Mazina'igan
A Chronicle of the Lake Superior Ojibwe
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Deadly fish disease circulating through the Great Lakes

By Charlie Otto Rasmussen
Staff Writer

Odanah, Wis.—With tens of thousands of fish left dead in its wake, a potentially devastating virus continues moving west through the Great Lakes basin towards Lake Superior. While the disease poses no known threat to humans, Viral Hemorrhagic Septicemia virus, or VHS, causes organ failure and hemorrhaging in a growing list of fish species.

According to fisheries professionals, a variant of VHS is responsible for large-scale fish mortalities as far west as Lake Huron, affecting species highly valued in tribal communities like muskellunge, walleye, whitefish and yellow perch.

"It's not clear on how VHS will ultimately impact the Great Lakes fishery," said Matt Hudson, Great Lakes Indian Fish & Wildlife Commission environmental biologist. "There could be widespread ecological impacts as well as social issues among tribes that rely on fish for commercial and subsistence needs."

Researchers believe the virus first entered the Great Lakes basin around 2002 through a now-familiar culprit in aquatic degradation: infected ballast water from ocean-going ships.

Many exotic invasive species like zebra mussels and spiny water flea owe their arrival into the upper Great Lakes to discharged ballast water, which ships carry to provide stability. Pathologists confirm that VHS infiltrates new environments by way of a host fish and can also survive for an unknown period of time in water.

Meanwhile, fisheries authorities across the upper Great Lakes are scrambling to better understand this particular VHS strain while trying to prevent its spread and redoubling efforts to keep fish hatcheries disease-free.

In Wisconsin, the Natural Resources Board adopted a slate of emergency rules to help control VHS, like requiring boaters to drain water from their craft immediately after leaving Great Lakes or Mississippi drainages. Michigan resource managers imposed a one-year moratorium on the production of select fish species to avoid hatchery contamination and expansion of the disease. For fisheries programs across the region, VHS is absorbing an increasing amount of time, money and resources.

Signs of VHS virus in fish include hemorrhages, both external on the skin and internal in the muscle and tissues, pale or swollen internal organs, and "pop-eye" (swollen eyes). Since all these signs are not specific to VHS, infections must be confirmed by lab tests. [Photo credits: Dr. Jim Winton (USGS Seattle, WA), Dr. Mohamed Faisal (MSU Lansing, MI) and Dr. Paul Bowser (Cornell Ithaca, NY)]

Pacific Northwest scare

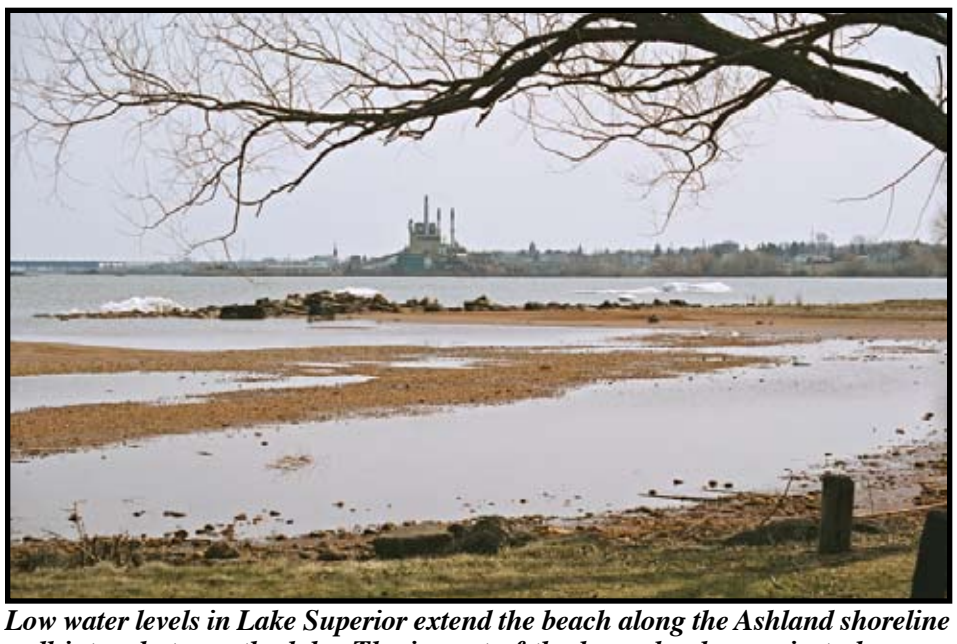
While VHS is a new arrival to the North American interior, scientists identified strains of the disease in Europe and coastal areas of the United States and Canada decades ago. During routine hatchery screenings in 1988,
See VHS, page 3)

Why is Lake Superior's water level so low?

By Bill Mattes, GLIFWC
Great Lakes Biologist

Odanah, Wis.—Lake Superior has been getting lower and warmer. The current water level in Lake Superior as of April was nearly as low as has ever been recorded in 137 years of recording water levels. At one point in 1926 the lake was lower by about seven inches (see chart on page four).

Why is Lake Superior so low? The answer can be found in Lake Superior's size, an impressive 31,820 square miles of surface area. This offers a whole lot of area over which evaporation can occur.



Low water levels in Lake Superior extend the beach along the Ashland shoreline well into what was the lake. The impact of the lower levels remain to be seen, especially if drought conditions continue in the region. (Photo by Sue Erickson)

Climatic events like warmer weather can evaporate a great deal of water from the world's largest freshwater lake. Warmer weather causes the ice on Lake Superior, which caps off evaporation, to form later in the winter and melt earlier in the spring. This leaves the surface exposed to the air and acclerates evaporation. Dry air is especially good at evaporating water, and we have had desert-like air through much of the winter and now into spring.

Add to this the shortage of signification rain and snow storms over Lake Superior, northern Wisconsin, Michigan, Minnesota, and the Province of Ontario along the northern shore.

Large storms draw water up into the atmosphere from the Gulf of Mexico as they form over the central plains of Nebraska, Kansas, and Oklahoma then move north-eastward toward Quebec, Canada. Once over the Great Lakes, the storms dump rain or snow unto the land around Lake Superior and into the lake directly. The blizzards and three-day spring rain storms that we all complain about actually add water back to the big lake and without them there is a net loss in water.

Without the storms and with the warm and dry conditions we are left with drought conditions. These drought conditions caused the lake to be low in 1926 and are causing the lake to be low in 2007.

Factors other than climate change affect water levels in Lake Superior. Namely, dams diverting river flows to Hudson Bay back into Lake Superior through the Nipigon River and the locks at the St. Mary's River which send Lake Superior water south. Notice from the chart, (page four) how average water levels climbed from the 1870s to the 1950s, but have since been in decline.

Lower water leads to dried up sloughs and wetlands and these areas can't just migrate out into Lake Superior. The shoreline is 'perched,' which means the lake drops off quickly. So when the water drops, the shoreline areas are left high and dry and without connection to the lake. Other impacts from low water include: dredging, which can stir up contaminated sediments; boaters hitting
(See Boaters, page 4)

Spring walleye harvest hits new high in three states

Ice slow to leave lakes

By Charlie Otto Rasmussen
Staff Writer

Odanah, Wis.—Buoyed by a weather-extended season and above average participation, tribal members set walleye harvest records across the ceded territory last spring. According to preliminary figures, Wisconsin treaty spearers took home 30,693 walleye while the off-reservation harvest reached 5,577 in Upper Michigan's 1842 territory. At Mille Lacs Lake, Minnesota—where the harvest is tracked by weight—eight Ojibwe tribes shared 86,487 pounds of walleye taken by gillnet and spear.

"Tribal fishermen set new walleye harvest benchmarks in all three states while remaining well below their overall harvest declarations," said Neil Kmiecik, Great Lakes Indian Fish & Wildlife Commission Biological Services Director. "Many tribal members were able to replenish their fish supply for sharing with family, friends and other community members."

Winter ice began breaking up on northern Wisconsin lakes during the first week of April, drawing inaugural spearers in the St. Croix and Lac du Flambeau areas onto local waters. A cold snap that included a winter storm, however, slowed the thaw and even caused some lakes to refreeze into the second week of April.

"Spearers were fishing in open water next to large sections of ice," said Fred Maulson, GLIFWC chief enforcement officer. "Quite a few walleye quotas were filled even before the lake was ice-free."

At Minnesota's Mille Lacs Lake, off-reservation fishing got underway on April 18 with the arrival of Sokaogon netters from eastern Wisconsin. Approximately 100 yards of open water between the shore and frozen lake ice offered early fishing opportunities near North Garrison landing. Ten days later members from all the treaty tribes were fishing at Mille Lacs even as large sections of ice remained. Then the windstorm blew in.

"More than a dozen nets were lost during the windstorm from shifting ice," Maulson explained. "Within two days we were able to recover all but one net and salvage all the fish." GLIFWC staff developed a harvest estimate for the lost net based on previous catches and deducted the poundage from the tribal quota. Maulson said GLIFWC officers also assisted in the recovery of a fishing boat that sunk on Mille Lacs during high seas.

"GLIFWC wardens did a nice job in some difficult situations," Maulson said. "They worked well with officers from tribal and state agencies to help make the season run as smoothly as possible."

Gunshots were fired near spearers at two Wisconsin locations: Big Lake in Vilas County and Willow Flowage in Oneida County. State officers are investigating the Big Lake incident and charges are expected, Maulson said.

Final harvest numbers from the spring off-reservation fishing season will be available July 15.

Thirteen-year-old Sokaogon member Jake McGeshick brings aboard a walleye speared on Planting Ground Lake in northeast Wisconsin. He fished with his father Jeff McGeshick Sr. and Wendy Smith. (Photo by Charlie Otto Rasmussen)

Sokaogon fishermen on the Three Lakes Chain faced low water levels making channel travel between lakes tricky. (Photo by Charlie Otto Rasmussen)

The State Bar of Wisconsin's Indian Law Section Board honored late GLIFWC Executive Administrator James H. Schlender at its annual meeting in Milwaukee on May 10. Schlender and a small group of lawyers organized the Bar's Indian Law Section in 1991. Current GLIFWC Executive Administrator James Zorn (right) accepted a framed gift to the Commission presented by the Indian Law Section's Paul Stenzel. GLIFWC Policy Analyst Ann McCammon Soltis also attended the Bar's annual gathering and spoke about off-reservation environmental issues during a panel discussion. (Photo provided by State Bar of Wisconsin)

A GLIFWC creel crew from Lac Courte Oreilles settles in for the evening as spearers launch boats nearby. (Photo by Jenny Schlender)

On the cover

Good haul! Cheyenne Landru, Mole Lake, pulls up a nice morning catch at Mille Lacs lake this spring from nets set just off the North Garrison landing. The pull landed both walleye and a few northern. (Photo by Sue Erickson)

From the desk of GLIFWC Board of Commissioners Chairman Mic Isham

Aneen Nijiwag

After sharing natural resource management responsibilities in the ceded territory for several decades, the relationship between Ojibwe treaty tribes and the states is at a high point. We are at the table for many issues affecting the health of fish, wildlife and the environment. The respective Departments of Natural Resources are doing a better job of notifying the Tribes about projects that will affect our treaty guaranteed resources. But there is still a long way to go.

While individual tribes and the Great Lakes Indian Fish & Wildlife Commission (GLIFWC) continues to promote true co-management, the tribal voice, in fact, is not always heard. All stakeholders seek protections for ceded territory natural resources. But differences in management approaches sometimes short-change not only the resources in question, but also the people who rely on them.

There was a time when vocal skeptics dismissed tribal off-reservation management as a power-and-control issue. Tribal management institutions were branded as inferior, staffed by biologists and other professionals who were supposedly substandard compared to their state and federal counterparts. A long list of inter-agency accomplishments like lake trout recovery on Lake Superior, expansion of wild rice beds and an unparalleled understanding of inland walleye populations, soundly discredits that notion. Tribes bring good science and a wealth of experience to the management table.

Mic Isham (Photo by Sue Erickson)

One important motivation for tribes to seek a fuller co-management is because we have different management philosophies. Typically, state officials manage fish and wildlife for sport harvests that include consumption, catch-and-release and trophy harvests. For the tribes, however, sustenance—whether nutritional or spiritual harvests—is the prime consideration. There is gap here. From a tribal perspective, for example, we must be more aggressive in cleaning up our lakes and curbing mercury pollution in order to guarantee a safe food source. With stronger working relations, resources problems can be alleviated for the benefit of all.

In fact, I would argue that fish and wildlife can be better served if the Department of Natural Resources adopted some proven management techniques long-employed by treaty tribes. For example, GLIFWC and tribal creel crews count, measure or weigh every fish harvested in Wisconsin and Minnesota during open water seasons. The states do not. We shut down our seasons when our quotas are reached. The state relies on mathematical formulas based on angler surveys to determine when or if a fishing quota is reached.

The scientific information on the lakes today is greater then at any time thanks to the combined efforts of tribal, federal and state resource managers. With better cooperation—a truer co-management—the health of natural resources cherished by all peoples can be best served.

Migwitch Mi'iw

VHS spreads through Great Lakes basin

(Continued from page 1)

a spawning salmon from the Sooes River in northwest Washington tested positive for VHS.

Fisheries officials from regional tribes, along with state and federal governments, prepared for a potential crisis in one of the world's great salmon populations. For western Washington's native communities that have relied on salmon for physical and spiritual sustenance for centuries, the threat was profound.

"There was a tremendous amount of adult and juvenile screening at all of our hatcheries. Any positive findings meant that all the fish at the site were destroyed," said Bruce Stewart, Chief Pathologist for Olympia, Washington-based Northwest Indian Fisheries Commission. "Washington fishery co-managers flew in VHS experts from Denmark and brought in sea lamprey control experts from the Great Lakes to explore the possibility of treating Sooes River with chlorine to stop the disease."

After a rigorous, 10-year testing program for all salmon broodstock returning to Washington hatcheries, pathologists learned that adult fish did not pass the disease onto their offspring and even in a controlled laboratory environment, it was difficult to infect juvenile salmon, Stewart said.

Among the tens of thousands of salmon tested in Washington, only 10-15 adult broodstock turned up positive with the disease, Stewart said. In response, fisheries managers in Washington have recently loosened some VHS management actions associated with adult fish as the disease threat has diminished. Stewart noted, however, that rigid testing measures for juvenile salmon remain in place as research continues.

Walleye are among the fish species susceptible to the VHS virus. This fish was collected by a GLIFWC creel team in spring 2007 for mercury testing. (Photo by Charlie Otto Rasmussen)

"We found that even though spawning adults might carry the virus, they are asymptomatic. They are not actually sick. And they aren't very successful infecting other fish," Stewart said.

"This seems to be a marine virus that salmon may be picking up by eating infected herring," Stewart continued. Washington salmon spend much of their lives in Puget Sound or the ocean, and return to freshwater rivers to spawn.

Stewart said the pathological variations between VHS strains in the Pacific Northwest and Great Lakes are minute, but the effects are dramatic. "You are looking at fish dying in great numbers on the Great Lakes compared to some broodstock that carry around the virus. In that sense, it's a big difference."

VHS found in Wisconsin inland lake chain

The unexpected appearance of VHS in a Wisconsin inland lake in early May has prompted state officials to expand emergency rules designed to slow the spread of the disease. Dead sheepshead—also known as freshwater drum—recently discovered in the Lake Winnebago system have tested positive for VHS according to the Department of Natural Resources.

Use of live and dead bait for angling is restricted under the rules and boaters are required to thoroughly drain their boats upon leaving waters connected to the Mississippi River, Great Lakes or Lake Winnebago basins. DNR officials are also cutting back on further fish stocking and transportation this year until hatchery stocks can be reevaluated.

Michigan pulls hatchery plug

As Washington researchers gathered data and developed techniques to manage VHS, other states with salmon populations followed suit. Gary Whelan, Michigan Department of Natural Resources fish production manager said state hatcheries disinfect salmon eggs with two rounds of iodophor, a water-soluble iodine solution that neutralizes the virus. While the treatment has proven effective on salmon eggs, Whelan said it's unclear whether topical iodophor applications will work on other species cultured in state fish hatcheries.

As a result, the Michigan DNR announced a one-year moratorium last April on the hatchery production of walleye, northern pike and muskellunge to reduce the risk of further transmitting the disease. State officials customarily tap wild broodstock from watersheds in Lakes Michigan, Erie and Huron. On Lake Michigan, DNR Fisheries Supervisor George Madison said that the agency considered the Little Bay de Noc walleye population—the primary source for inland walleye stocking in Upper Peninsula lakes—a high VHS risk. While VHS had not been confirmed in some of the egg collection areas, fisheries managers weren't taking any chances.

"Our traditional Fisheries Division work program is changing due to VHS, including spending more time on disease surveillance and equipment disinfection," Madison said.

Whelen said the agency is currently conducting egg disinfection experiments for walleye and other species in hopes of restarting hatchery production in 2008. "By this fall, we should have a fairly good idea on how to properly treat VHS in these other species," he said.

Tips to help prevent the spread of VHS

- ✘ Put your catch on ice and do not move live fish (including unused bait minnows) away from the landing or shore;
- ✘ Drain all water from bilges, bait buckets, live wells and other containers when leaving the landing or shore;
- ✘ Use live minnows purchased only from registered bait dealers or catch it yourself in the same water you fish; and
- ✘ Before launching and before leaving for the day, inspect and clean all watercraft for visible plants and animals.

Laker population, quota rising in Wisconsin's Gichigami waters

Red Cliff, Bad River, WDNR sign new agreement

By Charlie Otto Rasmussen
Staff Writer

State and tribal representatives met April 19 in Ashland to sign a new ten-year Lake Superior fish management agreement. From right: Bad River Vice-Chairman Peter Lemieux, Wisconsin Department of Natural Resources Secretary Scott Hassett and Red Cliff Chairwoman Patricia DePerry. Red Cliff elder Leo LaFernier (background) opened the signing ceremony with a prayer and comments about the condition of Lake Superior. (Photo by Charlie Otto Rasmussen)

Ashland, Wis.—Wild lake trout are back in a big way along Wisconsin's northernmost shoreline. Decimated by habitat degradation and overfishing, Lake Superior trout populations plunged through the middle decades of the 20th Century.

The invasion of parasitic sea lamprey delivered yet another blow to struggling trout numbers. Today lakers, known as namaycush in the Ojibwe language, are near historic highs, and the latest state-tribal fishing agreement attests to the dramatic turnaround.

"Lake trout have recovered," said Ervin Soulier, Bad River Natural Resource Department Director. "The increased trout harvest quotas provides an excellent opportunity for tribal members to exercise their treaty rights and meet some of their subsistence needs." Under the new agreement, lake trout harvest quotas are 18% higher over last year—from about 126,000 to 150,000 pounds for tribal and state-licensed fishermen.

Wisconsin Department of Natural Resources Secretary Scott Hassett joined Red Cliff Chairwoman Patricia DePerry and Bad River Vice-Chairman Peter Lemieux in signing the 10-year management pact on April 19 at the Sigurd Olson Environmental Institute at Northland College. It is the fourth intergovernmental Lake Superior fishing agreement since 1981 and details harvest management protocols for commercial operators along with subsistence and sport fishers.

According to fisheries managers, the bulk of Wisconsin's namaycush population is comprised of wild fish—more than 60 percent. In previous decades, hatchery-raised lake trout made up most of the fishery. State and tribal officials credit the resurgence to past management agreements, which included protective fishing regulations and sea lamprey controls.

While Wisconsin's Lake Superior waters include two management areas, the vast majority of lake trout and whitefish harvest occurs in unit WI-2. The Apostle Islands form the centerpiece of the unit, which is checkered with fish refuges that restrict commercial and recreational harvest. Commercial fishermen operating in WI-2 principally target whitefish, and smaller numbers of lake trout are incidentally caught.

