Mazina'igan
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Bands enjoy fair weather, good fishing at Mille Lacs

By Sue Erickson
Staff Writer

Mille Lacs, Minn.—By all reports, the 2003 Mille Lacs Lake treaty netting and spearing season was a success—a definite upturn in terms of fish harvested and weather conditions from the blustery 2002 season.

Mille Lacs Band members were the first to start the season on April 1, netting through the ice and achieving some nice catches at that. It wasn't until April 19 and early ice-out that Bad River folks began fishing, followed by Fond du Lac, Mole Lake and St. Croix, who arrived to fish on April 21st.

By May 5, when most tribal netting and spearing had ceased, the total of the combined eight-band harvest was over 67,000 pounds of walleye or nearly 70% of the bands' 100,000 pound quota in comparison to a combined total of 53,270 pounds of walleye at the end of the 2002 spring season. This represents considerably more fish for families, extended families and communities of tribal fishermen.

While commercial permits were available to members of some Wisconsin Ojibwe bands, none were requested or issued during the season, according to Joe Dan Rose, Great Lakes Indian Fish & Wildlife Commission's (GLIFWC) inland fisheries section leader.

Rose attributes the successful season to excellent weather conditions, which did little to impair either netting or spearing activities as well as to more nets in the water. This year Wisconsin bands allowed their members to set two to three nets per person, varying by individual band regulations. This provided more opportunity to tribal members.

GLIFWC Chief Conservation Officer Gerald White also attributed success to good weather and a good run of fish just as the ice went out. "The fishing was intense right from the beginning," he says, "and the season seemed shorter than usual."

Laurie Weyas, Mille Lacs Band member, finds a good catch as she hauls in her net from Mille Lacs Lake. (Photo by Sue Erickson)

The season ran its course smoothly with few problems. At the outset of the season, roofing nails had been scattered **(See Tribes harvest, page 6)**

High marks for Lac Vieux Desert

Walleye harvest, tribal participation and hatchery production on the rise

By Charlie Otto Rasmussen
Staff Writer

Watersmeet, Mich.—Under clear skies and a string of calm evenings, Lac Vieux Desert spearers tallied a record walleye harvest in western Upper Michigan lakes this past spring. Tribal members harvested 4,450 walleye, exceeding last years' high mark by 725 fish.

"Except for a few cold nights that shut the fish down, the weather was good for spearing," said Lac Vieux Desert fisherman and Vice-Chairman Jim Williams Jr. "Fishing was a little tougher on flowages like Bond Falls where water levels were high. Other lakes were low, but conditions were pretty good overall."

According to tribal spearing clerk Joyce Hazen, participation in the spring harvest has grown steadily in recent years. "A lot of women have started spearing. There were quite a few first-timers who wanted to experience it this year," she said.

In addition to good fishing experiences, tribal members enjoyed some quality time with family and friends in a brilliant natural setting. Flowing green blankets of northern lights and white-hot shooting stars decorated the night sky. Loons were vocal on many lakes, their calls resonating cleanly across black velvet water.

Each year tribal and state fisheries managers meet to establish walleye harvest guidelines for Lac Vieux Desert spearers in the Michigan 1842 ceded territory. Harvest guidelines are based on models that predict the number of adult walleye in lakes where tribal fishing may occur.

Lac Vieux Desert's Jim Williams swings a speared walleye into his canoe on Thousand Island Lake on April 28. (Photo by Charlie Otto Rasmussen)

Replenishing MI lakes

While Williams spent several nights on the water during the walleye spawning season, his days were devoted tending to the revamped tribal fish hatchery located on Lac Vieux Desert Lake's north shore.

Since opening several years ago, the hatchery has had mixed production, largely due to water quality problems. The recent switch from lake to well water, however, has yielded excellent results.

Water is now pumped to the hatchery from a well at the adjacent pow wow grounds. Williams said that other key hatchery improvements performed by the LVD Maintenance Department include the installation of a hot water heater to avoid temperature fluctuations that can be fatal to developing fish. A new back-up water pump provides additional insurance that the system will continue to function properly in the event of a power outage.

"The water itself has made a huge difference," Williams said. "We've increased our production by around 80%—it's working wonderfully."

Soon after the ice left Lac Vieux Desert Lake, hatchery personnel captured adult walleye in fyke nets only a stones-throw from the hatchery. After eggs were harvested from the females and milt squeezed from the males, the fish were returned to the lake.

Using a combination of Bell jars and Big Red units to hatch-out tiny fish from fertilized eggs, Williams estimated the facility churned out 4 million walleye fry during the first week of May. While some of the fry were released **(See Stocking Michigan, page 6)**

Fishin' with Fond du Lac

Articles & photos by Sue Erickson, Staff Writer

Mille Lacs Lake, Minn.—When Fond du Lac's (FdL) blue and white "big top" pops up at the Cedar Creek landing on Mille Lacs Lake, it's a sign that Fond du Lacers are ready to fish. And that's what they did this spring, taking about 14,600 pounds of walleye in five days, April 22-26, using both spears and nets. "We like to do it fast," says Ferdinand Martineau, director, FdL Resource Management. "We go down, get our fish and go home."

Cliff Rabideaux, Fond du Lac's representative to GLIFWC's Board of Commissioners, loads equipment prior to setting a net off of Mille Lacs' Cedar Creek landing.

FdL monitors its own spring netting and spearing season, bringing down a fisheries biologist, six fisheries technicians and four conservation officers to cover nearly round-the-clock fishing activity at Mille Lacs Lake. Martineau says staff work between ten and twelve hours, covering an evening-night shift and a morning-afternoon shift.

The festive-looking, blue and white tent is the hub of activity as FdL staff work-up the daily and nightly catches and record data. There's a somewhat homey environment within—a few tables serve as work-up benches and an outside generator keeps the lights on. Coffee is usually perking and a free-standing propane space heater keeps the chill out.

FdL members bring all fish to the tent before leaving the landing. Fish are weighed, and other biological information is gathered from the catch, such as length and sex. Otolith and scale samples, used for ageing, were taken from all walleye harvested on the first two mornings, and also taken from all tagged walleye thereafter.

FdL shares the biological information gathered with the Minnesota 1837 Ceded Territory Fisheries Committee, which includes representatives from all eight Ojibwe bands, the Minnesota Department of Natural Resources and the US Fish and Wildlife Service. Information on the Mille Lacs fishery from all participants provides the database used to establish quotas and as a basis for other fishery management decisions.

Pickin' fish out of a net at Cedar Creek landing after a successful lift are Robert LaFave Sr. and Kelly Smith, Fond du Lac.

Martineau is pleased to see FdL's participation in Mille Lacs netting and spearing steadily rising over the past six years. FdL requires that tribal members sign up for a netting permit in advance. The cut-off is usually in early April. This year, 136 band members signed up, a considerable increase from the first year, when only 30 showed interest. The Band does not require an early sign-up for a spearing permit. Those are issued at the landing.

Nets are generally set in the late afternoon or early evening and pulled in the morning, while spearing takes place after dark and goes into the early hours of the morning. This year, FdL had strong participation in both netting and spearing.

Prior to the season's start-up, FdL conservation officers kept an eye out on the big lake to determine when it was ready. This year, they pulled four test nets on Monday, April 2l, landing 250 pounds of fish—a signal that the fish were ready. This sent Wanda Smith, FdL Resource Management receptionist, to the phone to personally notify over 130 band members that Tuesday was a "go" for Mille Lacs Lake.

FdL allows one net with a maximum one and three-quarter-inch mesh per permit. On their April 22 opener, FdLers set 65 nets and harvested 5,000 lbs. of walleye. The following day 50 nets were set and over sixty spearing permits issued, resulting in an additional 4,000 lbs. of walleye. And so it went, until the quota was reached on Saturday, April 26 and FdL's five-day, Mille Lacs fishing event concluded.

FdL issued three citations during the season, one for a net with an oversize mesh. FdL conservation officers confiscated both the net and fish. Two FdL spear fishermen were cited for oversize violations. FdL allows only two walleye over 20 inches per permit.

Credit goes to FdL staff for implementing a smooth, efficient spring netting and spearing season. Staff that worked at Mille Lacs included: Fisheries Biologist Brian Borkholder; fishery technicians—Sean Thompson, Gary Martineau, Reggie Defoe, Russ Northrup, Charlie Nagahanub, and Terry Perault; and conservation officers—Chief John Smith, Mark Zacher, Jason Loons, and Duane Barney.

The big top is folded up now, packed away and ready for another season. Fish are filleted and in the freezer—the result of a fast and successful season.

Kept comfy within their work tent, Fond du Lac Department of Natural Resources staff put in long hours as they creeled the catch at Mille Lacs Lake. Pictured above from the left are: Duane Barney, conservation officer and fishery technicians Terry Perrault, Charlie Nagahanub, Russ Northrup and Reggie Defoe.

Wisconsin lakes yield good walleye harvest for tribes

Odanah, Wis.—St. Croix's spears struck water first in Magnor Lake and Wapogasset Lake, Polk County, on April 11, opening the nineteenth treaty, spring spearing season in Wisconsin. Other Wisconsin bands followed suit days later as the ice left more northern lakes. At the other end of the season, Lac du Flambeau continued spearing well into May, ending the spring season on May 14.

As in Minnesota, the season bore all the marks of success with pleasant weather and good fishing. Preliminary figures show Wisconsin tribes harvested 27,522 walleye from 175 ceded territory lakes. That's up nearly two thousand fish from last year's harvest of 25,543 walleye, but short of the 2000 record treaty harvest of 30,347 walleye. The bands' combined walleye quota for 2003 is 45,776.

Lac du Flambeau (LdF) spearers were especially successful, taking 11,479 walleye from 69 lakes. LdF also topped the season's muskie harvest, taking 97 of the 220 muskellunge harvested during the spring treaty season. The 2003 tribal quota for muskellunge is 1,522.

Preliminary totals by band for walleye and muskellunge in Wisconsin this year are:

Tribe	Walleye	Muskellunge
Bad River	2,972	4
Lac Courte Oreilles	4,030	23
Lac du Flambeau	11,479	97
Sokaogon/Mole Lake	4,656	36
Red Cliff	2,600	3
St. Croix	1,785	57

As in previous seasons, GLIFWC's conservation officers and creel teams manned all open landings nightly, checking permits and recording numbers, length and sex of fish as they were brought in from the lakes.

GLIFWC's Enforcement Chief Gerald White, who traveled to numerous landings around the state during the season, reported a rather quiet season with ample fishing opportunity and good tribal participation.

There were several incident reports during the season. One involved possible gun shots on or near Lake Vermilac in Michigan. In Wisconsin there were reports of verbal harassment of spearers at Big Moon Lake, Barron County; rock throwing on another night at Big Moon Lake, Barron County and harassment with the use of a spotlight on Long Lake, Washburn County.

The LacVieux Desert (LVD) Band in Michigan also took to the waters for the spearing season. LVD members harvested a total of 4,450 walleye during their season. They found excellent fishing opportunity on Lake Gogebic, Gogebic County, harvesting 2,500 walleye over four evenings.

On the cover

Louis McGeshick Sr. sharpens the points on his spear with a file while Louis Jr. looks on. The father and son duo harvested walleye that evening from Thousand Island Lake in Gogebic County, Michigan. (Photo by Charlie Otto Rasmussen)

Chicken Little visits Mille Lacs

A commentary by James Schlender, GLIFWC executive administrator

"The sky is falling! The sky is falling!" say some Chicken Littles in Minnesota. An April 11 Minnesota *Outdoor News* column sounded the alarm by warning of "The specter of tribal 'commercial fishing' at Mille Lacs."

Specter? My dictionary says that "specter" refers to a "haunting fear of future trouble." With a great sense of doomsday foreboding, I was compelled to read on and find out what trouble was expected and what it was that I should fear.

It turns out that the *Outdoor News* columnist picked up on a provision in the new five-year tribal fishery management plan that might result in the sale of walleyes harvested from Mille Lacs Lake. This provision would allow tribes to issue commercial harvest permits for the lake within the same tribal quotas and under the same gear restrictions that govern subsistence fishing.

As I read on, I learned that the writer himself acknowledged that, even if it would take place, a tribal commercial fishery would not harm the fishery. Why? Simply because the fish would be harvested under the same tight tribal regulations and under the same quotas anyway. And, as I read further, I found out that this half-page column concluded: "Maybe it'll amount to nothing."

So I had to ask myself, "What do I, or for that matter anyone else concerned about the Mille Lacs Lake walleye population, have to fear?" I did some checking of my own.

It turns out that only two of the eight tribes that fish in Mille Lacs Lake even considered possibly issuing commercial harvest permits, and then only after being satisfied that the subsistence needs of tribal members had first been met.

This is the "specter" of tribal commercial fishing? Not in my book.

And, anyone interested in knowing the truth would discover that the tribes issued no—that is none—commercial harvest permits this season. Not one. The so-called "specter" is itself a ghostly image of an imagined reality.

Why, then, would the *Outdoor News* want to frighten folks when nothing has happened? I guess the answer lies in the columnist's other conclusion: "But in Minnesota 'commercial' —just the word—raises eyebrows."

Now I was getting the picture. It's not whether a few tribal members might sell a few fish. Rather, it's simply enough to use the term *commercial* for Chicken Little to sound the alarm and for Minnesotans to be afraid of a collapsing walleye stock and plummeting profits for the Mille Lacs Lake tourism industry.

Again, I had to wonder. If the "commercial fishing label," as the columnist coined it, would itself cause such catastrophic results, why would anyone want to bring so much public attention to it, particularly when the sale of fish remains a theoretical possibility rather than an actuality?

Fear mongering! We saw it in Wisconsin in the 1980's over tribal spearfishing. Predictions of the Indians taking all of the fish, of empty lakes for the anglers, and of ultimate economic disaster for anyone and everyone associated with fishing, hunting or trapping in Wisconsin. Doom and gloom! The sky is falling!

The truth? None of that happened. After nearly twenty years of treaty fishing in Wisconsin, there's plenty of fish for all; tourism remains *the* vital Northern Wisconsin industry, and land values are high and ever-rising (and, yes, particularly on the very lakes where tribal members spear!). The fishery is healthy, and spearing has not harmed the resource or the economy.

But, unfortunately, what did happen is that the "sky-is-falling" rhetoric fomented threats, violence and racism. Don't just take my word for it. Check out the federal court decisions documenting what happened at Northern Wisconsin's boat landings. In the end, the only catastrophe was the damage to the social and spiritual fabric of Wisconsin's communities—neighbor to neighbor, person to person.

Don't think what happened at Wisconsin's boat landings didn't go unnoticed, either. "War in the woods" publicity reminiscent of reporting on the Mississippi civil rights movement was generated nationally, including in magazines such as *Newsweek* and on shows like NPR's *Weekend Morning Edition*.

Quite the image for Northern Wisconsin's communities! Is this what Minnesota now wants?

Be careful Minnesota, the signs are there. Harassment of tribal fishermen on Mille Lacs Lake has started. Nails were spread on the Cedar Creek landing this spring, targeted at tribal members launching their boats. And, there were several reports of nasty verbal harassment along the Mille Lacs shoreline.

It's time to nip these antics in the bud, Minnesota, before they blossom into what we saw in Wisconsin.

It is regrettable that we might expect this type of fear mongering from outdoor writers for a hunting and fishing periodical. But what particularly troubles me, and what truly is foreboding, is that Minnesota's highest ranking natural resources official has joined in.

The May 3 issue of the *Mille Lacs Messenger* reported Minnesota's DNR Commissioner Gene Merriam's statement—"I personally feel it is abhorrent when a sports fishery is commercialized"—at a fund-raising event sponsored by Proper Economic Resource Management (PERM) in Wahkon, Minnesota. For starters, Mille Lacs does not have just a sports fishery; it is a mixed fishery lake.

