. Further, dwarf and variegated varieties of Japanese knotweed are often advertised (with little justification) as "non-invasive." Don't buy it!

While there's nothing quite like Japanese or giant knotweed, lots of other tall, showy native substitute plants exist. For eye-catching size, the native cow parsnip or bibigwewanashk *(Heracleum lanatum)* makes a good substitute for knotweed. Plants do well in moist to wet soil and can reach nine feet tall. (Care should be taken around this plant, though. While not as potent as wild parsnip and giant hogweed, this plant can also cause photosensitivity, when bare skin is exposed to this plant in the presence of sunlight. See "Burning Topics: Wild Parsnip and Giant Hogweed" in the Spring 2005 ***Mazina'igan***.)

Another large showy native is the cup plant, or akandamoo *(Silphium perfoliatum)*, a sunflower relative whose leaves form "cups" around the stem that hold water after rain. This water can then be used by insects and hummingbirds. The seeds are readily eaten by birds. And a number of native shrubs have the same general shape and size as the knotweeds, including alternate-leaved dogwood or moozwemizh *(Cornus alternifolia)*, winterberry or animoshi-min *(Ilex verticillata)*, and red elderberry or papashkisiganak *(Sambucus racemosa)*.

If you would like more information on growing native plants, please contact Karen Danielsen at GLIFWC (715) 682-6619 ext. 125.

Turn the Tables on Knotweed!

Perhaps the most unique and fulfilling control method for knotweeds is to eat them! The early spring shoots are edible and can be used like rhubarb (a relative of knotweed). While this method is unlikely to have a significant effect on knotweed patches, it is reputed to be tasty.

Two other cautions should be followed when eating knotweed or any other wild plant:

1) Make SURE you have correctly identified the plant before attempting to eat it, and
2) avoid gathering from patches that may be growing in contaminated soil or have been sprayed with herbicides, such as along road sides and railroad right-of-ways. Knotweeds are only edible in early spring, after which they become too tough and bitter to eat.

For photos, recipes and collecting tips visit the "Wildman," at MACROBUTTON HtmlResAnchor *www.wildmanstevebrill.com/Plants.Folder/Knotweed.html*.

For more information

This article was adapted from a more detailed one posted on GLIFWC's website—see MACROBUTTON HtmlResAnchor *www.glifwc.org/invasives/*. Literature references for this article are listed at MACROBUTTON HtmlResAnchor *www.glifwc.org/invasives/Fallopia_spp/refs.html*. Links to other knotweed websites appear at MACROBUTTON HtmlResAnchor *www.glifwc.org/invasives/Fallopia_spp/links.html*.

The Japanese Knotweed Alliance of Great Britain has a great site with photos and detailed information at MACROBUTTON HtmlResAnchor *www.cabi-bioscience.org/html/japanese_knotweed_alliance.htm*.

Another great website on knotweeds, including extensive information on biological control, appears at MACROBUTTON HtmlResAnchor *www.invasiveplants.net/invasiveplants/biologicalcontrol/12Knotweed.html*.

Information on weed control can be found in the TNC Weed Control Methods Handbook at *http://tncweeds.ucdavis.edu/handbook.html*.

GLIFWC Enforcement Division winter round-up

By Sue Erickson, Staff Writer

GLIFWC wardens attend three-day WDNR recertification training

Nine GLIFWC wardens along with Chief Fred Maulson completed a three-day, recertification training sponsored by the Wisconsin Department of Natural Resources (WDNR) at Ft. McCoy on February 6-8.

Randy Stark, WDNR Bureau of Law Enforcement chief warden, and Mike Lutz, WDNR, general council, kicked off the training with updates on pertinent conservation enforcement issues, including any rule changes and related court cases, according to Maulson.

Stark stressed the growing diversification of the outdoor recreation industry in Wisconsin and briefed participants on WDNR's current initiative to make the outdoors more accessible to a broad spectrum of state citizens. They have recently begun publishing brochures and offering some hunter safety classes in Hmong as part of that effort.

The second day of the session involved firearms training and qualifying shoots as well as training in Defense and Arrest Tactics and Emergency Response Training. The latter emphasized coordination required when multiple jurisdictions respond to a major accident or incident, such as the Chai Vang incident in the fall of 2004, establishing a uniform procedure and chain of command. They were also given a detailed briefing on the Chai Vang murders, which involved two county sheriff's departments and their SWAT teams, the WDNR and members of the public.

GLIFWC wardens attending the training included: Mike Soulier, Matt Koser, Matt Martin, Mark Thayer, Vern Stone, Jonas Moermond, John Mulroy, Roger McGeshick, Emily Miller, Mike Wiggins, and Matt Bark.

Fifteen Lac du Flambeau students completed a snowmobile safety course conducted by GLIFWC wardens January 10-14. GLIFWC officers Fred Maulson, Roger McGeshick and Emily Miller paired with staff from Flambeau's Choices Group to present the program that includes both classroom and hands-on participation. Choices Group is a tribal initiative that encourages young people to pursue outdoor activities like snowmobiling and winter spearfishing. (Photo by Chris Zortman)

Cross-deputization

Four GLIFWC wardens are currently pursuing cross-deputization with the state in Wisconsin, including Matt Martin, Mark Thayer, Matt Bark, and Chief Fred Maulson. Maulson is near completion of the requirements and hopes to have state creditials by this summer.

Currently six GLIFWC warden hold state credentials.

GLIFWC wardens work with WDNR accident reduction teams

Crack down on snowmobile violators

In an effort to reduce the number of snowmobile accidents this season, the WDNR increased snowmobile surveillance in some areas. GLIFWC wardens participated in joint patrols with the WDNR's accident reduction teams, participating in six arrests related to operating snowmobiles while "under the influence." GLIFWC largely assisted with transportation.

GLIFWC conducted a group check in the Iron River, Wisconsin region in cooperation with US Forest Service (USFS) Rangers. Participating in the check were front row: Vern Stone, GLIFWC; Roger McGeshick, GLIFWC; Charles Humphrey, USFS; Mark Borcovan, USFS. Back row: Jason Johnson, USFS; Chief Fred Maulson, GLIFWC; Mike Soulier, GLIFWC; and Mark Megeles, USFS. The group made a number of contacts with weekend snowmobilers during the patrol.

Snowmobile Safety classes a success

On-reservation Snowmobile Safety classes offered by GLIFWC wardens this winter graduated 77 tribal and non-tribal youth. Classes were presented at the Mille Lacs reservation in Minnesota and the Lac du Flambeau, Lac Courte Oreilles, Mole Lake, and Bad River reservations in Wisconsin. Red Cliff offered the course, but it was cancelled due to lack of participation.

Interested in ATV or Boating Safety courses?

Contact your on-reservation GLIFWC satellite enforcement office for information on course schedules this spring and summer. For a listing of GLIFWC satellite offices go to ***www.glifwc.org*** and click on the staff link.

Preparations for spring season underway

Seasonal creel clerks and part-time wardens who help monitor spearing and netting landings will meet on March 28th at the Bad River Tribal Center for orientation.

GLIFWC wardens have also been participating in spring spearing meetings on member reservations. Many were held during February; others will occur in March in preparation for the spring season.

For more information contact your local, on-reservation GLIFWC Enforcement office.

GLIFWC wardens were busy this fall monitoring the off-reservation hunting and trapping seasons. Above Wardens Emily Miller and Jonas Moermond are pictured with deer heads confiscated during the treaty deer season. In these instances, tribal members were cited for hunting without a license and failure to register a deer within the time limitation. (Photo by Fred Maulson)

Spring gathering:

Bagawaj zhigaagawinzhiig (wild leek)

By Karen Danielsen, GLIFWC Forest Ecologist

Odanah, Wis.—When spring arrives, the forest floor erupts with new plant life; bright green foliage ascends through the tarnished skeletons of last year's leaves. These determined little plants, referred to as spring ephemerals, grow rapidly with the warming temperatures, basking in the sunlight filtering through the still leafless trees.

Interestingly, one of these spring ephemerals can be found more easily by smell than by sight. Emitting a distinctive aroma—onions tinged with garlic—bagawaj zhigaagawinzhiig (wild leek, *Allium tricoccum Aiton*) is easily recognizable.

This plant has broad green leaves that arise from an underground bulb. Though the leaves grow relatively large, sometimes up to a foot long, they quickly begin wilting as soon as flower buds appear. By mid-summer, the leaves have turned into a composition of shriveled, yellow to earthy brown fibers.

In the meantime, asterisk-shaped clusters of delicate white flowers emerge on elongated, sturdy stalks. By late summer, the flowers have been replaced by hard, shiny black capsules, each holding three to six seeds.

These plants grow in the rich, moist soils of deciduous forests throughout the eastern United States. Generally, the plants grow close together creating small isolated clumps of densely crowded leaves.

Tribal members gather the bulbs and leaves of bagawaj zhigaagawinzhiig for food, either eaten raw or added as a seasoning to soups, stews, roasts or casseroles. Often having an exceptionally strong flavor, this plant can be eaten sparingly. For certain people, it can cause gastric pain.

Some tribal members gather and freeze a supply of these plants for use throughout the year. Deanna Baker and Art Tainter, Lac Courte Oreilles elders, remember their families drying and then storing bagawaj zhigaagawinzhiig for later consumption. Joe Duffy, a Red Cliff elder, remembers pickling these plants by storing them in vinegar. In his mind, nothing tasted better.

Many upscale restaurants throughout the world use this plant as a valued ingredient to an elegant meal. As a result, scores of people search for and harvest it from the wild. In Tennessee, this plant has become so over-harvested, officials have designated it as a species of special concern.

Bagawaj zhigaagawinzhiig should be harvested with respect. Tribal elders frequently teach that gathering ought to occur in amounts of only what is needed. Enough plants should remain undisturbed to ensure their survival for future generations.

Wild Leek and Potato Soup

1 bunch leeks (approximately 3 to 5 leeks)
2 tbsp. butter
4 potatoes, peeled and cubed
4 cups chicken stock
1/4 tsp. ground nutmeg
1 cup milk
salt and pepper to taste
fresh parsley to garish

Trim leeks (discard green leaves). Wash, drain and finely slice leeks. Melt butter in large saucepan and add leeks. Cook 5 minutes. Add potatoes, stir in chicken stock, salt, pepper and nutmeg. Bring to boil, cover, let simmer 30 minutes. Cool slightly. Puree in food processor or blender. Reheat and stir in milk. Serve with garish of chopped parsley sprinkled on top

(*Recipe reprinted from www.mjwdesign.com/portfolio/recipesfromthegarden.)*

Upper left photo: Flower buds of a wild leek. (Photo by Thomas G. Barnes @ USDA-NRCS PLANTS Database/Barnes, T.G. & S.W. Francis. 2004. Wildflowers and ferns of Kentucky. University Press of Kentucky. Lower left: Broad green leaves arise from an underground bulb. (GLIFWC Photo)

Building better relationships with tribes focus of USFS workshop

By Sue Erickson
Staff Writer

Ashland, Wis.—Improving working relationships with Indian tribes was the focus of a three-day workshop sponsored by the USDA Forest Service, Eastern Region at the Northern Great Lakes Visitor Center on November 2-4, 2005.

Entitled "Building Effective Government and Business Relations with American Indian Tribes," the workshop aimed at providing Forest Service staff with the background and understanding required to effectively interact with representatives of Indian tribes in government-to-government consultations, pursuant to the Executive Order 13175 issued by President Bush in November 2000.

The Order, entitled "Consultation and Coordination with Indian Tribal Governments," is a directive to federal agencies "to establish regular and meaningful consultation and collaboration with tribal officials in the development of Federal Policies that have tribal implications, to strengthen the United States government-to-government relationships with Indian tribes and to reduce the imposition of unfunded mandates on Indian tribes…"

Part of a panel discussion about building effective government and business relations with tribes were Erv Soulier, Bad River Department of Natural Resources director; Jim St. Arnold, GLIFWC's Administration for Native Americans program director, and Frank Montano, Red Cliff tribal member. The workshop was sponsored by the US Forest Service. (Photo by Sue Erickson)

The workshop covered a lot of ground, including a summary of two hundred years of history, beginning with tribes during the pre-settlement period and including the various federal policies and their impacts on Indian tribes subsequent to European settlement and the establishment of the United States. This information provided participants with an understanding of the mistrust that sometimes greets them when developing relationships with tribes.