Exotic lampreys remain the largest consumer of lake trout in Gichigami. Since the mid-1990s lakers have experienced increasing mortality from lamprey attacks, outpacing the combined harvest of recreational, subsistence and commercial fishermen.

Tribal fishing in off-reservation Lake Superior waters is guaranteed in the 1854 Treaty between the United States and regional Ojibwe bands. In the 1972 *Gurnoe* Decision, the Wisconsin State Supreme Court upheld the treaty fishing rights for the Red Cliff and Bad River bands, ultimately leading to cooperative management of the Lake Superior fishery with state officials.

Boaters be allert to lower levels

(Continued from page 1)

previously unexposed rocks logs (so be careful if you're out boating); and buildings being constructed closer to the high-water line, which will be impacted when the lake rises again.

The trend in water temperature is a trend toward a warmer Lake Superior (see chart 2). Lake Superior was three degrees warmer over the past 13 years (1994-2006) as compared to the previous 15 years (1979-1993) as recorded at the National Oceanic Atmospheric Adminsitration (NOAA) bouy 45001, which is located mid-lake or 60 nautical miles NNE of Hancock, Michigan.

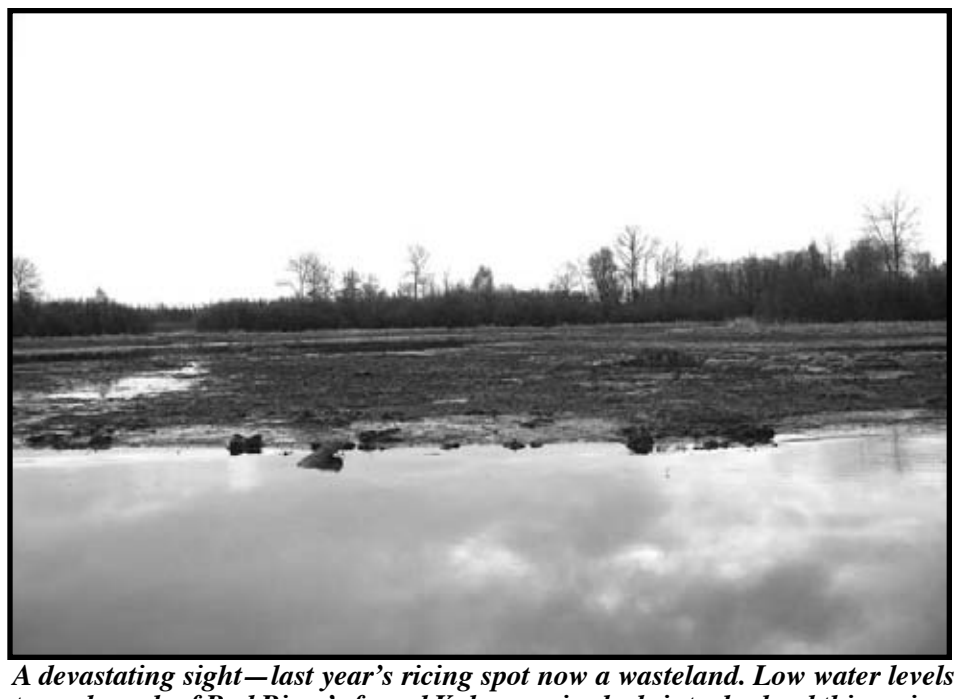
What does this mean? It means greater productivity for one. In comparison to the warmer Lake Michigan, Lake Superior has been a relatively low producer of fish. However, in recent years fish production from Lake Superior has increased, while Lake Michigan production has decreased.

Lake Superior's cold water has offered a harsh environment to some invasive species. For example, sea lampreys have always been smaller here than in other Great Lakes; exotic salmonids (chinook, coho, rainbow trout) have struggled to survive; and other invasive species have remained low in Lake Superior while they've thrived in the other lakes (i.e. alewife, round goby).

Conversely, Lake Superior is a refuge for cold water species like lake trout and ciscoes (a.k.a. lake herring), while their close relatives have already been disappearing from the southern end of their range. Lake Superior may end up with more fish, but the species composition may change considerably.

It is very difficult to say exactly what will happen. Predicting whether or not Lake Superior's water level will rise or fall over the short term is only as reliable as predicting the weather! If the climate continues to warm and rain and snowfall continue to be low, Lake Superior's water level will continue to fall. It is something to watch, and it should make us stop to consider just how precious our freshwater resources are to us.

It is never too soon to start conserving the life-blood of our Mother Earth. My advice, let your yard go brown this summer, turn off the water when you brush your teeth, and take other measures which you think are necessary to conserve water now!



A devastating sight—last year's ricing spot now a wasteland. Low water levels turned much of Bad River's famed Kakagon rice beds into dry land this spring. (Photo by Vern Stone)

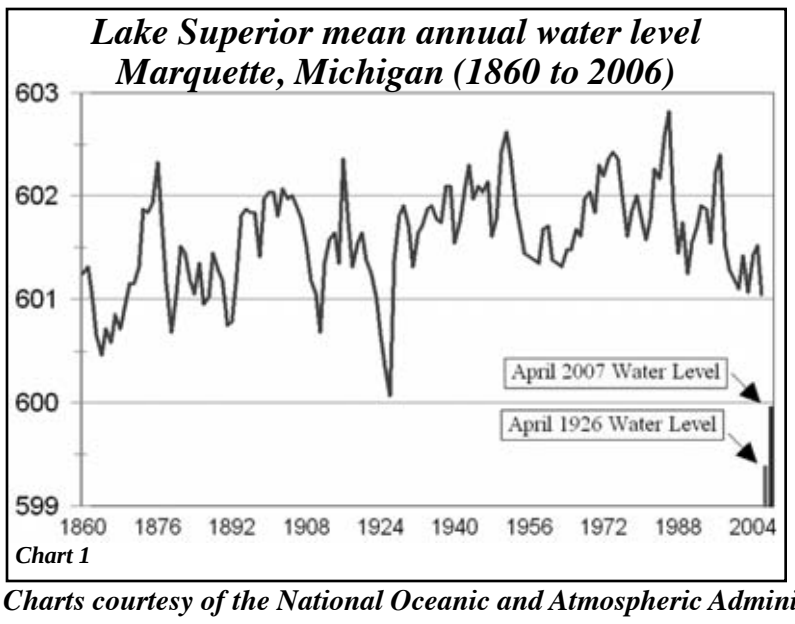


Chart 1

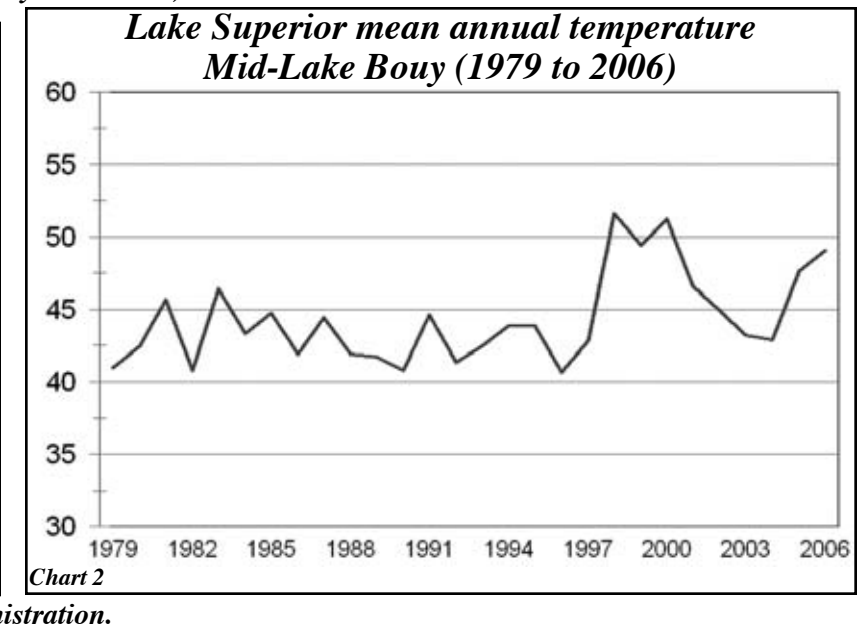


Chart 2

Charts courtesy of the National Oceanic and Atmospheric Administration.

Netmaking: Traditional skills in the contemporary world

By Sue Erickson, Staff Writer

Onamia, Minn.—The shiny filament composing the mesh of a 100-foot net stretched the length of one sunny, well-lit hallway at the Nah-Ah-Shing High School, Mille Lacs for most of the first week in April. A week-long net-making class taught by Red Cliff commercial fisherman Mike Montano exposed most of the school's students to the skill of traditional net-making during the week, with a total of ten nets being constructed during the course.

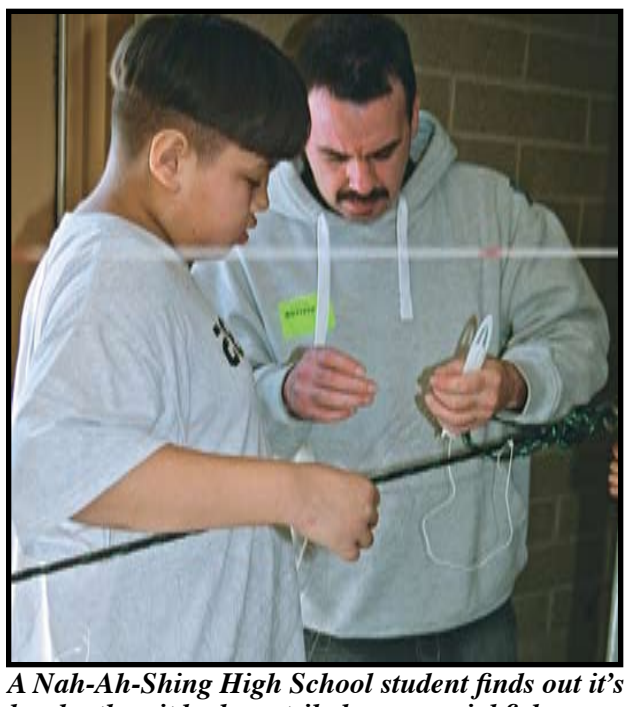
While some students wound the fine filament on shuttles, others carefully wove and tied the filament under Montano's watchful eye, step-by-step building a net with the correct length and mesh size for spring netting season at Mille Lacs Lake. Montano, captain of Orca, a commercial fishing tug on Lake Superior, learned the art while working with Red Cliff fishermen as a youth. Building and repairing nets has always been part of the trade.

The knots need to be correct and the interlude between knots exact, otherwise the mesh will not hold its shape once lowered into the water and would be ineffective, Montano explains. The mesh is fastened between long, cord lines, the bottom one weighted with lead to hold the net down when set. Stretched out the mesh unfolds into open, diamond-shaped holes, effective in snaring the gills of targeted species.

Mille Lacs elders were also on hand during the course, assisting with questions, providing traditional information and especially Ojibwe language terms and phrases that are a part of the process as well. Also assisting was student Amber Buckanaga, a sophomore who took the class at the East Lake Nimisinkwaa Learning Academy two years ago when another Red Cliff fisherman, George Newago, presented a workshop on net-making. Already a skilled and nimble weaver, Amber helps other students as they take up the task. "Some students pick up the skill readily," Montano explained, "for others, it is harder." The hope is that students will be able to teach each other.

The class was timely—in preparation for the awaited spring netting season that opened on the vast Mille Lacs Lake once it shed its thick ice cover, and the walleye began their seasonal spawning run into the lake's shallows.

The class is just one component that weaves Ojibwe culture and language into the fabric of the school's educational curriculum, teaching students traditional skills in concert with core subjects, like math concepts, history, science, and language. According to Nah-Ah-Shing Principal Erik North, cross-curriculum classes such as these are often more effective than straight textbook learning. They emphasize a hands-on application of a multitude of concepts while also allowing for the opportunity to incorporate and use the Ojibwe language. In the case of net-making, he cites learning about geometrical shapes, treaty rights, and fishery science as examples of how a cross-curriculum works. Similar classes are offered for other seasonal activities and skills, such as making maple sugar, ricing, hunting, constructing dance outfits and even quilts.



A Nah-Ah-Shing High School student finds out it's harder than it looks as tribal commercial fisherman Mike Montano, Red Cliff, (center) teaches him net tying. Montano brought his skills inland to the Mille Lac Band's Nah-Ah-Shing High School this spring in order to pass on the traditional skill of net-making. (Photo by Sue Erickson)

Jay Saros, Nah-Ah-Shing's Language and Culture Department coordinator, set-up the net-making class in collaboration with the Mille Lacs's Community Youth Services. He estimates about 90 percent of the middle and high school students participated in the class during the week. "Students helped sew two nets for an elder and hopefully will be able to make their own in the future and even sell nets," Saros says. The nets are worth about $90.00 once complete, minus the buoys.

As an extension of the course, the students were provided a special permit from the Mille Lacs Band's Department of Natural Resources for the youth to set nets for elders when the season began. They learned the process of correctly setting and lifting a net as well as extracting fish and preparing the fish for mealtime—fresh walleye for dinner, the ultimate reward. Most of the fish brought in by students went to the elderly feeding program where it has been much appreciated.

Amber Buckanaga, Nay-Ah-Shing High School sophomore, deftly uses a shuttle to tie a net during the school's netmaking workshop this spring. Buckanaga learned the skill two years ago during a similar workshop, so was able to assist other students participating in the class taught by Red Cliff's Mike Montano this spring. (Photo by Sue Erickson)

Ojibwemowin

asaab—net/mesh
na bi doo l'gan—needle
dakobiidoon—tie
aaba'an—untie
pashkisi assab—the net has large mesh
asabikewin—netting
assabins—small net
nind assabike—I make a net
nin pagidawa—I set nets

Ready for action at the Mille Lacs Lake North Garrison landing were creel and enforcement crews monitoring the spring netting and spearing throughout the spring 2007 season. Among them were Zachary Grunst and Isaiah Fanjoy, GLIFWC seasonal creel crew, Tom Kroeplin, GLIFWC LTE warden, and GLIFWC Fisheries Biologist Nick Milroy. (Photo by Dave Tembruell)

Shifting ice confronted some of the early birds at Mille Lacs Lake this spring, sometimes making it difficult to retrieve nets or come ashore. (Photo by Micah Cain)

Keeping lamprey in check not a simple problem

Balancing the good and bad of chemical control

Bill Mattes, GLIFWC Great Lakes Biologist

Odanah, Wis.—What is up with all the sea lampreys? There has been a disturbing increase in lake-wide abundance of sea lampreys since 1997, and many who fish Lake Superior on a regular basis have been wondering what is up with all the sea lampreys. Lake Superior is not alone in this problem—Lake's Michigan, Erie, and Ontario have also seen a similar trend.

The answer lies in the main source of lamprey control—the chemical TFM (3-trifluoromethyl-4-nitrophenol). TFM is a crystalline solid (like salt) and when mixed with water is toxic to larval lampreys at low concentrations. It is also toxic, to a much lesser extent, to other aquatic organisms which share the water with larval lampreys. TFM needs to be put in streams at concentrations which will kill lamprey but not other fish. Some streams have fish, such as lake sturgeon, which are only slightly more tolerant than lampreys to TFM's killing effect.

In the mid-1990s the Great Lakes Fishery Commission, which was established in 1955 by the Canadian/U.S. Convention on Great Lakes Fisheries and coordinates the control effort for sea lamprey with input from the states and tribes, decided to attempt to reduce the use of TFM on the Great Lakes by 20%. This was to be accomplished through a combination of instituting alternative control methods and reducing the amount of TFM applied during stream treatments—especially those streams with lake sturgeon.

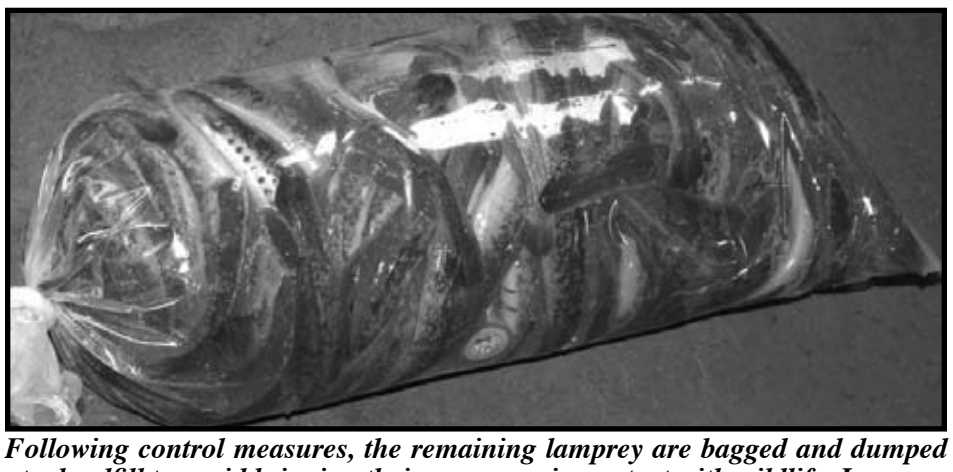
The TFM treatments were adjusted so that the line between applying enough chemical to kill lampreys while not killing non-target species was narrowed. This lead to no non-target fish kills but greater survival for larval lampreys.

To understand the magnitude of this effect, imagine a river where 100,000 larval lampreys live. If enough TFM is applied to kill all the lampreys then we get about a 99% kill (we never kill them all) so only 1,000 lampreys are left. But if less TFM is applied and we get say an 89% kill, just 10% less efficiency, then 11,000 lampreys are left. It doesn't take much of a reduction in kill efficiency to end up with an order of magnitude more lampreys. This is what scientists think happened between 1997 and 2004.

In addition, large river systems, which require larger amounts of chemical were not treated all in the same year, to reach the 20% reduction in annual use of TFM. For instance, on the Bad River, the main-stem and some tributaries were treated in one year but not the Marengo River. This lead to a steady supply of lampreys from the mouth of the largest river systems on the Great Lakes over the time period.

In Lake Superior, there were no increases in alternative control methods. However, there was an increase in the sterile male release program in Lake Huron's St. Mary's River—and lamprey numbers decreased throughout the time period. But the sterile male program cannot be expanded indefinitely because as lampreys are reduced the number of males available to be sterilized are reduced.

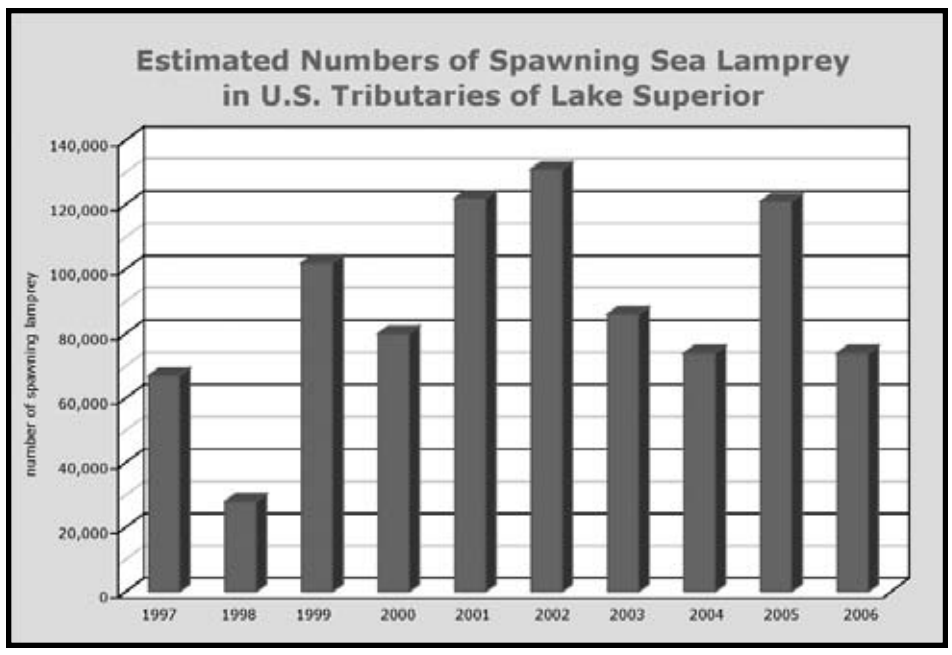
The response of the Great Lakes Fishery Commission since 2004 has been to increase TFM treatments throughout the Great Lakes basin. Only time will tell if this alone will reverse the trend of increasing lamprey abundance.