Mr. Merriam, sounding like the Godfather of Hollywood fame, further remarked that the tribes allowing commercial fishing could "be made an offer that they can't refuse." What role does Mr. Merriam wish to play—Mafia Don or diplomat? Hit man or resource manager?

Let's also not forget that semantics get tricky. The Mille Lacs fishery was commercialized long before today's Indian netting appeared.

The bottom line—whether it's catch and release, or catch and eat—the sport fishing industry produces revenue by marketing the opportunity just to put a line in the water, let alone catch a fish.

Take a trip to any of the sports shows and witness the coliseum-sized extravaganzas of commercialism and profiteering! A virtually endless array of fishing paraphernalia and services hawking for the fishing public's dollar —resorts, boat and motor dealers, fishing tackle and gear manufacturers, fishing charter and guide services, and purveyors of the latest high-tech fish locators. That's what I would call a commercial fishery!

But, my goodness, if an "offer that can't be refused" is on its way just because of the word *commercial*, Minnesotans beware! You will have to foot the bill—in tax dollars and in community image—should your neighbors and government officials resort to intimidation and harassment of tribal members who just want to harvest some fish. Millions were spent in Wisconsin on law enforcement against boat landing protesters and more recently in Minnesota in pursuing a court battle that the state was destined to lose.

So, in reply to those who say that a "commercial fishery label" will damage the Mille Lacs fishery and tourism industry, I say—Nonsense! Labels don't damage fisheries. Mismanagement, habitat degradation, exotic species and the like do. These are the things that we—all of us who want a healthy, sustainable Mille Lacs fishery—must protect against.

The focus should be on real facts, not speculation. What about the *fact*, not the theoretical possibility, that Minnesota anglers exceeded their walleye quota for Mille Lacs Lake last year? The tribes were so concerned about this fact that they allowed the State to apply last year's leftover tribal walleye quota to the State's overharvest.

Let's keep perspective here. "Sport" fishing is about fun, family tradition, and yes, dollars too. "Tribal" fishing is about subsistence, cultural tradition and perhaps someday, a few dollars to a few tribal members. And, for either fishing, it's the health and sustainability of the resource that matters.

Tribal members are primarily interested in feeding their families and nourishing the spirits of those who have walked on and those who are still coming.

It would be better for everyone if the Chicken Littles stopped needlessly predicting disaster. The sky isn't falling on Mille Lacs Lake, and, by the look of the spring population assessments, the walleyes still abound for you and even for me.

Tribes want DNR chief out after apartheid remark

By Dane Smith, Star Tribune

Minneapolis, Minn.—The leaders of eight Minnesota tribal bands called for the resignation of Department of Natural Resource Commissioner Gene Merriam, citing his use of the word "apartheid" in reference to treaties that give special hunting and fishing rights to Indian tribes.

In a letter to Gov. Tim Pawlenty, the leaders criticized Merriam for attending a fundraiser for a group opposed to treaty rights, for displaying "obvious bias" against those rights and for making several statements that suggest he will not be an "impartial referee" in disputes between tribes and opponents of their treaty privileges.

Pawlenty and Merriam later released statements apologizing for the use of the word "apartheid" but a spokesman for Pawlenty said Merriam will not resign.

Merriam's comments "were unfortunate and did not reflect the policy of my administration," Pawlenty said, adding that Merriam "will act quickly to ensure that these regrettable comments do not damage the relationship that DNR has with the tribes."

In a separate statement, Merriam offered his "most sincere apology for recent comments that were hurtful to Minnesota's Native American tribes. I fully respect and recognize the importance of their treaty rights."

At a fundraiser

The controversy arose from quotes attributed to Merriam in two publications —the *Outdoor News* and the *Mille Lacs Messenger*—in connection with a fundraiser for Proper Economic Resource Management, a sportsmen's group that has sought to end privileges that it contends are unfair to non-Indians and harmful to fish populations. The event was held in Wahkon, on the south shore of Lake Mille Lacs on April 27.

Tension between the Mille Lacs tribe and non-Indian groups, primarily over the tribe's rights to spear fish and its higher limits for walleye, have festered for more than a decade and have resulted occasionally in violence and vandalism.

The May 2 issue of *Outdoor News* quoted Merriam as saying, "I think that any system of apartheid based on race is inherently misdirected," in response to a question about the fairness of different rules for Indians and non-Indians.

The *Outdoor News* also noted that Merriam 10 years ago as a state senator took a position against the Mille Lacs band, voting not to accept a proposed settlement of the fishing rights dispute.

The publication also quotes Merriam as saying after the event that his comments did not reflect official DNR policy. "I was thinking aloud about where I would personally come from. Before I would say the DNR would support this I'd need to have a conversation with the governor."

The use of the word "apartheid," usually used to describe the history of white supremacist laws and oppression of blacks in South Africa, drew the strongest reaction in the tribal leaders' letter. "Comparing the legal exercise of treaty rights with one of history's most brutal and racist systems of government is outrageous and should be condemned by all Minnesotans," the letter says.

Pawlenty in his statement essentially agreed with that point. "Apartheid, or segregation based on race, is an abhorrent chapter in human history. The special hunting and fishing privileges enjoyed by Native Americans in Minnesota are the result of legal rights granted to them. . . . Decisions by our legal system should be respected by all Minnesotans," he said.

(See Tribes want DNR chief out, page 7)

The traditional diet & American Indian health

By Dr. Peter Hanson, MD
University of Wisconsin Medical School

Mewinzha jibwaa gii-pidagoshinoog Gichi-Mookomaanag omaa
(Long ago before those white men arrived here)
gete-Anishinaabeg apane gii-babaanandowaabandamowaad
(the old time Indians always looked)
wiisiniwin endaso-giizhik.
(for food every day.)

Gakina gegoo gaa-mijiiwaad gii-onjibaamagad omaa akiing gemma gaye nibikaang.
(Everything they ate came from the earth or from the waters.)

Mii apii niibing ogii-debinaawaan giigooyag
(When it was summer, they caught fish,)
gii-mawinzowag, gaye ogii-asiginaawaan anooj ojibikanan.
(they picked berries, and they gathered various roots.)

Apii dagwaaging gii-manoomikewag gaye gii-giiwasewag.
(In fall they made wild rice, and they hunted.)

Biiboong gii-wani'igewag gaye gii-akwa'wawag.
(In winter they trapped, and they speared fish.)

Dash gakina awiiya gii-mino-inamajani'owag, gii-eta-wiinowag
(And so everyone did feel well, and some did get a little fat,)
aanawi ingoding aabita biboong ogii-maneziwag wiisiniwin
(but sometimes in middle of winter they ran short of food,)
gii bakadewag gaye gii bakaakadozowag biinish igo ani-ziigwang
(and they were hungry and became thin until spring came)
dash apii da-maaji-nandawenjigewaad miinawaa.
(when they could go looking for food again.)

Mii dash gaa-abaajitoonaawaa owiininaanig apii da-bimaamiziwaad
(And thus they used their fat to live when they)
ogii-maneziwag wiisinan.
(were short of food.)

Naagaj Anishinaabeg gii-maajii-adaawagewag anooj
(Later those Indians started buying various)
gichi-mookoman wiisiniwinan.
(white man foods.)

Ogii-maajitaawaad miijiwaad "niiwo-waabishkinan wiisiniwinan":
(They started to eat those "four white foods" :)
baasizid-bakwezhigan, waabishki- biimide, zinziibaakwaad gaye zhiiwitaagen.
(white flour) (white lard) (white sugar) (and salt.)

Gomapii niibowa Anishinaabeg gii-maaji-wiininowag
(After some time many Indians started to get fat,)
gii-mazhiiwaabidewag, moozhag gii-maaji-aakoziwaadiziwag.
(they had bad teeth, and often they became sick.)

Mii dash gaye gii-maaji-zinziibakwaadowaapinewag.
(And then they started to get diabetes.)

Noongom gi gichi-gikendaamin iniw waabishki-wiisiniwinan
(Now we really know those white foods)
gaawiin-onizhishisiinoon. Miinawaa gigikendaamin gishpin
(are not good.) (Also we know if)
wii-minwamanjioyaang gaye da minoayaayaang
(we want to feel good and be well,)
gidaa-minwanjigemin apane dibishkoo ingiw gete-anishinaabeg
(we should always eat properly like the old time Indians.)

Mii iw.
(It' s done for now.)

Gathering manoomin (wild rice) on the Fond du Lac Reservation. (Staff photo)

The hunter-gatherer diet

This story highlights the conclusions of many anthropologists who have analyzed the seasonal diet and nutritional status of various indigenous hunter-gatherer groups and the adverse impact of adopting the "western diet."

We know that the diet of most nomadic hunter-gatherer groups in the North American continent was high in protein from wild game meat and low in refined carbohydrates. Fat from game was also consumed, but the composition of the fat was mainly in the unsaturated form. The diet was high in natural fiber and calcium (from bone) and micro-nutrients from plant stems, roots and berries. Table 1 shows a comparison of the hunter-gatherer diet versus our contemporary "western diet."

Table 1 Characteristics of the Hunter-Gatherer Diet (intake versus the modern urban diet)

- Protein: about 3x greater—primarily lean wild game and fish
- Fat: about 1/2 and mostly unsaturated fat
- Carbohydrate: much less—mainly of complex form, from seeds, wild rice, nuts, roots, tubers
- Fiber: much greater—also from native plants, roots, seeds
- Calcium: about 2 x greater—from bones and meat
- Sodium: much less—probably 1/4
- Micronutrients (minerals and vitamins): possibly 2–3x greater—also from native plants, animals, mineral springs

The "thrifty gene"

The balance of seasonal "feast vs. famine" and the survival of the hunter-gatherer societies is of particular interest. When food was plentiful, extra calories were stored as body fat. A moderate amount of body fat storage would then serve as a source of body energy during periods of food scarcity. Stored body fat has a high calorie value and is easily taken up and used by muscle and other organs where it is completely "burned" and eliminated as carbon dioxide and water.

This cycle of fat storage and usage has been named the "thrifty genotype" indicating that those hunter-gatherer groups who successfully stored fat for use during periods of starvation had developed a genetic advantage for survival over an estimated period of 10,000 years.

Fast forward to 1900s and the era of broken treaties, land loss, alcohol, and boarding schools. The descendants of the "thrifty-gene" survivors are now consuming a very different diet loaded with refined carbohydrates, lard, sugar, and salt. And they no longer work hard in food gathering and preparation and related daily activities. So their "thrifty gene" continues to store fat for the anticipated starvation period, and permanent obesity replaces temporary "survival fatness."

Excess body fat & the "metabolic syndrome"

For many years the accumulation of excess body fat was thought to be harmless. But we now know that excess fat can decrease the sensitivity of body tissues to insulin. This slows the rate that blood sugar is used in the body which results in "type 2 diabetes." Excess fat can also cause a low grade "inflammation" state throughout the body which contributes to the injury and eventual blockage of blood vessels in the heart, legs and neck.

Recently, the Surgeon General and many medical organizations have issued warnings about a condition called the "metabolic syndrome" which develops in many persons who carry excess body fat (especially in the belly). They develop type 2 diabetes, high blood pressure, increased cholesterol levels and have heart attacks at an early age.

Unfortunately, the "metabolic syndrome" has come to roost throughout Indian Country and some of the highest rates of obesity and diabetes (20 to 50% of adults) are found in tribes ranging from the Pima in Arizona to the Oji-Cree of northern Ontario. Even Aboriginal peoples in Australia who adopt a more western diet are now showing evidence of borderline diabetes.

(See Return to the traditional diet, page 22)

Near optimal conditions boost Mille Lacs walleye tagging efforts

By Joe Dan Rose
Inland Fisheries Biologist

Mille Lacs Lake, Minn.—On the evening of Monday, April 21, 2003, fisheries assessment crews from the Great Lakes Indian Fish & Wildlife Commission (GLIFWC), US Fish & Wildlife Service (USFWS), and Fond du Lac Band (FDL) slipped their electrofishing survey boats into the icy waters of Mille Lacs Lake to resume walleye tagging operations started there last year.

Little did they know that they would be greeted by stable weather and nearly ideal working conditions throughout most of their two week tour of duty on this 132,516 acre, mixed-fishery lake in the 1837 ceded territory of Minnesota.

This joint mark-and-recapture walleye tagging study was initiated in 2002 by state and tribal biologists to provide an independent estimate of walleye abundance to supplement ongoing state and tribal walleye population modeling efforts. Biologists also hope the study will yield valuable information about the seasonal movements and distribution of adult walleye throughout the waters of Mille Lacs Lake.

Last spring, over 12,000 adult walleye in Mille Lacs Lake were captured, tagged and released by electrofishing crews from GLIFWC, USFWS, FDL, and the St. Croix Band. These fish represented approximately 59% of those that were tagged prior to the 2002 state fishing opener.

This was a monumental task and accomplishment in light of the cold temperatures and extremely windy conditions that were experienced by these crews nearly every night last spring.

As planning and preparations were being made for the spring 2003 tagging study, tribal biologists and electrofishing crews knew that more favorable weather and lake conditions would allow them to tag significantly higher numbers of fish than they were able to last spring.

They also knew that the lake itself would ultimately dictate if and where the crews would be able to work on any given night. Data collection procedures associated with tagging operations were also streamlined in an effort to reduce the amount of time spent working-up fish, thus allowing more time to be spent collecting fish to be tagged.

Like most fishermen, tribal electrofishing crews like to catch fish. The crews take a great deal of pride in the quality of their work and strive to be as productive as possible, even when conditions are less than ideal.

In stark contrast to the wild weather that was experienced last spring, a stable weather pattern highlighted by moderate temperatures and light breezes allowed the crews to work from dusk to dawn on many nights during the spring of 2003. These conditions allowed the crews to tag more fish in less time than they did last year.

A preliminary summary of the contribution made by these electrofishing crews indicates that they tagged and released approximately 20,090 new (not previously tagged) fish during a thirteen day period from April 21 to May 3, 2003. An additional 3,956 recaptured (previously tagged) fish were collected and released by the crews.

Of the 24,046 adult walleye that were collected this spring by GLIFWC, USFWS, and FDL electrofishing crews, approximately 84% were new fish and 16% were recaptures.

All data collected in conjunction with these tagging operations will be compiled and entered into computer files for analysis. Minnesota Department of Natural Resources and GLIFWC will exchange tagging data from spring 2003 as these tasks are completed.

Year 2 (2003) results from the tagging study will be used by state and tribal biologists in combination with their ongoing walleye population modeling efforts to determine 2004 harvestable surplus levels for this important, ceded-territory lake.

Phil Doepke, GLIFWC inland fisheries biologist, and David Stone, electrofishing crew member, prepare for a night of walleye population assessment on Wisconsin's Siskiwit Lake in Bayfield County. Electroshocking boats from GLIFWC, U.S. Fish & Wildlife Service, the St. Croix Band and the Mole Lake Band surveyed fifteen lakes in Wisconsin and two in Michigan this spring. (Photo by Sue Erickson)

Bill Soulier and Dale Corbine, GLIFWC electrofishing crew, man the dip nets on a U.S. Fish & Wildlife Service (USFWS) electrofishing boat captained by David Wedan of the USFWS LaCrosse Fishery Resource Office. The boat and crew participated in the spring walleye tagging study on Mille Lacs Lake. (Photo by Sue Erickson)

Public's help sought to track and stop spread of fish parasite

Woodruff, Wis.—With the recent discovery of a nonnative fish parasite in two more northern lakes, state fisheries biologists are encouraging fishermen to take steps to help track and stop the spread of the parasite.