Other areas covered in the workshop curriculum included communicating in a culturally diverse environment, building trust and relationships, and treaties, tribal sovereignty and consultation.

Representatives from various tribes, tribal governments and tribal organizations were included on the agenda to provide firsthand input into the topics of the day. On November 4 GLIFWC's Jim St. Arnold, Administration for Native Americans grant program coordinator, participated in the discussion on Trust and Relationship Building along with Erv Soulier, Director of the Bad River Department of Natural Resources, Red Cliff's Frank Montano, and Holly Yellowbear Tibbetts, Center for First American Forest Lands.

They were able to provide tips and helpful information based on personal experience. For instance, Montano explained the Ojibwe custom of offering tobacco with a request and the meaning if it is accepted. He also provided some insights into his own childhood on the reservation as well as explained the respect that Ojibwe people extend to all of nature—"all our relatives," as he put it.

Drawing on previous experience as the Keweenaw Bay Tribal Chairman, St. Arnold emphasized the need to respect tribal governments and their sovereign powers, explaining that tribal governments have many of the same powers as state governments possess. He also noted that some tribes have frequent turn-over in elected officials, so federal representatives may need to build new relationships, provide background and explanations over again in order to keep new tribal representatives informed.

St. Arnold also included a word to the wise: "When talking to one tribe, you are not talking to all. Each one has its own laws and governments," emphasizing that one tribal representative may not present the views held by others.

The Madeline Island Historical Museum to expand educational outreach

Feature ancient & contemporary Ojibwe history

By Lorraine Norrgard and Steve Cotherman

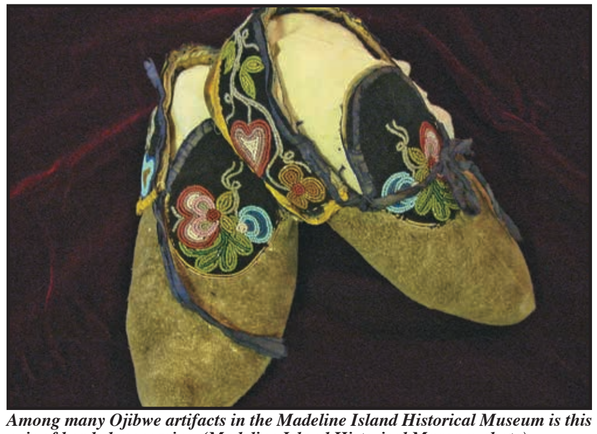
LaPointe, Wis.— When you approach LaPointe from the ferry, Madeline Island seems to rise up out of Lake Superior—its green beauty is breathtaking and powerful. As you walk down the quaint streets of La Pointe today, the modern cars, shops, restaurants, golf course, and marina disguise the fact that this island is one of the most historic places in Wisconsin. Across from the ferryboat landing is the Madeline Island Historical Museum, which is owned and operated by the Wisconsin State Historical Society. It is an excellent starting point for an important journey back in time for Anishinaabe, (Ojibwe) and non-Indian people alike.

Museum background

The Madeline Island Historical Museum opened its doors in 1958 as a place where area residents and visitors could learn about the rich and fascinating living history of Moningwanekaaning Minis. Four individuals with deep ties to the island were primarily responsible for the museum. Leo Capser and his long-time friend Hamilton Nelson Ross were summer residents and had first come to Madeline Island as boys in the early 1900s. Ross was an amateur historian and conducted extensive research culminating in his book, ***La Pointe Village Outpost***. The storyline that Ross developed through his research was adapted for the museum and Capser set about collecting objects to illustrate Ross's story. He was assisted by islander Al Galazen, a history buff and amateur archeologist who had discovered a number of historic sites on the island. Galazen's objects became the core of the museum's collections. Finally, Capser's artist wife Bella designed the museum's original exhibits, oversaw the installation and hand-lettered all of the object labels.

The original museum was comprised of four separate historic log structures, disassembled and brought to the museum site. Reassembled end to end, the four small buildings created one larger structure with four rooms or galleries. The central room was part of the original 1835 American Fur Company warehouse complex. Another was the island jail, built around 1890. A third was a small barn built by islander Gus Dahlin circa 1900. The final gallery was originally a small cabin, often referred to as the Old Sailors' Home and was built by Olaf Anderson around 1900.

With their museum building complete, the Capsers, Ross and Galazen filled it with objects and artifacts illustrating more than 500 years of island history, from pre-European contact Native American stone, clay and copper tools to objects used by early 20th century immigrants. The collections tell a comprehensive story that includes early Ojibwe life, the first arrival of Europeans and the advent of the fur trade, the French and British colonial periods, the American territorial period, the treaty signing era, the Lake Superior trades (like fishing, logging and boat building), the second arrival of Europeans in the late 1800s, and the beginnings of the modern era. The museum was deeded to the Wisconsin State Historical Society in 1969. In 1990 a major construction project added gallery space, an auditorium, collections storage, office space, and a gift shop.



Among many Ojibwe artifacts in the Madeline Island Historical Museum is this pair of beaded moccasins. (Madeline Island Historical Museum photo)

The Madeline Island Historical Museum's displays depict life through the various eras of Island history. (Photo submitted by the Madeline Island Historical Museum)

Historical highlights of Madeline Island

"Moningwanekaaning Minis" the historical name of the island in Ojibwemowin, meaning the "the place where there are many golden breasted woodpeckers" (popularly known as a flicker), is located on the western end of Lake Superior across from Bayfield, Wisconsin. This island was the principal cultural, political, and spiritual home of the Anishinaabe/Ojibwe (Chippewa) for centuries. According to Ojibwe oral history, the island was said to be the last stopping place in the Ojibwe migration story. For many years the island provided the Ojibwe protection from enemies and abundant natural resources, including the rich fishing grounds in Lake Superior off Amnicon Point. It was a gathering place for tribes to trade with each other, for councils, and for ceremonies in the summer. Grant's Point was the site of an Ojibwe village and graveyard, which historian Hamilton Nelson Ross speculated was established as early as 1490.

The French arrived around 1660 and traded for furs with the Ojibwe. Pierre LeSueur founded the first trading post in 1693 on the island's south end (modern day Grant's Point). The next post was built in 1700's by the Frenchman Paul le Gardeur near the present day marina, and it continued until 1763 when the English conquered the French in the region. Michel Cadotte then founded a trading post in 1793 near the original site at Grant's Point for the British North West Fur Company. Later, in 1816, The American Fur Company took over the North West Company post and in 1835 moved the post to the location of the town of LaPointe today. Also in this year, Fr. Frederic Baraga established the first permanent Catholic mission on the island.

The head of the LaPointe Band in the 1800's was the outstanding orator, Bizhiki, also known as Chief Buffalo of the Crane Clan. He was a representative of the Lake Superior Bands during the negotiation and signing of the 1842 Treaty, which is also known as the "Copper Treaty" at Treaty Hall in LaPointe. Thinking far into the future, Ojibwe leaders reserved the right to hunt, fish, and gather on "ceded" territory. The United States Government agreed to pay annuities to the Ojibwe at LaPointe for the next 25 years in exchange for mineral rights and land cessions.

By 1849, there were rumors that government agents wanted all Ojibwe to remove from Michigan and Wisconsin to lands west of the Mississippi. Bizhiki and other headmen objected and sent a delegation to Washington D.C. to deliver a pictorial petition indicating that they were united in their hearts and minds to never leave their homelands. In 1850, President Zachary Taylor ignored the wishes of Bizhiki and ordered the removal of all Ojibwe to lands west of the Mississippi River, and. The location of the annuity payments was changed from LaPointe to Sandy Lake, Minnesota. The LaPointe Band, under Bizhiki, refused to go but sent representatives to Sandy Lake where tragedy struck. There were no annuity payments and few supplies for them at Sandy Lake, and when winter arrived, hundreds of Ojibwe died waiting at the site and on the long walk home.

Bizhiki, at age 92, was outraged and decided to travel by canoe to Washington D.C. in the spring of 1852. He took with him Chief Oshoga, translator Benjamin Armstrong, and several men for the long journey, first by canoe and later by steamer and train to the capitol. After many obstacles, the delegation met with President Fillmore.

Buffalo stated," It is generally the case with white men when they have selected a spot to dwell at, that they begin to consider and look around them, to see what obstacles are in their way. They begin to cut away the underbrush and the bad trees, in order to make the land level and smooth so that nothing will come in contact and hurt their feet. They see good trees and they are allowed to stand and live, and they are not cut down. We beseech you to do towards us as you do, allowing the good trees {the Wisconsin Chippewas} to stand and live in your domain. And furthermore, we pray, that in accordance to that, we so fully understood that our annuities should be paid to us at La Pointe, and that they may be continued there."

Bizhiki and the delegation from LaPointe succeeded in persuading President Fillmore to suspend the removal order, and three years later they signed the 1854 Treaty at Madeline Island that established permanent reservations for the Ojibwe in their homelands and guaranteed the right of the Ojibwe to hunt, fish, and gather on ceded territory. Bizhiki died two years later on Madeline Island. After this treaty was signed, many Ojibwe left Madeline Island and went to two Wisconsin reservations—Red Cliff near Cornucopia and Bad River in Odanah. Bizhiki, Chief Buffalo is buried in the old Catholic Cemetery on Madeline Island and Chief Oshoga is buried at the Memorial Grounds also on the island. There is a bronze bust of Bizhiki in the Legislative Wing of the Capitol in Washington, D.C.

Contemporary historical significance

During the 1970's the excavation of the Madeline Island Marina and the golf course development led to the desecration of Ojibwe gravesites at the old Catholic Cemetery. Coordinated action between the tribes and the community of La Pointe in the 1980's prevented further development and led to the creation of Ojibwe Memorial Park and the construction of a monument honoring Ojibwe ancestors. Each Memorial Day, tribal and local community members gather there to give thanks to and remember Ojibwe ancestors on the island, and a sacred Medicine Tree is placed at the site. In 1998 the Madeline Island Treaty Conference took place including representatives from Ojibwe Bands in Michigan, Wisconsin, Minnesota, and Canada to honor the treaties that were signed there. The Annishinaabe Akii Protocol was signed during this conference, recognizing the common origin of the United States and Canadian signatory bands and pledging to uphold the treaties today, protect tribal sovereignty and the natural resources.

In 2000, another key event took place and another monument was placed on the island at the Memorial Park. The Mikwendaagoziwag (They are remembered) run from Sandy Lake, Minnesota back to Madeline Island took place, re-tracing the steps of the Ojibwe ancestors who refused to be removed from their homelands and suffered great loss of life in the Sandy Lake Tragedy. A memorial was erected at Sandy Lake from a large boulder. The bottom was removed and sent to Madeline Island as a marker also honoring the Ojibwe who perished in the Sandy Lake Tragedy.

The original museum was designed from four historic structures that were transported to the museum site and reassembled into one unit with four large rooms. (Madeline Island Historical Museum photo)

Museum open house slated for Memorial weekend

Native American doll collection debuted

The Madeline Island Historical Museum and the Great Lakes Indian Fish & Wildlife Commission are jointly sponsoring an open house on Sunday, May 28th. This is an opportunity to visit historic Madeline Island and the Museum, just a short walk from the ferry dock. The Museum will be debuting a beautiful collection of around 300, mostly antique Native American dolls from the Crandall Collection. The Museum will be open between 10:00 a.m. and 5:00 p.m., and the open house will include a tour of the museum collection as well as informational materials on treaty rights and off-reservation hunting fishing and gathering activities. There will also be a free showing of a documentary film at 5:00 p.m. in the Museum theater from the series, "Waasa Inaabidaa-We Look In All Directions."

Light refreshments will be served. Admission is free for tribal members. For information contact Steve Cotherman at 715-747-2415 or Sue Erickson at (715) 682-6619.

Traditionally, members of the Bad River and Red Cliff bands of Ojibwe have also held ceremonies on Madeline Island during the Memorial weekend in honor of Ojibwe ancestors.