Following control measures, the remaining lamprey are bagged and dumped at a landfill to avoid bringing their carcasses in contact with wildlife. Lamprey flesh contains high amounts of mercury which can cause sickness, reproductive problems and death in some species. (Photo by Charlie Otto Rasmussen)

Saxon, Wis.—Early spring fishing on Lake Superior can be fraught with complications. A fair wind and mild weather gave way quickly to gusty northeast winds and a cold snap which left the crew of the* TNT*, Bayfield, scrambling across pack ice to get their fish to market on time. The pack ice prevented the* TNT *from reaching the docks at Black River and Saxon harbors, but with an extra effort the crew was able to off-load their catch. After transferring a fine catch of whitefish to a waiting truck, the captain and co-captain returned to the* TNT*, backed her out of the pack ice, and remained on the lake until the wind blew in their favor. (Photo by Bill Mattes)

GLIFWC's sea lamprey control crew bags parasitic sea lamprey captured at the Bad River Falls. Technicians release 20% of the trapped lamprey with a fin clip back into the river as part of a mark-and-recapture population analysis. Live male lamprey are placed in holding and later transported to Michigan where they are sterilized then released into the St. Mary's River to compete with fertile males for nests. Pictured above left to right in foreground: Mike Plucinski and Sam Wiggins. Background: Jason Meacham and Andy Fox. (Photo by Charlie Otto Rasmussen)

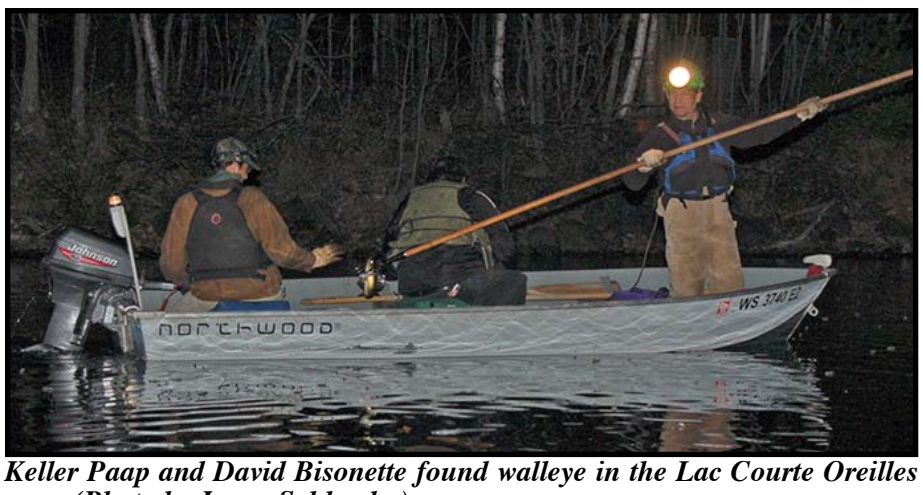


2007 spring boat landings saw plenty surveys and fishing activity

Bill Soulier measures a walleye on Parent Lake, Michigan. GLIFWC assessment crews conducted walleye surveys on 18 ceded territory lakes last spring. (Photo by Charlie Otto Rasmussen)

Each speared fish in Wisconsin is measured and tallied. (Photo by Charlie Otto Rasmussen)

Charlie Thannum, Bad River tribal member, patiently frees a walleye from his net at Mille Lacs Lake. (Photo by Micah Cain)



Keller Paap and David Bisonette found walleye in the Lac Courte Oreilles area. (Photo by Jenny Schlender)

Picking fish from nets is one of the more tedious aspects of netting, but this trio—Keith Newago, Marvin Defoe and George Newago from Red Cliff—wasted no time. (Photo by David Tembruell)

Bill Cadotte, a spearfisherman from Lac Courte Oreilles, seems happy with his catch. (Photo by Jenny Schlender)

A GLIFWC electrofishing boat cruises the shoreline of Parent Lake in Upper Michigan. (Photo by Charlie Otto Rasmussen)

A Minnesota DNR official stands by as GLIFWC creel crew record stats on a catch from netting at Mille Lacs Lake. Micah Cain measures and weighs while Larry Plucinski (far left) enters the data. (Photo by David Tembruell)

Lake Superior whitefish go to inland tribes

By Sue Erickson
Staff Writer

Odanah, Wis.—GLIFWC is working to promote the treaty harvest and use of natural resources by increasing the awareness of the health benefits of traditional foods.

The Treaty Fisheries Intertribal Community Food Program is part of a two-year initiative funded through the Administration for Native Americans (ANA) and has been coordinated with a grant from the First Nations Development Institute. These grants seek to encourage more consumption of the healthy Lake Superior product, whitefish, while also assisting tribal commercial fishermen in expanding their markets.

Treaty harvested traditional foods are highly nutritious and low in fat, thereby providing a healthy alternative to the high fat, high carbohydrate diets commonly associated with modern processed fast foods. With the high incidence of diabetes (see graph) and heart disease among Native Americans today, Lake Superior whitefish, rich in omega 3, along with other traditionally consumed foods like wild rice and venison, can assist tribal members in reducing health risks.

According to Jim Thannum, director of GLIFWC's Division of Natural Resource Development and coordinator for the program, samples of Lake Superior fish are headed inland this summer and will be provided to tribal communities through community food distribution programs and product demonstrations/fund raisers.

GLIFWC's "inland" member tribes have or will receive donations of frozen, vacuum-packed whitefish and lake trout fillets donated by tribal fishermen in exchange for leasing fish processing equipment from the ANA program. This equipment, like commercial size vacuum packers, pin bone machines and freezers provide tribal fishermen the capacity to expand their product line into frozen fish markets.

GLIFWC will also use the whitefish donations to assist various tribal fund-raising projects by selling boiled and fried whitefish at fund-raising events and donating the proceeds to the cause. This year the project will kick off its first *fresh from the big lake to your plate* fish boil/fry at the Lac Courte Oreilles tribal office on June 1, 2007 in a cooperative fund-raising event with the LCO Boys and Girls Club. Along with the actual meal, information about the benefits of whitefish consumption is also on display at the traveling whitefish stand with information on how to access the GLIFWC website for more details.

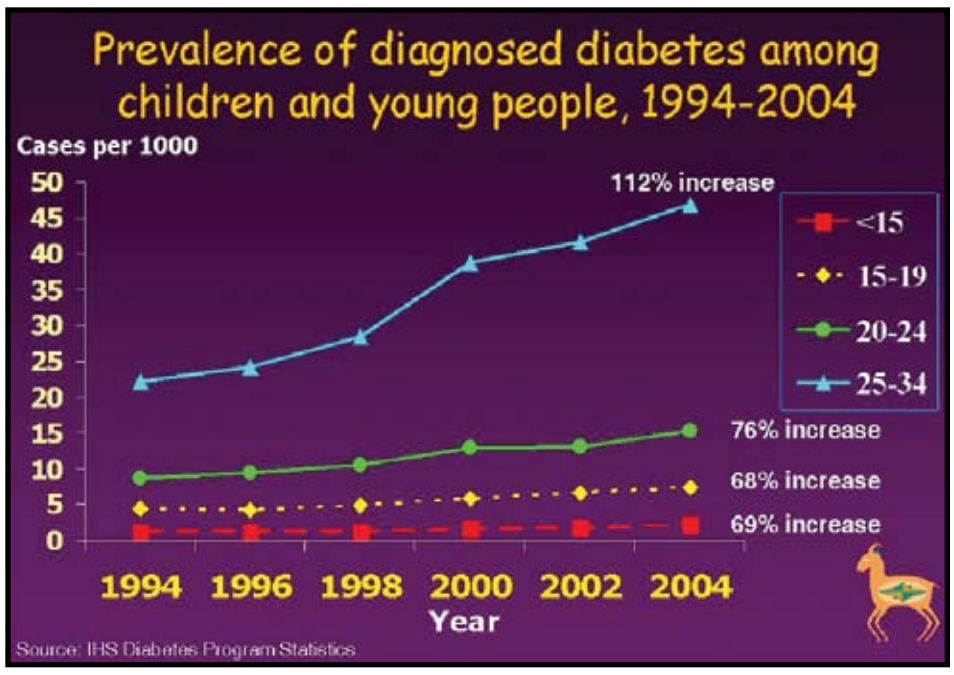
Its proving to be a highly marketable fish product, Thannum explains. Not only are chemical contaminants in Lake Superior whitefish at levels far below other fresh water fish commercially either imported or domestically harvested, the fish also rank high on just plain being tasty, whether fresh or frozen, in comparison to other popular fish products.

To Thannum, it's a matter of getting the word out to the public about this valuable, healthy fish and stepping up the marketing capacity of the small, family businesses with sales materials, a new ad campaign, and a web site at *www.lakesuperiorwhitefish.com*. The website offers information on recipes, business contact information, and GLIFWC's extensive contaminant testing results as well as taste testing results (see article on page 22)—both of which whitefish passed with flying colors.

Getting the word out to the tribal communities, the general public and commercial markets has been the thrust of the ANA grant, which aims at both assisting the tribal commercial fishermen expand their markets for fresh and frozen whitefish and providing consumers with a healthy selection of fish for dinner, whether at home or in a restaurant.

The grant has enabled a number of tribal commercial fishermen to expand their fish processing capacity already.

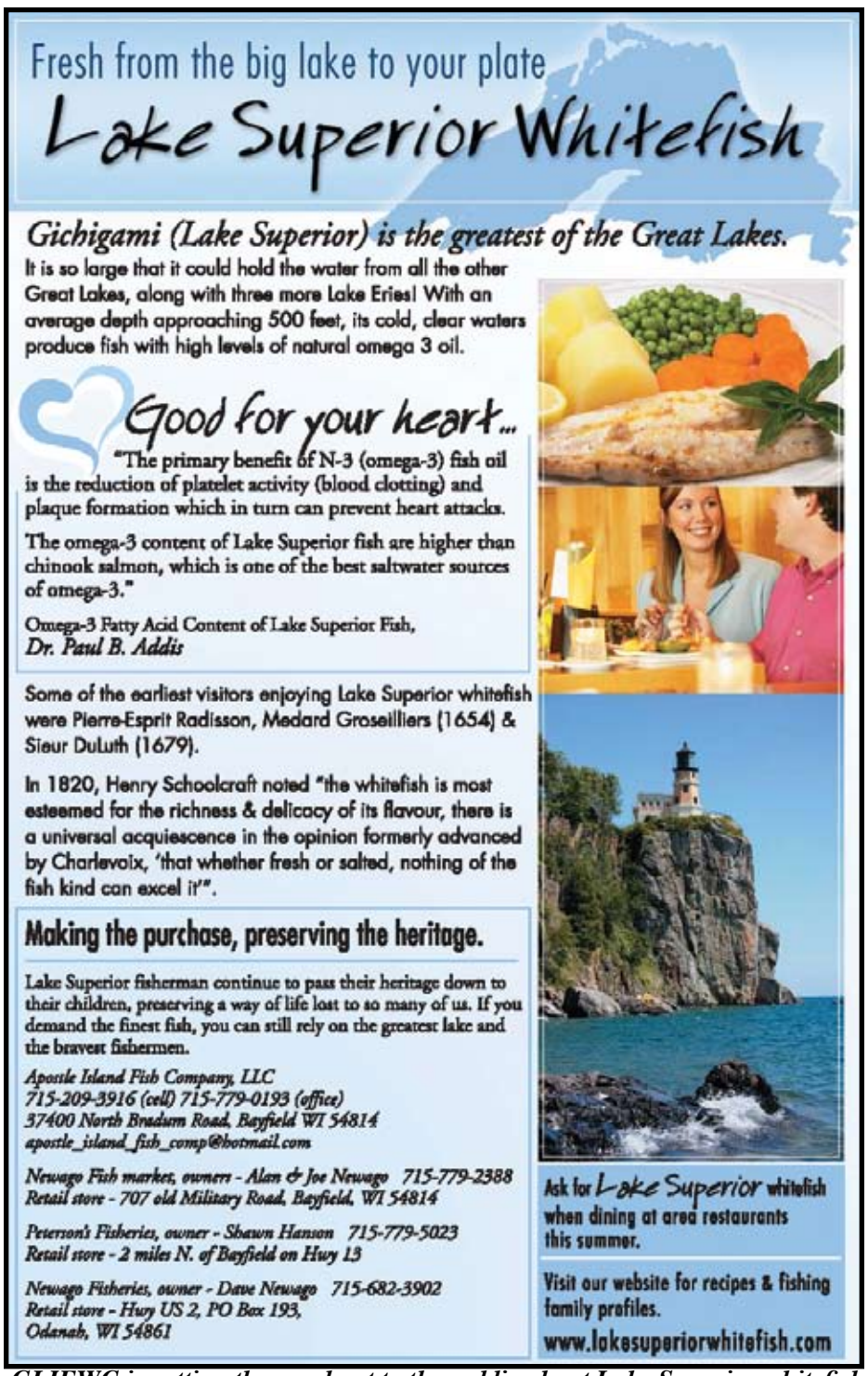
To date, the program has proven to be a win-win for all concerned—benefiting the fishermen, helping tribal communities obtain a healthy food and raise money, and acquainting the general public with the benefits of eating whitefish—tasty, healthy and a nutritional winner.



Reprinted from the Indian Health Service.

Roberta Ivey, Lac Vieux Desert Commodity Food Program, and Mitch Soulier, GLIFWC, load 400 pounds of tribally harvested Lake Superior whitefish into a freezer for use by the tribal community. The frozen, vacuum packed, boneless fillets are high in natural omega 3 oils. (Photo by Jim Thannum)

www.lakesuperiorwhitefish.com



GLIFWC is getting the word out to the public about Lake Superior whitefish and its health benefits by stepping up the marketing capacity of the small, family businesses with sales materials, a new ad campaign (shown above), and a web site at www.lakesuperiorwhitefish.com.

Bad River eagle project provides bird's eye view of eagle activity

By Sue Erickson, Staff Writer

Odanah, Wis.—It was a little bit of serendipity on the Bad River reservation that enabled the Bad River Department of Natural Resources (BRDNR) to observe eagles' nests through a camera's eye this winter.

While the band has been monitoring eagles nesting on the reservation since 1995 and currently have ten nesting pairs on the reservation, reproduction rates, especially in the Bad River Falls vicinity, have been poor, according to Bad River Biologist Tom Doolittle.

The questions are why, what are the variables and why this particular segment of the reservation's eagle population? Speculation about the eating habits, possibly ingestion of contaminated food, is one strain of thought that led Doolittle to wonder if the eagles at the Falls vicinity were feeding heavily on the very ample population of sea lamprey in the Bad River system.

"They are reporting a surge in the sea lamprey population in Lake Superior," he commented. "Well, that surge is here, right here in the Bad River system—that accounts for about 25% of the overall Lake Superior adult lamprey population. This increase has been recorded through assessment studies. Lampreys are also known to be highly contaminated with methyl mercury throughout their whole body because they are at the top of the food chain, feeding on the blood and flesh of large predatory fish."

Consequently, he wonders if the eagles could be consuming a large quantity of lampreys, and the methyl mercury ingestion could be affecting their reproduction rate. To find out, he would need to observe their eating habits. But how? Then again, the whole problem could be related to predation. Were these nests more vulnerable to predators, like coons and bears, than others on the reservation? Again, the nests needed to be observed. Meanwhile in 2006 the Band was contacted by Science North and IMAX Film Company, Canadian firms interested in filming several features of the Bad River reservation for a nature segment of a movie they are producing on the Great Lakes. The Eagle Project caught their interest right off the bat, but would require some tricky camera work to get footage of the eagles' nests resting high—about 80 feet above ground—in the swaying boughs of towering pines.

For their part, the Bad River DNR could use the footage to better understand what the eagles were eating or the degree of predation in the nests. Serendipity—a happy combination of art and science was in the making.

Doolittle sought and received support from the US Bureau of Indian Affairs' Circle of Flight Program to supplement the project and in-nest cameras and private sector monies from Science North-Canada to obtain digital video recorders for food habit observations, which would take place by installing very small cameras into the eagles' nests. But all the work would have to be done with extreme care and assistance from the tribe's DNR staff. "We make sure we are never part of the problem," Doolittle says. "The last thing anyone wants to do is disturb the nesting pairs to a point they desert their nests or are in anyway negatively affected by our research activities."

Some preliminary groundwork began in August 2006, and in January 2007 cameras were installed in three nests; two remain operational. In addition, five observation platforms overlooking eagles' nests were installed for future use come spring. The in-nest cameras have already provided some interesting around-the-clock footage of the nests, including snow-covered nests, eagles nesting with eggs and footage of several nests that were taken over in the winter by predators including raccoons in two and a bear hibernating high above ground in another. Bad River DNR staff climbing up to check the empty nests happened upon these unlikely occupants.

"It was amazing watching how a female nesting eagle protected her nest when a major snowstorm covered the reservation and her nest with 18 inches of snow this spring," says Leah Gibala, Bad River wetlands specialist. She wouldn't leave the nest nor allow the male to sit, and used the build up of snow as a windblock, which she faced directly, all the while keeping those eggs protected and toasty as possible. Amazingly, this lady hatched one youngster.

The five observation platforms were installed in January so the eagles would become accustom to them in their environment, Doolittle explains. The technology of the project has been challenging to say the least. Doolittle was pleased that IMAX cameraman Neil Rettig will be filming the eagles. He has worldwide acclaim in filming predatory birds for successes to date. "This project also relies on using just a lot of common sense, in order to achieve our objectives while respecting the needs of the nesting eagles," he says.

Confronting the challenge of keeping those eggs toasty, Mom eagle uses snow from the late spring blizzard to build a higher wind break in her nest. (Photos courtesy of the Bad River Department of Natural Resources)

As viewed from one of the platforms erected in January on the Bad River reservation, a pair of eagles battle the challenges of a snowstorm that dropped 18 inches of snow late in the season during their nesting cycle.

IMAX camera crews will be filming from the platforms this summer, assisted by Gibala, Ed Wiggins, Bad River wetlands technician and contract climbers Joe Papp and Jeff Wilson. The film crew will enter the platforms at night, and they can only leave under the cover of darkness, Gibala says. She will be recommending when and which nests be filmed, and Wiggins will be involved in retrieving and reviewing film from the two nests already containing imbedded cameras.

This summer IMAX camera men will film from three platforms in specially prepared, pop-up blinds for a couple of days in order to film the eagles. However, filming will take place under strict conditions. The blinds will be popped up about a week before the camera crew uses them, again allowing the eagles time to acclimate, and a camera crew will be allowed up only after the hatched eaglets are old enough to self thermo-regulate in case a parent does not sit on the nest for a period of time.

Since the crew will be in and out at night only and only one time, they must be prepared to spend about 16 hours in the cramped, swaying tree top quarters. They must also be prepared to enter once the conditions appear to be ideal for that duration of time.

While IMAX camera crew will be up and down, in and out, for only a short duration, the two imbedded cameras will remain in the nests until 2008, maintaining the around-the-clock coverage of the eagles' activities and hopefully providing some answers to the questions about the Bad River Falls nesting pairs.