The parasite, Heterosporis, doesn't seem to directly kill the fish, but causes white, opaque areas in the fish muscle tissue that makes the fillet appear cooked or freezer burned. There's no evidence that Heterosporis can infect people, but many people who catch an infected fish choose not to eat it because of the changes in the fillet's texture and quality.

Heterosporis has been found in four lakes outside the Eagle River chain since it was first discovered in that chain in 2000, including Big Arbor Vitae in Vilas County and Echo Lake in Oneida County, the lakes most recently diagnosed with the parasite.

"This spring additional yellow perch samples were collected from about 30 waters to see whether Heterosporis has spread from those two lakes to surrounding waters, but we need the public's help too," says Wes Jahns, the Department of Natural Resources (DNR) fisheries technician who will be coordinating the sampling.

"Fishermen who encounter a fish whose fillet appears to be infected with Heterosporis can place the fish in a plastic bag and keep it cool but not frozen, and call their local DNR office or contact the Woodruff Service Center at 715-356-5211."

Even more importantly, people can take simple steps to help prevent the pathogen from spreading, particularly when they are fishing waters where the parasite has been detected, Jahns says.

These steps are:

☒ Do not throw infected fish back into a lake or other natural water body. Instead, place the fish in the garbage, burn them or bury them.

☒ Thoroughly dry all equipment (outside of boats and trailers, nets, boots, etc.) when moving from one waterbody to another. Heterosporis can survive under moist conditions, but is vulnerable to dry conditions.

☒ Drain all live wells and bilges away from lakes and rivers, on soil if possible so the water does not run into a natural water body. Because it is difficult to dry live wells and bilges completely, these areas can be disinfected with a bleach solution of one cup bleach in five gallons of water.

Since its initial discovery in yellow perch in the Eagle River Chain of Lakes in 2000, the parasite has been found in more lakes and more species of fish, although at a much lower level than in yellow perch. Testing has revealed Heterosporis' presence in:

⇨ walleye, burbot and sculpin from Catfish Lake in Wisconsin's Eagle River chain;

⇨ yellow perch in Lac Vieux Desert in Vilas County;

⇨ yellow perch in Robinson Lake in Vilas and Forest counties;

⇨ yellow perch in Big Arbor Vitae in Vilas County;

⇨ yellow perch in Echo Lake in the Sugar Camp Chain in Oneida County;

⇨ yellow perch, walleye, and one northern pike in several lakes in Minnesota; and

⇨ yellow perch from the Bay of Quinte in Lake Ontario.

Sampling is planned this spring on lakes including Lac Vieux Desert, Big Arbor Vitae, Echo, Laura, Carroll, Dam, Sand, Little Arbor Vitae, and Madeline, Jahns says. "These are top priority for sampling because these are lakes, or chains, where Heterosporis has been confirmed in a sample brought in by the public, or suspected, but we have not documented it in our sampling."

The remainder of the lakes to be sampled are those that DNR fish crews are already planning to be working this spring, either to conduct population surveys or collect eggs.

*(Reprinted from the Wisconsin **DNR News & Outdoor Report**, April 2003)*

Bad River hatchery nearly doubles egg production

By Barbara Sanchez
Northland College Intern

Odanah, Wis—Spring of 2003 was a record year for the Raymond Couture Fish Hatchery of Bad River (formerly known as the Bad River Fish Hatchery). Yielding 179 quarts of eggs, approximately 28 million eggs, compared to last year's 97 quarts, egg harvesting has nearly doubled.

"This year we have a new ultraviolet (UV) sterilizer that sterilizes our water before it comes through [the hatchery]," revealed Hatchery Manager Ed Leoso. The $2,000 plus investment was expected, according to Leoso, to increase production by at least 10-20%.

The UV sterilizer reduces the amount of bacteria in the water to stave off fungus infecting the eggs and reduces clumping in the eggs.

Bad River's water normally contains eight fungal colonies per 100 milliliters (ml) of water, but after sterilization had zero. Turbulence due to flooding increased the number of fungal colonies to 100 per 100 ml of water this spring. The UV sterilizer reduced the infection to eight colonies per 100 ml, significantly improving the hatchery's water quality, said Tom Doolittle, Bad River Wildlife/Fisheries Specialist.

With an average survival rate of their eggs being 45-50%, the Kakagon River and Bad River welcomes the addition of more fish. The hatchery has already stocked 14 million walleye fry into the Kakagon River and one million fry into the Bad River. About 300,000 fry are being reared to fingerling size in two rearing ponds. Those fingerlings will also be stocked into the Bad and Kakagon Rivers.

All in all, Leoso and hatchery crew are optimistic about their efforts to maintain the walleye population in the Kakagon and Bad Rivers, with the end goal to provide fish for future generations.

Tom Houle, hatchery crew member, carefully tends eggs collected by Bad River's Raymond Couture Fish Hatchery staff this spring. (Photo by Barbara Sanchez)

Stocking Michigan lakes

(Continued from page 1)

back into Lac Vieux Desert, a majority of the fish will spend the summer in rearing ponds located on the tribe's golf course north of Watersmeet where they'll be fed a diet of soy flour, and later, minnows, Williams said.

"Most of the walleye will be raised into fingerlings [three to five inches] and released into lakes this fall," Williams said. "Lac Vieux Desert, Marion Lake and some others we normally harvest will receive fish."

LVD Maintenance Director Dick Caudill and his staff are planning to install a new hatchery well this summer, eliminating the need to pipe water in from the pow wow grounds.

Cole Belongie, LVD environmental officer (left), and Dick Caudill, LVD director of maintenance, inspect the fish hatchery prior to the walleye hatch. (Photo by Charlie Otto Rasmussen)

St. Croix hatchery stocks lakes used for spearing

By Sue Erickson
Staff Writer

St. Croix, Wis.—Beth Greiff, fisheries biologist and hatchery manager for the St. Croix Band, has been spending most of her time this spring "babysitting" fragile walleye eggs and the tiny fry as they hatch. As hatchery personnel well know, it doesn't take much to lose a whole batch of eggs, so careful observation is a must.

Grieff and her crew gathered 21.7 liters of walleye eggs from Big Round Lake walleye this spring. That translates into 2.9 million eggs, which were subsequently fertilized and placed into Bell jars to incubate. This will be the hatchery's fourteenth successful hatch.

Once hatched, ten percent of the fry, or about 292,000, are stocked back into Big Round Lake as fry, Greiff says. The remainder go into the tribe's two rearing ponds and are raised to fingerling size.

The hatchery crew spends most of July harvesting the fingerlings, which are stocked into lakes used by the St. Croix Band during the spring spearing season.

St. Croix Hatchery Manager Beth Greiff carefully handles the first walleye eggs harvested this season from Big Round Lake walleye. The hatchery collected, fertilized and hatched 2.9 million eggs in all this spring. (Photo by Sue Erickson)

Tribes harvest nearly 70% of quota this spring

(Continued from page 1)

on the Cedar Creek landing, White reports. They were cleaned up, and none were found again.

GLIFWC creel crews and enforcement personnel monitored the season at Cedar Creek, North Garrison and South Garrison primarily, although some fishing did occur from the Wealthwood landing.

GLIFWC's creel clerks also worked with Mille Lacs Band wardens to monitor Mille Lacs' on reservation landings. Fond du Lac provided their own creel and enforcement staff. Monitoring teams were able to efficiently process permits and creel the catches as they came in.

For GLIFWC the mechanics of monitoring the season ran with few glitches. For the first year, landings were open earlier, by 3:00 p.m., for tribal members to obtain permits. Rose feels this helped reduce congestion at the landings and allowed sufficient time for fishermen to disperse harvest effort over a larger area of the lake. The harvest was primarily by net with some spearing activity.

GLIFWC Warden Vern Stone says he heard few complaints from tribal members, outside of one net damaged possibly by ice or vandalism.

Preliminary totals for pounds of walleye harvested by each band as of May 7, 2003 were as follows:

Band	Quota	Harvest
Bad River	7,143	5,670
Fond du Lac	16,143	14,596
Lac Courte Oreilles	7,143	5,896
Lac du Flambeau	7,143	7,027
Mille Lacs	34,999	19,894
Mole Lake	7,143	2,708
Red Cliff	6,643	4,102
St. Croix	14,643	7,856
Total Combined	**100,000**	**67,749**

The average net lifted during the season held 43.6 pounds of walleye. Several substantial lifts, over 100 pounds per net, occurred on a couple days early in the season. In 2003 it seems the old saying about "early birds" held true.

Women, water, a copper pail, & a message: We must protect nibi (water)

By Sue Erickson
Staff Writer

Odanah, Wis.—Whipped by a stiff, spring breeze and the sudden gusts from high-speed, passing traffic, two walkers proceeded steadily eastward along Highway 2 heading from Ashland, Wisconsin toward Duluth, Minnesota on April 22, Earth Day.

They presented an unexpected image along the busy, northern thoroughfare—an elderly woman, her head wrapped in white headscarf, carrying a shiny copper pail and a young man carrying a staff decorated with eagle feathers.

Not far down the road, a support vehicle with a flashing light on top and American flag attached on back waited. It was manned by Thecla Negamegijig, Thunder Bay, Ontario. She explains that the walkers represent the First Annual Women's Water Walk, which began Monday, April 21 at the Bad River reservation.

The walkers are Josephine Mandamin, Thunder Bay, Ontario, and Mario Waasaykeesic, Popular River, Ontario. Their message is about nibi (water).

In the Ojibwe tradition, she says, women are the keepers of the water, responsible for keeping it clean and keeping it plentiful. The walk was organized to promote awareness of the need to protect water for ourselves, our children and generations to come. "We are thinking about seven generations to come. We are bringing back our teachings and traditions and applying them today," Negamegijig says.

According to Sue Nichols, Three Fires Society member, men and women are both given equal responsibilities. Men are responsible for the fire and women for the water. "This relates to women's ability to give life as our Mother, the Earth, gives life," she says.

Mandamin's attention to a potential water crisis came about two years ago during a Sun Dance ceremony. An Anishinaabe elder there had warned that in years to come "an ounce of drinking water will cost the same as an ounce of gold" if humanity continues to neglect this precious, life-sustaining resource.

Compelled to act, Mandamin found support among Anishinaabe-kwewag (Ojibwe women) and designed the Women's Water Walk around Lake Superior in 2003, carrying symbolically the copper bucket of Lake Superior water throughout the 1,000-mile trek.

For the Ojibwe, the use of copper is also significant. Copper was one of the first metals used by our Ojibwe ancestors, Nichols says. Today copper water vessels are used during ceremonies. Mandamin's copper bucket provides another tie to the Ojibwe culture and traditional teachings.

The walkers hope to educate as they go and spur more efforts toward water conservation and protection. While water protection issues often become encumbered in lengthy legal and political processes, the walkers urge even simple, down home caretaking—like not running the dishwasher or washing machine unless full, recycling and community cleanliness. They promote individual responsibility and an awareness of the impact our own use may have on the water resource.

While the core group of walkers and supporters are from Canada, they chose the Bad River reservation as a place to start and end the walk because, according to Ojibwe teaching, the Ojibwe migration from the east had ended there along the southern shore of Gichigami (Lake Superior).

The walkers were welcomed by members of the Three Fires Society on the Bad River reservation and also given a pipe ceremony at the onset of the walk by Robert Powless Sr. as well as a drum song (a walking song) by Jerome and Dan Powless, Bad River tribal members.

Walkers anticipate ending where they began at the Bad River reservation on May 26, several weeks ahead of schedule. Persons interested in the walk can contact them at (807) 623-4811 or e-mail to Annmetan@tbaytel.net. The Women's Water Walk website address is: tbaytel.net/aoskine

Mario Waasaykeesic and Josephine Mandamin, both of Ontario, begin a Water Walk around Lake Superior at the Bad River Reservation. (Photos by Sue Nichols)

2003 International Year of Fresh Water

"Coastal pollution, loss of coral reefs, the struggle to maintain biodiversity—these challenging natural resource issues and many others faced across the world today are strongly linked to the interaction between land and water. The management and understanding of land, freshwater, and marine systems are essential to effectively deal with these problems. These situations, in addition to current estimates that by 2005, two-thirds of the world's population will be living with serious water shortages or almost no water at all, led the United Nations to designate 2003 as the International Year of Fresh Water."

—Minnesota Sea Grant, Seiche, March 2003

Tribes want DNR chief out after apartheid remark

(Continued from page 3)

Merriam's claim in the newspaper articles that his comments were personal and not necessarily reflective of the Pawlenty administration's policy was insufficient, the tribal leaders wrote.

Randy Thompson, an attorney for Proper Economic Resource Management (PERM), said "apartheid" was "not a term I personally would use" but that it was unfair for the tribal leaders to accuse Merriam of bias.

"He supports some of the positions of PERM and the hunting and angling folks, but I don't think he supports every position. Nor do I think he supports everything the band is about," Thompson said.

Signers of the letter include eight of 11 tribal leaders. They were: Melanie Benjamin, chief executive of the Mille Lacs Band of Ojibwe; Stanley Crooks, chairman of the Shakopee Mdewakanton Sioux Community; Gary Donald, chairman of the Bois Forte Band of Chippewa Indians; Tom Ross, council member of the Upper Sioux Community; Audrey Bennett, president of the Prairie Island Community; Norman Deschampe, chairman of the Grand Portage Band of Chippewa Indians; Ann Larsen, president of the Lower Sioux Indian Community; and Peter White, chairman of the Leech Lake Band of Chippewa Indians.

The tribal leaders could not be reached for comment after the apologies were issued.

The tribes' main concern recently has not been fishing rights, but rather the House Republican majority's proposal to expand casino gambling to the Canterbury Park racetrack in return for state revenue from that operation. That proposal is seen as a major infringement on the tribes' current monopoly over casino gaming.

White, of the Leech Lake band, said before the Pawlenty and Merriam statements were issued that the tribes were "not intentionally trying to make [Merriam's comments] a political issue. Obviously the tribes take this very seriously. [Merriam] should understand what the treaties are all about."

(Reprinted with permission from the Star-Tribune.)

Miigwech nibi

Giving thanks to the water and water beings

By Sue Erickson, Staff Writer

Odanah, Wis.—As the earth's waterways unthaw in the spring and the lakes break free of their icy covering, it is traditionally a signal of an important time for Ojibwe people—a time to harvest fish. But the break-up of the ice also tells that is a time to give thanks to the water as a life-giver and for the gifts of the water beings.

At the Bad River reservation, a small group of women gathered at the shore of the Bad River in early spring for a water ceremony, feasting the water in observance of their traditional ways.

This ceremony is done by women, as keepers of the water, but is open to all in the community, says Sue Nichols, Bad River tribal member. "We prepare a feast to give thanksgiving to the water spirits and make offerings to those spirits for all that they give and continue to give. The offerings represent the four seasons, the water, our grandparents, our parents, our children and those who are yet unborn," she explains. "In preparing for the ceremony we think and care about all these generations and extend that caring to seven generations yet to come."

The ceremony is at once a prayer of thanksgiving for life that water brings and the sustenance from water beings, such as fish and wild rice. It also includes a prayer for a good harvest and for the safety of the people on the water.

"We recognize the power of water, not only as a life-giver, but also as one that can take life," Nichols explains, "and so we think of the safety of those who go out on the lakes and rivers in the springtime as well."

Nichols, along with Essie Leoso, Robin Powless, and Annie Maday were joined by Bad River hatchery staff for this quiet, but important ceremony, one which was likely observed on many other Ojibwe reservations as the ice turned over on ceded territory lakes.