Also on September 30, 2004 the 150th anniversary of the 1854 Treaty signing was celebrated at the Memorial Park and Music Camp on Madeline Island. The island continues to be a place for pilgrimage and ceremony to honor the ancestors of the Ojibwe who made possible life as we know it today. There is a 120-acre portion of the island on the north shore that continues to be a part of the Bad River reservation.

The museum's collections contain many objects and artifacts representative of Native peoples including the Ojibwe, who have occupied the island and surrounding region over the last 500-plus years. Stone and copper tools, shards of "Mississippian" pottery and fragments of stone pipes have been found on the island that tell us about the original trading that occurred between different bands and tribal groups long before the arrival of Europeans. Relics of the fur trade era (circa 1660 through the 1840s) illustrate the changes that took place for the Ojibwe after the arrival of the French and later the British. The collections contain some beautiful examples of Ojibwe beadwork, from as early as 1790 to the early 1900s.

The museum and NAGPRA

A number of ceremonial objects were collected by the museum's founders and for many years were on exhibit. Since the passage in 1990 of the federal Native American Grave Protection and Repatriation Act (NAGPRA), these objects have been respectfully removed from the exhibits.

Since 1992 museum staff have been actively identifying all objects in the collections that may be sacred or ceremonial, or represent the cultural patrimony of the Ojibwe and other tribes. In the mid-1990s, inventories of these objects and artifacts were sent to all the Ojibwe bands in northern Michigan and Minnesota as well as all the Wisconsin bands. Typically, NAGPRA regulations require museums to work with liaisons or historic preservation officers appointed by each band or tribe, and the museum has made progress establishing working relationships with these individuals. Following the Wisconsin Historical Society's NAGPRA policies and procedures, museum staff have been working with colleagues in Madison to promote and nurture a continuing dialog with the Ojibwe community so that the appropriate steps can be taken to begin the repatriation process. Partnerships and open communication are very important to reach the goal of repatriating sensitive objects to their rightful owners. The museum encourages interested tribal members to contact their NAGPRA liaisons or official tribal government historic preservation officers and become a part of this effort.

The role of the museum in protecting Madeline Island's historic sites

The museum has been working with the State Historic Preservation Office (SHPO) to ensure that historic sites on the island are protected and remain undisturbed. Over the past 40 years, formal archeological surveys and digs have been conducted at two primary sites on the island: Grants Point (in the early 1960s) and the Marina Site (in the early 1970s). A number of sensitive areas have been identified, including traditional burial grounds, and the museum is dedicated to working with the Ojibwe community and their colleagues in SHPO to protect these sites. Currently, state and national register of historic places nominations are pending for property in **(See Madeline Island Museum, page 19)**

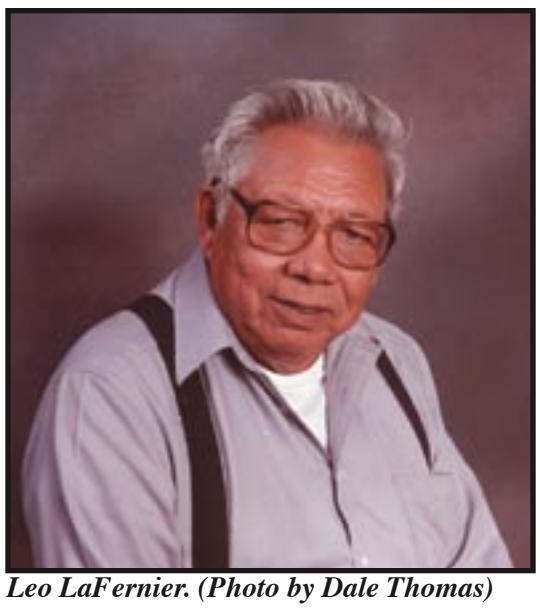
Voigt: What's in a name?

Reflections from 'Uncle Leo'

By Charlie Otto Rasmussen, Staff Writer

Beginning with the very first issue, the name has invariably shown up in ***Mazinai'gan***. Sometimes it appears in regional publications associated with Ojibwe treaty rights. It is commonly misspelled by writers compelled to follow the 'i," with a letter "h." It is Voigt.

The name originates with former Wisconsin Department of Natural Resources (DNR) Secretary Lester P. Voigt who passed away last winter at age 90. L.P. Voigt became the first secretary of the DNR when the state conservation and resource development departments merged in 1967. Seven years into his term, DNR wardens cited two Ojibwe brothers from Lac Courte Oreilles for off-reservation spearfishing through ice. Following a Sawyer County Court ruling that the tribal fishermen violated state laws, the LCO Band filed suit in 1974 against a handful of county and state officials for interfering with treaty-reserved fishing rights. Named at the top of the court docket: DNR Secretary L.P. Voigt.



Leo LaFernier. (Photo by Dale Thomas)

After an initial setback by Federal Judge James Doyle (father of Wisconsin's present Governor), the LCO Band petitioned a federal appeals court to hear their case with support from Wisconsin's five other Ojibwe tribes. In 1983, the court repealed Doyle's ruling against the tribe and affirmed the existence of Ojibwe treaty rights to hunt, fish and gather in territory ceded to the United States. In the end, it became known as the Voigt Decision.

That same year, the tribes created the Voigt Intertribal Task Force to manage inland treaty harvests. Representatives from tribes with court-affirmed rights in the 1837 and 1842 ceded territories made up the Task Force and convened sometimes passionate meetings with DNR officials to establish interim tribal hunting and fishing rules.

In 1984 the Task Force became part of a new tribal organization—Great Lakes Indian Fish & Wildlife Commission—and continues to help craft tribal policy for inland off-reservation harvests and environmental protection.

Red Cliff's LaFernier: then and now

Red Cliff representative Leo LaFernier is the longest-serving member of the Task Force, entering his 23rd consecutive year in 2006. A highly respected elder, firekeeper at traditional ceremonies and a strong paternal presence at tribal meetings and events, he's affectionately known as Uncle Leo to friends and colleagues. As part of the GLIFWC Oral History Program, he shares some of his thoughts in the following excerpts from a December 2005 interview.

Born and raised on the Red Cliff reservation, LaFernier and his extended family lived largely on what was available in nearby woods and waters. This subsistence lifestyle for the LaFerniers and other tribal members centered on fish and wildlife, including menu items considered exotic today, like porcupine and muskrat. Additional foodstuffs along with household utilities were obtained through trade with local residents.

"My dad had a horse down in Red Cliff that we stabled there. So in the wintertime, my brother and I, we'd go up and cut pole wood and haul it down in sleighs to people that needed firewood for the winter. A lot of times there wasn't any money exchanged, it was some kind of bartering going on. In some instances the township gave a food voucher for five dollars for a sleigh-load of pole wood you could cash at the local store," he said.

Hunting, fishing and gathering activities at Red Cliff in mid-1900s, however, were complicated by the checkerboard pattern of land ownership that resulted from nineteenth century United States government assimilation efforts. State game wardens staked out hunting trails that cut across parcels of private land inside reservation boundaries, issuing citations, confiscating personal property and imposing jail time. Similar encounters occurred off the reservation where state officials did not recognize the harvest rights spelled out in the 1842 Treaty. It became increasingly difficult to live off the land.

Like many American Indians in the upper Great Lakes region, LaFernier moved away from the reservation in search of employment in the early 1950s. He plied Great Lakes waters on iron ore freighters, operated a car ferry across Lake Michigan and found jobs in the cities of Milwaukee and Chicago. By 1973 he was back home at Red Cliff and a decade later was elected to the tribal council—the same year the Voigt Task Force was formed.

A few months into his first term as a council member, LaFernier filled a void in the vice-chairman position and was soon appointed to the newly minted Task Force.

Transcript from LaFernier's December 2005 interview

COR: *How has the Voigt Intertribal Task Force changed over the past two decades? Are there any differences that stand out in your mind?*

LL: Well, one of things I can say is that the services that are provided are quite a bit different. Originally, we met every season with the DNR and had some real contentious meetings at times on how we were going to harvest with the upcoming seasons, whether it was fishing or the gun deer season or trapping. Some of the tribal members on the Task Force have been very traditional people and wanted to utilize some of their traditional ways of harvesting, and it was hard for the state to recognize—that this is the way we've always done things.

So we had to continue with this discussion at every season whether it was small game or wildlife or waterfowl, whatever it was. And, of course, we were trying to develop in our own minds what we wanted to do as far as the regulation efforts. So those meetings went on up until the federal trial was completed, and the off-reservation code was developed and ratified [treaty harvests in the 1980s were developed through interim negotiations and various judicial rulings resulting in a court-approved set of regulations known as the Model Code].

Now that the code is in place it's kind of routine every year on what we do [with state officials], except some things we have to again discuss on an annual basis, such as waterfowl, and make changes to harvest numbers in whatever season like the deer hunt. But the role that the Task Force has as I see it now is expanded and much more complex. Instead of dealing with mainly the state, the Task Force is dealing with all the other federal agencies, regulatory agencies: United States Environmental Protection Agency, US Fish & Wildlife Service, of course the Bureau of Indian Affairs, the Forest Service and Park Service.

Some of the issues take years—it took us six years to get an MOU [Memorandum of Understanding to gather on ceded territory National Forests] hammered out with the Forest Service, and we have ongoing discussions with the Park Service [to establish permanent treaty harvest regulations on the Apostle Islands]. But, of course, the crunch comes from anything that we do with them that doesn't come with funding. So we battle with that, with getting the funding to provide the services that we want.

Treatment-as-State process

(Continued from page 1)

Congress has authorized tribes to be treated similar to states for various purposes under the Clean Water Act (CWA), including setting water quality standards for reservation waters.

TAS status is the only issue under consideration currently by the EPA, which has approved TAS status for 32 tribes nationally under the CWA, including one in Wisconsin, the Sokaogon/Mole Lake Band and two in Minnesota, the Fond du Lac and Grand Portage Bands.

EPA's 1996 approval of the Mole Lake Band's TAS was legally challenged but upheld by the Wisconsin District Court and affirmed by the 7th U.S. Circuit Court of Appeals.

Approval of the TAS application will allow the Band to administer its own water quality standards program for on-reservation waters.

Requirements for TAS status

In order for a tribe to establish its own water quality program, it must meet specific EPA requirements. For one, it must be a federally recognized tribe and must have a government that carries out substantial duties and powers.

The tribe must have jurisdiction over the waters within reservation boundaries, and finally, must have the ability to maintain the authorized water quality standards under the CWA.

TAS Status—first of two phases

Prior to actually setting water quality standards, the Band must receive TAS status and then submit proposed standards to the EPA for approval. The proposed standards are also open for a public comment period prior to approval or disapproval by the EPA.

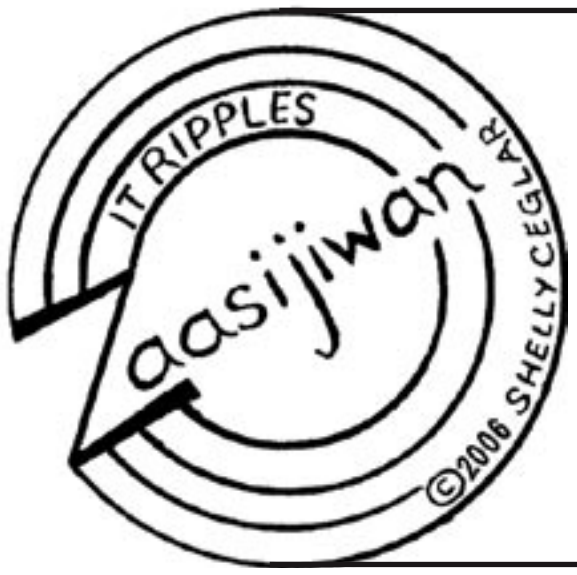
According to Lac du Flambeau Tribal Vice-President Dee Mayo in a January press release, "The Tribe is committed to a full and open process regarding the development of our water quality standards. Once the EPA grants the Tribe's treatment-as-a-state application, we will begin the next phase, which will involve the public process on proposed water quality standards. At that time, all interested parties will have an opportunity to be heard regarding those standards."

In response to opposition to the LdF's TAS status application, the Band noted that criticism of the Band's application reflected a "misunderstanding of both the settled legal authority of tribes under the Clean Water Act and the basic process under which water quality standards are adopted." Congress and the courts have already provided the authority, and the Band is only seeking to use that authority through a federally mandated process.