Doolittle remains quite concerned about the overall impact of the contaminated lamprey on the whole watershed. The lampreys ultimately return to the river system each spring to spawn. They spawn throughout the Bad River water system to the first impoundments, spawning up to 70 river miles into the interior. After they spawn, they die and become bio-available. Consequently, they are present as an unhealthy food source for a variety of species on the reservation, including otters, raccoons, mink, osprey, bears, and, of course, eagles.

The Band's DNR is actively looking for solutions to the lamprey problem which hopefully in the future will rely less on chemical applications, Doolittle says. Currently, they are looking at a potential barrier dam below the juncture of the Brunsweiler and Marengo Rivers. This low-head dam would preclude lampreys from migrating up stream to spawn in the Marengo River but would allow for steelhead passage, Doolittle says. After the lamprey spawning period, the river would be open for normal passage.

*(**Editor's note:** Bad River Biologist Tom Doolittle has worked with the Band over the past 12 years, developing aggressive wildlife management and fisheries programs on the reservation. However, his career will be taking him north to Alaska, where he has accepted a position as Supervisory Wildlife Biologist with the USFWS Yukon Delta National Wildlife Refuge, Bethel, Alaska, one of the nation's largest wildlife refuges. We are thankful for his work, dedication and significant contributions to the protection of the Bad River Band's natural resources and those of the region.)*

While surveying empty eagle's nests this winter, Bad River Department of Natural Resources crew found a bear hibernating in one—apparently comfortably asleep in his treetop bed. Raccoons inhabited two other nests that were checked.

Upcoming GLIFWC outdoor safety classes

GLIFWC conservation officers conduct safety classes throughout the year across the ceded territory. For additional information or to register contact your local GLIFWC warden. Classes are open to tribal and non-tribal members.

Lac du Flambeau—Lac du Flambeau Grade School
ATV/snowmobile Safety: June 11-13
Boating Safety: June 18-21
Contact GLIFWC Warden Emily Miller
(715) 892-6789

Mole Lake—Mole Lake Tribal Office
Boating Safety: June 18-21
ATV/snowmobile Safety: July 16-19
Hunter Safety: August 6-11
Contact GLIFWC Warden Roger McGeshick
(715) 478-7500

Red Cliff—Red Cliff Fire Hall
ATV Safety: June 15-16
Contact GLIFWC Wardens Jim Stone
or Mike Soulier (715) 779-5182

New warden on patrol in LVD

By Charlie Otto Rasmussen
Staff Writer

Adam McGeshick

Watersmeet, Mich.—Following a career path traveled by his father and uncle, Adam McGeshick became a conservation warden last spring in the 1842 ceded territory. While his GLIFWC enforcement duties are centered in the Lac Vieux Desert area, McGeshick patrolled lakes in northeast Wisconsin during the early spring spearing season until western Upper Michigan lakes shed their ice cover in the latter half of April.

In addition to enforcing tribal conservation codes, McGeshick juggles Wisconsin Army National Guard responsibilities and coursework at Nicolet College in Rhinelander where he's pursuing a criminal justice degree.

A Sokaogon tribal member and Rhinelander High School graduate, McGeshick began participating in fishing and hunting activities at an early age, wielding his first walleye spear at 11 under the supervision of his uncle. McGeshick lives in Eagle River, Wis. and is available at (715) 550-0414 to address questions about LVD-area treaty harvests.

Lac Courte Oreilles creel and enforcement team for the spring spearfishing season was, (back row from the left) GLIFWC St. Croix Area Warden and Western District Supervisor Matt Martin; Greg Schillinger, Don Cline, Jose Valentin. Front row: Randy Alexander, Charlie Quarderer, Bobby Dishaw and GLIFWC Lac Courte Oreilles Area Warden Victoria Thayer-Debrot. Not pictured are Andy Quaderer, Denise Johnson, Joe Grover, Scott Baumruck, Charo Lynk, Lawrence Smith, Todd Dale, and Eric Haskins. (Photo by Jenny Schlender)

Fee-exempt camping at National Forest campgrounds

Through an agreement between participating GLIFWC member bands and the U.S. Forest Service, tribal members exercising treaty rights may camp for free and without length of stay restrictions for most campgrounds in the Chequamegon-Nicolet, Ottawa, Hiawatha, and Huron-Manistee National Forests.

Member bands that have ratified the agreement include Bad River, Bay Mills, Keweenaw Bay, Lac du Flambeau, Lac Vieux Desert, Mille Lacs, Red Cliff, and Sokaogon (Mole Lake). Member bands that have not yet ratified the agreement include Lac Courte Oreilles and St. Croix.

Some fee-exempt campgrounds still maintain length of stay restrictions between June 15 and August 15. The Forest Service states that these campgrounds experience high visitation rates during these summer months. This provision will be periodically reviewed to ensure that these restrictions are not interfering with the exercise of treaty rights.

In addition, some campgrounds operated by concessionaires will not have fee or length of stay exemptions until the solicitation and awarding of new concessionaire contracts. Expiration dates for the existing contracts will continue until 2009.

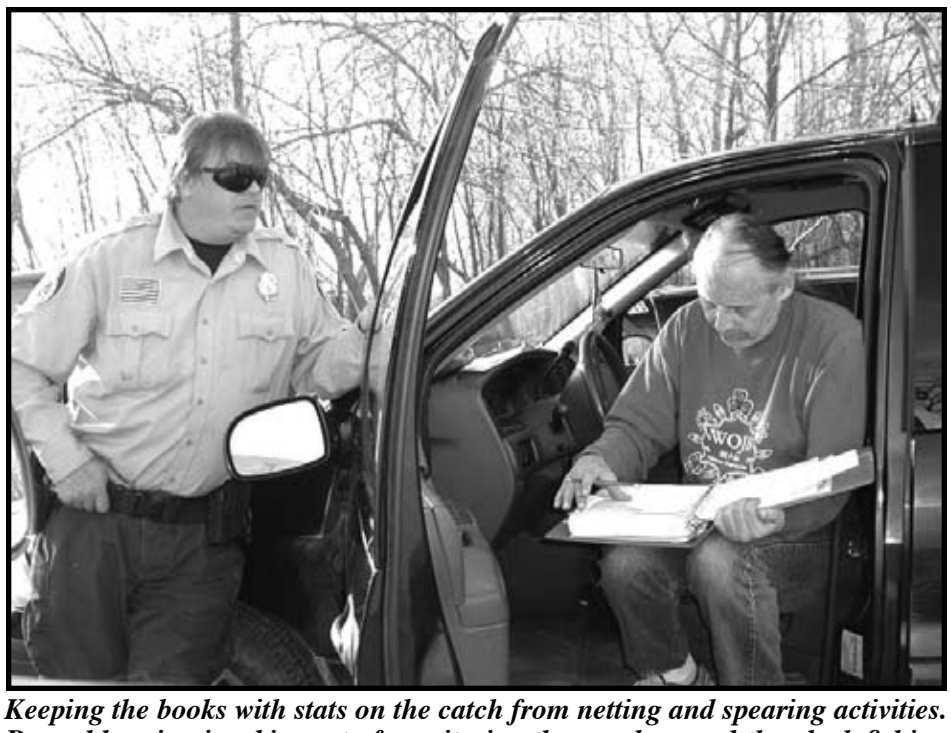
For fee-exempt camping in NATIONAL FOREST campgrounds you must:

1. Be a member of a band that has ratified the Tribal/USFS Campground Agreement.
2. From your tribal conservation department or other person designated by your band, obtain a tribal camping permit, the list of fee-exempt campgrounds, and the booklet entitled *Regulations Summary: National Forest Treaty Gathering and Camping.*
3. Follow the camping registration procedures at the campground. Generally, this involves providing information requested on a registration form or envelope.
   a. Indicate the number of days that you plan on camping on both the tribal camping permit and on the campground registration form.
   b. Instead of paying a fee, give the camping permit to the campground registration personnel or place the permit in the envelope.
4. Camp only at the campsite for which you have registered.

GLIFWC warden bill moves closer to Assembly floor

Madison, Wis.—During an executive session, the Wisconsin Assembly Committee on Natural Resources unanimously passed the GLIFWC Warden Bill (AB198) on April 25.

The Committee had received oral testimony a month earlier from a handful of lawmakers, wildlife officials and tribal staff on the merits of the bill, which would allow GLIFWC wardens the same protections currently held by federal, state and county law enforcement officers. The bill is expected to reach the Assembly floor sometime this summer for discussion and a possible vote by state lawmakers.



Keeping the books with stats on the catch from netting and spearing activities. Record keeping is a big part of monitoring the nearly round-the-clock fishing season during the spring walleye run at Mille Lacs Lake. Above are Warden Jim Mattson, a veteran of many such seasons, and Neil Kmiecik, GLIFWC's Biological Services Director, helping out at the Cedar Creek landing during the height of the season. With nets set in the late afternoon and early evening and pulled in the early morning, and sometimes spearing taking place from the early evening into the late night, monitoring crews, can find little time for R and R, especially on busy weekends. (Photo by Dave Tembruell)

The allure of ozaawashkojiibik

By Karen Danielsen
GLIFWC Forest Ecologist

Odanah, Wis.—The balmy days of niibin (summer) usher in a dazzling array of flowers. Some of the most exquisite flowers belong to ozaawashkojiibik (spotted touch-me-knot or jewelweed; *Impatiens capensis*, *Meerb*). Brightening a scaffolding of pale green foliage, these flowers radiate vivid orange tattooed with a scarlet tinge.

Genuine admirers of these flowers, however, find more than just glitzy good looks. Darting to and fro, nenookaasiwag (hummingbirds) pause briefly to obtain the true source of their attraction, the energy-packed nectar. In the process, nenookaasiwag unwittingly transfer pollen between flowers.

Though the flowers provide the charisma, the foliage offers its own modest enticement. Sap, from the stems and leaves, has long been used by the Ojibwe to alleviate skin irritations caused by animikiibag (poison ivy) and mazaan (stinging nettle).

Interestingly, ozaawashkojiibik often grows near animikiibag and mazaan. All three plants require moist soil conditions, favoring sites along streams, rivers and lakes. Other locations that support these plants include hardwood forests, sedge meadows, and even, roadside ditches.

Surprisingly, despite being an annual plant (developing from seed each year), ozaawashkojiibik can reach heights up to four to five feet. Of course, this rapid growth leads to fragile, easily broken stems and thin, delicate leaves that quickly wilt if water becomes scarce.

By the end of niibin, seed pods have replaced many of the flowers. The seed pods measure less than one inch long, but swell to look very much like miniature green bananas.

Unlike bananas, they perform a startling trick. With the slightest touch, mature pods burst open, launching seeds in all directions. This trick has generated one of the plant's English names, touch-me-not. Its Latin genus name, Impatiens, also insinuates this "impatient" maneuver.

Some people attribute its second English name, jewelweed, to its gem-like flowers. While others state that this name arises from its water-repellent leaves that become adorned with tiny, glistening water droplets after rain showers or early morning dew.

An examination of its Ojibwe name reveals that "ozaawa" refers to the color yellow and "ojiibik" means root. Thus, ozaawashkojiibik translates to yellow root.

While enjoying the warm winds of niibin, look for ozaawashkojiibik. Search for its charming flowers and amusing seed pods. Soon, you will understand the allure of ozaawashkojiibik.

Side view of ozaawashkojiibik flower © 2003 Steven J. Baskauf, Department of Biological Sciences Vanderbilt University.

Off-reservation treaty harvests as reported by registration station for the 2006-2007 season in MN & WI

Fisher harvest

Registration Station	Males	Females	Unknown	Totals
Bad River	2	1	0	3
Fond du Lac	0	1	0	1
Lac Courte Oreilles	83	75	0	158
Lac du Flambeau	0	0	0	0
Mille Lacs	6	1	0	7
Mole Lake	0	1	0	1
Red Cliff	24	24	0	48
St. Croix	67	75	1	143
Totals	**182**	**178**	**1**	**361**

Otter harvest

Registration Station	Males	Females	Totals
Bad River	0	0	0
Lac Courte Oreilles	19	15	34
Lac du Flambeau	0	0	0
Mille Lacs	0	2	2
Mole Lake	0	0	0
Red Cliff	3	1	4
St. Croix	18	9	27
Totals	**40**	**27**	**67**

Bobcat harvest

Registration Station	Males	Females	Totals
Bad River	0	1	1
Lac Courte Oreilles	10	5	15
Lac du Flambeau	3	2	5
Mille Lacs	0	1	1
Mole Lake	3	0	3
Red Cliff	1	4	5
St. Croix	1	5	6
Totals	**18**	**18**	**36**

Wildlife news briefs

Compiled by Karen Danielsen and Peter David
GLIFWC Wildlife Section

Birch bark harvest

The Chequamegon-Nicolet and Ottawa National Forests have prepared maps identifying proposed timber harvest locations. These maps may be of use to tribal members interested in gathering birch bark prior to the birch being cut. Please be aware that GLIFWC has prepared other maps of areas not planned for timber harvest, but likely contain significant numbers of birch trees for tribal bark gathering. These maps were published in the Fall 2002 Mazina'igan supplement. Please contact Karen Danielsen at GLIFWC offices if you would like copies of the proposed timber harvest maps or the *Mazina'igan* supplement.

Wisconsin migizi continue to soar

The Wisconsin Department of Natural Resources recently reported that there were 1,065 bald eagle nest territories occupied by breeding adults in 2006, an increase of 45 pairs from 2005. ("Occupied" means either incubation, eggs, young, or a repaired nest was observed.)

Eagles nested in 60 of the state's 72 counties, but are concentrated in the high-density lake regions in the northwest and north central parts of the state, where 70% of the breeding birds were found. The DNR noted that some locations in these regions now held dense breeding concentrations not thought possible early in the eagle recovery, in the decades of the 1970's and 1980's. It was not until 1994 that Wisconsin's migizi population exceeded 500 occupied territories, after falling to little more than 100 pair as a result from the now-banned pesticide DDT and other negative factors.

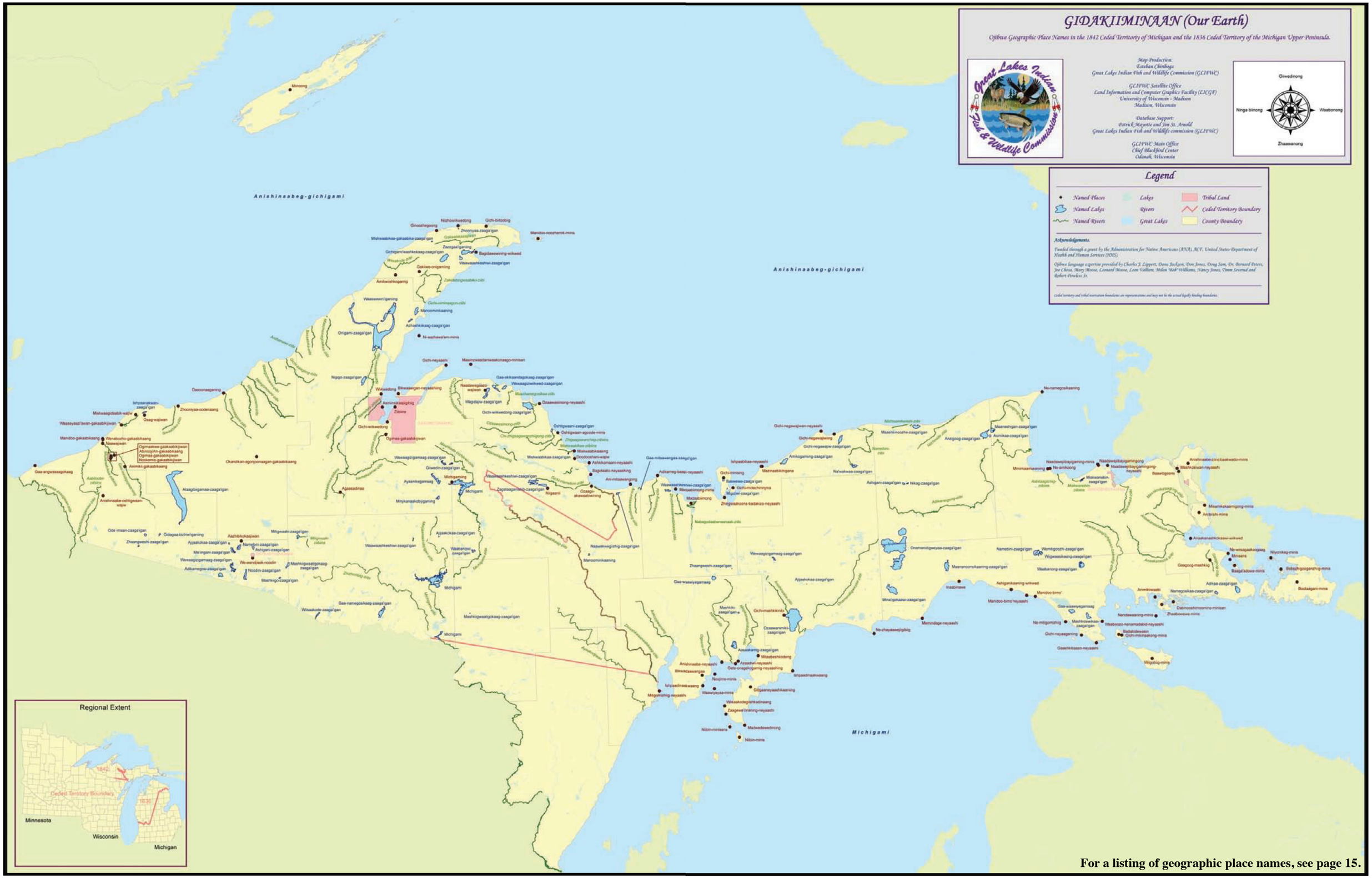
Biologists now expect to see the population continue to expand in the years ahead.

Wisconsin and Michigan ma'iingan (wolf) populations continue to rise

Wisconsin's and Michigan's wolf populations showed similar increases over the past year. Preliminary data suggests that Wisconsin's population increased to 547-600 wolves, while Michigan's numbers appear to be in the range of 473-545. Both figures reflect an increase of about 17% above the previous year. (Wolf populations are traditionally counted in late winter, when they are at an annual low; spring pup production will temporarily significantly inflate these numbers, which then tend to dwindle as the year progresses.)

The Wisconsin count in particular surprised some people, since the population grew only 7% the previous year, and is thought by many to be approaching the biological carrying capacity in the state. However, many introduced or recovered species of wildlife will initially expand until the carrying capacity is exceeded, before dropping to a more sustainable level. Much of the recent growth in the Wisconsin population appears to have occurred in the northeast part of the state, which was re-colonized relatively slowly; populations in the northwest and central sands areas appeared to show less change.

Gidakiiminaan (our earth)



For a listing of geographic place names, see page 15.

Ojibwe names for manidoonsag (insects) 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 (ANA), Administration for Children and Families, Health and Human 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 insect is listed first. The plural of the word is shown in parenthesis. Secondly the common name is listed, and then the scientific name. Dialects shown are central western (c/w) and eastern (e).