Keeping tabs on lake sturgeon

By Sue Erickson
Staff Writer

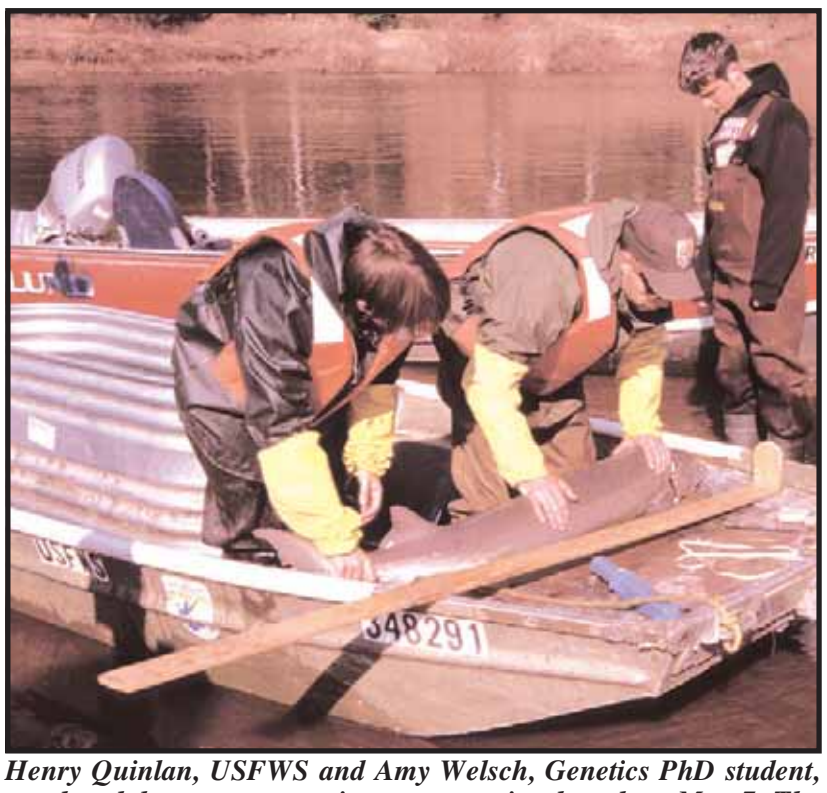
Odanah, Wis.—Once the ice cracks and moves out from lakes and rivers, a whirlwind of activity for Great Lakes Indian Fish & Wildlife Commission (GLIFWC) fisheries personnel also breaks loose. This is true for GLIFWC's inland fisheries staff involved with spring walleye population estimates and for the Great Lakes fisheries crew. Their destinations, however, are out on Lake Superior for lake trout assessments and to the big lake's tributaries for lamprey trapping and lake sturgeon assessments.

The lamprey eel and lake sturgeon work is performed in cooperation with the U.S. Fish & Wildlife Service (USFWS) and the Bad River Natural Resources Department. GLIFWC and Bad River crews assisted USFWS with the capture of lake sturgeon migrating up the White and Bad Rivers this spring. This is the fifth season GLIFWC has worked with the project, according to Great Lakes Fisheries Section Leader Bill Mattes.

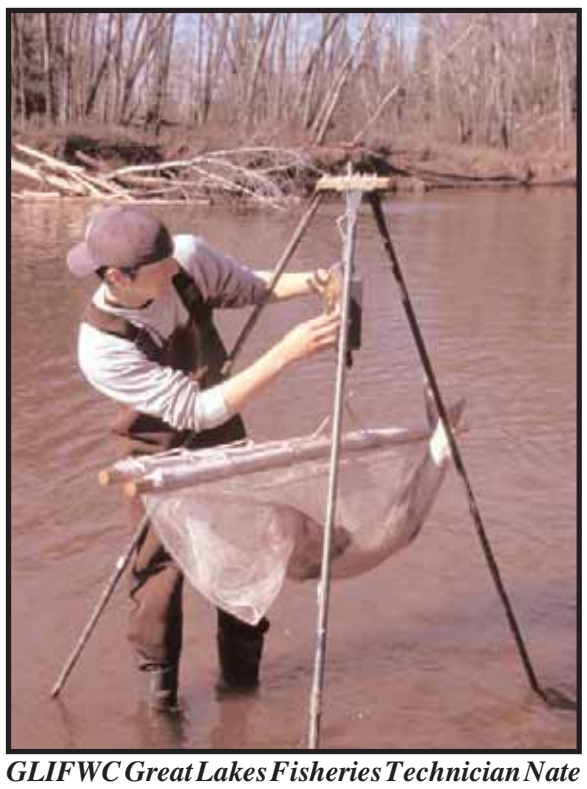
The study, supervised by USFWS Fisheries Biologist Henry Quinlan, uses "mark and recapture" methodology to obtain a population estimate of adult, spawning lake sturgeon, a species whose numbers seriously declined in the 20th century due to over harvest and habitat degradation.

The lake sturgeon study in the Bad River is in its tenth season. It's objective is to describe the characteristics of the Bad River spawning population and abundance of fish, Quinlan says. Bad River and GLIFWC have also done assessments on young of the year and juvenile lake sturgeon at the mouth of the Bad River. White River studies began in 2001.

This year the USFWS will also be working in conjunction with Canadian agencies to study lake sturgeon in the Pic River, Michipocten River, Black River, Little Black River and the White River in Canada. Quinlan says little is known about the Canadian lake sturgeon population, and these studies will be part of a genetic project to describe spawning stocks throughout the Great Lakes. The work on the Bad River lake sturgeon population will be incorporated into this project.



Henry Quinlan, USFWS and Amy Welsch, Genetics PhD student, steady a lake sturgeon against a measuring board on May 7. The sturgeon was netted and examined in the Bad River as part of a cooperative long term study undertaken by Bad River, GLIFWC and federal fisheries biologists. (Photo by Charlie Otto Rasmussen)



GLIFWC Great Lakes Fisheries Technician Nate Bigboy weighs a sturgeon captured in the Bad River this past spring as fish moved between Lake Superior and Bad River Falls to spawn. (Photo by Charlie Otto Rasmussen)

Valued for their eggs, which are used for caviar, the hunt for female sturgeon seriously diminished lake sturgeon populations in the United States and abroad, Mattes says. Also, dams on streams and rivers used for spawning have disrupted spawning habitat.

Today, the Bad River is the tributary to Lake Superior boasting the largest spawning lake sturgeon population. Based on estimates, about 250 fish are in the Bad River spawning run. The crews usually capture about 50-100 spawning lake sturgeons in the Bad River, depending on amount of effort. The average capture in the White River is fifteen fish, according to Quinlan. He says the populations appear to be small, but stable.

GLIFWC's Mike Plucinski, Great Lakes fisheries technician, and two summer interns, Ben Michaels and Tiffany Hooper, assisted USFWS's Quinlan, Glen Miller and John Pyatskowit capture, measure and weigh sturgeon. Also, a small clip from the pectoral fin was taken for ageing.

Some were recaptures, which means they have already been tagged both with a Passive Internal Transpector (PIT) tag that is read with a scanner and an external floy tag. The later allows staff to easily determine fish carrying an internal tag. Unmarked fish are marked before being returned to the river.

Lake sturgeons are remarkable, very old fish. They easily live up to 100 years, Mattes says. Also, they do not spawn every year. Females, which reach sexual maturity between 14-23 years, spawn every nine years. Males reach sexual maturity between 8-13 years and spawn every three years.

Studies need to be performed over many years to obtain an overall picture of the spawning population because of the infrequency of their spawning cycle.

While spawning may be infrequent, the female sturgeon produces between 107,000 to 885,000 eggs, Mattes says. The eggs are adhesive, sticking to rocks and logs. Females generally drop their eggs and leave, while the males hang around the spawning grounds.

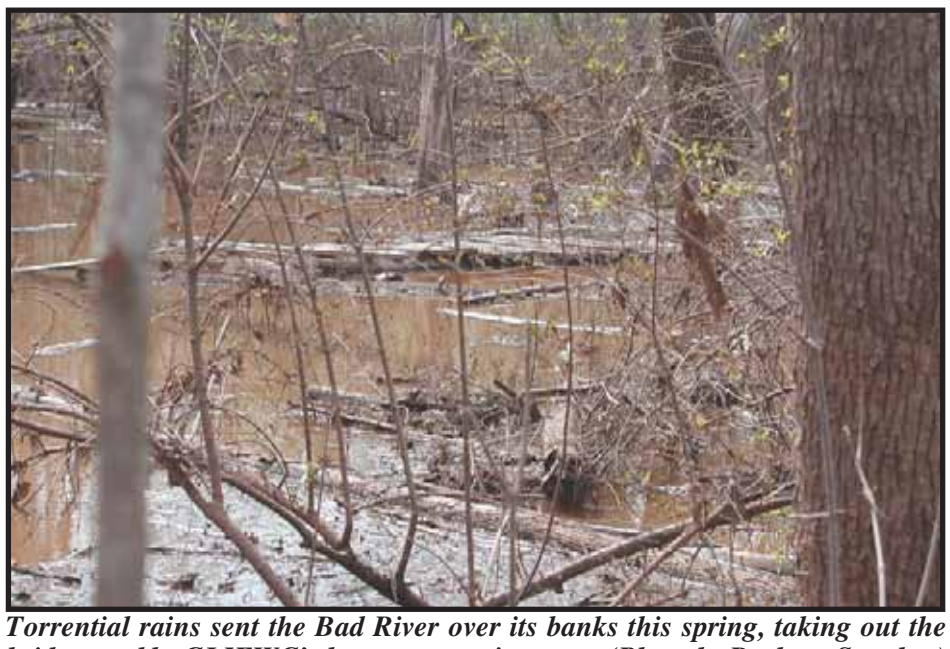
Once hatched, the tiny sturgeon fry are about eight millimeters long. "The young are thought to stay in the Sloughs for about a year before venturing into Lake Superior," Mattes comments. "They grow very fast for the first five years, and then the growth rate slows considerably."

This prehistoric fish, known as name' (pronounced nam ae) in Ojibwemowin, has cartilage, rather than bone, for a backbone and grows up to six feet or more in length.

Flooding foils lamprey trapping endeavors

By Barbara Sanchez
Northland College Intern
& Sue Erickson, Staff Writer

Odanah, Wis.—The torrential rains that swept through the ceded territory mid-May succeeded in disrupting Great Lakes Indian Fish & Widlife Commission's (GLIFWC's) lamprey control efforts, especially on the Bad River. The swollen river flooded its banks, tearing out the bridges used by fisheries crews to reach the river and leaving the fate of the traps unknown for over a week.



Torrential rains sent the Bad River over its banks this spring, taking out the bridge used by GLIFWC's lamprey trapping crew. (Photo by Barbara Sanchez)

Traps set on the Amnicon River were removed by U.S. Fish & Wildlife Service (USFWS) personnel prior to the storm, according to Mike Plucinski, GLIFWC Great Lakes fisheries technician, in anticipation of the flooding river.

Despite the havoc wreaked by Mother Nature, the trapping program was off to a slow start, according to Plucinski. On the Bad River, the crew had only captured six lamprey eel the week before, even though the weather was calm and the river's water temperature right for the migrating lamprey. Last year, the crew caught nearly one thousand lamprey eel in the Bad River by this time, Plucinski says.

Like numerous other fish, the exotic lamprey eel, a vicious predator that has brought devastation to Lake Superior's lake trout population, migrates up river in the spring to spawn. This is when crews working in conjunction with the USFWS Sea Lamprey Control Program set traps to capture and mark the migrating fish as part of mark-and-recapture population assessment.

GLIFWC has worked with the lamprey control program since 1986. In 2003 traps are being set on the Silver, Misery and Firesteel Rivers in Michigan and the Bad, Amnicon, Middle, and Poplar Rivers in Wisconsin. No traps had been set in the Michigan rivers prior to the stormy weekend.

As trapping continues, the number of marked lamprey captured will be tallied in order to arrive at an estimated population figure in these and other streams.

These population estimates are then combined to estimate the lamprey eel population in all of Lake Superior and subsequently for determining the effectiveness of lamprey control efforts.

Like GLIFWC's crew, Red Cliff reported capturing only seven lamprey by mid-May, and the USFWS collected seven from the Chocolay River and sixteen from the Big Garlic River. But it's early in the season.

Meanwhile, some of the initial work will have to be redone. Crews will have to reset traps and rebuild bridges—essentially start over on the project once water levels recede and make the rivers accessible.

Lake trout surveys underway on Gichigami

Ice slows progress in some areas

By Charlie Otto Rasmussen
Staff Writer

Hancock, Mich.—Fisheries managers throughout Lake Superior are conducting annual surveys to track lake trout populations. In lake management unit MI-3 situated north and west of the Keewenaw Peninsula, Great Lakes Indian Fish & Wildlife Commission (GLIFWC) and the Michigan Department of Natural Resources (MiDNR) recently examined 117 lake trout as part of the broad, interagency effort.

With assistance from a commercial fisherman, Gilmore Peterson, GLIFWC and MiDNR personnel netted the fish in 900 feet of water at long-term survey sites.

"We place nets in about the same location each spring where lake trout exist in both high and low densities," explained Bill Mattes, GLIFWC Great Lakes fisheries biologist. "The data we gather is combined with other information taken throughout the year to develop population estimates."

Beyond the nuts-and-bolts information common to fish surveys like length, age and sex, Lake Superior assessments take a close look at the impact of sea lamprey on the fishery.

As individual fish are examined onboard the fishing tug, biologists note scaring where lamprey have either attacked or fed on lake trout. Small areas with no scales on the side of the fish reveal where a lamprey has attacked, Mattes said. Evidence of feeding is more obvious.

From the hold of the fishing tug Three Sons, GLIFWC Biologist Bill Mattes unloads gill nets used in lake trout surveys with Dawn Dupas, Michigan DNR fisheries assistant. (Photo by Charlie Otto Rasmussen)

"You can see a rounded scar with a pit made by the fangs of the lamprey that has attached and drained blood and fluid from the fish," Mattes said. "Sometimes the lamprey will feed along a fish's body and reattach itself in several different places."

Spring assessments in lake management unit MI-2 situated above the far western portion of the Upper Peninsula got off to a slow start as fish managers allowed shifting lake ice to melt.

"The lake had total ice cover for the first time since the mid-1990s and frequent northeast winds packed all that ice into an area from Black River Harbor to the mouth of the Bad River in Wisconsin," Mattes said.

Mattes said updated lake trout abundance data for Lake Superior would be summarized later this summer after researchers have finished the field season.

In addition, sea lamprey wounding data compiled during assessments will be used to estimate lamprey-inflicted mortatlity.

Lake Superior's native lampreys

By Sharon Moen
Reprinted from Sea Grant Seiche

For thousands of years, lamprey have been spawning in Lake Superior's tributaries. Not the notoriously destructive sea lamprey, which joined Superior's lamprey community only about 60 years ago, but three more benign native species—the silver, American brook, and northern brook lampreys. You are unlikely to see these secretive creatures, but if you do, consider yourself lucky to have encountered one of the oldest, more mysterious species in the lake.

Lampreys don't charm most people, but "they clearly have a valuable role in biodiversity and the ecosystem," said Peter Sorensen, professor of fisheries, wildlife, and conservation at the University of Minnesota. "These ancient fish aren't well understood but they are incredibly efficient filter feeders, an extremely important link between the benthos and fish communities, and sensitive to environmental degradation."

Of the three native species, only adult silver lamprey act like sea lamprey by parasitizing other fish. Even so, most experts do not consider silvers especially destructive to fish populations. They prefer catfish and sturgeon, but have been known to prey on northern pike, paddlefish, carp, suckers, and white bass.

Lake Superior's two brook lamprey species are about as horrific as the average minnow. They are not parasitic; in fact, their digestive tracts degenerate and they don't eat anything once they transform into adults.

For most of their lives, lampreys (even the sea lamprey) are almost literally "sticks-in-the-mud." Their lives begin in streams, where their mothers and fathers spawn in shallow nests before dying. Upon hatching, the larvae float downstream until they find an appropriate place, often a muddy pool, to plant themselves for the next three to eight years.