The Band also noted that currently "there are effectively no water quality standards protecting the 260 lakes, 15,600 acres of water, 71 miles of creeks, rivers and streams and 24,0000 acres of wetlands on the Lac du Flambeau Indian Reservation." While the CWA gives the authority to set effluent limits in order to protect receiving waters, there are no such protections on the reservation.

Among those expressing concerns about the TAS application have been Assembly Speaker John Gard (R-Peshtigo) and Senator Neal Kedzie (R-Elkhorn), who both issued press releases on Lac du Flambeau's application.

Wawronowicz finds much of the opposition confusing and ironic. "You would think people in this area would want water quality protection, not be afraid of it," he says.



Ziigwan—It is Spring

Oshkayi'iiwan, gikinoonowin! Apegish ezhi-minoseyeg. Ziigwang, ganawaabandaamaanan dazhiikewinan, niiskinaagwan. Noongom, azhigwa, gidaa-biinichigemin. Ambe omaa biinichigewininiwag idash biinichigewikweg, biinichigedaa! Gakina'awiya, nanaa'ichigedaa! Zhizhoobii'igedaa! Niwii-zhizhoobii'aan, Nimaamaa. Gichi-miigwech.

(It is new, the year! So I wish you all good things. In the spring, when I look at the villages, it looks messy. Now, at this time, we should clean things. Come here, men cleaners and women cleaners; let's all clean things up! Everyone, let's all fix things up! Let's all paint things up! I will paint something for my mother. Great-thanks.)

Bezhig—1

OJIBWEMOWIN
(Ojibwe Language)

Double vowel system of writing Ojibwemowin.
—Long vowels: AA, E, II, OO
Omaa—as in father
Miigwech—as in jay
Gaawiin—as in seen
Boozhoo—as in moon

—Short vowels: A, I, O
Dash—as in about
Imaa—as in tin
Endaso—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

Verbs
Intransitive
Inanimate-Negation

The "It is" verbs are spoken in negation by first saying, GAAWIIN. Suffix with forms of "sinoon."
Aabawaa—It is mild, warm weather.
Gaawiin aabawaasinoon.—It's not mild.
Gimiwan.—It is raining.
Gaawiin gimiwanzinoon.—It isn't raining.
Niiskaadad.—It is bad weather.
Gaawiin niiskaadasinoon.—It isn't bad...
Miskwaa.—It is red.
Gaawiin miskwaasinoon.—It isn't red.
Zanagad.—It is difficult.
Gaawiin zanagasinoon.—It isn't difficult.

Niizh—2

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

A. Boozhoo. Aaniin ezhichigeyan? Gaawiin got.

B. Daatagaadakamig! Ningiziibiibinige noongom.

C. Niikan omaa. Nindoodaapinige. Eya, nimamige.

D. Miikawaadad ina? Ninminwedam, giziibiiginigeyaan.

E. Izhinikaazo "onaabani-giizis" a'aw giizis.

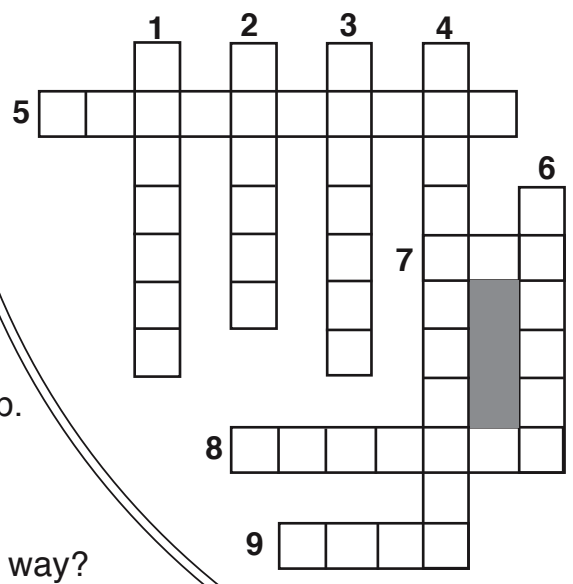
F. Ningizo goon. Aabawaa!

G. Aaniin endaso-biboonigiziyan? Ningitiz...eh.

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

Niswi—3

IKIDOWIN
ODAMINOWIN
(word play)



Down:
1. It is running sap.
2. It is messy.
4. village
6. How or in what way?

Across:
5. It is budding.
7. question marker
8. It is raining.
9. snow

Niiwin—4

VII Negations

Makadewaa.—It is black.
Gaawiin makadewaasinoon.—It isn't black.
Bakaanad.—It is different.
Gaawiin bakaanasinoon.—It isn't different.
Majigaa.—It starts running with sap.
Gaawiin majigaasinoon.—It isn't running.
Zaagibagaa.—It is budding leaves.
Gaawiin zaagibagaasinoon.—It isn't budding leaves.

Goojitoon! Try it!
Translation below.

zaagibagaa

makadewaa

gimiwan

majigaa

zoogipon

1. Gaawiin. _____-sinoon. Waabishkaa.
2. Gaawiin _____zinoon. Aabawaa dash waaseyaa.
3. Gaawiin _____zinoon. Ziigwan!
4. Gaawiin _____sinoon imaa. Omaa majigaa.
5. Giwedinong gaawiin _____sinoon. Niiskaadad.

Translations:
Niizh—2 **A.** Greetings. What are you doing? Nothing much. **B.** What a chore ahead! I am cleaning things now. **C.** It is messy here. I pick things up. Yes, I pickup. **D.** It is beautiful. I am happy when I wash things. **E.** She is called "crust on the snow" moon (March) this moon." **F.** She is melting, the snow. It is mild weather. **G.** How many winters old are you? I am older...eh.
Niswi—3 **Down: 1.** Majigaa. **2.** Niikan. **3.** Aabawaa. **4.** Dazhiikewin **6.** Aaniin **Across: 5.** Zaagibagaa. **7.** Ina. **8.** Gimiwan **9.** Goon.
Niiwin—4 **1.** No it is not black. It is white. **2.** No it is not raining. It is mild and sunny. **3.** No it isn't snowing. It is spring! **4.** No it isn't running sap there. Here it is running. **5.** To the north it isn't budding leaves. It is bad weather.

There are various Ojibwe dialects; check for correct usage in your area. Note that the English translation will lose its natural flow as in any world language translation.

Bird talk

The Ojibwe word for bird is bineshiinh. Larger birds are called binesi.

Many birds fly south, or migrate, just before winter, escaping the cold weather, but others, like many sparrows, juncos, chickadees, blue jays, owls, and cardinals, to name a few, stay over the winter. Some people put out birdfeeders with various seeds, like sunflower seeds, to help the birds that stay through the winter. Some winter birds, like the blue jay, also like suet, which is animal fat or lard.

Birds are the only creatures with feathers. Feathers cover the bird's body to protect it from wind, rain and cold and also to help it fly. All the feathers that cover a bird's body are called its plumage. Some birds' plumage is very colorful, while others have plumage that blends into their habitat (the earth and trees where they live). Each bird has many, many feathers. The tiny hummingbird has about 1,000 feathers! Some birds, like cardinals, have a peak of feathers on their head called a crest.

When birds clean and fluff their feathers, it is called preening. The long, hard spike in the center of each feather is a quill. Short, soft feathers close to the bird's body are called down feathers and are important to keep them warm. Birds molt, or shed, their feathers and grow new ones. In the cold weather, birds fluff up their feathers to help stay warm. Birds use their beaks, also called bills, to preen. Beaks are often very sharp and strong so they can dig for insects in the earth or in the hard wood of trees.

Birds come in all different sizes, ranging from the very small wrens and hummingbirds to huge birds, like the eagle, herons and pelicans. Some larger birds have wingspans (the length from the tip of one outspread wing to the tip of the other) of six to seven feet! Birds lay their eggs and hatch their babies, called chicks, in nests. Some return to the same nest year after year. Some nests are high up in trees, while others may be on the ground or in old logs.

(information source: Audubon Society www.audubon.org)

Word search

Circle the following words associated with birds. (Answer is on page 23)

beak	**down**	**migrate**	**preen**
bill	**eggs**	**molt**	**quill**
chick	**feather**	**nest**	**suet**
crest	**habitat**	**plumage**	**wingspan**

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

Color the birds

Diindiisii (blue jay)

Gijigijigaaneshinh (chickadee)

Misko bineshiinh (cardinal)

Ojibwe names for birds common to the ceded territory

ANA grant seeks to inventory plants, animals, places

Editor's note: The following translations were made possible with assistance from elders and speakers from Lac du Flambeau, Mille Lacs, Lake Lena, St, Croix, Fond du Lac, Lac Courte Oreilles, and the Bad River communities and funded by a grant from the Administration for Native Americans (ANSA), Administration for Children & Families-Human Health Services. The Natural Resources Anishinaabe Language program is identifying a spectrum of natural resources in the ceded territories by their Ojibwe name and collecting additional cultural information about them.

The Ojibwe name for the bird is listed first. The plural of the word is shown in parenthesis. The common name is listed second, and then the scientific name. Dialects shown are central western (c/w) and eastern (e).

c/w—bine (wag)
e—baabaashki (oog)
Ruffed grouse
Bonasa umbellus

Helps makwa (bear) while he hibernates. Will fly up to lead people away from the den. In winter he dives under the snow and moves to a different spot making it difficult to find him. Bizhiw (lynx) will watch for his breathing hole to find him. The gizzard which looks like a small moccasin is dried and hung on the tikinaagan (cradle board). A pouch in the neck is used as a measure.

Bine. (Photo by Pennsylvania Game Commission, pgc.state.pa.us)

c/w—mishkwan naniisi (yag)
e—gekek (oog)
Red-tailed hawk
Buteo jamaicens

c/w translates to—He with red tail feathers.

c/w—migizi (wag)
e—migizi (oog)
Bald eagle
Haliaetus leucocephalus

c/w—wiinaage (wag)
e—wiinaange (g)
Turkey Vulture
Cartharte aura

Translates to—Dirty wings.
He cleans up nature.

Migizi. (Photo reprinted from parks.state.co.us)

c/w—meme (g)
Pileated woodpecker
Dryocopus puleatus

c/w—giikiibidkomeshiinh (yag)
Yellow-bellied sapsucker
Sphyrapicus varuis

Translates to sliding bugs off of himself.

c/w—diindiisii (wag)
e—diindiins (ag)
Blue jay
Cyanocitta cristata

Diindiisii is a gossip. He tells that you are going to get company. When you are out hunting, he will tell you where the game is. He will also tell them where you are.

Diindiisii. (Photo by Dave Rintoul)

c/w—aanak (wag)
White-throated sparrow
Zonotrichia albicollis

In the winter, if he sings and cannot finish his song then it is going to be cold. Gaajiwegoodeg giizhig-giizhig. This is how the clouds lay.

c/w—gaagaagi (wag)
e—gaagaagii (g)
Northern raven
Corvus corax

c/w—gijigijigaaneshinh (yag)
e—jigjigaaneshiinh (yag)
Black capped chickadee
Parus atricapilla

Gijigijigaaneshinh. (Photo by Dave Rintoul)

Calls his own name. His wiinidib (brain) helps get rid of warts. Right after killing gijigijigaaneshiinh take the wiinidib out and put it on the wart while it is still warm.

c/w—ajitkomeshiinh (yag)
White-breasted nuthatch
Sitta carolinensis

The bird that walks upside down.

c/w—giizhikaandomineshii (yag)
Cedar waxwing
Bombycilla cedrorum

He eats cedar berries.

c/w–ashaweniniisi (wag)
Common grackle
Quiscalus quiscula

Giizhikaandomineshii. (Photo by Ed Sigda primehookbirding.com)

Translates to a crooked tail. He sounds like he is sneezing.

c/w—waabinangozhii (wag)
Snow bunting
Plectrophenax nivalis

He is white is the winter and brown in the summer. He is here year round and a powerful bird. If you kill him in the winter there will be a big blizzard.

c/w—adedekoneshiinh (yag)
Red crossbill
Loxia curvirostra

He is named from the flame which describes the seven arms of the fire. He hangs upside down to reach cones.

c/w—ozaawaabineshii (yag)
Evening grosbeak
Coccothraustes verpertinus

Translates to a yellow bird.

c/w—baapaasens (ag)
Downy woodpecker
Picoides pubescens

Baapaase is the general word for woodpecker.