Compiled by Jim St. Arnold

Photos courtesy of *www.insectimages.org*

c/w—enigoohns (ag)
e—enigoons
Translates to "worker"
Black ant (Camponotus pennsylvanicus)

c/w—ojiins
e—oojii
House fly (Musca domestica)

c/w—waawaatesi (yag)
e—waawaatese
Translates to "flashes light"
firefly (Ellychnia corrusca)

c/w—mishi-moose/maagobesi
e—moose
Translates to "worm with hair"
Cattail caterpillar (Simyra henrici)

c/w—aamoo (g)
e—aamoonh
Translates to "honeymaker"
Bee (Bombus fervidus)

c/w—oboodashkwanishii
Translates to "blown about"
Dragon fly (Anax junius)

c/w—papakine (wag)
e—bpakine
Translates to "flies snapping its wings"
American grasshopper (Schistocerca americana)

c/w—mishi-moose/maagobesi
e—moose
Translates to "worm with hair"
Cattail caterpillar (Simyra henrici)

c/w—asabikeshiihn (yag)
e—esnikenh
Translates to "little net maker"
Six-spotted fishing spider (Dolomedes triton)

c/w—ezigaa (g)
e—ezgaa
Woodtick (order Acarina)

c/w—memengwaa (g)
e—memegwaanh
Translates to "flies alternately"
Monarch butterfly (Danaus plexippus)

Geographic place names in the MI 1836 ceded territory

The following list of geographic place names in the Michigan 1836 ceded territories was made possible by a grant from the Administration for Native Americans (ANA), ACF, US Dept. HHS. Due to space limitations in the ***Mazina'igan***, we cannot run the entire listing. If you would like to receive a copy of the complete listing, please contact Pat Mayotte, ANA language research assistant at GLIFWC's main office: (715) 682-6619 ext. 174 or email *pmayotte@glifwc.org*.

Ojibwe	Translation	MI—English
Aabitaagiizhig-ziibiins	half-a-day creek	Halfaday Creek
Aabitoobii-ziibiins	half-full creek	Abitosse Creek
Aakozijiwansing	little river rapids of the sickness	Tacoosh River
Aasaakamig-zaaga'igan	lake of the marsh sphagnum moss	Moss Lake
Aazhibikokaajiwan	rocky cliff waterfall	Ajibikoka Falls
Abinoojiinh-gakaabikaang	children's waterfalls	Abinodji Falls
Adikaa-zaaga'igan	caribou lake	Caribou Lake
Adikameg-baapi-neyaashi	laughing whitefish point	Laughing Whitefish Pt.
Adikamegong-wiikwedong	plenty of whitefish bay	Tahquamenon Bay
Adikamegong-ziibi	whitefish-bay river	Tahquamenon River
Adikamego-zaaga'igan	lake of the whitefish	Whitefish Lake
Agaasadinaa	be a small hill place	Sidnaw
Agaasadinaa-ziibiins	a small hill creek	Sidnaw Creek
Agaawaa-zaasijiwan-ziibi	we-barely-get-started-before-the rapids-stops-us river	Montreal River
Ajijaakokaa-zaaga'igan	lake of the sandhill cranes	Crane Lake
Akwa'waa-wiikwed	bay where they spear fish through the ice	Garden Bay
Amikogamiing-zaaga`igan	the beaver's lake	Beaver Lake
Amikwiishkogamig	at the place of the beaver lodges	Ahmeek
Anaakanashkokaawi-wiikwed	bay of the bulrushes	Munuscong Lake (bay)
Anaakanashkoon-ziibi	rushes [for woven mats] river	Little Munuscong Riv.
Anaakanashkoon-ziibiins	bulrush creek	Ankodosh Creek
Anaakanashk-ziibi	river of the bulrushes	Munuscong River
Aniibiinsiwi-ziibi	elm tree river	Elm River
Aniibiishi-minis	leaf island	Neebish Island
Animikii-gakaabikaang	thunderers [thunderbirds] waterfall	Nimikon Falls
Animikiiwaabi-neyaashi	sees the thunderbirds point	Cube Point
Ani-mitaawangong	beginning of the next sandy beach along the shoreline	Shot Point
Ani-mitaawangong-ziibi	where the sandy beach river begins	Sand River
Anishinaabeg-gichigami	great lake of the Anishinaabe people	Lake Superior
Anishinaabe-neyaashi	place of the anishinaabe—Indian people	Indian Point
Anishinaabe-oshtigwaan-wajiw	anishinaabe-Ojibwe head mountain	Indianhead Mountain
Anishinaabe-ziibi	river of the anishinaabe—Ojibwe	Indian River
Anishinaabe-ziinzibaakwado-minis	anishinaabe-maple-sugar island	Sugar Island
Anzigoog-zaaga'igan	lake of the saw-bill common merganser ducks	Betsy Lake
Anzigoog-ziibi	river where the saw—bill ducks are plentiful	Shelldrake River
Ashiganikaaning-wiikwed	plenty bass fish bay	Epoufette Bay
Ashigani-zaaga'igan	bass lake	Ashigan Lake
Ashigani-zaaga'igan	bass lake	Bass Lake
Ashkikomaani-neyaashi	lead point	Presque Isle
Asiniikaa-zaaga'igan	stony lake	Clark Lake
Asiniinsikaajiigibiig	place of the little stones along the shore	Assinins
Ataagibiigamaa-zaaga'igan	lake that gets covered with algae	Lake Gogebic
Awaazisiig-wiikwed	bay of the burbot or lawyer fish	Baie de Wasai
Ayaakodjiwan	river rapids of the sickness	Ford River
Ayaanikegamaag-Zaaga'iganan	chain of lakes connected	Three Lakes
Azaadiwi-neyaashi	poplar tree point	Poplar Point
Azhashkiikaag-zaaga'igan	lots of mud lake	Mud Lake
Baaga`adowe-minising	island where they play lacrosse	Lime Island
Baawitigong-ishkonigan	reserve at the place of the cascades	Sault Ste. Marie Reservation
Baawitigoons	little rapids	Little Rapids Channel of St. Mary's River
Baawiting	rapids of St. Mary's River	St. Mary's River
Badakidewasin	standing-erect-from-the-surface rock	Sugar Loaf Rock
Bagidaabii-neyaashi	point place where they fish with set lines	Marquette Lighthouse Point
Bagidawewining-wiikwed	bay at the net setting place	Bete Grise Bay
Bagidawewin-wiikwed	net fishing bay	Sleeping Bay
Basaabikaa-ziibi	cleft-in-the-rock river	Graveraet River
Baswewe-zaaga'igan	at the lake where the echo is heard	Echo Lake
Bebezhigooganzhiig-minis	horse-hoof island	Harbor Island
Biboon-ziibiins	winter creek	Peboan Creek
Biiwaabiko-wajiw	iron mountain	Iron Mountain (town of)
Biiwaabiko-ziibi	iron river	Iron River
Bikwaawiganiing-wiikwed	humpback bay	Pequaming Bay
Bikwaawigan-neyaashi	humpback point	Pequaming Point
Bikwadaawangaa	protruding rounded sandy place	No English Name
Bootaagani-minis	mortar shaped island	Drummond Island
Chi-mawinzwaadaniwi-ziibi	great gathering place [of fruit or berries] river	Big Huron River
Chi-zhigaagawanzhiigong-ziibi	big wild leek river place	Big Garlic River
Dabinooshimoomino-minisan	islands to seek shelter from the wind behind the islands	Les Cheneaux Islands
Dasoonaaganing	fish-trap or fish-weir; place of	Ontonagon (town of)
Dasoonaagani-ziibi	river of the fish-trap or fish-weir	Ontonagon River
Doodooshani-wajiw	mountain that resembles a woman's breast	Sugarloaf Mountain
Gaa-aangwasagokaag	where there is much flood wood or driftwood on the beach	Little Girl's Point
Gaagoog-mashkiig	swamp of the porcupines	Gogomain Swamp
Gaagoog-ziibi	place of the porcupines river	Gogomain River
Gaag-wajiwan	mountains that resemble a crouching porcupine	Porcupine Mountains
Gaa-minitigojiwaniing	a place which appears to be an island [but is not] located in a rapids	Presque Isle River
Gaa-mitaawangaa-zaaga'igan	sandy beach lake	Sand Lake
Gaa-namegosikaag-zaaga'igan	trout lake—was an Ojibwe village c. 1870's	Chicagon Lake
Gaa-okikaandagokaag-zaaga'igan	lake of the jack-pines	Pine Lake
Gaa-okikaandagokaag-ziibi	river of the jack-pines	Pine River
Gaashkibaazo-neyaashi	shaving point	Pointe La Barbe
Gaa-waawiyegamaag	the round lake	Round Lake
Gakaabikaasijiwan	river of cascades-falling-over-rocks	Montreal River
Gakiiwe`onaning	portage over a point by land place	L'Anse Reservation
Gakiiwe-onigamiing	the place where they go straight across a point by portage	Keweenaw Peninsula
Gashkigama-wiikwed	bay that appears sewn-shut	Gladstone
Gete-gitigaaning-ishkonigan	reserve at the ancient garden planting place	Lac Vieux Desert Reservation
Gete-gitigaaning-zaaga'igan	lake of the old gardens	Lac Vieux Desert Lake
Gete-onagekogamig-ney-aashing	point of the ancient cedar bark lodges	Stony Point
Gichi-biitoobiig	the great pond harbor of refuge	Grand Marais Harbor
Gichi-biitoobiig	the great pond harbor of refuge	Grand Marais
Gichigami'washkokaag-zaaga'igan	lake where the great lake bulrushes are plentiful	Lake Gratiot
Gichi-mashkikinibi	great medicine water	Kitchi-iti-kipi Spring
Gichi-midechininjma	the great thumb	Grand Island "Thumb"
Gichi-mikinaakong-minis	the island of the great snapping turtle	Mackinac Island
Gichi-minising	at the great islanded place	Munising (town)
Gichi-minising	the great island place	Grand Island
Gichi-mitaawangaa-ziibi	big sandy river	Chocolay River
Gichi-namebini-ziibi	big sucker river	Carp River (1)
Gichi-namebini-ziibiing	big sucker river; place of	Marquette
Gichi-negawajiwan-neyaashi	great sand mountains point	Au Sable Point
Gichi-negawajiwan-zaaga'igan	great sand mountains lake	Grand Sable Lake
Gichi-negawajiwiing	great sand mountains	Grand Sable Dunes
Gichi-neyaaganiing	place of the big headland or cape	Gros Cap
Gichi-neyaashi	great point place	Pointe Abbaye
Gichi-niminaagon-ziibi	big traverse river	Traverse River
Gichi-wiikwedong	big bay place	L'Anse (town & bay)
Gichi-wiikwedong	big bay place	Big Bay
Gichi-wiikwedong-zaaga'igan	great bay inland lake	Lake Independence
Gichi-zaagiing-ziibi	greatly-flowing-river; mouth of	Misery River
Gidagaa-bizhiw'iganiing	at the lake of the bobcats	Bobcat Lake
Giiwe-aanakwad-wiikwed	homeward flying cloud bay	Horse Shoe Harbor
Giiwedin-zaaga'igan	homeward wind lake	Lake Keewaydin
Giiwetaa`onaning	place where we go around by boat/canoe	De Tour Village
Giizhigong	heavenly place	Paradise (town)
Giizhikaa-ziibiins	eastern white cedar creek	Gijik Creek
Ginebig-ziibiwishenh	snake creek	Kenabeek Creek
Ginoozhegoong	place of the northern pike	Eagle Harbor
Ginoozhekaaning	place of abundant northern pike	Bay Mills Reservation
Gitigaaneyaashikaaniing	garden peninsula place	Garden Peninsula
Inaabinawe	sit and keep watch for something	Naubinway (town)
Ishpaabikaa-neyaashi	high rock cliff point place	Grand Portal Point
Ishpaabikaa-wiikwed	bay of the high mineral-rock cliff	High Rock Bay
Ishpaadinaakwaang	a high cliff at the edge of the woods place	No English Name
Ishpaadinaakwaang	a high cliff at the edge of the woods place	Pointe Aux Barques
Ishpaanakwan-zaaga'igan	lake high in the clouds	Lake of the Clouds
Ishpimiing	up above, in the air/heavens	Ishpeming
Jibwaa-maaji'izhijiwan-baawitig-ziibi	the last river before the water becomes a rapids	Pine River (1)
Ma`iingani-zaaga'igan	timber wolf lake	Ma In Gan Lake (aka Wolf Lake)
Maananoonsikaaning	lake of the ironwood trees	Millecoquins Lake

Niibin—It is Summer

Gaagiigidodaa! Nindikid, "Aaniin. Aaniindi waa-izhaayan niibing?" Gidikid, "Boozhoo, "Niwii-izhaa Miskwaa-zhibikaag. Niwii-mawadishaa Ninoshe." Niin, "Niwii-pabaamaadiz Waswaaganing ganabaj idash Naagaaajiwanong." Giin, "Giniim ina?" Niin, "Eya. Niimi'iding gabe-giizhig niniim." Giin, "Nimbizindawaa a'aw dewe'igan." Niin, "Nitaa-nagamowag gaye Ingiw negamojig." Mii'iw.

(Let's all speak! I say, "Greetings. Where are you going in the summer?" You say, "Greetings, I want to go to Red Clif. I will visit my Auntie." Me, "I want to travel about to Lac du Flambeau maybe and Fond du Lac." You, "Do you dance?" Me, "Yes. At the Traditional Dances, all day I dance." You, "I listen to that drum." "Me, They are good singers, also those singers. That's all.")

Bezhig—1

OJIBWEMOWIN
(Ojibwe Language)

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

—Short Vowels: A, I, O
Gaye—as in about
Gitigaan—as in tin
Bimose—as in only

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

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

Future Tense

Future tense markers.
wii—want to **ga**—will
3rd person: **da**—will
Personal prefix, tense marker, hyphenated to the verb.
Bimose—S/he walks. Nimbimose—I walk.
Ninga-bimose.—I **will** walk.
Gibimose.—You walk.
Gi**ga**-bimose.—You **will** walk.
Da-bimose.—S/he **will** walk
Ni**wii**-bimose.—I **want** to walk.
Wii-bimose.—They **want** to walk.
Gi**wii**-bimibaatoo ina? Do you **want** to run?
Miikanang ni**wii**-bimibaatoo.—On the trail, I **want** to run.

Niizh—2

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

A. Niibing, niwii-gitigaan. Niwii-izhichige agwajiing?

B. Gichi-gigizheb, niizho-diba'igan ninga-bimose.

C. Giwii-bimoomig ina? Niwii-bimoomig noongom!

D. Gaawiin niwii-aakozisii. Niwii-mino-ayaa.

E. Giwii-bagiz ina? Eya, gaye niin!

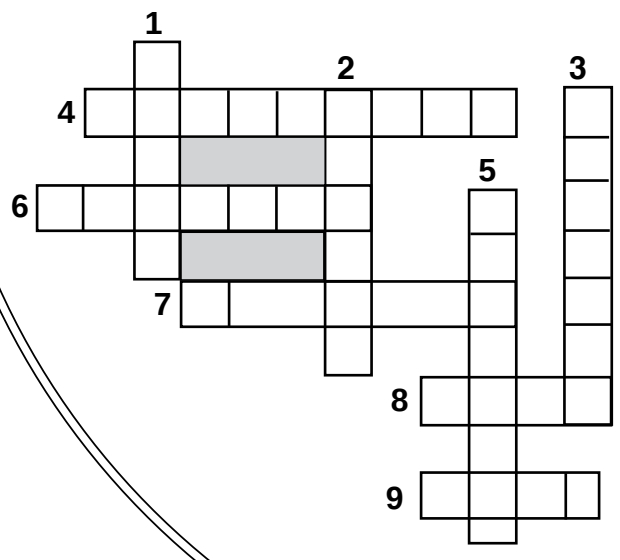
F. Giga-giigooyikemin jiimaaning!

G. Apegish menoseyeg!

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

Niswi—3

IKIDOWIN
ODAMINOWIN
(word play)



Down:
1. S/he walks.
2. Now, today.
3. You eat it.
5. drum

Across:
4. On the trail/road.
6. greetings
7. My mother's sister/aunt.
8. you
9. also

Niiwin—4

VTI-Verbs-Inanimate-Transitive

Root/Command VTI, future tense added
Miijin! Niwii-miijin. Giwii-miijin. Owii-miijin.
Eat it! **I want** to eat it. **You want** to eat it.
S/he wants to eat it.
Aabajitoon. Ninga-aabajitoon.
Giga-aabajitoon. Oga-aabajitoon.
Use it! **I will** use it. **You will** use it.
S/he will use it.
Try Baakinan!—Open it up!

Naagaj—later.
Goojitoon! Try it!
Translation below.

Niwii-...

Giga-...

Ninga-...

Giwii-...

Owii-...

1. Wii-gigizheb _____baakinaan adaawewigamig.
2. Baanimaa ___aabajitoon o'ow jiimaan Niikaanis.
3. ____aabajitoon i'iw maangaanibaajigan.
4. Wii-naawakweg, _____miijin giigoowaaboo.
5. Gego maajaaken! ____miijin ina giigoowaaboo?

Translations:
Niizh—2 **A.** A. When it is summer, I want to garden. I want to do things outside. **B.** Early in the mornings, two miles I want to walk. **C.** Do you want to go ride horse? I want to ride horse now. **D.** I don't want to be sick. I want to be healthy. **E.** Do you want to go swimming? Yes, also me. **F.** We all want to go fishing in the canoe/boat. **G.** I wish you good things!
Niswi—3 **Down: 1.** Bimose **2.** Noongom **3.** Gimiijin **5.** Dewe'igan
Across: 4. Miikanang **6.** Boozhoo **7.** Ninoshe **8.** Giin **9.** Gaye
Niiwin—4 **1.** In the morning **you will** open the store. **2.** Later **he wants** to use this canoe, my brother. **3. I will** use that shovel. **4.** When it is noon, **I want** to eat fish soup. **5.** Don't leave! Do **you want** to eat fish soup?

Fun facts about sunflowers

Sunflowers are very beautiful flowers and are used for decoration. Sunflower plants can be from 3 to 18 feet tall. One sunflower can have up to 2,000 seeds.

There are several Ojibwe words for sunflower including baashka'bigwan, which means bursting open, blooming or blooming flower. Biisitaagan is another word meaning something used after it's been ground to fine particles, using the root word "biisi" or "biisisi"—to crumble or grind something. This was possibly used as a form of flour for thickening or baking. Also the word ozaawibag (oon), meaning yellow flower, has been used. The scientific name for sunflowers is Helianthus, Helia for sun and Anthus for flower.

Sunflowers are also an important crop. There are more than sixty different kinds of sunflowers growing in the United States, Europe, Japan and Russia. Sunflowers originally came from the United States, and were used by the Indians for food and oil. Some farmers use it to feed their farm animals.

There are two kinds of sunflower seeds. Oil is made from black seeds, and snacks are made from striped seeds. Seeds have lots of calcium and minerals so they are good for you. Sunflower seeds are also used to feed birds.

Sunflowers are one of the fastest growing plants. They can grow 8 to 12 feet tall in good soil within six months. There are also wild sunflowers, which are highly branched with small heads and small seeds. It grows from one to three feet high. In the fall, sunflowers have dried and turned brown and are ready for harvesting. The Ojibwe Indians used the crushed roots from the wild sunflower on bruises and cuts.