As larval lamprey, they strain microscopic plants, animals, and organic material from the water. Eventually, they morph into adults during late summer or fall.

Earning a living on Lake Superior

Challenges abound for treaty fishermen

By Charlie Otto Rasmussen
Staff Writer

Hancock, Mich.—Less than six weeks after a heart attack that required several emergency resuscitations, Gilmore Peterson was back onboard his fishing tug *Three Sons* for a 12-hour workday on Lake Superior.

"They were short a guy and the lake was pretty calm, so I went along to help," shrugged Peterson who has fished the Keewenaw Bay area for nearly 20 years. Raised into a Gichigami fishing family in Red Cliff, Wisconsin, Peterson brought his wife and children to Hancock in the early 1980s when poor yields and growing competition made for tough fishing in Wisconsin waters.

Gilmore Peterson.

"I came to make some good money and return home in a few years," Peterson explained. "But two years turned into three, three into four, and so on. The kids put down roots, and we stayed."

Like most tribal commercial fishermen on Lake Superior, Peterson targets whitefish, herring, lake trout and—historically—siscowet or "fat trout," which carry a signature low-hanging belly. Top predators in the food chain, siscowets are now recognized for accumulating contaminants harmful to humans like chlordane and PCBs (polychlorinatedbiphenyl). Although proper fillet trimming reduces health risks to consumers, siscowet have become problematic for fishermen.

"We always used to sell 'fats,' but nobody buys them anymore," Peterson said. "There's a lot of them [in the lake] and they eat anything—a lot of forage fish. Their bellies are full of smelt, herring and chubs. I even found a corn cob in one."

While consumer demand for fat trout has waned, fishermen must also contend with stagnant wholesale prices while operating costs steadily rise. Bound by a market quagmire painfully familiar to dairy farmers, today's Lake Superior commercial fisherman receives about the same price-per-pound that was paid out thirty some years ago.

"I remember my dad was getting sixty cents a pound for whitefish," said Peterson. "Last year we got seventy cents. If we didn't have this fish shop, we wouldn't make it very well. It gets us over the hump."

Peterson and his family sell fresh fish from Lake Superior plus salmon from points as far away as Chile at their hilltop market overlooking Hancock and Houghton. Sales of whole and filleted fish are brisk in the summertime during the peak tourist season, Peterson said.

An area fish buyer purchases the bulk of Peterson's catch, which ultimately ends up in the New York area, he said.

"When there were more fish buyers around we'd get good prices. There was a time [in the late 1970s] we used to haul our whitefish in the back of a pick-up truck to Chicago for $2.50 a pound. Now it seems like the price is fixed, and they all pay the same."

At 54 Peterson is looking to the future, envisioning retirement in another half-dozen years and handing the wheel over to son and fishing partner, Chris. Despite the weak pricing trends, he forecasts a solid future for tribal commercial fishing on Lake Superior. Peterson noted that his late father, Wilfred, who stayed active in the fishing business for 65 years, frequently commented that fishing was as good now as ever.

"Numbers of lake trout and whitefish are good. There's fish for those few who are out there. But fishing isn't easy," he said, reaching for the shoulder he broke during rough seas several years ago. "There's good and bad spawning years, all sorts of things can happen. You really have to like fishing to make it."

Ojibwe, conservationists gather to contest power line

Gaylord Nelson returns to Namekagon River

By Charlie Otto Rasmussen
Staff Writer

Springbrook, Wis.—Prominent Wisconsin conservationist Gaylord Nelson remembers first visiting the Namekagon River around 76 years ago as a Boy Scout. He made another notable visit as U.S. Senator in 1965, teaming up with Lac Courte Oreilles (LCO) tribal members and a host of concerned citizens to promote federal protection for the river from development. On May 10, 2003, the onetime Wisconsin Governor returned to the Namekagon, reconnecting with old allies and again seeking to safeguard the river—this time from the proposed Arrowhead-Weston transmission line.

Gaylord Nelson speaks to the crowd at a May 10 rally in opposition of the proposed Arrowhead-Weston transmission line. (Photo by Charlie Otto Rasmussen)

"There aren't many rivers left in this country as beautiful and pure as the Namekegon," Nelson told a capacity audience at the Springbrook Community Center. He called for an end to the degradation of natural treasures by big business interests and expressed his opposition to the massive 345-volt power line that would cleave through forests, farms and sensitive waterways from northwest Wisconsin to a substation near Wausau.

Scores of other citizens—from local canoeists to state political leaders—echoed Nelson's sentiments during the hearing, which was recorded and simultaneously broadcast on WOJB radio. A Pimicikamak Cree representative also submitted comments, explaining how tribal lands and much of the northern Manitoba boreal forest have been destroyed by hydroelectric projects to feed power lines in the upper Great Lakes states.

Transmission line developers Minnesota Power and the Wisconsin Public Service Corporation have applied for a right-of-way from the National Park Service (NPS) to cross the Namekagon. A third business, the American Transmission Company, is also expected to request inclusion in the NPS right-of-way application.

The NPS administers the property as part of the St. Croix National Scenic Riverway—recognized as some of the most scenic and undeveloped riparian land in the Midwest. An environmental impact statement is currently being developed and should be available for public comment in August, according to Jill Medland, NPS.

Medland said NPS staff are examining different routes for the transmission line, including overhead and underground crossings. A decision on whether to grant the right-of-way is slated for Winter 2004.

LCO issued a tribal resolution in September 1999, strongly opposing the construction of the line based on the negative environmental and social impacts of Manitoba hydro projects in addition to the potential damage the line could cause in the ceded territory of northern Wisconsin. Several months later, the Great Lakes Indian Fish & Wildlife Commission's Voigt Intertribal Task Force passed a resolution supporting LCO's position.

River ceremony

Prior to Nelson's appearance in Springbrook, he and others joined Ojibwe people from LCO and Sokaogon for ceremonies along the Namekagon. Six miles upriver from Springbrook, Sokaogon's Fred Ackley and Fran Van Zile conducted pipe and water ceremonies under towering pines. Nelson was honored for his efforts to protect the environment both locally and across the globe throughout his venerable career that includes founding Earth Day in 1970.

LCO's Badger Drum, Hayward Youth Drum and Mole Lake Drum played songs during the ceremonies that preceded a commemorative canoe trip down the river. Reconnecting with the 1965 paddle on the Namekagon, Nelson canoed with LCO's Buck Barber, said radio producer Nick Vander Puy, one of the event's organizers. Almost 38 years earlier, Nelson had canoed the Namekagon from Historyland in Hayward to Springbrook with Barber's father, William.

Organizations including SOUL (Save Our Unique Lands), River Alliance of Wisconsin, Wisconsin Stewardship Network, Clean Wisconsin, and Anishinaabe Niiji/Protect the Earth sponsored the commemorative paddle and hearing.

Lake Superior special designation recommendations

Will it adequately protect Gichigami?

By Sue Erickson
Staff Writer

Odanah, Wis.—An effort to strengthen protection of the Lake Superior basin through special designations has been in the works in Wisconsin for over ten years, but may be presented to the Wisconsin Natural Resources Board (WNRB) as a proposed rule this fall. The hope would be that the WNRB would then allow the rule to proceed to public hearings—the next step in a long process.

The product of Wisconsin's Lake Superior Advisory Team, the special designations plan presents a three-tiered approach to the protection of Gichigami's shining waters. Representatives from the Red Cliff and the Bad River Bands sit on the Advisory Team and have contributed towards the proposed plan.

However, Judy Pratt-Shelley, Red Cliff's environmental programs executive director, feels the recommendations represent a compromise and fall short of providing Lake Superior the necessary level of protection.

To summarize the plan, Tiers 1 and 2 are recommendations that address point source pollution concerns, while Tier 3 looks at non-point source issues.

Lake Superior's scenic shoreline.

Tier 1 recommends that Wisconsin's Outstanding Resource Water (ORW) designation be applied to specific areas of Lake Superior. While some of the lake's tributaries already have an ORW status, it does not extend into the lake itself, so the committee is recommending the designation continue for one-quarter mile from the ORW—tributary mouths into the lake.

Tributaries currently designated as ORW include: Brule, Flag, Bark River and Bark Bay Slough, Cranberry, Pike, Onion, Sioux, Thompson, Whittlesey, and Fish Creek.

Tier 1 also recommends an ORW designation for areas one-quarter mile into the lake around the Apostle Islands National Lakeshore.

Tier 2, or the "best technology" designation, would require that no new or increased discharge containing the "nasty nine" bioaccumulative pollutants would be permitted in the Lake Superior basin unless the requesting facility applies the best technology in process or control. These measures may include pollution prevention, source reduction, waste minimization, or pollution control and treatment applications.

Tier 3 addresses unique watershed protection concerns that may impact the Lake Superior basin. Currently, many government programs target urban areas and funding is not accessible for Lake Superior needs. Therefore, Tier 3 recommends a pilot project be instituted to investigate means to incorporate Lake Superior issues and access resources necessary to better protect the lake's watershed.

Pratt-Shelley feels the proposed plan, which represents only Wisconsin, is circumventing the whole issue and is compromising maximum protection for Lake Superior due to the pressure of business interests.

"Ideally, Red Cliff would like to see Lake Superior given a federal Outstanding National Water Resource (ONWR) designation," she says. "This would provide the lake with the highest level of protection. We are people of Lake Superior and rely on its resources for commercial and subsistence fishing, ceremonies and religious rites. It's more than protecting our food; it's about the cultural significance of Lake Superior and the well-being of our community."

She hopes that after the three states of Michigan, Wisconsin and Minnesota get their respective plans in place, a larger effort to provide greater protection for the lake can move forward. "I'm hopeful that in the 'Year of Water' something better can be achieved," she says.

Target leafy spurge

GLIFWC sets sights on local leafy spurge infestations

By Miles Falck, GLIFWC Wildlife Biologist & Steve Garske, Invasive Plant Aid

Odanah, Wis.—Great Lakes Indian Fish & Wildlife Commission (GLIFWC) staff recently compiled a database to help prioritize and guide management activities for over 300 non-native plants known to occur in the Upper Great Lakes region. The database was used to prioritize species based on each plant's relative abundance, ecological impact and feasibility for control.

Using local abundance data from Ashland and Bayfield Counties, the database ranked leafy spurge (*Euphorbia esula*) as the highest priority for local control efforts. Leafy spurge ranks high because it poses the greatest threat to local habitats, while its relatively low abundance and wide range of control options make it more feasible to contain and control.

Leafy spurge was first reported from North America in Massachusetts in 1827. A native of Europe and Asia, it was probably introduced a number of times, as a contaminant in grain seed. It is now found throughout the northern and western United States and in southern Canada, infesting more than five million acres.

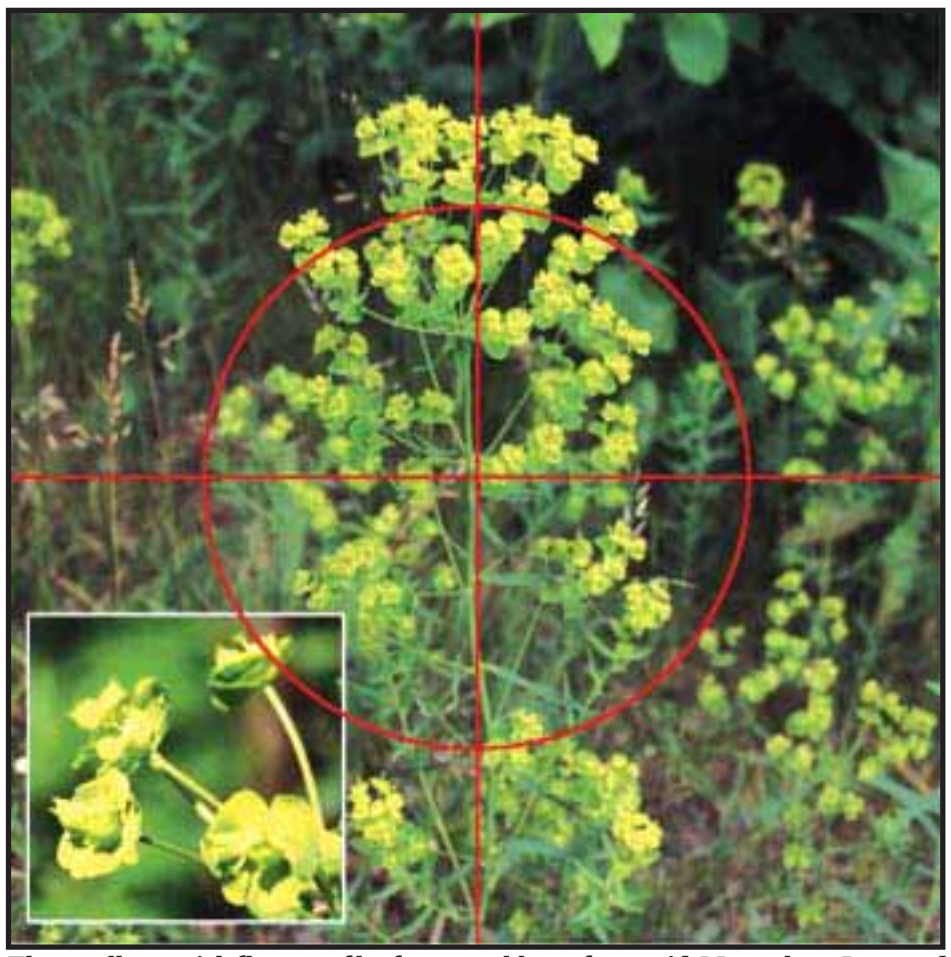
Prolific seed production and an extensive root network allow leafy spurge to spread rapidly, displace native vegetation, and resist control efforts. The roots of leafy spurge can penetrate as deep as 15 feet below the surface, while exploding seed capsules eject seeds up to 15 feet from the plant. Leafy spurge thrives in a wide range of habitats and readily displaces native plants and other desirable vegetation, even in undisturbed habitats. Leafy spurge competes especially well on dry, sunny sites.

The economic and ecological impacts of leafy spurge are substantial. The milky sap, found throughout the plant, is toxic to deer, cattle and other ruminants. While most livestock and wildlife avoid spurge-infested areas, they may ingest dry plants in hay. Avoidance of spurge-infested areas often leads to a vicious cycle: overgrazing and disturbance in spurge-free areas reduces competition from native plants, allowing spurge and other exotics to colonize these areas. This process results in reduced species diversity, degraded wildlife habitat, lost productivity of range and pasture lands, and lower land values.

In Wyoming, Montana and the Dakotas, leafy spurge infestations cost an estimated $144 million per year in lost agricultural production and control expenses. Agricultural lands and natural areas in the upper Great Lakes region are also vulnerable. Leafy spurge is classified as a "prohibited noxious weed" in Minnesota, Wisconsin and Michigan.

Researchers recently estimated that leafy spurge is doubling its range in the Great Plains every five years. It is also increasing in abundance throughout the upper Great Lakes region. Globally endangered pine barrens habitats, including the Moquah Barrens of Bayfield County in northwestern Wisconsin, are especially vulnerable to the threats posed by leafy spurge. Significant treaty harvest opportunities such as hunting and berry-picking are also threatened.