Baapaasens. (Photo by Dave Rintoul)

How did red squirrel come to look like he does?

This story was related by Manidoons (Leonard Moose) and translated by Pebaamibines (Dennis Jones) as part of the Anishinaabe Natural Resources Language program funded through a grant from the Administration for Native Americans.

Wenaboozhoo is a trickster and teacher who appears in many Ojibwe stories. His name has many spelling variations: Nenabush, Nenaboozhoo, Wenaboozhoo.

Boozhoo, aani in indinawemaaganidok.
(Greetings my relatives.)

Niin Pebaamibines indigo idash Bizhiw indoodem.
(My name is Dennis Jones and I am of the lynx clan.)

Mii go imaa Gakaabikaang oodenaang indayendaa.
(I reside in the city of Minneapolis.)

Iwe aadizookaan ingii-noondaan idash ingii-ozhibii'aan imaa mazina'iganing.
(I heard this origin teaching and I transcribed it.)

Aapichi niminwendaan dazhiikamaan dibaajimowinan.
(I really enjoy working on these stories.)

Mii imaa gegoo wenji-gikendamaan ji-izhichigeyaan gegoo.
(This is how I learn how to do things.)

A'aw idash Leonard Moose izhinikaazo a'aw akiwenzii gaa-aadizooked.
(Leonard Moose is the name of the elder that told this legend.)

Makwawan odoodeman
(Bear is his clan.)

Ogii-dibaajimaan iniw ajidamoon wenji-izhinaagozid imaa oshkiizhigoong miinawaa gaa-onji-miskwadowed.
(He talked about why the squirrel's eyes look the way they do and why his fur is red.)

Gii-pipoon agwajiing gii-aadizooked akiwenzii.
(It was winter outside when the elder told this story.)

Mewinzha iizan awensiiyag gii-nitaa-gaagiigidowag.
(Apparently a long time ago, the animals were able to talk.)

Idash gii-ganoonidiwag, mii o'apii gekendang gegoo anishinaabe ge-izhi-mino-bimaadizid.
(It is from listening to them talk to each other that we learn the lessons we need to know about how to lead a good life.)

Ajidamoo ezhinaagozid (He is called squirrel)

Ahaw miinawaa dash aw ajidamoo, niwii-dazhimaa wenji-izhinaagozod aw ajidamoo.
(And then there was that squirrel, I am going to talk about why he looks the way that he does.)

Mewinzha iizan, ajidamoo ogii-gaganoonaan aw Wenabozhoon.
(Apparently along time ago, the squirrel made a request to Waynaboozhoo.)

"Nenabozhoo, iye akawe, giwii-kagwejimin gegoo," ikido aw ajidamoo.
("Nenabozhoo, first, I would like to make a request of you," said the squirrel.)

"Aho bakaan niin niwii-izhinaagoz," ikido.
("So I would like to have a different look," he said.)

"gaawiin niwii-izhinaagozisiin aye keyaa izhinaagoziyaan noongom," ikido ajidamoo.
("I do not want to look the way that I look now," said the squirrel.)

"Ayaa'aa aw makwa mii-waa-izhinaagoziyaan," ikido.
("The bear is what I would like to look like," he said.)

"Miinawaa edinowaa ezhi-misawendamaan ezhinaagoziyaan," ikido.
("And this is what I wish for, to look like that," he said.)

"Aw chi-makwa ezhinaagozid, mii nakeyaa waa-izhinaagoziyaan," ikido.
("That big handsome bear, that is the way that I want to look," he said.)

Aya'ii, Gaawiin dash gegoo gii-ikidosiin aw Nenabush.
(And so, Nenabush didn't say anything.)

Baanimaa pii dash miinawaa bi-gagwejitood a'aw sa ajidamoo.
(Later after a little time went by, the squirrel tried again.)

"Ahaw miinawaa dawaji igo miinawaa ingagwejimaa," ikido.
("Well again I think I will try and ask him," he said.)

"Nenabozhoo, akawe maa bi-izhaan," ekidod. "Gegoo da-gagwejimin. Gegoo nimisawendaan i'iw makwa da-izhinaagoziyaan," ikido.
("Nenabozhoo, come over here," he said. " I want to ask you something. I wish to look like the bear," he said.)

Ajidamoo.

Hay' mii dash miinawaa gaawiin gegoo gii-ikidosiin Nenabozhoo.
(Shucks, and again, Nenabozhoo did not say anything.)

Baanimaa apii dash miinawaa wiikwajitood a'aw ajidamoo miinawaa bezhig geyaabi wiikwajitood ji-gagwejimaad Nenabozhoo.
(Again and again the squirrel tried to make his request known to Nenabozhoo.)

"Iw sa ezhinaagoziyaan makwa ezhinaagozid," ikido.
("I really want to look like the bear," he said.)

Jiigaya'ii idash iwidi ishkodeng gii-naanamadabi a'aw ajidamoo.
(So the squirrel sat around over there by the fire.)

"Aadiwaaji go aabiding miinawaa inga-gagwejimaa," ikido.
("Well, I'm just going to have to keep asking him," he said.)

"Nenabozhoo giwii-gagwejimin miinawaa i'iw gaa-izhinaagoziyaan iniw makwa ezhinaagozid," ikido.
("Nenabozhoo, I want to ask you about me wanting to look like the bear," he said.)

Iwidi idash ishkodeng gaa-naanamadabid a'aw ajidamoo.
(Over by the fire, the squirrel sat waiting.)

Gaa-izhi-mawid, gaa-izhi-mawid.
(He began to cry and cry.)

Mii iw niiyo-giizhig waapii gaa-mawid.
(For four days he cried.)

Miinawaa gaa-naanamadabid jiigaya'ii ishkodeng.
(Again he just sat there by the edge of the fire.)

Mii dash i'iw apane gaa-izhichiged a'aw ajidamoo, i'iw mawid.
(That is why to this day he still does that, he cries a lot.)

Mii dash wenji-izhinaagozid imaa ishkiizhigoong gaa-waabishkidenidoon iniw.
(That is why his eyes have a white ring around them.)

Mii wenji-izhinaagozid ajidamoo.
(That is why the squirrel looks the way that he does.)

Mii iye gaa-misawendamogwen iw, wii-gagwejimaad iniw Nenabozhoon, mii iw makwa wii-izhinaagozid.
(So the very thing that he desired, what he asked Nenabozhoo about, is how he wanted to look like the bear.)

Miinawaa dash iw apane imaa iw ishkodeng, imaa naanamadabid wenji-misk-wesig, mii a'aw ajidamoo.
(So as a result of sitting so long near the fire, he turned red from the fire, that red squirrel.)

Onzaami gii-gaajimo. Ogii-ozaawaaki aw ajidamoo.
(He cried too much. He turned red that squirrel.)

Loose translation

It was at one time, one time the red squirrel, he wanted to be like the bear. He asked Nenabozhoo. He said, "Nenabozhoo, I want you to make me look like a bear." And Nenabozhoo didn't say anything. So he did that about three different times trying to ask Nenabozhoo to change him into a bear. That's what he wanted to be like. But Nenabozhoo didn't say anything. So, finally he sat by the fire for about four days crying how badly he wanted to be like the bear. He cried so hard waiting for the answer, that is why his eyes are white around. He has white rings around the eyes, the red squirrel, and the reason why that he is red is because he sat by the fire all that time. That's why he turned red.

Michigan approves mining rules, Kennecott tenders applications

Experts critical of DEQ's short-permitting timeline

By Charlie Otto Rasmussen
Staff Writer

L'anse, Mich.—Following the approval of metallic sulfide mining rules by Michigan legislators, Kennecott Minerals Company submitted permit applications on February 21 to establish a nickel mine on the Yellow Dog Plains in the Upper Peninsula. Based on the new mining rules, Michigan authorities now have between 56 and 112 days to issue a proposed decision on whether the mine will move forward.

Despite detailed concerns articulated by the Keweenaw Bay Indian Community (KBIC) and several leading environmental protection groups, legislators approved the rules package earlier in the month. According to environmental experts, the recently approved mining statutes are far from sufficient to safeguard water quality, which has caused universal unease among residents near proposed sulfide mines.

"The rules they passed are better than nothing at all," said KBIC Natural Resources Director Todd Warner. "But that's much different from rules that are adequate to protect the environment and human health." Kennecott Minerals is seeking to establish a sulfide mine just east of KBIC reservation on the Yellow Dog Plains at the headwaters of two sensitive rivers.

The regulations were developed by the state Department of Environmental Quality—the agency responsible for overseeing mining in Michigan—following a series of meetings in 2005. Representatives from tribal interests, environmental groups and mining companies participated in the DEQ-sponsored meetings and came to agreement on many mining protocols. However, in several cases the DEQ chose to enact weaker environmental protections in their recommendations to state lawmakers.

The most troubling provision of the sulfide mining statute is the unusually brief timeline to review permit applications said John Coleman, Great Lakes Indian Fish & Wildlife Commission environmental modeler.

"A short timeline makes it almost impossible to do an adequate technical review of a permit application," Coleman said. In order to assess potential environmental impacts from removing sulfide ore, experts including geologists, hydrogeologists and geochemists must thoroughly examine mineral companies' plans to deal with the complex geology and hydrology that encompass mine sites, explained Coleman. Sulfuric acid is created when sulfide mineral ore bodies are exposed to air or moisture and leach toxic levels of heavy metals into surface and ground water.

The mining industry has been pushing the Michigan DEQ to issue mining permits within a six-month timeframe or less. By comparison, Minnesota officials have established a two to three year period and Wisconsin a two and one-half to four year timeline to decide whether to permit a sulfide mine. The difference is months versus years.

"Without sufficient time to assess an application, it is not clear to me that DEQ can be reasonably expected to ensure that any mining permit issued is appropriately protective of public health and the environment," wrote Geochemist Christopher Carlson, a former Wisconsin Department of Natural Resources mining expert contracted by GLIFWC to review Michigan's mining laws

Michigan legislators said "yes" to sulfide mining February 1 despite widespread concern from the Keweenaw Bay Indian Community, local residents and environmental groups. (Photo by Charlie Otto Rasmussen)

While observers expect Kennecott to begin construction of the Yellow Dog later this year, Kennecott and other companies have bored additional exploratory holes throughout the Upper Peninsula, including lands within the KBIC reservation.

"Many people may not realize how widespread this activity is. It's not just the Yellow Dog Plains," KBIC's Warner said. "Currently companies are exploring for sulfide deposits in the Huron and Silver River Watersheds, within the Ottawa National Forest and in other areas of the western U.P. Companies are also exploring for uranium deposits. This is a huge concern. If mine development were to go forward at all these locations, the regional impacts to the environment and human health could be very substantial and last a long time."

The KBIC Tribal Council is on record opposing sulfide mining anywhere in Upper Michigan. Council President Susan LaFernier delivered a statement at a public hearing in Lansing last December critical of the DEQ's proposed sulfide mining rules.

"Water is a gift of life and is sacred. The L'Anse Indian Reservation and its ceded territories, which includes the Yellow Dog Plains, are the homeland of my people and the treaties entered into by our ancestors for our members. The rights to hunt, fish, and gather are rights which we are determined to preserve and protect for at least the next seven generations," she said.

Madeline Island Museum's future plans

(Continued from page 13)

the Grants Point area that includes a burial site and other important historic features. Once on the state and national registers, this and other historic sites can be better protected against development, encroachment and disturbance. This is another area where museum staff plan to work closely with tribal historic preservation officers and encourage the public to do so as well.

Educational programs & plans for the future

Over the years, Madeline Island Museum staff have provided school tours to area children and have focused programs on the encounter between Ojibwe and European cultures as seen through the fur trade. The goal has been to provide a better understanding of the impacts of these different cultures on each other over time.

Students from the Fond du Lac Tribal and Community College, Native American Boy & Girl Scouts, and students enrolled at Northland College have frequented the museum each summer as well. The museum provides educational tours, handouts, and GLIFWC educational materials to visitors.

Museum staff members are currently developing a number of ideas for future interpretive programs. Agronomist and historian Paul Red Elk from St. Paul, Minnesota has expressed a desire to assist in planting heirloom and three-sister gardens; the museum would like to collaborate with educators and area youth from the Bad River, Red Cliff, and La Pointe communities to create educational programs around the cultivation and harvesting of these gardens beginning in 2006.