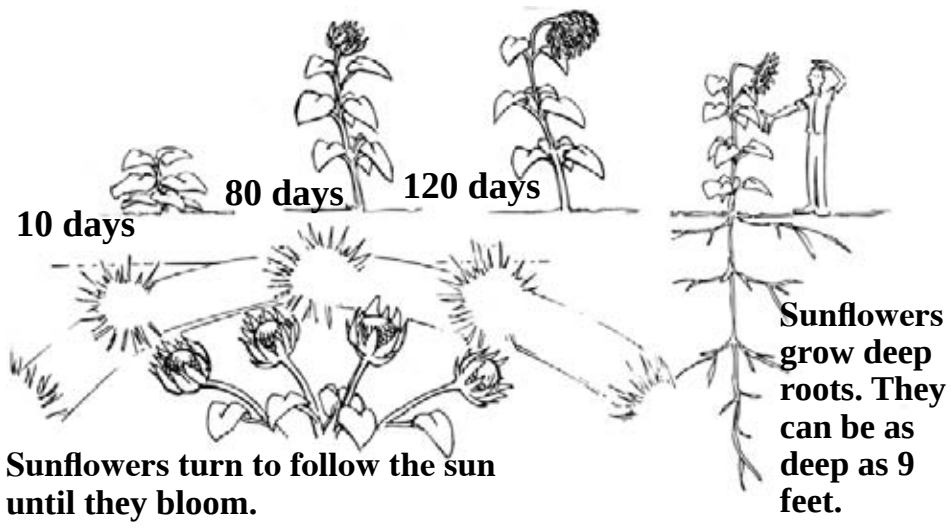
Fill in the blanks using the following words

United States	crop	sixty	birds
black	Sunflowers	plants	seeds
decoration	growing	two	striped

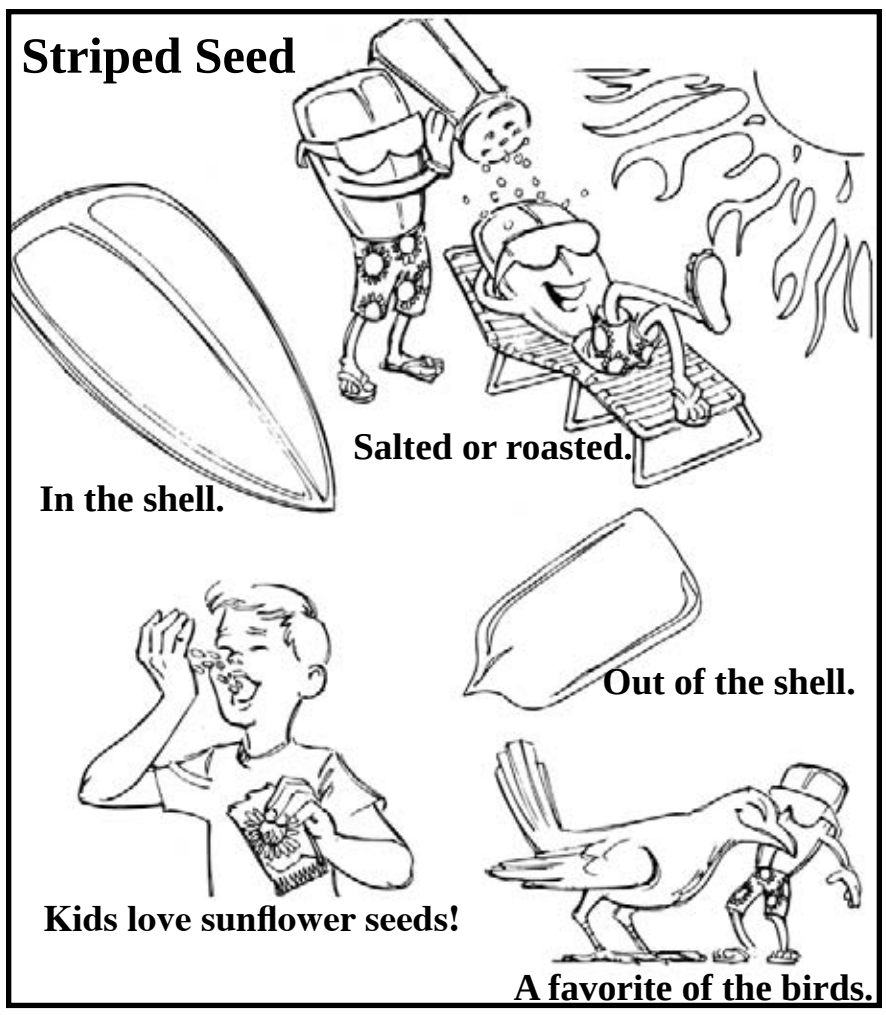
_____are very beautiful flowers and are used for _____. Sunflower _____ can be from 3 to 18 feet tall. One sunflower can have up to 2,000 _____.

Sunflowers are also an important_____. There are more than _____ different kinds of sunflowers _____ in the United States, Europe, Japan and Russia. Sunflowers originally came from the _____.

There are _____kinds of sunflower seeds. Oil is made from _____ seeds and snacks are made from _____ seeds. Sunflower seeds are also used to feed _____.

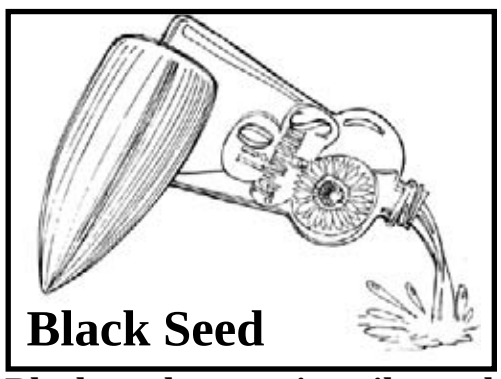


Color the pictures of Sunny Sunseed.



For more activities from Sunny Sunseed, visit the National Sunflower Association at **www.sunflowernsa.com/all-about/default.asp?contentID=61.**

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



Black seeds are primarily used to make oil for cooking and salads. This is the "good for you" oil!

Can you find these words in the puzzle?

black
crop
field
harvest
kernel
oil
roasted
seed
snack
striped
sunflower
sunshine
yellow

A tale of two beetles (and a moth): Serious threats to native forests

By GLIFWC Staff

Odanah, Wis.—Sometimes the little things are what matter most in life. This old saying may be especially applicable when it comes to introduced species. Over the years various insects, mites, fungi, and other plant pests from overseas have attacked nearly all the tree species in eastern North America.

Trees most severely affected so far include American elm (Dutch elm disease, caused by an introduced fungus carried by an introduced beetle), eastern hemlock (heavily attacked in the eastern US by an introduced sap-sucking insect), and the American chestnut (once common across the eastern and central US, but now virtually eliminated from the wild by an introduced rust fungus).

The gypsy moth

One of the best-known introduced forest pests is the gypsy moth *(Lymantria dispar L.)*, so named because of its tendency to hitch a ride on vehicles, outdoor equipment, and other items. Imported to Massachusetts from Asia in 1869 as a possible source of silk, gypsy moth caterpillars proved unsatisfactory for silk production. The moth soon escaped and slowly spread west, though (slowed by extensive control efforts as well as by the fact that the female moths are flightless). It is now established as far west as Wisconsin, with isolated pockets nearly throughout the US and southern Canada.

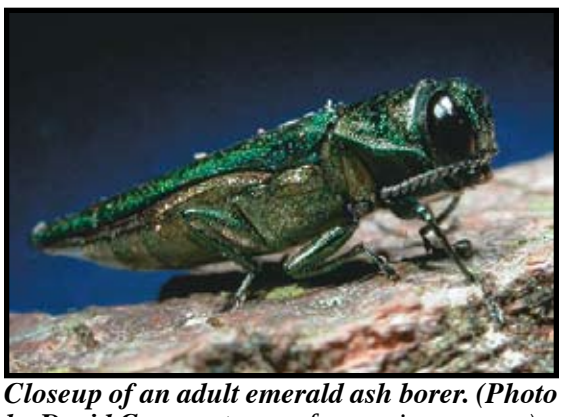
Male (left) and female (right) gypsy moths. (Photo by Anson Eaglin, USDA-APHIS).

The caterpillar's favorite food is the leaves of oak and beech, but they also attack a wide variety of other trees and shrubs including birch, aspen or poplar, most maples, basswood, alder, and willow. Only a few native animals feed significantly on the bristly caterpillars, including the yellow-billed cuckoo (common in the central US), mice, voles, and shrews. A suite of gypsy moth predators and diseases, including several parasitic wasps, a fungus and a virus, have been introduced and are also helping to control the moth in North America.

Though gypsy moth outbreaks can be very destructive, the trees usually survive. Recently, though, two beetles have arrived from overseas that threaten to cause great damage to North America's deciduous (broadleaf) forests.

The emerald ash borer spreads across lower Michigan and beyond

The emerald ash borer *(Agrilus planipennis Fairmaire)*, or EAB for short, is already established in the Great Lakes region. This wood-boring beetle probably arrived here sometime in the 1990s on solid wood packing material from Asia. First detected near Detroit, Michigan in 2002, this insect has rapidly spread throughout Lower Michigan and into northwest Ohio, northern Indiana, northeast Illinois, and southwest Ontario, recently showing up in eastern Upper Michigan. A separate population is threatening to become established in Maryland.



Closeup of an adult emerald ash borer. (Photo by David Cappaert, www.forestryimages.org)

Adult EABs are emerald-green and about 1⁄2 inch long. They feed on the foliage of ash trees *(Fraxinus spp.)* but cause little damage. The larvae are far more destructive, however, feeding on the inner bark, disrupting water and nutrient transport and killing the trees. Black, white, and green ash are all highly susceptible. [The EAB does not attack "mountain ash" *(Sorbus spp.)*.] Except for some individual trees that have been heavily treated with systemic pesticides, infestation has so far been virtually 100% fatal.

Firewood Alert!

Transporting firewood long distances can endanger our forest trees because firewood potentially harbors non-native, tree-damaging insects and diseases. Emerald ash borer, gypsy moth and Asian long-horned beetle top the list of particularly troublesome non-natives.

As with all non-native organisms, the best strategy to minimize their impact is to prevent their movement and thwart new infestations. So, please don't unwittingly be the carrier for non-native forest pests—avoid transporting firewood more than 50 miles! Miigwech!

Signs to watch for

Because the emerald ash borer is conspicuous and easily recognized, the public can play a vital role in the early detection of this beetle. (The Asian longhorned beetle is very unlikely to be encountered outside the quarantine areas mentioned above.)

Symptoms of emerald ash borer (EAB) infestation include dieback of the ash tree crown, followed by extensive suckering and sprouting from the base and trunk as the tree tries to compensate for the loss of leaves and twigs. The bark tends to split vertically, often exposing the winding trails or "galleries" where the larvae have damaged the tissue below. The D-shaped exit holes through the bark are also a reliable sign of EAB infestation. Woodpeckers love EAB larvae, and heavy woodpecker damage may also be a sign that something is seriously amiss. You can see photos of these symptoms at *www.dnr.wi.gov/org/land/Forestry/FH/Ash/eab-symptoms.htm*.

Michigan and Wisconsin have both set up toll-free "hotlines" to report occurrences of the EAB. In Michigan, call 1-866-325-0023. In Wisconsin, call 1-800-462-2803.

Upper photo: Emerald ash borer larva burrows beneath the bark. (Photo by David Cappaert, www.forestryimages.org) Photo to the right: D-shaped exit holes left by emerging EAB larvae. (The bark has been removed from upper half of trunk for this photo.) (Michigan State University photo)

Even though the EAB is now established over a large area, containment efforts are continuing with the hope of buying time. Researchers are frantically searching for natural enemies of the EAB in China, in the hope that some of these agents might be effective in controlling it here as well.

Meanwhile the USDA has initiated a program to systematically collect seeds from all native ash species at multiple locations across the eastern US. The plan is to place these seeds into long-term cold storage, so they might someday be reintroduced to North America in the event the EAB eliminates them from the wild.

The Asian longhorned beetle arrives

Especially fond of maple trees

The Asian longhorned beetle or ALB *(Anoplophora glabripennis Motschulsky)* is also from Asia. This large, dark-blue-and-white wood-boring beetle was first discovered in North America in Brooklyn, New York in 1996. In 1998 a population was found in Chicago by an alert truck driver. In 2002 it was found in Jersey City, New Jersey, and two years later it showed up in Rahway and Linden, New Jersey. In 2003 it showed up in Toronto, Canada. All of these (so far) small populations appear to have originated through importation of solid wood packing material (crates, pallets, etc.).

Male Asian longhorned beetle. Adults range from 0.75-1.25 inches long, with females tending to be larger. (Photo by Mike Bohne, US Forest Service).

The ALB or other, closely related longhorned beetles have also been intercepted in shipments at several dozen warehouses and ports in 14 states, including Madison, Wisconsin and Lansing, Michigan. Fortunately, they are not known to be established at any of these interception sites.

The ALB attacks a wide variety of broadleaf trees, including birch, poplar, willow, elm, sycamore, ash, and mountain ash. It is especially fond of maple (Acer) species, including sugar maple. Unlike native wood boring beetles, which generally burrow into dead or dying trees, the ALB attacks and kills live, healthy trees. Aggressive action by the USDA, state and local officials has so far kept these infestations contained, and the Chicago population appears to have been eradicated. But should this insect escape from the remaining quarantined areas, it has the potential to do more damage to North American forests than Dutch elm disease and the gypsy moth combined.

In 1998 the USDA implemented a rule requiring that wood packing material from China be treated with heat, preservatives or fumigation before being

(See Threats to native forests, page 20)

GLIFWC in the big city

By Sue Erickson
Staff Writer

Madison, Wis.—The bike belonging to John Coleman, GLIFWC's environmental section leader, is parked neatly alongside a menagerie of student and faculty bicycles outside the Steenbok Library on the UW-Madison campus, where GLIFWC's Madison satellite office is housed in the depths of the vast building's basement.

GLIFWC shares quarters with UW's Land Information Composition and Graphics Facility (LICGF) offices and equipment and has maintained the on-campus satellite office since 1994 when Coleman first set up shop there.

Perhaps it is appropriate that two of the three-man staff that inhabit the office in the cavernous, underground site focus on mining issues

Following his four-mile, daily bike trek to the office, wending his way through the inner city streets crowded with car, bike and pedestrian traffic, Coleman joins both Esteban Chiriboga GIS, mining assistant, and Rick Madsen, data analyst—fellow inhabitants of GLIFWC's urban office.

A patchwork of maps on the walls attests to the study of mining projects both he and Chiriboga pursue on behalf of GLIFWC. The impact of mining on various resources in the treaty ceded territories that may potentially affect member tribes is the major thrust of their work.

Historically, the Kennecott's proposed sulfide mine near Crandon, Wisconsin consumed much of their time and effort, but thankfully, that proposal is now history.

Currently, they are focusing on other areas: the closure of the Flambeau Mine near Ladysmith, Wisconsin; the proposed mine site in Michigan's Upper Peninsula near the Yellow Dog River, and several mining proposals in northern Minnesota, where mining activity appears to be picking up steam.

Much of Coleman's work requires gathering and analyzing data related to mining proposals and preparing comments on behalf of GLIFWC member tribes. Acquiring appropriate data from mining companies and federal and state agencies involved in permitting as well as on-site sampling, then interpreting that information, are all part of his work.

Helping to understand the information and how and where mining procedures may impact the resources are maps of the various locations developed through Geographic Information System (GIS) mapping. That's where Chiriboga comes into play—producing visuals that interpret proposals and depict, for instance, how waste discharged from a site would flow and what it might impact.

Through a cooperative agreement with the UW's LICGF, they are able to share technological equipment necessary for the production of these highly technical, layered maps created through satellite imaging.

Recently, Coleman has been focusing on the Flambeau Mine's application for a certificate of completion from the Wisconsin Department of Natural Resources. The certificate would free the company of any more responsibility for reclamation at the site except for the long-term oversight at the waste pit itself.

However, Coleman is concerned over continuing pollution detected on the reclaimed site that could impact ground and surface water and one of the streams that runs into the Flambeau River. "The discharge is above the reasonable standard and above the Wisconsin Pollutant Discharge Elimination System's discharge limit," he says. First noted in 2002, the company has tried twice to remediate contaminated soil at the site; however, above-limit contamination still exists. With this being the case, Coleman would be reluctant to recommend granting a certificate of completion. He terstified on this issue at a hearing before an administrative law judge at the end of the month. He's also been preparing comments related to proposed exploration in the Ottawa and the Superior National Forests.

For his part, Chiriboga is working primarily on Minnesota and Michigan mining proposals, or, as in some cases in Minnesota, re-applications to mine. GLIFWC involvement comes at the request of the Fond du Lac Band. A sulfide mine being proposed by Polymet is one. A draft Environmental Impact Statement is currently under review by the US Army Corps of Engineers and the Minnesota Department of Natural Resources.

Working closely with Ann McCammon Soltis, policy analyst and intergovernmental affairs director at the main office in Odanah, Coleman will contribute to comments as part of that review. Tribes are also concerned about a new water discharge proposal by Minntech that would allow discharging waste that has accrued over several decades to be diluted and dumped into the West Two River, a tributary to the St. Louis River running through the Fond du Lac reservation. Several long-established taconite mines are now also having to re-apply for permits to resume mining after curtailing operations for years, so tribes will have an opportunity to raise issues related to their operations during review processes.

John Coleman, GLIFWC's environmental section leader (left) and Esteban Chiriboga, GIS mining assistant. (Photo by Sue Erickson)

A special mapping project has recently offered Chiriboga some variation to the constant mining theme. He has been assisting GLIFWC 's Administration for Native American's language grant project that creates poster-size maps of the ceded territories with Ojibwe names for locations and water bodies. The project will also produce a gazetteer with detailed scaled maps in Ojibwe. Chiriboga has found the project to be a fascinating deviation from his standard workfare.

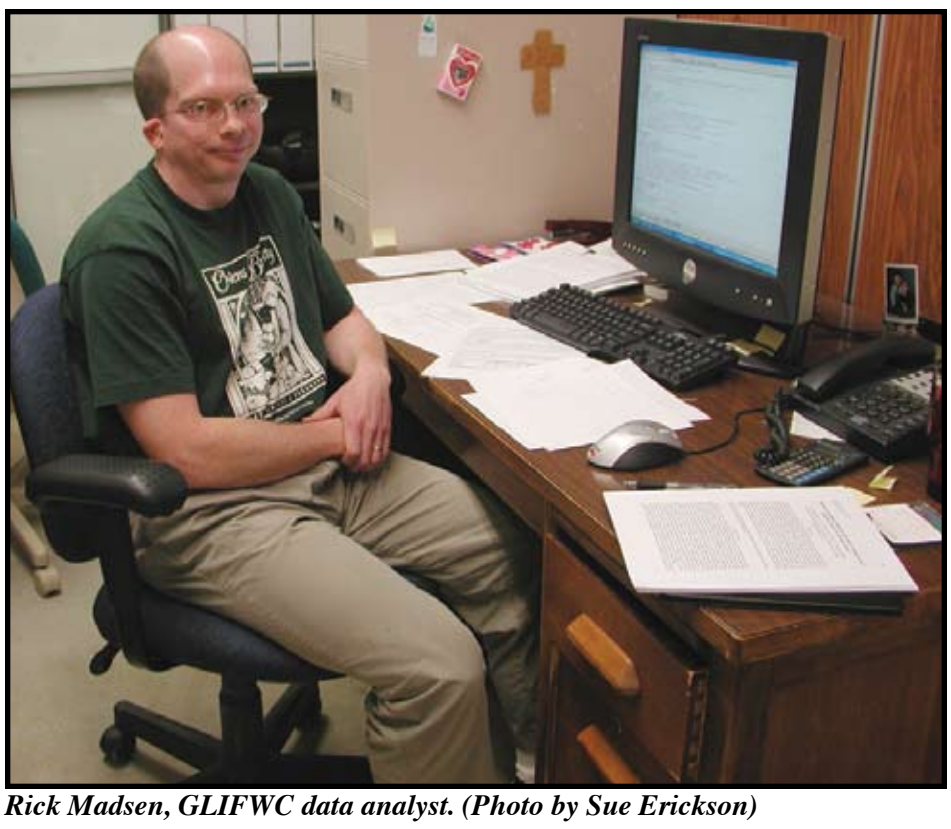
Also at the urban, underground satellite office is Rick Madsen, whose work is related largely to fisheries and wildlife projects with little relation to mining. Statistics are his gig, making sense out of all that data that flows from fieldwork and data gathering.