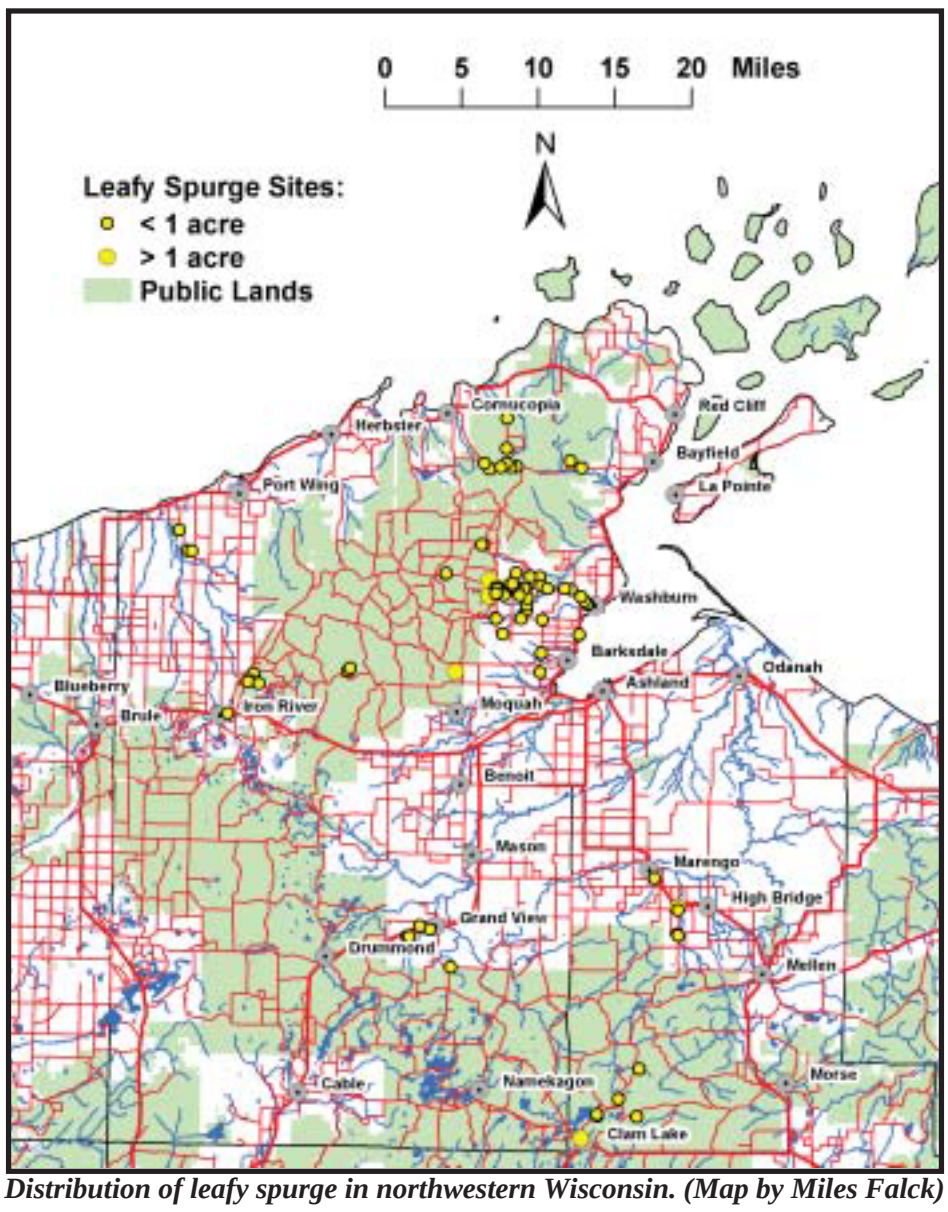
GLIFWC staff are currently developing a management plan for leafy spurge in northwestern Wisconsin in cooperation with several state and federal agencies,



The small greenish flowers of leafy spurge bloom from mid-May to late-June and are surrounded by yellow-green, heart-shaped bracts. (Photo by Elizabeth Sutton. Inset photo by Miles Falck.)

non-profit organizations and local landowners. Borrowing from GLIFWC's experience with purple loosestrife (*Lythrum salicaria*), the plan incorporates educational outreach, integrated pest management, monitoring and evaluation, and interagency coordination. To date, GLIFWC staff have compiled a GIS database of leafy spurge locations from field surveys conducted by GLIFWC and the US Forest Service. An educational brochure is also being developed with funding from the Natural Resources Conservation Service to help raise awareness of the threat leafy spurge poses to local natural areas and agricultural lands.

Control options include mowing, grazing, biological control, and herbicide. In 2003, GLIFWC staff will evaluate the use of two flea beetles (*Aphthona nigriscutus* and *A. lacertosa*) for future biological control efforts. Of the 15 insects that have been approved by USDA–APHIS for biological control of leafy spurge, these two flea beetles appear to be the most effective in the Great Plains states. Similar to the *Galerucella* beetles used for controlling purple loosestrife, the flea beetles are host-specific, feeding only on the subgenus *Esula* of the genus *Euphorbia*. This subgenus includes cypress spurge (*E. cyparissias*), another non-native invasive plant, but excludes native species such as flowering spurge (*E. corollata*). GLIFWC staff will visit sites in Minnesota and Wisconsin where flea beetles have been released to evaluate their impact. Fall herbicide applications will also be initiated in mid-September after crews have completed purple loosestrife treatments.



Distribution of leafy spurge in northwestern Wisconsin. (Map by Miles Falck)

West Nile Virus

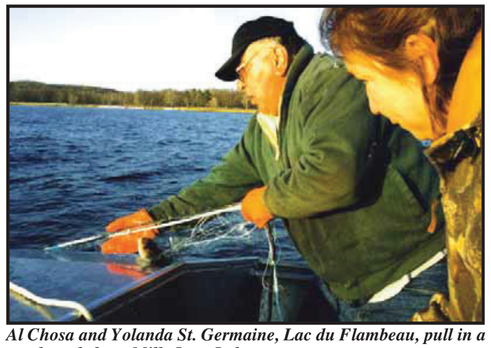
West Nile Virus (WNV) is a viral disease previously seen only in Africa, Asia, and southern Europe. This virus can cause encephalitis, an infection of the brain and the spinal cord. For the past several years, WNV has caused disease in the United States. In 1999, at least 62 people became seriously ill, and seven of those died. Since then, WNV has rapidly spread throughout 27 states and the District of Columbia. During the year 2000, 21 human cases of WNV encephalitis were reported in the United States, with two deaths. In 2001, 56 cases with 7 deaths were reported. It is expected that WNV will continue to be a disease threat.

The West Nile Virus is spread to people by the bite of an infected mosquito. The principal transmitter of West Nile Virus is the Northern House Mosquito. Mosquitoes first become exposed to the virus when they feed on birds that are infected with WNV. Once the mosquito is infected, it may transmit the virus to people or other animals when it bites them. Many birds can be infected with WNV, but crows and blue jays are most likely to die from the infection. People cannot get WNV from another person.

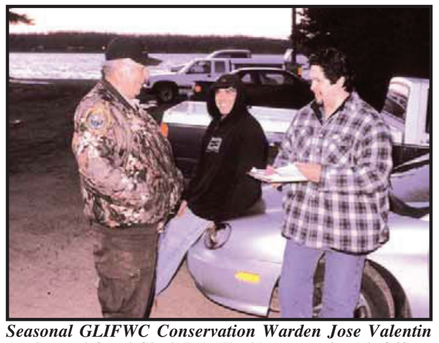
Most people who are infected will not have any type of illnes. It is estimated that 20% of the people who become infected will develop West Nile fever with mild symptoms, including fever, headache, and body aches, occasionally with a skin rash on the trunk of the body and swollen lymph glands. West Nile fever typically lasts only a few days and does not appear to cause any long-term health effects, unike the more severe form of the disease that can cause encephalitis.

Dead birds may be a good indicator that WNV is in the area. Testing such birds for the virus has been a major component of surveillance for WNV. The National Wildlife Health Center (NWHC) in Madison, Wisconsin tests wild birds for WNV. A contact at NWHC is Dr. Kathy Converse (608) 270-2445.

Calm lakes, busy landings & lots of fish for families



Al Chosa and Yolanda St. Germaine, Lac du Flambeau, pull in a good catch from Mille Lacs Lake.



Seasonal GLIFWC Conservation Warden Jose Valentin (right) and Creel Clerk Eric Haskins consult with Officer Ken Rusk at a boat landing on May 1 as Lac Courte Oreilles members arrive for an evening of spearfishing.

Learning something new. Fred McGeshick, Mole Lake, shows Yolanda St. Germaine, LdF, how to make a net weight.

Don Klingman, Lac Vieux Desert, prepares for a night of spearfishing on Michigan's Thousand Island Lake.

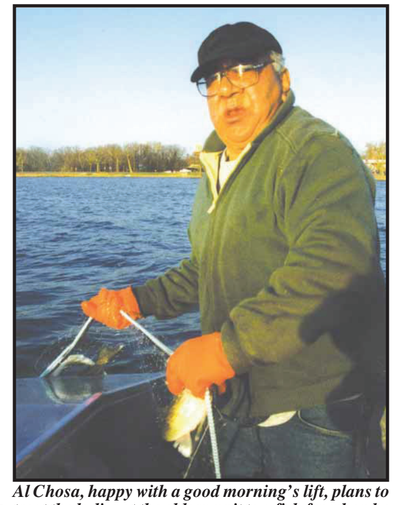
Vern Stone, GLIFWC warden, checks in with Bruce Pettibone, GLIFWC creel clerk, at the North Garrison landing on Mille Lacs Lake.

Valerie Bigboy, GLIFWC creel clerk, issues permits at the South Garrison landing.

Photos by Sue Erickson & Charlie Otto Rasmussen

Leo LaFernier and son, Eugene, Red Cliff, straighten a net prior to setting it.

Joe Dan Rose, GLIFWC inland fisheries section leader, helps out with creel work at Mille Lacs' South Garrison landing.

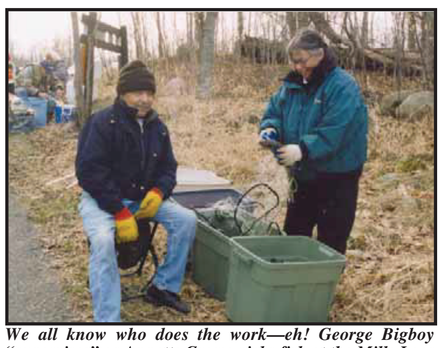


Al Chosa, happy with a good morning's lift, plans to treat the ladies at the eldery unit to a fish fry when he returns to Lac du Flambeau.

Moose Plucinski, GLIFWC creel clerk, quickly got into the swing as the spring netting and spearing season opened at Mille Lacs Lake.

Chris Kessenich, GLIFWC warden, coordinated the creel and enforcement staff monitoring the landings declared by the St. Croix Band. Jerry Hans, St. Croix registration clerk, looks on.

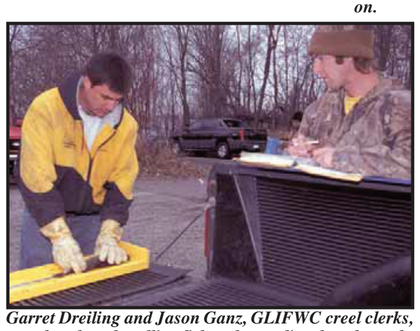
An early morning lift by Laurie Weyas, Mille Lacs Band member.



We all know who does the work—eh! George Bigboy "supervises" as Annette Crowe picks fish at the Mille Lacs Cedar Creek landing.

JasonLoons, Fond du Lac Band conservation officer, prepares for on-water patrol at Mille Lacs.

Lac Courte Oreilles' Jim Dennis Sr. lowers a speared walleye into his fish box. Along with son Jim Jr., Dennis fished Big Round Lake in early May.



Garret Dreiling and Jason Ganz, GLIFWC creel clerks, were kept busy handling fish and recording data throughout the season.

GLIFWC Warden Jim Mattson put in another hectic season monitoring the spring netting season at Mille Lacs Lake.

Above, Jake (standing) and Dave Parisien, GLIFWC creel clerks at Mille Lacs Lake, record data on a catch. Upper left, Mike Taylor, Mille Lacs Conservation Officer, and GLIFWC Wardens Vern Stone and Mike Soulier compare observations on the season. Lower left, Creeling at the South Garrison landing are GLIFWC Inland Fisheries Section Leader Joe Dan Rose and Mark Peterson, GLIFWC creel clerk. Valerie Bigboy, GLIFWC creel clerk, records data.

Enthusiastic Mole Lakers come ashore at Mille Lacs with GLIFWC Warden Vern Stone at the wheel. Having a great time fishing are Rick McGeshick and Steve Tuckwab.

Photos by Sue Erickson & Charlie Otto Rasmussen

The tribulations of fishermen

A tiney tale of two fishermen

Bob Shelby and Don Gurnoe, Red Cliff, were the last boat off Lower Eau Claire after an April evening of spearing. Pulling ashore around midnight, they had kept the monitoring crew up late on this night, but the duo had gotten off to a really slow start!

Equipped with a brand new spear head, Shelby spent the first hour at the bow of the boat, spotting plenty of walleye hovering in the shallows, but only managing to bring six of them flopping into the boat. Time after time, the spear would make a quick splash into the dark water and come up empty.

This seemed unusual to Gurnoe, who decided to take a shift on the bow and give his partner a break. Taking the spear, he shined his headlight into the shallows. Spotting a nice sized walleye, he took aim and struck, but the fish just rolled off the spear and darted away! This happened time and time again. "It was like a spear and release operation," he commented. "I couldn't figure out what was going on!"

So, he took a moment to check out his new spearhead, recently purchased at Angler's All in Ashland. Each tine of the spear was encased in a clear plastic sheath, protecting anyone from getting hurt by the sharp tines—including a lot of lucky walleye from Lower Eau Claire!

A good hour and a half into the evening by then, the guys were ready for business as usual, but running slightly late.

"I don't know how Bob managed to spear the six walleye he did get; he must of really hit 'em hard," Gurnoe says.

Rub a dub dub, three men in a...

And who do you think they be? All former tribal chairmen, all three!

(Yes, someone forgot to check on the small details before Tom Maulson, Lac du Flambeau, Arlyn Ackley, Mole Lake/Sokaogon, and George Newago, Red Cliff, launched their boat to set nets on Mille Lacs Lake the evening of April 30th.)

Lo and behold, once out on the lake, the motor sputtered and quit.
Out of gas they were, all three.
Not a spare gas can to be found, nor an oar,
and they were so far from shore,
adrift on the great Mille Lacs sea!
Well, flares they had not, but cell phones they did.
And the phones worked—a miracle, indeed!
Tom called his wife, Laura, who called GLIFWC's enforcement.
She urged them to hasten and speed.
Warden Jim Mattson tore off from the shore
to offer them hope.
He shortly returned and at the end of a rope,
he towed them in safely, all three.

LCO brother, sister worked together to enforce the law

By Terrell Boettcher
Sawyer County Record

Lac Courte Oreilles, Wis.—A brother and sister from Lac Courte 0reilles who worked as a team for 11 years in conservation law enforcement still are close-knit.

Ken Rusk currently is the Western District warden supervisor for the Great Lakes Indian Fish & Wildlife Commission (GLIFWC). He is the only original warden still working for GLIFWC, an organization formed in 1984 to monitor off-reservation treaty harvests and enforce tribal codes governing off-reservation treaty seasons in the ceded territory of northern Wisconsin, northern Minnesota and the Upper Peninsula of Michigan.

Rusk supervises wardens in the areas surrounding Lac Courte Oreilles (LCO) and St. Croix in Wisconsin and Mille Lacs in Minnesota.

Rusk is cross-deputized with the Sawyer County Sheriff's Department and carries credentials of the Wisconsin Department of Natural Resources. He works out of GLIFWC's satellite office in the LCO Quick Stop building. "It's an all-around job," he said with a chuckle.

Carole Rusk Wielgot worked in law enforcement for 25 years before she was injured in a snowmobile accident six years ago. She was one of the first women, if not the first woman, to work as a patrol deputy for the Sawyer County Sheriff's Department.