Another project in the works is to conduct research and compile oral histories on the role of lacrosse in Ojibwe culture and to create an exhibit on the important 1935 lacrosse match between Bad River and Red Cliff. As well, the museum will help facilitate the return of lacrosse to the island on an annual basis.

One additional possibility that the museum will be undertaking in the next year is the reproduction of the bust of Great Chief Buffalo (Bizhiki) that is on exhibit in the Senate wing of the US Capitol in Washington, D.C.

The goal is to place a replica in stone or bronze at the museum and on the island in honor of his great leadership. We look forward to talking about this idea with the Buffalo family and other members of the Ojibwe community in the near future.

This summer the museum will be seeking Anishinaabe artists to sell their work in the gift shop, to teach classes, or for a weekend artist in residence program that is being developed. Artists are encouraged to contact the museum if they are interested in these possibilities. The museum will be showing the films from series, Waasa Inaabidaa—We Look In All Directions on Thursday nights during the summer. These showings are free and open to the public.

Other ideas that have surfaced regarding cooperative programs are the possibility of an Ojibwe language summer immersion camp on the island, expanded Memorial Day ceremonies including a museum open house, an environmental education day, and an educational event to honor the signing of the treaties. The museum director, Steve Cotherman, welcomes your ideas and visit to the museum.

In 2006, the museum is open from May 27 to October 7, 10-5 daily. It is necessary to take a ferryboat ride from Bayfield to LaPointe to visit the museum and then a short walk from the boat to the museum. Admission is $5.50 for adults, $4.95 for seniors and $2.75 for children (age 12 and under). Group rates are available by contacting the museum.

If you would like additional information on the Madeline Island Historical Museum or have any ideas about the kinds of Ojibwe cultural programming you would like to see at the museum, please feel free to contact Steve Cotherman, museum director, at 715-747-2415 or by e-mail at *srcotherman@whs.wisc.edu*.

Summer intern wanted

The Madeline Island Historical Museum is seeking an intern for the 2006 summer to work with Museum staff to interpret the collection, interact with the public, and conduct research on the history of Madeline Island. Internships are arranged through HONOR and include a stipend and housing allowance. Please contact Rose Soulier, Red Cliff, if you are interested in this opportunity at *rosesoulier@charter.net*.

Lake Superior Initiatives:
Whose doing what? How do they differ?

By Kelly McKnight, GLIFWC Environmental Policy Analyst

Editor's note: *Citizens of tribal and non-tribal communities around Lake Superior share common concerns about protecting the health of Gichigami, the big Lake Superior and its watershed. Various cooperative initiatives to address the Lake's issues are ongoing at local, tribal, state and federal levels. However, with the extensive use of acronyms (alphabet soup) and the similarities in titles, the layperson is often confused about who's doing what. To help clarify, three major initiatives aimed at protecting and/or restoring Lake Superior are briefly explained below, and the Great Lakes Indian Fish & Wildlife Commission's (GLIFWC) role in each is defined.*

Great Lakes Water Quality Agreement (GLWQA)

Who signs it:

United States and Canadian federal governments.

What it is:

A formal agreement that aims to restore and maintain the chemical, physical and biological integrity of the waters of the Great Lakes basin eco-system. It was first signed in 1972. A new agreement was signed in 1978, and it has been amended in 1983 and 1987.

The Agreement addresses a variety of water quality issues facing the Great Lakes basin through numerous measures such as:

- a call for the prohibition of the discharge of toxic substances in toxic amount and for the virtual elimination of the discharge of persistent toxic substances in the Great Lakes watershed,
- a Lakewide Management Plan (LaMP) for each of the individual lakes to reduce Critical Pollutants and restore beneficial uses,
- Remedial Action Plans (RAP) to restore specific Areas of Concern (AOC) in the Great Lakes basin, and
- mechanisms for the parties to cooperate in the exchange of water quality information.

The Agreement is subject to review approximately every six years. It will be reviewed again in Spring 2006. The agreement has not been modified since 1987.

GLIFWC's role:

GLIFWC holds a seat on the Binational Executive Committee (BEC), which will be responsible for leading and coordinating the process of reviewing the Agreement. BEC will establish an Agreement Review Committee and various working groups who will apply a comprehensive and systematic approach to reviewing the Agreement. BEC will then make any appropriate recommendations or assessments based on its review of the Agreement.

Great Lakes Regional Collaboration (GLRC)

Members of the collaboration:

Council of Great Lakes Governors
Great Lakes and St. Lawrence Cities Initiative
Great Lakes Tribal Caucus
Federal Interagency Task Force
Great Lakes Congressional Task Force

What it is:

The Great Lakes Regional Collaboration was established in 2004 with the goal of partnering federal, state, tribal and local governments, as well as other stakeholders, to develop a strategic plan to protect and restore the Great Lakes.

Based on the recommendations of the Council of Great Lakes Governors, the Collaboration strategy identifies the following eight priorities to achieve the goals of the Collaboration:

- aquatic invasive species,
- habitat conservation and species management,
- near shore waters and coastal areas,
- areas of concern,
- non-point sources,
- toxic pollutants,
- sound information base and representative indicators, and
- sustainability.

The Collaboration strategy recommendations are made keeping in mind the overarching considerations of human health impacts and priorities, tribal interests and perspectives, and research and monitoring.

The Collaboration strategy was signed on December 12, 2005. The Collaboration partners continue to work together to implement the goals of the strategy.

GLIFWC's role:

GLIFWC's participation in the collaborative process was wide-ranging, significant and included the following:

- involvement in an executive subcommittee responsible for addressing the day-to-day challenges faced in the collaborative process,
- participation by employees of GLIFWC and its member tribes on several of the issue area teams that developed the recommendations for action in the Collaboration strategy,
- participation in the Great Lakes Tribal Caucus whose purpose was to keep interested tribes informed about the progress of the Collaboration and its various working groups, discuss issues and concerns, and coordinate tribal positions as necessary, and
- continued participation on an executive subcommittee attempting to develop a management mechanism for implementation of the Collaboration strategy.

Great Lakes Charter Annex 2001

Who signs it:

Governors of the eight Great Lakes states and Premiers of the two Canadian Great Lakes provinces.

What it is:

Based on the provisions of the Great Lakes Charter Annex 2001, on December 13, 2005, the governors of the eight Great Lakes states signed the Great Lakes-St. Lawrence River Basin Water Resources Compact, which is a potentially binding agreement banning new or increased diversions of water of the Great Lakes basin to areas outside the basin, with limited exceptions. The exceptions are:

- for "Straddling Communities" that are partially in and partially out of the basin,
- for interbasin transfers among the Great Lakes watersheds, and
- for communities that are outside the basin, but in a "Straddling County" that is partially in and partially out of the basin.

Proposals that fall under one of these exceptions are subject to significant other conditions that must be met prior to approval.

The Agreement contains numerous other provisions relating to:

- collection and sharing of data and information,
- establishment of water conservation and efficiency programs,
- public participation,
- periodic consideration of cumulative impacts, and
- dispute resolution and citizen suits.

The Compact will become binding on the states if and when it is approved by Congress.

At the same time the Compact was signed, the governors signed an additional non-binding agreement with the premiers of Ontario and Quebec, the Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement, which has the same purpose and contains the same basic provisions.

GLIFWC's role:

GLIFWC has been interested in the water diversion issue since the late 1980's when GLIFWC's Board of Commissioners passed a resolution opposing the Chicago Ship Canal diversion. In 2000, GLIFWC provided comments on the draft Annex 2001 expressing opposition to water diversions. Over the past several years GLIFWC staff have followed the development of these latest agreements, including meeting with the governors' and premiers' working group that negotiated the agreements, and submitting extensive comments on various drafts of the agreements. Staff will continue to participate in the processes associated with the ratification and implementation of the Compact and Agreement.

McKnight joins GLIFWC staff as environmental policy analyst

By Sue Erickson
Staff Writer

Kelly McKnight. (Photo by COR)

Odanah, Wis.—The Division of Intergovernmental Affairs (IGA) staff got a boost with the arrival of Kelly McKnight to assist with the burgeoning workload. Hired under a three-year Administration for Native Americans (ANA) grant, McKnight is working as an environmental policy analyst for the division. As such he deals with entities such as the Great Lakes Regional Collaboration, the Great Lakes Water Quality Agreement, and the Annex 2001.

McKnight is not new to GLIFWC. He served a three-month internship with the IGA during the summer of 1999, addressing legal issues relating to the environment and treaty rights at the time.

Originally hailing from Fenton, Illinois—one of about 120 residents, McKnight graduated from nearby Erie High School and went on to earn an undergraduate degree from UW-Eau Claire. In 2000 he graduated from the UW-Madison School of Law and has been in private practice in Eau Claire for the past five years. His practice focused primarily on criminal defense and family law.

Environmental and Indian law, however, have always been his areas of interest and that's what ultimately drew him back to GLIFWC. When seeking those positions as a fledgling lawyer, he says, most environmental and Indian organizations suggested he obtain legal experience and then come back.

Possible effects of global warming on treaty protected natural resources

(Continued from page 3)

- Increasing frequency of severe and destructive storms.
- Increasing frequency of drought in the interior of continents.
- Increasing frequency and severity of hurricanes.

Forecasting climate trends

To estimate climate changes that might occur in the future, climatologists employ computer models designed to represent the energy balance of the atmosphere. All climate models tend to predict global increases in temperature. However, outputs from different climate change models have a high variability, which creates uncertainty in the forecasts.

The effects of climate change described in this article are based on output from two climate models: the Parallel Climate Model (PCM), developed for the US Department of Energy at the US National Center for Atmospheric Research, and the HadCM3 model, developed at the United Kingdom Meteorological Office's Hadley Center for Climate Modeling. Output from these models lie in the mid to low range of all climate models.

Therefore, the forecasts described below are "conservative." In addition, these models are used by the IPCC for their climate change forecasting. Much of the information presented below is available in greater detail in "Confronting Climate Change in the Great Lakes Region" produced by The Union of Concerned Scientists and The Ecological Society of America.

Climate change in the ceded territories: General overview

Evidence of human-induced climate change is overwhelming. Data generated by the models described above indicate that the climate of the Great Lakes region is already changing. Some of these changes include:

- Winters are getting shorter.
- Annual average temperatures are growing warmer.
- The duration of lake ice cover is decreasing as air and water temperatures rise.
- Heavy rainstorms are becoming more common.

The IPCC report indicates that, in general, the climate of the region that includes the ceded territories will grow warmer and drier during this century. By the end of the century, temperature in the region will warm by 5 to 12°F (3 to 7°C) in winter, and by 5 to 20°F (3 to 11°C) in summer. Nighttime temperatures are likely to warm more than daytime temperatures, and extreme heat will be more common. Annual average precipitation levels are unlikely to change, but the seasonal distribution is likely to vary greatly, increasing in winter and decreasing in summer. Overall, the region may grow drier because any increases in rain or snow are unlikely to compensate for the drying effects of increased evaporation and transpiration in a warmer climate. This drying will affect surface and groundwater levels, and soil moisture is projected to decrease by 30 percent in summer. In addition, the frequency of 24-hour and multi-day downpours and flooding is predicted to continue to increase.

These changes in temperature and precipitation will strongly alter how the climate feels to us. For example, research presented at the 2003 Conference on Climate Change and Environmental Policy states that by the end of this century a Wisconsin summer will probably feel like an Arkansas summer does today[4].

Climate change in the ceded territories: Impact predictions

As previously stated, the latest computer models, bolstered by large quantities of research at a regional scale have allowed scientists to identify specific impacts associated with human induced global warming. The following is a summary of these impacts.