He's responsible for generating a number of biological reports that are related to a variety of GLIFWC's fishery and wildlife projects. Inland fish assessment reports, updates to the *Fishery Status Update* publication generated by the Wisconsin Joint Fishery Assessment Steering Committee are a big part of his work. Madsen also assists GLIFWC staff with reports related to mercury levels in fish, generating reports on mercury levels from tested fish and, along with Chiriboga, producing "Mercury in Walleye" maps. The maps show tribal members mercury levels in walleye in lakes that have historically been speared by tribal members. Separate maps for each tribe target lakes used by tribal members during the spring off-reservation spearing season.

Currently, Madsen also has a "mercury trends over time" report in the pipeline for publication. Entitled "Time Trends of Methylmercury in Walleye in Northern Wisconsin: A Hierarchical Bayesian Analysis," which Madsen co-authored with Hal S. Stern, will be appearing in the *Environmental Science and Technology—A Journal* within the next several months.

While it's difficult to notice GLIFWC's presence on campus—only a small sign on the basement door of the library announces that—the urban component of GLIFWC continues to provide a tremendous amount of critical information in conjunction with GLIFWC's various assessments and resource management projects. The only windows they have are the Windows on their computers, but they manage to put a lot of light on data and information for GLIFWC's benefit.

(**Editor's note**: *Fishery Status Update* and GLIFWC's mercury in walleye maps are available as pdf's on GLIFWC's website: *www.glifwc.org* or by contacting GLIFWC's Public Information Office at pio@glifwc.org or calling (715) 685-2150.)



Rick Madsen, GLIFWC data analyst. (Photo by Sue Erickson)

Chuck Brumleve, Keweenaw Bay Indian Community, Baraga, Michigan, and GLIFWC's Policy Analyst Ann McCammon Soltis provided comments during hearings regarding the closure of the Flambeau Mine near Ladysmith, Wisconsin in late May. Mic Isham also presented testimony on behalf of the Lac Courte Oreilles Band. Tribes are concerned that reclamation of the site has not truly been accomplished, it is unclear if contamination at the site is continuing to pollute surface and ground water. (Photos by Sandy Lyons)

Developing the ethnohistory of Wisconsin's McCord Village

An historic intertribal community

By Minetta Koblings & Rachel Zorn
For Mazina'igan

Madison, Wis.—Between 1890 and 1950, an intertribal band of Native Americans inhabited a small, secluded area known as McCord Village in Wisconsin's Oneida County.

The village was located off of Highway 8, thirteen miles West of Tomahawk and included members from the Ho-Chunk, Potawatomi, Menominee, and Ojibwe tribes. After some archaeological research, this site was registered with the National Register of Historic Places (NRHP) in 2001.

Recently, Professor Larry Nesper, Department of Anthropology and American Indian Studies, University of Wisconsin-Madison, State Archaeologist John Broihahn, and University of Illinois-Chicago Historian Brian Hosmer and this article's authors, UW undergraduate Research Scholars Program participants, are working to further research the village from an ethnographic and ethnohistorical perspective in order to tell a more elaborate story of the village's significance.

McCord has recently gained attention because it was multitribal and off-reservation. Although it is not fully certain why these groups chose to settle together, there was a clear desire to maintain their traditions and culture, which was made easier by their secluded location, at least in relation to federal authorities. The archaeological investigations for the NRHP discovered a communal Big Drum Dance Lodge and two dance circles—clearly indicating that McCord was a place where Native Americans gathered for ceremonies.

The residents of McCord were also able to work together to maintain themselves economically, primarily by producing maple sugar. Ten boiling arches and a significant number of taps and buckets that were found on the site are testimonies to this, making McCord the most extensive maple sugaring site of Native Americans recorded in Wisconsin.

To further learn about the settlers of McCord, more archival research in the Wisconsin Historical Society is being done. Advertisements and articles in the newspapers of local towns Tomahawk and Prentice document the economic relations between the Native Americans of McCord and the neighboring towns.For instance, on August 20, 1931 The Tomahawk Leader ran an advertisement for an Indian Wedding between a McCord man, Uas-Tos-Kah, and Lac du Flambeau Indian Princess Sa-Wau-Quat. The ceremony charged admission for spectators and offered traditional goods for sale.

The idea that a large group of Native Americans decided to settle off-reservation shows that the group was looking for an area that could support and meet their needs with the land and natural resources. McCord Village was able to provide year round for the group and created a stable environment with usable resources. To those that settled there, the creation of reservations throughout Wisconsin did not mean they had to reside there; they still had options and chose the option that suited them best at the time.

So far the research has concentrated on the historical and archaeological aspects through visits to the site and archival research, along with researching newspapers from both Tomahawk and Prentice for all the years McCord was occupied.

Annual Reports of the Commissioner of Indian Affairs from agencies in Wisconsin and Kansas have also been read to ascertain more information about the so-called "strolling bands." In the future, the project will continue with a genealogical emphasis and further archival and ethnographic research.

Project participants hope to collaborate with tribal members in Wisconsin as well as community members from nearby towns who are familiar with McCord. A public event is scheduled for October 16, 2007 at the Rhinelander Public Library where researchers will present their findings and also hope to have a broader conversation about McCord with community members.

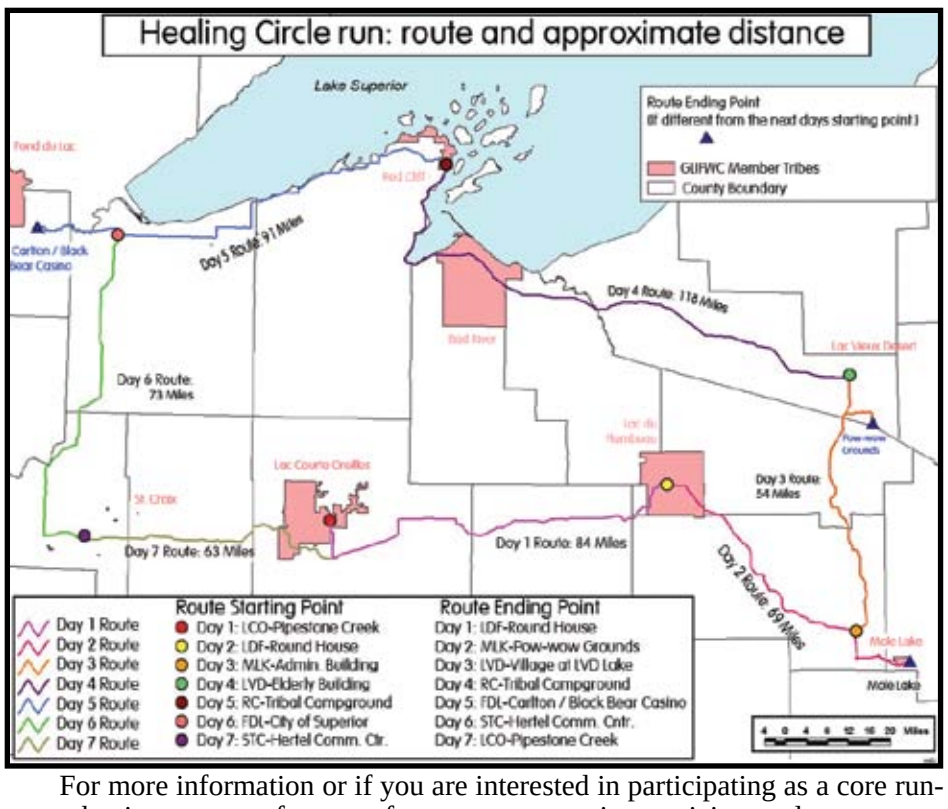
Anyone with further information about McCord is encouraged to attend the event in Rhinelander or personally contact Professor Nesper through the University of Wisconsin-Madison at 608.265.1992 or by email at lnesper@wisc.edu.

Healing Circle run

July 14-20, 2007

The 2007 "Healing Circle" run/walk is intended to be a prayer for healing. During the 2001 Healing Journey Run, participants thought of a teaching on healing—"for a nation to heal, it must begin with the individual. As a person heals, then that person can help heal his/her family. As a family begins to heal, they can help heal their community. As communities heal, they can help the nation heal. As nations heal, they can help Akii (the earth), our plant and animal relatives to heal." Individual and family healing is possible after addictions (e.g. alcohol, drugs) and abusive or violent behavior are acknowledged and steps taken to prevent them from returning. Healing is also needed after the loss of a loved one and by the incarcerated, the orphaned, and sick. Native people also suffer from the inter-generational trauma and scars left by war, racism, oppression, and many destructive policies aimed at assimilation.

The 2007 "Healing Circle" run/walk will occur from July 14-20, 2007. The run/walk will connect eight Ojibwe reservations in northern Wisconsin, Michigan, and Minnesota (see below map) starting at the Lac Courte Oreilles Reservation and ending at Lac du Flambeau on July 14 (Day 1), then ending at Mole Lake on July 15 (Day 2), at Lac Vieux Desert on July 16 (Day 3), at Bad River/Red Cliff on July 17 (Day 4), at Fond du Lac/Black Bear Casino on July 18 (Day 5), at St. Croix on July 19 (Day 6), and at Lac Courte Oreilles on July 20 (Day 7).



For more information or if you are interested in participating as a core runner, or having a group of runners from your reservation participate, please contact Rose Wilmer, Sue Nichols, or Neil Kmiecik at GLIFWC at (715) 682-6619. All participants must assume personal liability, as well as responsibility for their own transportation and expenses.

Serious threats to native forests cont.

Continued from page 18)

allowed entry into the US. While the USDA estimates compliance at about 98%, it unfortunately does not require shipments from other countries to undergo treatment. Thus import of ALB and other forest pests in wood packaging from other countries is still a possibility.

Meanwhile, research into possible biocontrols for the ALB continues. A number of insects that attack the ALB have been identified in China and Korea. Two of the most promising are the wasp, Scleroderma guani, which parasitizes some closely related beetles, and the beetle Dastarcus longulus, whose larvae parasitize and kill Asian longhorned beetle larvae inside the trees.The females of S. guani first sting the young larvae to paralyze them, then lay eggs on them. The females remain with their young until they have completed their development and emerged as adult wasps, and have even been observed to return stray eggs or larvae to the host.

What you can do

The best way to keep from spreading the EAB and many other forest pests is to avoid transporting logs or firewood. Gather or buy wood locally instead. Don't be the one that transports these destructive insects to new areas!

For more information

An interesting "History of the gypsy moth" appears at *www.ent.msu.edu/gypsyed/docs/history.html#In%20the%20United%20States*.

The Wisconsin DNR has a nice webpage showing the difference between true ash *(Fraxinus spp.)* and other, unrelated trees often referred to as "ash." See *www.dnr.wi.gov/org/land/forestry/fh/PDF/EABMIextension.pdf* .

To see the emerald ash borer's current range, check out the Cooperative Emerald Ash Borer Project's map, at *www.emeraldashborer.info/files/TriState_EABpos.pdf*. Additional up-to-date information on this insect can be found at *www.emeraldashborer.info/*.

For more information on the Asian longhorned beetle, visit USDA's site at *www.aphis.usda.gov/newsroom/hot_issues/alb/alb.shtml*.

An excellent summary of current research appears at: *www.uvm.edu/albeetle/research/index.html*.

Photos and information on the ALB and similar-looking native beetles is at *www.uvm.edu/albeetle/identification/index.html*. Be sure and take a look at the whitespotted pine sawyer *(Monochamus scutellatus)*, a similar, native wood borer that feeds on dead and dying conifers (pines, fir and spruce).

Great Lakes whitefish rank high in consumer preference study

Cooked fish appearance, flavor, texture compared

By Michigan Sea Grant

Marquette, Mich.—Michigan Sea Grant Extension has been working on a Great Lakes whitefish marketing study with support from a Fisheries Extension Enhancement Grant through the National Sea Grant Program. One part of this project included sensory analysis of Great Lakes whitefish to help better position this important commercial fish in the marketplace.

With guidance from the Lake Whitefish Marketing Steering Committee, it was determined that fresh Great Lakes whitefish would be compared to fresh inland lake whitefish marketed by the Freshwater Fish Marketing Corporation of Canada; frozen Great Lakes whitefish would be compared to fresh Great Lakes whitefish; and frozen Great Lakes whitefish would be compared to frozen farmed catfish, tilapia, and Atlantic salmon.

The Lake Whitefish Marketing Steering Committee is made up of state and tribal commercial fishers/processors, and representatives from the Great Lakes Indian Fish & Wildlife Commission and Chippewa Ottawa Resource Authority.

The research for this project was carried out at the Michigan State University Department of Food Science and Human Nutrition Sensory Evaluation Laboratory that runs under the direction of Janice Harte.

Ron Kinnunen and Chuck Pistis, who are both with Michigan Sea Grant Extension, worked with Janice Harte and her graduate students to conduct the Great Lakes whitefish sensory analysis. The consumer panelists that participated in the product testing ranged from 113 to 115 for each of the three sensory analysis tests. For all the tests 0.5 ounce samples were prepared from the loin section of the fish fillets and they were cooked in a microwave without any additional seasoning.

In the first sensory analysis test, fresh northern Lake Huron lake whitefish was compared to fresh inland lake whitefish from Lake Winnipeg. The consumer panel preferred Great Lakes whitefish two to one over the Lake Winnipeg lake whitefish in the attributes of cooked appearance, texture, and overall acceptability.

The second sensory analysis test compared fresh Great Lakes whitefish to Great Lakes whitefish that had been frozen for one and four months. Two side-by-side frozen fillets were stored in 3 mm vacuum sealed bags. During the freezing process all vacuum packed fillets were spread out on racks in the freezer to freeze evenly and quickly. The freezer was kept at -10° F to -20° F.

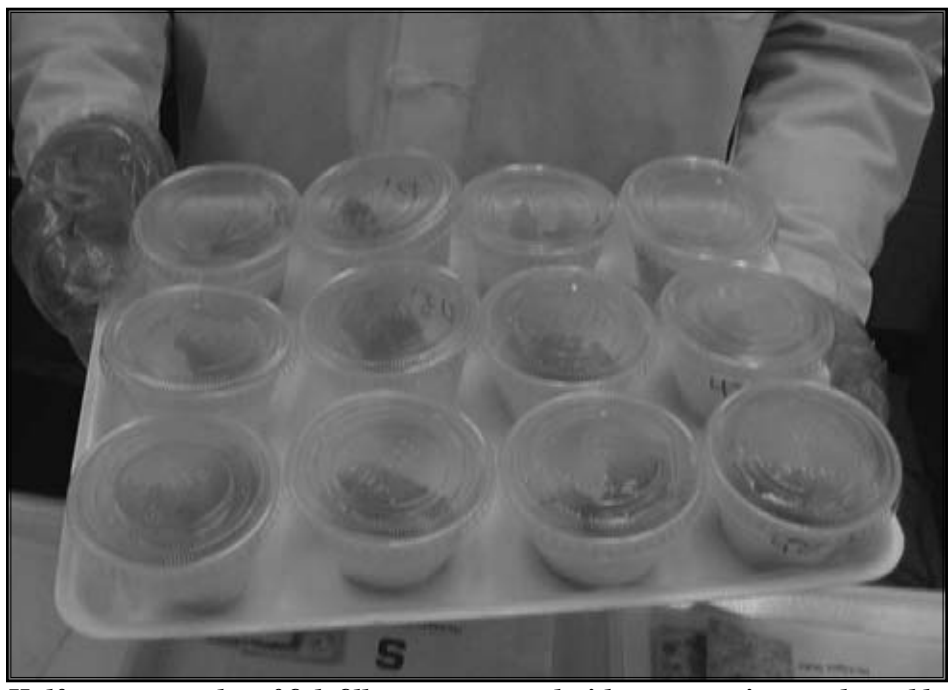
The consumer panel preferred the one and four month frozen Great Lakes whitefish over the fresh Great Lakes whitefish in cooked appearance, texture, and overall acceptability. The consumer panel could not differentiate a cooked flavor difference between the fresh or frozen Great Lakes whitefish.

A comparison was made in the third sensory analysis test between frozen Great Lakes whitefish and frozen farmed catfish, tilapia, and Atlantic salmon. The consumer panel gave similar ratings to Great Lakes whitefish when compared to tilapia and catfish in the areas of cooked appearance, flavor, and overall acceptability. On cooked texture Great Lakes whitefish scored the same as tilapia and Atlantic salmon. Atlantic salmon did score higher than Great Lakes whitefish in cooked appearance, flavor, and overall acceptability. Wild Great Lakes USA scored the highest on a consumer label preference.

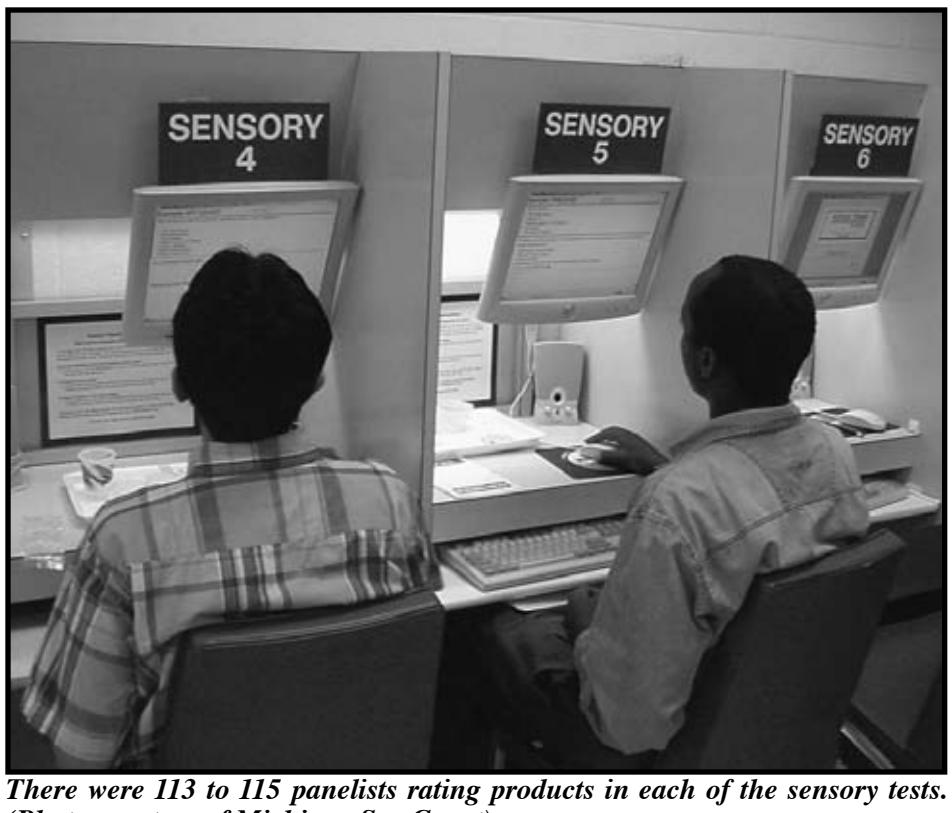
In summary, the Great Lakes whitefish commercial fishing industry should use the results of this study to help position its product against other competing fishery products.

Since Great Lakes whitefish is preferred two to one over Canadian inland lake whitefish, retail stores and restaurants that use inland lake whitefish based solely on price should be made aware of these results to help enhance repeat customers. The stigma that frozen Great Lakes whitefish is inferior to a fresh product is dispelled in this study as the consumer panel gave the frozen product high scores.

Salmon, catfish, and tilapia are in the top ten species consumed in the United States. They are also the top three fish species in retail value in the United States. Since Great Lakes whitefish compared favorably with these top selling fish species, it can compete with its qualities in the market place. When marketing Great Lakes whitefish, "Wild Great Lakes USA" should be prominent on the label as this preference was made by a consumer panel.