Ken Rusk and Carole Wielgot. (Photo Courtesy of Sawyer County Record)

The Rusks come from a large family in the Whitefish community on the LCO reservation. Ken is the oldest of eight brothers and Carole is one of five sisters born to John (Jack) and Eunice Rusk. She is three years older than Ken.

After graduating from Hayward High School in 1967, Ken was drafted into the Army when he was 19 years old and spent 18 months with the Ninth Infantry, Charlie Company, in the Vietnam War. Two other brothers were in the service at the same time: Russell, who was in the Navy on the USS Midway and John.

"They wanted to send John to Vietnam, but Kenny didn't want that to happen, because he figured he knew what was going on in Vietnam and he wanted to keep his brother out of there," Carole said. So he re-enlisted for another two years, and John was shipped to Korea instead. John "still hasn't forgotten me for that," Ken said.

"We always were a closeknit family," Carole said. "Our parents raised us that way. They were strict with us, but never laid a hand on us."

Ken was always interested in hunting and fishing. Both his dad and grandfather were fishing guides. "The best lake my dad liked to guide on was Big Lac Courte Oreilles," he said.

Her brother "was a good kid," said Carole. "He never got into trouble."

Ken was working for a silo manufacturer in Milwaukee when he got laid off. He called his sister, who had just taken a job with the LCO Conservation Department. "I told him, 'You can work with me as a warden,'" she said. "So he came up here and sure enough, they hired him. We worked for LCO Conservation for a while, and I also worked for the Hayward Police Department."

Then Carole was deputized and started work as a patrol deputy with the Sawyer County Sheriff's Department. She knew of other women who didn't make it in that job. "It wasn't easy, but it wasn't hard," she said. "You just had to pay attention to what you were doing, put the men aside and do the job."

Ken thanks Sawyer County Sheriff's Deputy Bill Morrow for getting him into law enforcement in 1979. "He kind of talked with me," he said. "I used to ride in his squad as a ride-along. Then they were hiring at the LCO Conservation Department, when Melvin White was the head of the department. He asked me, 'Hey, are you interested in going to school?'"

He trained at the United States Indian Police Academy in Brigham City, Utah. "When I came back from there, I found out that Wisconsin doesn't recognize it," he said. "I got home on Saturday, and Melvin called me on Sunday. Then I started Wisconsin Law Enforcement Basic Recruit School in Rice Lake."

Both he and his sister went to WITC-Rice Lake and graduated in 1981.

When GLIFWC was started in 1984, both Carole and Ken applied for jobs as wardens. One full-time and one parttime positions were available. "I told him, you take the fulltime job because I have time for unemployment," Carole said.

"We were always partners," she said. "GLIFWC opened up a satellite station at LCO. Kenny was a sergeant and I was a corporal."

The 520 hours of basic law enforcement training for GLIFWC wardens involves study of state and tribal law, reporting procedures, use of firearms, medical response, defense tactics, emergency vehicle operation, and cold-water rescue.

Also, officers must take further training each year to maintain their certification. Every two years, they take recertification classes in medical first responder skills including defibrillator use and an emergency vehicle operations course (EVOC).

Ken and Carole worked together until she hurt her back in a snowmobile accident in 1996. The throttle on her sled stuck when they were coming off a lake after checking fishermen. By the time she hit the kill switch, the sled went over a bank and she landed on her side. She was in and out of hospitals for six years.

When her doctor said he would list her as disabled, because he felt her work would further injure her back, "I just cried," Carole said. "I worked hard to get where I was, and I enjoyed it. There was something going on all the time, even out in the woods."

When she first started 30 years ago, "I was one of the first girls that even attempted to work in law enforcement here," Carole said. "The guys didn't like that too much. I told them, 'if I can't do the job, okay.' But I lasted 25 years in law enforcement." "It's a people job," she added. Her brother is known for his cool, calm, even pleasant demeanor. Many times, law violators have tunnel vision and don't even know he's there.

Ken says he "loves to golf and am getting better at it. I do a little fishing. I don't hunt no more—Vietnam cured me of that."

One of the major aspects of both Ken and Carole's jobs has been instructing youths in hunter, ATV, snowmobile and boating safety. They have conducted classes each year at the LCO School, which are open to youths both on and off the reservation.

The classes "have cut way down on accidents," Ken said. The minimum age to participate is 10. Hunter's education is still free of charge, but now it costs $10 to participate in the vehicle safety classes. So that has put a crimp on participation, Ken said. Both Ken and Carole have received awards from the Department of Natural Resources for teaching the classes—Ken for 15 years and Carole for 10 years.

"Every day in this job is a new experience. That's what I like about it," he said.

*(Reprinted with permission from the **Sawyer County Record**.)*

From basic training to patrol

GLIFWC's rookie warden initiated at spearing landings

By Sue Erickson, Staff Writer

Lac du Flambeau, Wis.—From the tense split-second decision to use lethal force during a confrontation to performing an emergency delivery, it was the dramatic real-life situations used in Basic Recruit Training that best prepared GLIFWC's rookie warden, Christina Dzwonkowski, for life in the field.

Dzwonkowski completed 13 weeks of basic training, graduating on April 4 with the first class to complete Wisconsin's new 520 hour training requirement. Previously, basic training required ten weeks and 400 hours. Successful completion of the program certifies graduates to be a law enforcement officer in Wisconsin and applies to both police and conservation officers.


GLIFWC Warden Christina Dzwonkowski. (Photo submitted)

According to Dzwonkowski, the program was intensive, thorough and action-packed. The expanded course allowed for inclusion of more simulated, real-life situations during the last week of the course. Students were fully equipped and provided with a squad car, then were called to respond to scenes involving a DUI, a high risk stop, response to a burglary, and response to a bar fight—situations frequently encountered by law enforcement officers.

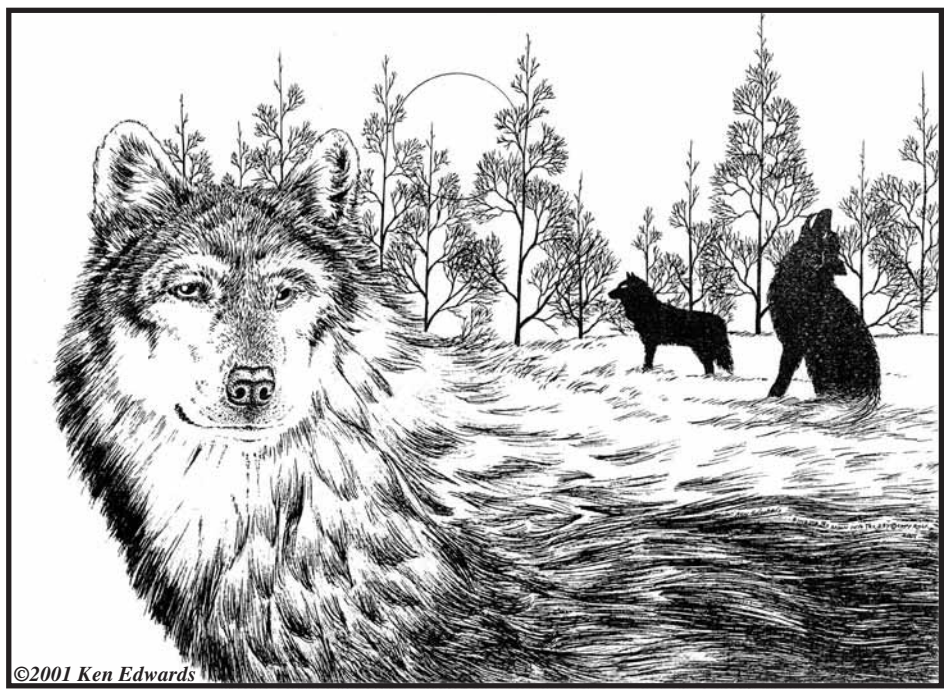
During simunitions training, their guns were fitted with different barrels, and paint balls replaced bullets in order to practice scenes where lethal force may potentially need to be used.

In one scenario Dzwonkowski had to enter a house and find her way to a back room where a woman was allegedly armed and threatening suicide. Dzwonkowski says it was so real, she could "feel the adrenaline rushing." After talking and dissuading the woman from taking action, the woman put down her gun, but then picked it up again and pointed it at Dzwonkowski. "I could see her finger pulling back on the trigger, and I was forced to shoot in self defense," she recounted.

Other aspects of the training included Defense Arms and Arrest Tactics, training that focuses on weapon retention, use of handcuffs and how to search an apprehended person. Sessions also covered emergency vehicle operation, law, extensive firearms training, finger printing, first response, and even how to deliver a baby.

Following graduation Dzwonkowski reported for duty at GLIFWC's Lac du Flambeau satellite office, just in time to assist with the intensive, nightly monitoring of the off-reservation, spring spearing season in Wisconsin.

Wisconsin wolf population growth slows


©2001 Ken Edwards

By Peter David
GLIFWC Wildlife Biologist

Wausau, Wis.—When groups with interests as diverse as The Timber Wolf Alliance and People Against Wolves sit down at the same table, one might expect verbal fireworks to fill the air. But a meeting of these two groups and over twenty other "Wisconsin wolf stakeholders" held April 12 in Wausau passed with remarkable cordiality, perhaps reflecting that the meeting seemed to hold a little something for everyone interested in wolf management in the state.

Pro-wolf groups were pleased to learn that preliminary mid-to-late winter tally of Wisconsin's wolf population (the official measure used in the state management plan) produced a count of 335-357 wolves in the state, including six that live primarily on Indian reservations. Not surprisingly, most of the state's wolves live in northern forested areas, but over 40 reside in the state's central forest region.

This tally indicated a small increase in the population from last year and suggested some increased presence of wolves in northeastern Wisconsin—the largest area in the state that appears to provide suitable habitat, but which has not been appreciably colonized.

The full meaning of this count probably will not be clear for several years. A larger increase might have been expected given the population increases seen in recent years. The small increase might represent a simple "bump" in the growth of the state's wolf population, reflecting a temporary situation like a spike in the impact from mange, or it could indicate that the population growth is beginning to slow as wolves approach their biological carrying-capacity.

The existence of that latter possibility might have been encouraging to those groups opposed to a higher wolf population in the state.

Livestock interests also had things to cheer. Wisconsin (as well as Michigan and Minnesota) will be receiving a huge increase in federal funding to investigate possible wolf depredations in the state, and recent action by the U.S. Fish and Wildlife Service to downlist Wisconsin's wolf population from "endangered" to "threatened" has opened the door for the first lethal control of wolves at sites with verified depredations. (The first wolf to be euthanized under this program was subsequently taken on May 6 from a Douglas County farm with a long history of depredation problems.)

The problems that wolf depredations cause for the state were also discussed. Considerable staff time and expense is currently expended by the state in its program to provide reimbursement to individuals experiencing verified losses of livestock or pets. These payments are especially problematic because they are very unpredictable in extent from year to year.

The money for these reimbursements comes from the Bureau of Endangered Species funds created by the state tax form donation line and the sale of special Endangered Resources license plates.

Interestingly, state legislation was passed that will have the state continuing to make reimbursement for wolf losses out of Endangered Resources funding even after wolves are no longer listed as a threatened species in the state (a listing change which the state intends to proceed with soon).

Several stakeholder groups feared that this could result in a back-lash in contributions to these funds. Some groups also felt that the state should not be using these dollars to pay for the loss of dogs that are killed while hunting or training on bears, as most donators are likely unaware that a portion of their contribution may be used for this purpose.

Stakeholders also reviewed data provided by the WDNR on the causes of wolf mortality in the state. Data from radio collared wolves (which tends to be the least biased source of information) indicated that a little more than half of the 2002 mortality was the result of "natural causes" and a little less than half was human-related.

Of the human-related mortality, half was the result of intentional or accidental (mistaken identity) shootings, showing the significance of human attitudes toward the future of wolves in the state, and the benefits that can come with public education.

One area where the group showed consensus was over the regulation of wolf-dog hybrids. It was recognized that these animals present several problems to wild wolf populations, and the group voted unanimously to encourage the state to begin the process of establishing regulatory authority of these hybrids.

Despite the lack of fireworks at this meeting, numerous issues remain to be discussed by the stakeholder groups, many of whom seem to be treading water for the moment, watching what the wolves themselves do and waiting to see the significance and effectiveness of new control measures.

More meetings are planned in the year ahead, and the ten-year state management plan is due for its five year review next year. The discussions about the future of this species, which the Ojibwe know as their brother, are far from over.

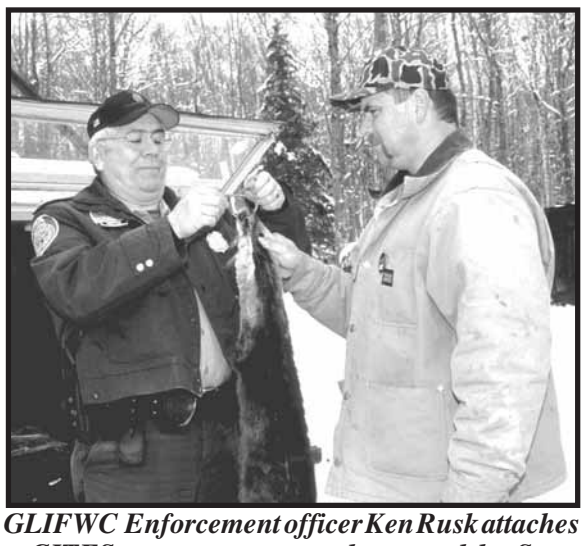
Tribal officials to issue otter, bobcat CITES tags

USFWS outlines requirements at national conference

By Charlie Otto Rasmussen, Staff Writer

Traverse City, Mich.—Great Lakes Indian Fish & Wildlife Commission member bands along with Indian tribes across the United States are discussing elements of an international treaty designed to protect endangered species from overharvest. If approved by the U.S. Fish & Wildlife Service (USFWS), tribal officials will oversee the tagging of river otter and bobcat pelts through the federal CITES program.

"This allows tribal members to continue with traditional ways of trapping and selling furs and is an opportunity for tribes to use their sovereign rights," said Little River Band Wildlife Biologist Nate Svoboda on May 20 at the Native American Fish & Wildlife Society (NAFWS) annual meeting in Traverse City.


GLIFWC Enforcement officer Ken Rusk attaches a CITES tag to an otter pelt trapped by Steve Barnaby, Lac Courte Oreilles. (Photo by COR)

CITES tags—named for the Convention on International Trade in Endangered Species of Wild Fauna and Flora—must be attached to certain animal skins including some furbearers and alligators in order to export them to international markets outside of the U.S. The USFWS recently approved CITES programs for the Little River Band of Ottawa Indians and Grand Traverse Band of Ottawa and Chippewa Indians in Michigan.

The absense of tribal CITES programs has made it difficult for tribal trappers to sell furs. In the past, federal officials denied CITES authority to Great Lakes tribes, insisting that tribes participate under state programs. Some tribes felt this was an affront to their sovereignty and ability to self-regulate, as well as making the process of obtaining tags unnecessarily cumbersome for their tribal trappers. Without a properly attached CITES tag, fur buyers and many taxidermists decline to purchase or handle pelts.

Although the USFWS sparingly granted CITES authority to five U.S. tribes from 1977 to 1988, the agency is now ready to sign on additional tribal natural resource departments. Clifton Horton, USFWS wildlife biologist, highlighted the application requirements for tribes seeking CITES authority at the NAFWS conference. Tribes are asked to submit current harvest regulations and season dates along with a forecast of how many CITES export tags might be needed each year.

"Our goal is to turn these applications around as quickly as possible," Horton said, estimating the process could take three to six months. "The bottom line is ensuring sustainability of animal populations."