Model predicted impacts on lakes

- Lake levels have been highly variable in the 1900s, but model outputs indicate that declines in both the inland lakes and the Great Lakes are anticipated in the future[5].
- Declines in the duration of winter ice have already been seen and are expected to continue[6](See inset for more information).
- Loss of winter ice reduces winter fish kill in shallow lakes[7] but also negatively affects the reproduction of whitefish in the Great Lakes bays, where ice cover protects the eggs from winter storm disturbance. This may impact the Lake Superior commercial fishery[8].
- The distributions of many fish and other organisms in lakes and streams will change. Cold-water species such as brook trout, and cool-water species such as northern pike and walleye could decline in the southern parts of the ceded territories[9]. Warm-water species such as smallmouth bass and bluegill are likely to expand northward[10].
- The duration of summer stratification will increase, adding to the risk of oxygen depletion and formation of deep-water "dead zones" for fish and other organisms[11, 12].
- Lower water levels, coupled with warmer water temperatures, may accelerate the accumulation of mercury and other contaminants in the aquatic food chain and ultimately in fish[13].

Model predicted impacts on streams and wetlands

- Stream temperatures will increase reducing habitat of cold and cool water species[14, 15].

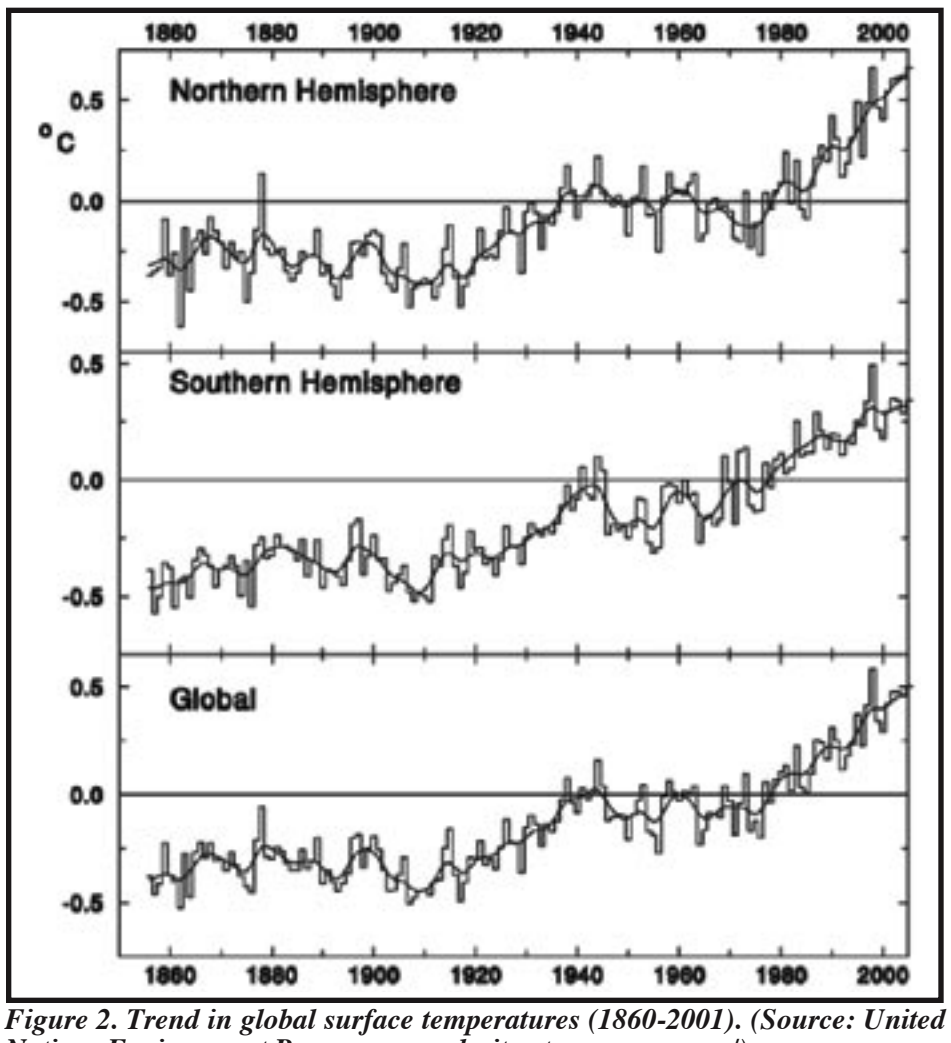


Figure 2. Trend in global surface temperatures (1860-2001). (Source: United Nations Environment Programme web site at www.unep.org/)

- Earlier ice breakup and earlier peaks in spring runoff will change the timing of stream flows, and increases in heavy rainstorms may cause more frequent flooding[16].
- Changes in the timing and severity of flood pulses may reduce safe breeding sites, especially for amphibians, migratory shorebirds, and waterfowl[17, 18].
- Reduced summer water levels are likely to cause small streams to dry up and reduce the area of wetlands, resulting in diminished water quality and less habitat for wildlife[19].

Predicted socioeconomic impacts

- As lake levels drop, costs to shipping in the Great Lakes are likely to increase, along with costs of dredging harbors and channels and of adjusting docks, water intake pipes, and other infrastructure. On the other hand, a longer ice-free season will increase the shipping season[20].
- Decreased water levels could reduce hydropower generation in the region by as much as 15%[21].

Climate change in the ceded territories: Inferred impacts and potential issues

The following global warming related impacts have not been extensively researched. However, they are reasonable areas of concern given the predicted impacts previously described.

- Reductions in the length of the winter season may cause wild rice to germinate earlier than it does today. Increased rainstorm intensity and flood pulses may have negative effects on wild rice during the floating leaf stage. Furthermore, changes in lake and stream water levels could negatively impact the overall distribution of wild rice in the region. It is possible, with the data available now, to identify rice beds that could be particularly sensitive to a drop in water levels and also identify those lakebeds that may become suitable for rice growth as water levels drop.
- A northward expansion in the range of native species currently found just to the south of the ceded territories and invasions of warm water non-native species such as common carp will be more likely. These changes would increase the stress on native plant and animal populations in the region.
- There is a well established relationship between drying of wetlands and increases in the availability of mercury in the adjoining lakes and rivers. Therefore, increased drying of precipitation-fed wetlands along with increased flood pulses may increase the amount of methyl mercury in waterbodies.
- Shorter, warmer winters will result in losses in winter recreation such as skiing, ice fishing, and snowmobiling but will also lengthen the season for warm-weather recreation.
- Changes in subsistence and recreational fishing and hunting seasons may be necessary as the distribution of species shifts across the region.
- Climate warming may lower heating costs in winter, but that may be off set by higher costs for air conditioning in summer.

(See Climate change, page 22)

Climate change in the ceded territories

(Continued from page 21)

- Water withdrawals from the Great Lakes are already the subject of debate, and pressures for more water for irrigation, drinking, and other human uses may intensify the conflicts as lake levels drop.
- There has been an effort to persuade hydropower dams to release water to mimic natural fluctuations in rivers and streams. Precipitation reductions associated with global warming may create greater resistance from dam operators to the use of "run of the river" flow regimes.

What can be done?

It may appear that the magnitude of the global warming problem is too great to solve. However, many of the challenges listed in this article can be ameliorated or even avoided by reducing the emission of greenhouse gases. Large-scale government actions are needed but they can often take a great deal of time to implement and can be weakened by a variety of factors. Until these large-scale programs become a reality, individual families and organizations can play an immediate and tangible role in reducing greenhouse gas emissions.

Comparative risk assessment research has shown that 70% of all greenhouse gas emissions for individual households and small organizations fall under two categories: transportation and household operations[(22)]. Transportation related emissions (use of cars, trucks, motorcycles, etc.) can be reduced by using public transportation, carpools, and bicycles whenever possible. Environmentally conscious consumers, companies, and agencies can also have an effect by buying hybrid cars and trucks and looking for low emission snowmobiles, motorcycles, and other recreational vehicles.

Household operations include all activities that use electricity (heating, hot water, air conditioning, appliances and lighting). Since burning fossil fuels produces most of the electricity generated in the United States, smart choices in household electricity use can translate into reductions in greenhouse gas emissions. Purchasing compact fluorescent light bulbs is an excellent way of conserving energy. The bulbs may cost more than conventional bulbs but they last much longer and use far less energy. This creates a cost savings for the consumer over the life of the bulb.

Improvements in insulation for houses and buildings can help keep them cool in summer and warm in winter. Wood heating is also a way of reducing greenhouse gas emissions because those emissions are confined to the lower atmosphere. However, it should be noted that the emissions from burning wood could contribute to respiratory health problems. A firm commitment to buying recycled paper products can reduce greenhouse gas emissions by slowing demand for wood pulp. Less demand for wood pulp can, in turn, reduce deforestation rates and lead to preservation of forest and wetland ecosystems. Preserving these ecosystems is important because their plants are very effective in removing CO_2 from the atmosphere through photosynthesis.

Finally, more research into the specific effects of climate change on treaty protected natural resources may allow the tribes to plan for the climate change consequences that cannot be avoided.

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Treaty deer harvested in Management Unit 1 by Gary Johnson, Director, First Nations Center, UW-Superior. The buck had 14 points, and weighed 220 pounds. Gary is shown here with son Jeremiah. (Photo submitted)

2005 off-reservation WI & MN treaty deer harvest by tribal registration station

Wisconsin Registration Station	Antlerless	Antlered	Unknown	Harvest Totals
Bad River	83	109	0	192
Fond du Lac	28	39	0	67
(Registered in) Field	2	0	0	2
Lac Courte Oreilles	204	326	1	531
Lac du Flambeau	180	300	0	480
Mille Lacs	22	23	0	45
Mole Lake	50	105	0	155
Red Cliff	134	129	0	263
St. Croix	161	288	6	454
Wisconsin Harvest Totals	***864***	***1319***	***6***	***2189***
Minnesota				
Mille Lacs	22	45	**0**	**67**
Sandstone	10	15	**0**	**25**
Minnesota Harvest Totals	***32***	***60***	***0***	***92***

2005 off-reservation WI & MN treaty bear harvest by tribal registration station

Wisconsin Registration Station	Male	Female	Harvest Totals
Bad River	5	2	7
Fond du Lac	0	2	2
Lac Courte Oreilles	8	9	17
Lac du Flambeau	5	4	9
Mole Lake	5	1	6
Red Cliff	5	3	8
St. Croix	3	2	5
Wisconsin Harvest Totals	31	23	54
Minnesota Harvest Totals	**0**	**0**	**0**

Banned in Canada, sold in America

(Continued from page 4)

'I thought I was doing myself good'

Almost all the mercury that people are exposed to comes from eating fish. And almost all fish contain some amounts of the metal, much of which falls into oceans, lakes and streams from air pollution.

Some of that pollution can travel around the world before falling to the ground. So emissions from a factory in China can pollute a lake in America and vice versa. Mercury also occurs naturally in rock and soil and is continually being released into the oceans through erosion and underwater volcanoes.

In water, bacteria chemically alter mercury, creating a highly toxic form called methylmercury, which the tiniest fish eat or absorb. As bigger fish eat smaller fish, mercury accumulates up the food chain, with the largest predators, such as shark and swordfish, generally containing the most.

At the top of the food chain are people. And because mercury passes easily through the placenta and can harm the developing nervous system, fetuses and small children are most vulnerable to its effects.

Many experts now believe that even tuna-fish sandwiches—a favorite of the American diet—can be risky for children. The fact that we poisoned our air and our oceans to such an extent that we can't eat a damn tuna sandwich is just diabolical," said Ayelet Waldman, a noted mystery author whose daughter was diagnosed with mercury poisoning at age 5 after frequently eating tuna.

"You spend so much time as a parent making the world safe for your children," Waldman said. "We strap 75 different kinds of helmets on our kids, and here I was exposing [her to a] neurotoxin in the food I was giving her because I thought it was healthier."

Solving the mercury problem ultimately will require reducing levels of the pollutant in the environment, according to the National Academy of Sciences, the nation's leading scientific advisory body. For now, though, the academy says consumers can best protect themselves by eating low-mercury fish.

The importance of avoiding mercury-laden seafood was underscored by a study released this fall by researchers from Harvard Medical School.

Children born to women who ate fish during their pregnancies did better on tests of memory and visual recognition, the study found. But if mothers had high levels of mercury in their bodies—mercury absorbed from the fish they ate—their children posted lower scores than those whose mothers ate less-tainted fish.

Other studies suggest the heart benefits of eating fish might be offset by mercury. Though the American Heart Association recommends eating fish twice a week to "benefit heart health," two major European studies found that mercury exposure can increase the risk of fatal heart attacks in men.