Half-ounce samples of fish fillets are prepared with no seasonings and rated by panelists for taste, appearance, and texture. Above, Chuck Pistis holds a tray of fish ready to be sampled. (Photo courtesy of Michigan Sea Grant)



There were 113 to 115 panelists rating products in each of the sensory tests. (Photo courtesy of Michigan Sea Grant)

Year-old perch released into Kakagon River on the Bad River reservation

Bad River hatchery technicians transferred approximately 7,000 year-old perch from the Northern Aquaculture Demonstration Facility (NADF) to the reservation's Kakagon River. Hatched from Kakagon broodstock, the perch were reared at the NADF located on the Red Cliff reservation as part of a study to better understand growth rates in regional perch populations and to develop experimental egg, fry and fingerling rearing practices for local perch populations utilizing outdoor ponds and indoor Recirculating Aquaculture Systems (RAS). Mike Parsons, Bayfield High School loads the hatchery truck with perch as part of a program to expose students to the field of fisheries management. Also pictured from left: NADF technician Kendall Holmes and Bad River hatchery technicians Ed Leoso and Tom Houle. (Photo by Charlie Otto Rasmussen)

Letter to the Editor

Recollections of an HONOR intern

Editor's note: *The following letter is a submission from Ian Wilshire, who traveled from England to serve as an HONOR intern on two separate occasions. It is submitted as a tribute to the Red Cliff community HONOR, Inc., a treaty support organization that stood by the tribes during the troublesome 1980s and 90s when off reservation treaty rights were first being implemented. HONOR disbanded as of December 2006.*

As it is 10 years since participating in my first HONOR internship, I am writing to ask if, through the pages of the ***Mazina'igan***, I might please share some fond recollections and express my heartfelt gratitude to Red Cliff my host Community and the individuals involved in my subsequent experiences.

I did and always will consider myself most fortunate to have received such privileged insights into the, Culture, Customs, Traditions, Lifeways and Spiritual Ceremonies of the Anishinaabe People.

Assigned to work alongside 'Kat' [Katherine Balber] in the HONOR office, I found myself researching and writing articles for the ***HONOR Digest*** and letters of advocacy and support in Native newspapers. One I specifically recall researching and writing was a feature article seeking the removal of the extremely objectionable, controversial and highly offensive term 'S****' from geographical place names and to eradicate the term of reference, generally. As a male, I felt particularly privileged to be entrusted to this task and retain a copy to this day.

It is with a great deal of affection I recall attending several Pow-Wows, the first of which was at Lac du Flambeau. The pervading atmosphere of friendliness, openness, respect, sense of community, kinship and exceptional generosity is something I shall never forget. I quickly ascertained that there was something entirely different to being within the circle, as opposed to being a mere observer on the outside. How I relished that invitation to participate in the 'Inter-Tribal' dancing and becoming immersed and wholly absorbed by the rhythm and beat of the Traditional Drums and the accompaniment of the Singers. As my internship progressed, the steady rhythm of the hours turned into days, the pulse of the days becoming weeks and these eventually maturing and blossoming into months of cultural immersion, with the subsequent harvest bearing the rich fruit of many cherished experiences.

On my return to the England I continued the advocacy work of HONOR addressing school students and prison inmates with the knowledge and insights I had gained, consequently raising awareness into the critical concerns confronting Native Communities today.

There is no denying that these interim years have not been without their challenges. However, when I am confronted by such occurrences there is one thing that if I 'dig really deep' keeps me going. There is a "place" I go and that place is a small place in a beautiful location on the shores of Lake 'Gitchi-Gami' in Wisconsin. I met some people there. Some real special people and they shared their lives with me.

Those subsequent experiences, touched my heart, touched my soul, touched me emotionally, touched me mentally and touched my very being. Those experiences, those recollections, those memories, that knowledge so generously, freely and openly shared, somehow keeps me strong, keeps me sane, keeps me going and keeps me hoping.

I love the people in that community, the Anishinaabe People, your warmth, your wonderful sense of humor, your openness, your kindness, your generosity of material possessions and of spirit. How I admire not only your collective courage, resolve and tenacity but that of all the people within the different Anishinaabe Communities who remain strong and proud in adversity. I salute you, each and every one of you. The distance of time or geographical location does not diminish those feelings or the extra special bond and associated happy memories that are evoked when thinking of that small place, in a beautiful location on the shores of 'Gitchi-Gami' in Wisconsin.

This letter of thanks would not be complete if I failed to acknowledge or express my heartfelt gratitude to at least a few of the individuals who so generously shared their lives and insights with me. Fully justifying first mention is Katherine [Balber/Morrisseau] a very special lady who remains my 'neej' to this day.

Kat, as she is affectionately known, is someone I have every admiration and respect for as she is a lady of courage, fortitude, conviction, commitment, dedication and tenacity that knows no bounds. Once she is your ally she commits totally and demonstrates tremendous loyalty to, both people and the issue being addressed.

Not only is she an advocate for numerous Native issues but continues to be passionately involved with advocacy for the well being of children irrespective of cultural background and ancestry. In the event, I could not have wished for a finer mentor to introduce me into 'NDN Country'!

Others include: Leo LaFernier and all the Members of the Red Cliff Tribal Councils during my respective visits. The Elders of the Community and other community members including: Sam, Joe, Eugene, Rose, Oley and family, Mike and family, Madeline, Julie, Bobbie, Jamie, Denise, Marvin, Crystal, Brian, 'Scooter,' Michelle, Pauline [and all the Isle Vista Casino Waitresses!] Tony, Chuckie, Lynn, her family and all her colleagues at FAPC, Frank, Midge and their family, Jimmy, Diane, Genni. I should also mention Alan M. & Greg [LdF], Jim N. [Fond du Lac], Les M, Al B, Kevin J, Ron & Sharon K. [Seine River].

It would be remiss if I overlooked the contribution of Sue Erickson, Jim St. Arnold and their colleagues at GLIFWC. I would also like to acknowledge two non-Native individuals who enriched my experience and they are Frank K, and Gene. In the event I have overlooked someone [I don't have as many 'grey cells' now as I did 10 years ago] my profuse apology, you know who you are and consider your contribution no less in my own failing to have mentioned you here.

I also recall, with the utmost respect, those members of the community who have since 'Walked On.' I recall my fellow Interns: Sarah K, Tricia K, Tim, Beth & Helen. Finally, but by no means least, I express my sincere thanks and appreciation to Sharon & Tom Metz, without whom my aspirations never would have borne fruition.

I dedicate this letter to Red Cliff my host community and the sterling work of HONOR Inc., carried out over a period of 18 years.

In conclusion, I convey the biggest 'Chi-Miigwitch' possible to every person with whom my path crossed and facilitated my experiences. I recall you with much affection and many, many happy, treasured and valued memories.

Until our paths meet again—Gigawaabamiin.

Ian Willsher—aka Aeon sa go
Milton Keynes, England

US Forest Service's new tribal liaison getting acquainted with tribal staff and issues

By Sue Erickson, Staff Writer

Mary Rasumussen is the new tribal government liaison for the US Forest Service's Region 9 Huron-Manistee, Ottawa, Hiawatha, and Chequamegon-Nicolet National Forests.

Recently replacing Cheri Ford as tribal liaison, Rasmussen has been getting acquainted with tribal decision-makers and project staff involved in Forest Service issues this spring.

In her new position she will be working with tribes that are signatory to the Memorandum of Understanding (MOU) between Voigt Intertribal Task Force signatory tribes and the Forest Service as well as 1836 tribes as relates to the Upper Peninsula's Hiawatha National Forest. Rasmussen will also be working with other Region 9 tribes in regard to issues or projects relative to national forest projects.

Currently stationed at the Ranger District Office in Watersmeet, Michigan, Rasmussen says her position is responsible for assisting in implementing the MOU, facilitating relationships with tribal leaders and staff, and identifying common areas of interest between the tribes and the Forest Service so they can more effectively work together on projects related to the national forests.

Rasmussen has been with the Forest Service for 19 years. During her years with the Forest Service, she has worn a variety of hats, most recently working on a forest plan revision for the Ottawa National Forest and as Director of the Visitor Center at Watersmeet.

She has also worked in the areas of soil science and as a wilderness specialist in the Sylvania Wilderness area. She holds a Bachelor of Science Degree in soil science from the University of Wisconsin-Madison.

Sandy Lake Ceremonies honor victims of the1850 Sandy Lake tragedy

GLIFWC will host annual ceremonies at the Mikwendagooziwag Memorial at the US Army Corps of Engineers recreational site near McGregor, Minnesota on Wednesday, July 25.

As in past years, the day will begin with a paddle across Sandy Lake commencing with ceremonies at 9:00 a.m. The paddle concludes across the lake at the memorial site and is followed by ceremonies and a noon feast.

The public is welcome to attend.

The US Army Corps of Engineers Sandy Lake Recreational Site is located approximately 15 miles north of McGregor, Minnesota on Highway 65.

For more information contact: GLIFWC at (715) 682-6619 or visit our website at *www.glifwc.org* under "What's New."

Cadotte monitors Great Lakes as policy analyst

By Charlie Otto Rasmussen
Staff Writer

Reggie Cadotte. (Photo by COR)

Odanah, Wis.—Nearly a decade after participating in a conservation warden internship, Reggie Cadotte returns to GLIFWC as a policy analyst in the Division of Intergovernmental Affairs. Cadotte's duties center on examining Great Lakes treaty fishing issues and tracking the environmental health of the watershed.

Prior to punching in at GLIFWC's main office in Odanah in mid-April, Cadotte worked for the Red Cliff tribe for five years as a natural resource consultant, grant writer and educator. He lives at Red Cliff with his wife Leah.

A Lac Courte Oreilles (LCO) member, Cadotte grew up hunting, spearfishing and gathering forest products on his home reservation near Hayward, Wisconsin. Following high school, he went on to earn an Associate Degree in Native American Studies from LCO Community College and a Bachelor of Science Degree in Biology from the University of Wisconsin-Superior.

Cadotte is a member of two drum groups, Badger Singers and Pipestone Creek, and occasionally sings with Red Bird. Additionally, he belongs to the Lac Courte Oreilles Big Drum Society.

Nine GLIFWC employees were recognized during the annual All Staff meeting on March 29 in Odanah. On every five-year employment anniversary, staff members receive a pin for their years of service. GLIFWC awarded recipients and years of service include: back row from the left: Jenny Krueger (10), Lee Cloud (10), Charlie Rasmussen (10). Front row, Karen Danielsen (10), Sue Nichols (5), Jim Zorn (20), Miles Falck (10). (Photo by Sue Erickson)

GLIFWC 2007 Officers

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Vice Chairman—Curt Kalk, Mille Lacs
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Lakes Committee
Chairman—Larry Deragon, Red Cliff
Vice Chairman—Erv Soulier, Bad River

Madeline Island Museum open house slated for Memorial weekend

Featuring Ojibwe Artists Carl Gawboy & Rabbett Strickland

La Pointe, Wis.—Come spend some time on Madeline Island, also known as Moningwanekaaning Minis in the Ojibwe language which means the place of the golden-breasted woodpecker. The Madeline Island Museum and the Great Lakes Indian Fish & Wildlife Commission are jointly sponsoring an open house at the Museum on Saturday and Sunday, May 26-27 all day. The event will be a special welcome to Anishinaabe/Ojibwe visitors.

The open house will include free admission for tribal members, refreshments, educational exhibits on treaty rights and off-reservation hunting, fishing and gathering activities by GLIFWC, a tour of the Museum, the Crandall Collection of American Indian Dolls, including more than 200 dolls from different tribes around the country, and featuring paintings by Carl Gawboy and Rabbett Strickland. There will be an artist reception on Sunday, May 27 at 2:00 p.m.

This is an opportunity to visit historic Madeline Island and the Museum which is just a short walk from the ferryboat landing. Ferries run regularly from Bayfield, Wisconsin to the island. The Museum will be open between 10:00 am and 5:00 pm.

For information contact Steve Cotherman, Director of the Madeline Island Museum, at 715-747-2415 or Sue Erickson, GLIFWC's Public Information director at 715-682-6619. The Madeline Island Museum is a Wisconsin Historic Site, owned and operated by the Wisconsin Historical Society. For information about the WHS, its programs and services, go to *www.wisconsinhistory.org*.

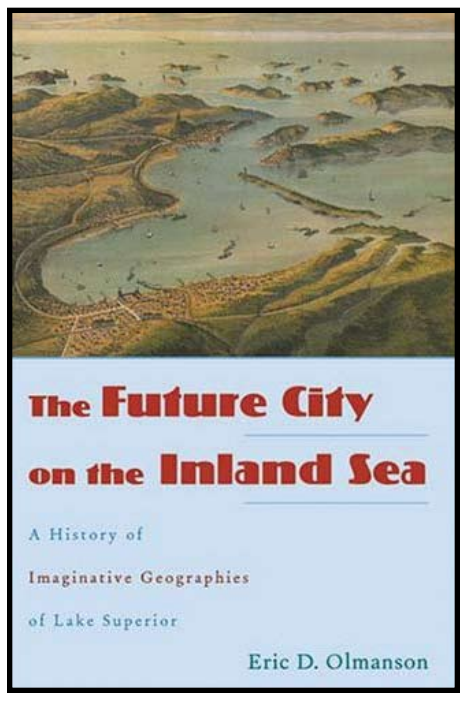
Notice

Madeline Island Ferry Lines annually has a free ferry day which is Sunday, June 3. Free passage is for passengers only, not vehicles. For information on the 2007 ferry schedule, contact *www.madferry.com* or phone (715) 747-2051.

The Future City on the Inland Sea:

A History of Imaginative Geographies of Lake Superior

Written by Eric D. Olmanson
Ohio University Press, 2007
Reviewed by Larry Nesper, UW-Madison



I have been fascinated with the maps that GLIFWC's Esteban Chiroboga has been doing of the ceded territory for years. They suggest both a new and an old way to imagine the landscapes that make up these native lands. They foreground what the state maps push to the background. I see GLIFWC's maps as active representations.

So with imaginative geography in mind, I turn to this brand-new book. It is a very reader-friendly history of how the Chequamegon Bay area has been imagined, written about, and represented for over three-hundred years, since the time of Claude Allouez's visit, though it focuses on the nineteenth century.

The author starts by taking us through the writings of Henry Schoolcraft and Thomas McKenney and shows us how the idea of the "sublime,"—nature seen as both powerful and dangerous, and therefore, capable of having a transformative effect on the human spirit—shaped how these men imagined places around the southern shore of Lake Superior. Grand sable, Pictured Rocks, the Keweenaw Peninsula, the Ontonagon River, Madeline Island.

He goes on to describe the history of surveying and the boosterism that sought to bring about the existence of a great city in the area by sheer force of published language and images.

The book is filled with many illustrations, photos, and maps, some of which I wish were bigger. Readers of ***Mazina'igan*** interested in Indian-White relations will enjoy the account of Buffalo Bill's Wild West Show performance in Ashland in 1896, that attracted hundreds of tribal members of all ages.

Readers will also be interested in the book's final chapter which is an account of the First Annual Apostle Island Indian Pageant in 1924, an "authentic history," from the point of view of Mo-kad-ji-wens' dream concerning the future of the Ojibwe Nation.

Though the future has turned out quite differently, readers will enjoy thinking about how the future was seen so long ago and the factors that have changed that vision.

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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.

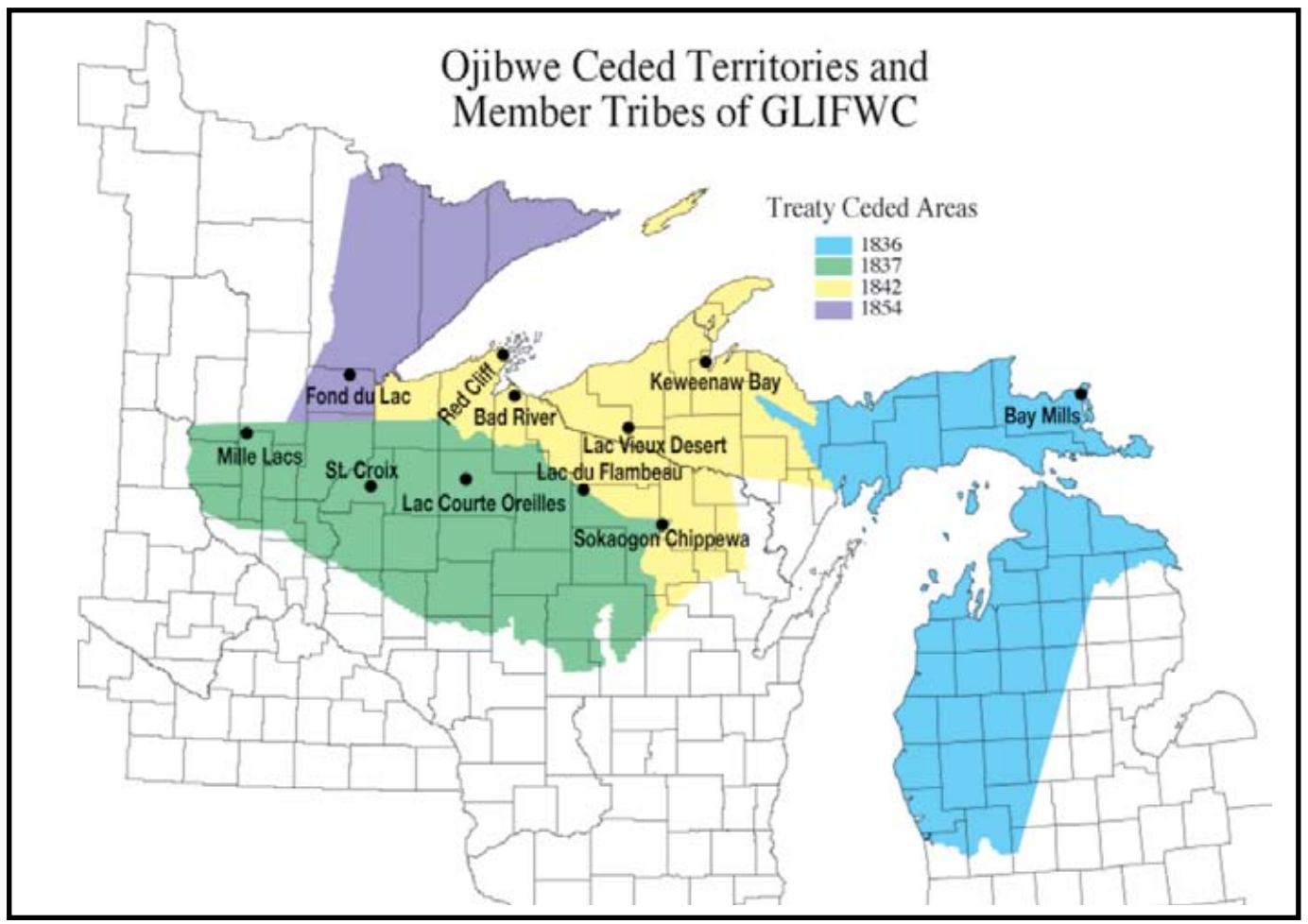
Subscriptions to the paper are free. Write: **MAZINA-'IGAN**, P.O. Box 9, Odanah, WI 54861, phone (715) 682-6619, e-mail: pio@glifwc.org. Please be sure and keep us informed if you are planning to move or have recently moved so we can keep our mailing list up to date.

MAZINA'IGAN reserves the right to edit any letters or materials contributed for publication as well as the right to refuse to print submissions at the discretion of the editor.

Letters to the editor and guest editorials are welcomed by **MAZINA'IGAN**. We like to hear from our readership. The right to edit or refuse to print, however, is maintained. All letters to the editor should be within a 300 word limit.

Letters to the editor or submitted editorials do not necessarily reflect the opinion of GLIFWC.

For more information see our website at:www.glifwc.



Mazina'igan

A Chronicle of the Lake Superior Ojibwe

Niibin 2007