Waldman, of Berkeley, Calif., said that when her daughter, Sophie, was 5, she seemed to stop learning. She had trouble sounding out words she had already learned. She forgot how to tie her shoes.

During a heavy metals screening in 2000, Sophie showed high mercury levels, her mother said. After Sophie's mother consulted with a San Francisco internist, Dr. Jane Hightower, one of Sophie's favorite meals was identified as the culprit: She was eating a tuna sandwich a week made with canned albacore. Further tests by Hightower confirmed high mercury levels in Sophie, the doctor said.

When Sophie quit eating tuna, she started learning again, her mother said. "She seemed to us like she was a different kid."

Mercury does not stay in the body forever, Hightower said. It takes six months to a year for the metal to leave a person's bloodstream.

Hightower is one of the few American physicians who have diagnosed and treated people with elevated mercury levels. After discovering that some of her patients had complaints suggesting mercury poisoning, such as headaches, fatigue and loss of concentration, she tested 123 children and adults who had symptoms or who reported eating fish.

In a peer-reviewed study published in 2003, Hightower reported that 89 percent of the patients showed high mercury levels in their blood. Many of the patients, she said, were wealthy professionals who dined out frequently or ate fish as part of a workout regimen. Most, she said, were unaware of the risks.

"I was incredibly surprised," said Arnold Michael, 48, a videographer in Ft. Lauderdale who developed dizzy spells after eating tuna steaks and canned tuna at least four times a week. "I was just bingeing on it."

Tests showed he had high mercury levels, and he contacted Hightower for help. "I was eating fish," Michael said. "I thought I was doing myself good."

Banned in Canada, sold in America

Testing by the Tribune showed that a variety of fish that consumers might assume are relatively safe actually contain high levels of mercury.

For example, 15 of the orange roughy samples the Tribune bought had high levels. The testing also indicates mercury levels can vary widely even within a given species. A sample of orange roughy from Dominick's in suburban Crestwood had seven times more mercury than a piece from Jewel on North Elston Avenue in Chicago.

Though some of the Tribune's results were in line with previous limited U.S. sampling, others represented the first thorough testing of certain fish in years.

The FDA has tested only four **walleye samples since 1978, 14 fewer than the Tribune. The newspaper found that walleye averaged 0.51 parts of mercury per million parts of fish tissue.**

That may sound like a tiny amount, but mercury is so toxic that, by one estimate, a teaspoon of the metal is enough to contaminate a small lake. **The amount the Tribune found in walleye, which was imported from Canada, is above the limit at which Canadian officials can ban fish from sale within that country's borders.**

Four of the walleye samples were even above the much weaker U.S. limit of 1 part per million.

In an interview earlier this year, Canadian officials said their own testing in Lake Erie, where almost all of the country's walleye exports originate, showed there was no reason for concern.

"Why should we spend resources looking for a problem we know doesn't exist?" said John Hoeve, a senior policy officer for the Canadian Food Inspection Agency.

When told later about the Tribune test results, Hoeve said he was surprised the newspaper found mercury levels in some Canadian walleye that exceeded the U.S. standard. "I fully expected fish over the Canadian limit, but I wouldn't have expected those kind of numbers," he said.

People buying fishing licenses are given mercury warnings for walleye and other freshwater fish, but the federal government does not require such advisories in American supermarkets—even if the fish comes from the same waters.

The nation's divided oversight of fish safety helps explain the discrepancy. State environmental agencies and the EPA oversee recreationally caught fish, while the FDA is responsible for commercial fish. And the FDA has not extensively tested fish or issued comprehensive mercury warnings.

Agency officials said not enough walleye is consumed nationwide to merit their attention, even though the fish is popular in the Midwest. "Walleye just isn't going to be high on our radar screens," Acheson said.

In the Tribune's testing, walleye and orange roughy averaged below the government's do-not-sell limit of 1 part per million, but still high enough that a 161-pound woman should eat no more than 3.2 ounces of orange roughy and 3.5 ounces of walleye in a week.

The FDA has issued warnings for canned albacore tuna, which has averaged 0.35 parts per million in the agency's testing. Yet the agency has not issued warnings for orange roughy, which averaged 0.57 parts per million in the Tribune testing, or walleye, which was at 0.51.

When the FDA issued its mercury warning last year—an advisory posted on its Web site but not required in stores—the agency did not include some fish it knew had high levels of the toxic metal. Officials said they wanted to keep the advice simple.

If consumers have concerns about mercury in a particular species of fish, Acheson said, they should go to the agency's Web site, www.cfsan.fda.gov/~frf/sea-mehg.html <http://www.cfsan.fda.gov/~frf/sea-mehg.html>.

"The data is there if somebody wants to go look it up," he said.

Swordfish showed the highest mercury levels in the Tribune tests, averaging 1.41 parts per million, well above the 1.0 limit at which regulators can confiscate fish. In FDA testing, swordfish has averaged 0.97 parts per million.

FDA officials said it is impractical to test individual swordfish to weed out those that are heavily contaminated.

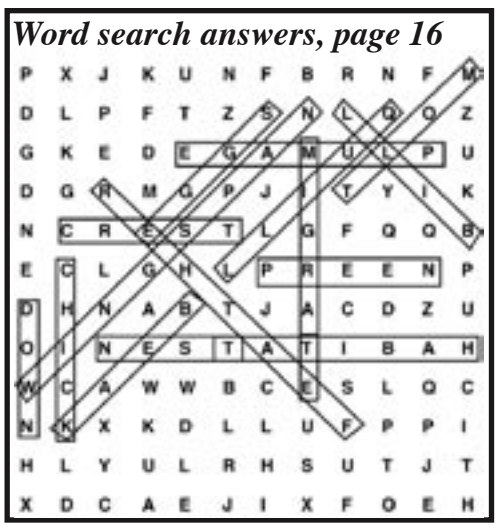
Issuing warnings is a better way to protect at-risk groups, such as young children and pregnant women, the officials said. "Rather than saying, 'You can eat swordfish as long as it has been tested,' we're saying, 'Don't eat those fish,'" Acheson said.

Though it is unclear whether a single high-mercury meal could harm a fetus, experts say the developing nervous system is so sensitive to toxic substances that caution should prevail. "You only get one chance to develop a brain," Hightower said.

Waldman, Sophie's mother, said that if there had been proper warnings years ago, she never would have fed so much canned tuna to her daughter, now 11. Today, Waldman said, she keeps track of how much fish her daughter eats and consults an environmental group's Web site to find mercury levels in various fish.

Deborah Rice, a former EPA toxicologist and mercury expert, said that most consumers cannot be expected to research the mercury levels of their favorite fish and "then keep a diary about when was the last time they ate orange roughy." "But that's what it has come down to."

Word search answers, page 16



Northern pike tagging study continues

(Continued from page 2)

abundance from the interagency northern pike tagging study and modeling work completed by GLIFWC, the possibility of adjusting the northern pike harvest cap was discussed. However, the Committee agreed to maintain the harvest cap for northern pike at 25,000 pounds.

The cooperative interagency northern pike tagging study will continue in 2006. Tribal netters should expect to see some northern pike in their catches that are marked with plastic tags which stick out from the side of the fish next to the dorsal fin. These tags will be yellow in color and will have "MN DNR" plus a number printed on them. As in previous years, tribal creel clerks will collect tags and document tag numbers when tagged fish are observed in tribal catches. In addition, tribal creel clerks will collect northern pike release information from tribal netters throughout spring 2006. MnDNR creel clerks are also planning to collect similar information from state-licensed anglers throughout their annual creel survey.

Due to the presence of zebra mussels and Eurasian water-milfoil in the waters of Mille Lacs Lake, tribal spearers and netters are advised of their responsibility to comply with tribal rules and regulations that protect against the spread of these harmful invasive species into other ceded territory waters. This includes but is not limited to a requirement for all water to be drained and all aquatic vegetation to be removed from boats, motors, trailers and fishing gear when they are removed from infested waters such as Mille Lacs Lake.

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NON PROFIT ORG
POSTAGE PAID
PERMIT # 203
EAU CLAIRE, WI

Printed by: EAU CLAIRE PRESS COMPANY, EAU CLAIRE, WI 54701

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MAZINA'IGAN (Talking Paper) is a quarterly publication of the Great Lakes Indian Fish & Wildlife Commission, which represents eleven Ojibwe tribes in Michigan, Minnesota and Wisconsin.

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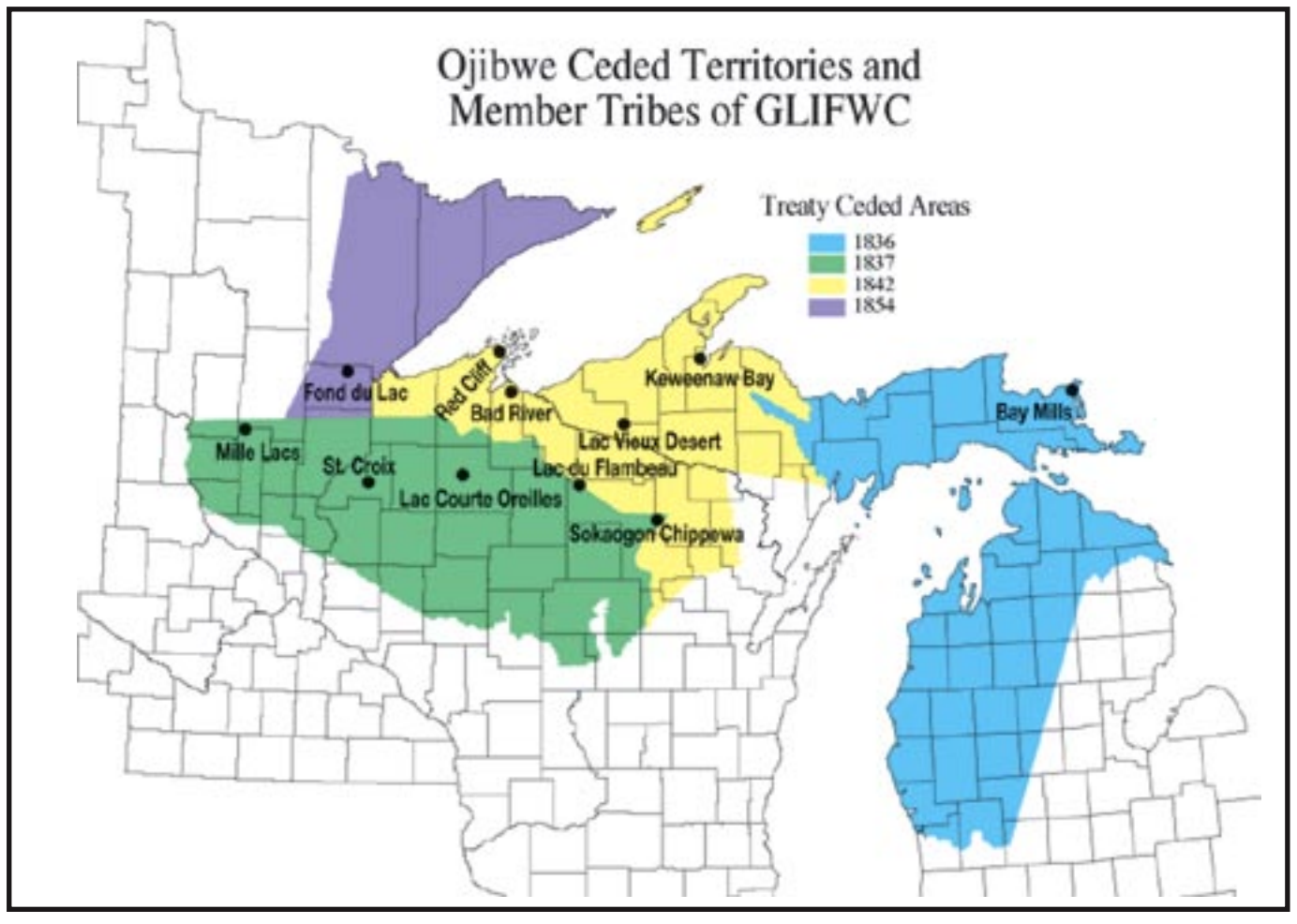

Mazina'igan

A Chronicle of the Lake Superior Ojibwe

Ziigwan 2006