Countries from across the globe enacted the CITES Treaty in 1975 to protect endangered plant and animal species from unregulated trade. By 1977, thirty-six states and one tribe, the Navajo Band, had established federally-endorsed CITES programs. Southern alligator hides represent the vast majority of CITES animal exports, followed by bobcat and river otter from the contiguous United States. Lynx, wolf and brown bear fur are included in Alaskan exports.

Searching for sharpies

By Peter David
GLIFWC Wildlife Biologist

Ino, Wis.—Don't get the wrong idea. I'm not about to describe a hunt through the catacombs of my desk in search of one of those elusive permanent markers that I know are in there somewhere, but which I can never find. No, the sharpie I am seeking goes by the scientific name *Tympanuchus phasianellus*; a dressed up name for what is more commonly known as the sharp-tailed grouse (STG).

The "sharpie" is a close cousin to the ruffed grouse (which many locals refer to as "partridge"). Within the ceded territory, however, the STG is much less abundant than its cousin, owing to its habitat preferences. The young forests which the ruffed grouse favors might already seem like "old growth" in the eyes of a sharpie, which lives its life in the shrubby, brushy world of the barrens.

Barrens habitat is not naturally abundant in the ceded territory and has grown even less so with human intervention. Smokey may be a well-intended bear, but he's no hero to sharpies. Barrens depend on fire to keep ecological succession at bay. Without it, these habitats tend to grow into young forests rather quickly. The advent of effective fire control, the organized promotion of the idea that all fires are bad, and the increased infusion of humans and human property into barrens habitat have all worked against the STG and its barrens companions throughout much of the 20th century.

Which is part of the reason why, on late April mornings, I tend to rise from the cozy comfort of my bed around 4:00 a.m. and stick my head out a west-facing window. If it appears likely the dawn will come free of wind and rain, I slip on some warm clothes, make a couple of pieces of toast and a 4-cup mug of tea, and head out to the Moquah Barrens to hunt for sharpies.

The gun stays at home; my collecting is done with ears and eyes. The birds, if found, go not into my larder but my notebook.

Sharp-tailed grouse (sharpies) are a close cousin to the ruffed grouse, which many locals refer to as "partridge." (Photo by MJ Kewley)

Sharp-tails are one of several species of grouse whose mating habits include having males display at communal sites known as "leks," where the males strut their stuff in an effort to win the attention (shall we say) of the females. This remarkable display of sight and sound—involving booming magenta-colored air sacs along the neck, physical posturing and foot stomping movements—served as the inspiration for many pow-wow dances for tribes of Plains Indians.

Biologists seeking information on STG populations seek out leks, and count the males displaying on them to gain an index to the size of the population. We can also use some assumptions (based on observational data) to extrapolate the number of displaying males observed to estimate the fall population.

Typically, we assume there is a female for each male seen (although they do not mate monogamously) and that the population will about double in size from spring to fall with the addition of the year's production. Thus 25 displaying males are thought to represent a fall population of about 100 birds.

Although lekking areas tend to persist from year-to-year, there is still a certain turnover in them. A site which has been used for years may "dry up" and disappear, or a previously unused location may suddenly be put to use. Since it is fairly easy to count males at known, well-established sites, I spend most of my limited survey time each spring searching for possible new leks.

I know these will be located in areas with short vegetation and a good open horizon (dancing is a risky behavior, and you don't want to hurt your odds of survival by dancing where predators have cover or perches nearby). Unfortunately, much of the barrens fits this description, so the search is not narrowed much by this knowledge.

Now don't tell my supervisors, but lek hunting is both easy and enjoyable, at least for someone who has always loved mornings. The routine is simple: 1) Go to areas of potential habitat in the early dawn when displaying is most intense. 2) Get out of your vehicle, stand where its quiet, and listen for 10-15 minutes. 3) Listen to the distant honking of north-bound geese, watch color begin to wash the eastern sky, or ponder the prospects for the summer blueberry crop while you strain your ears for unique sounds of dancing sharpies—especially those booming neck sacs. 4) Have a sip of tea or coffee, and repeat about half-mile away. Good work if you can get it.

If you are lucky enough to pick up the sounds of dancing, you can cautiously move in its direction until you locate the lek and make a count of its dancers.

It's a pretty lovely way to spend a morning, but it is not without its frustrations. Sharpies are less consistent than ruffed grouse or prairie chickens in performing their mating rituals, so you may hear nothing even when the birds are there. They may also sense your approach and flush off the lek before you ever see them, leaving you to try and pinpoint their location another day. The wind may pick up, hiding their sounds and leaving you wondering why you left your warm bed. Or when the conditions are just right, their sounds will travel further than usual, bouncing in odd ways off of hills, and you may find you spent your morning carefully tracking down a distant lek you already knew about.

These frustrations are just part of the game, however, and are quickly forgiven and forgotten when everything comes together, and you find yourself crouched behind a young jack pine eyeing a half dozen males enrapted with full display, seeking their partners on a lek that you didn't know existed when you stuck your head out the window a few hours before.

You know it may be a couple of years before you have this moment again, so you savor it while you pull out your notebook and record your new observations.

Ceded territory news briefs

Turtles on the move

Watch for slow moving traffic on northern roadways

The search for breeding grounds often brings our slow-moving relatives, the turtles, to risky roadways and dangerous crossings during May and June. The Wisconsin, Michigan and Minnesota ceded territories are home to many species of turtles, including miskwaadesi (painted turtle) and mikinaak (snapping turtle), so it is good to watch out while driving and avoid them on the road if possible!

If it is safe to do so, they can be helped across the road, but be sure to keep them going in the same direction they were headed. They know where they need to go.

Both the Blandings turtle and the wood turtle are listed as threatened species in Wisconsin, so deserve our respect, care and a moment of our time.

The Crandon mine . . .The saga continues

On April 11, 2003, Northern Wisconsin Resource Group LLC announced the purchase of Nicolet Minerals Company, a subsidiary of BHP Billiton and the applicant seeking federal and state permits to develop and operate the Crandon mine. Northern Wisconsin Resource Group LLC is owned by the Connor family, which also owns Nicolet Hardwood Corp., a logging company based in the Laona area. Gordon Connor Sr. has indicated that his company is negotiating with, and will pick, a mining company as a partner in the project in the coming months.

The implications of this sale for the Crandon mine permitting process are unclear. Representatives of the new owners have stated that they intend to pursue a mine permit, but have also hinted that some aspects of the proposal may change. In the meantime, state and federal permit reviews and Environmental Impact Statement (EIS) development continue.

The Wisconsin DNR has indicated that it may release a draft EIS in the fall; the Army Corps of Engineers has not specified a date for the release of its draft EIS.

GLIFWC's annual waterfowl survey conducted

GLIFWC once again cooperated with the WDNR in its annual state-wide waterfowl survey by conducting ground truthing on 3 survey transects. This survey, which includes air and ground components, is conducted in a narrow time window, typically around May 5-12 in the northern part of the state, when most migrant ducks have departed, but before tree leaf-out makes aerial observation impossible.

Much number crunching remains to be done, but preliminary reactions from Bruce Bacon, one of DNR's aerial observers for the northern half of the state, suggests the northern tally of birds may be down this year, and counts of wetlands may be inflated on late-run surveys by the heavy rains received on Mother's Day in many parts of the state.

Dan North, GLIFWC wildlife technician, said that relatively few birds were seen on the GLIFWC ground transects conducted in Vilas and Lincoln Counties, but pretty good numbers were observed on a Taylor County transect. A nesting Sandhill Crane was also documented for that transect for the first time this year. Full survey results will be available in a DNR report available in June.

Rep. Boyle tackles the mascot issue

Representative Frank Boyle is proposing legislation that directly addresses the use of ethnic mascots by Wisconsin schools. The bill provides that a school district resident may object to a school board's use of an ethnic name, nickname, logo, or mascot by filing a complaint with the state superintendent of public instruction. The superintendent must schedule a hearing during which the school board must prove the use of the ethnic name does not promote discrimination, pupil harassment or stereotyping. If the superintendent finds in favor of the complainant, the school board must terminate its use of the name, nickname, logo, or mascot within twelve months of the order or be subject to a fine for each day it continues such use. The decision of the state superintendent would also be subject to circuit court review.

Fall harvest opportunities

Introduction

During 2000 and 2001, GLIFWC staff interviewed tribal elders regarding non-medicinal uses of plants. With approval from the elders, we have decided to share this information as a regular feature in *Mazina'igan* in the form of a seasonal harvest guide.

In this issue, the harvest guide is devoted to those plants that may be gathered for non-medicinal uses during the upcoming fall months of waatebagaa-giizis, leaves changing color moon (September); binaakwii-giizis, falling leaves moon (October); and gashkadino-giizis, ice is forming moon (November).

Fruits

raw, jams, jellies, pie fillings, breads, pancakes

atiteminan—nannyberries
mashkiigiminag—cranberries
aniibiiminan—highbush cranberries
miinesag—hawthorn berries
asasaweminan—chokecherries
bagwaj zhoominan—wild grapes

Nuts

raw, roasted, flour, pie fillings

waawiye bagaanag—black walnuts
bagaanaak bagaanag—butternuts
wakikaanag bagaanag—pine nuts
bagaanag—hazelnuts
mitigwaabaak bagaanag—hickory nuts
mitigomizh bagaanag—oak acorns

Grains

casseroles, soups, breads, pancakes

manoomin—wild rice

Roots

roasted,sauteed, steamed, boiled

waabiziipin ojiibikan—arrowhead roots
okadaakoon—wild carrots
oga'da mun ojiibikan—yellow waterlily roots
bagwaji zhigaagawinzhiig—wild leeks
bagwaji zhigaagananzhiig—wild onions
apakweshkway ojiibikan—cattail roots
anaakanashk ojiibikoon—bulrush roots
anaakanashk ojiibikoon—rush roots

Greens

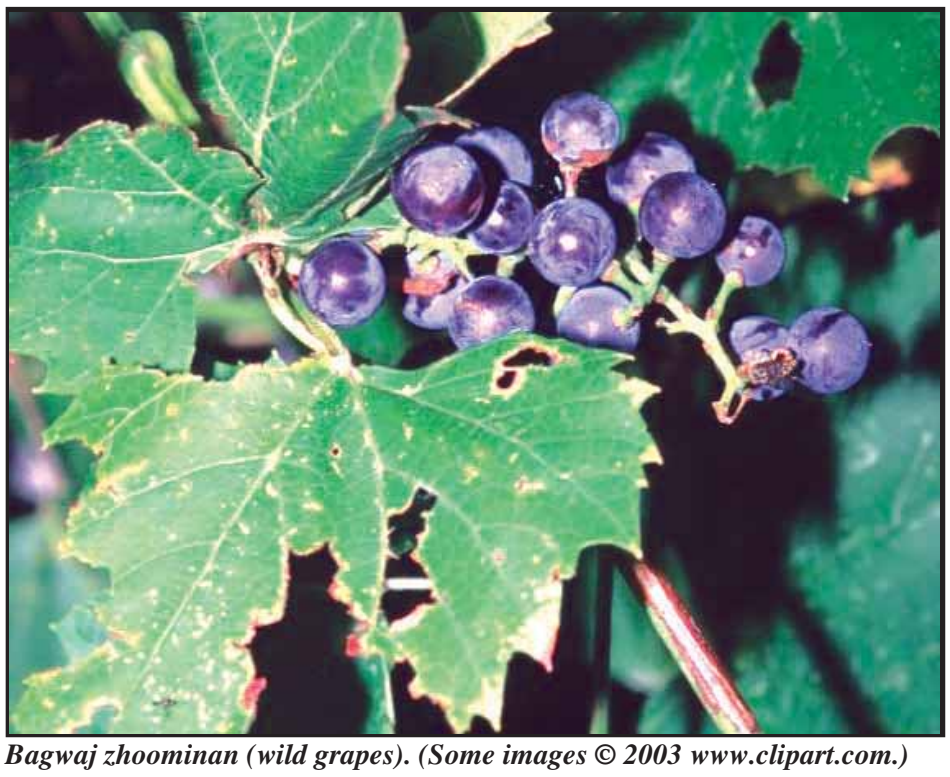
raw, sauteed, steamed, boiled

*watercress leaves

Cold beverages

asasaweminan—choke cherries
bagwaj zhoominan—wild grapes
apaakwaanaatig miinesan—sumac fruits
mashkiigiminag—cranberries

***We have been unable to find the Anishinaabe names for these plants.**



Bagwaj zhoominan (wild grapes). (Some images © 2003 www.clipart.com.)

Tea

oginiig—rosehips
apaakwaanaatig miinesan—sumac fruits
wiinisiibag miinesan—wintergreen berries
wiinisiibag aniibiishan—wintergreen leaves
mashkigobag aniibiishan—swamp tea leaves
kaakaagiwanzh aniibiishan—hemlock leaves
zhingob aniibiishan—balsam fir leaves
giizhik aniibiishan—white cedar leaves
okwemin nagek—black cherry bark
asasawemin wategwaanan—choke cherry twigs
gagige bag—princess pine

Utility items

mazaanaatigoons—nettle stems (twine)
giiziso-mashkiki inaskoon—goldenrods stems (pipes)
apakweshkway waabigwaniin—cattail flowers (torches)
nookwezigan waabigwaniin—fleabane flowers (smoke attracts deer bucks)
oziisigobimizh wadikwanan—willow branches (baskets)
apakweshkway aninbiishan—cattail leaves (weaving)
anaakanashk inaskoon—bulrush stems (weaving)
anaakanashk inaskoon—rush stems (weaving)
*angelica stems (whistles)

Ceremonial items

miskwaabiimizh aniibishan—red willow bark (tobacco)
wiigob ojiibikan—basswood roots (tobacco)
giizhik aniibiishan—white cedar leaves (smudge)
mashkodewashk aniibiishan—wild sage leaves (smudge)

Commercial products

gagige bag—princess pine
zhingob waatigwaanan—balsam fir boughs
wakikaandag gomizhomin—pine cones

Miigwech to those speakers in Mille Lacs, Minnesota and Lac du Flambeau, Wisconsin for their help in providing us with the Anishinaabe names for these plants.

Disclaimer

While the list identifies those plants that can be harvested during the fall months, we strongly recommend that before you pick them, you meet with elders in your community to talk about proper ways of harvesting, times of harvesting, and proper preparation of the plants before eating them.

This is important because some plants need to be harvested in certain ways to ensure that they will continue to grow, while other plants need to be properly washed and prepared prior to eating or using them. In addition, those elders can also help you in different uses of these plants.

Iskigamizigan (sugar camp)

Lac Courte Oreilles, Wis.—Every spring during their childhood, brothers Art and Ken Tainter helped at their family's iskigamizigan (sugar camp, sugarbush) located at Odaawaa-zaagaa'iganing (Lac Courte Oreilles). When they became adults, however, they had to leave home and move to the city to find work—like so many other tribal members.

Now, back on the reservation, they again work the family iskigamizigan, to relive their own memories and help create new memories for today's children. They work hard each year to keep it operational, but consider it to be well worth the effort.

First, loads of firewood have to be cut and hauled to the iskigamizigan. Next, taps need to be inserted into the ininaatigoog (sugar maples), below which containers are fastened to collect the flowing wiishkobaaboo (maple sap).

The Tainters gather from approximately 200-250 trees and use simple, yet effective, containers such plastic ice cream pails and metal coffee cans.

At their iskigamizigan, they begin the wiishkobaaboo boiling process using large kettles and barrels hanging over a hot (very hot) open fire. An iskigamizi-ganaak (frame), made with tree saplings, supports the hanging kettles. Another sapling frame, covered with a tarp, provides a shelter for preparing meals and storing the wiishkobaaboo before boiling.

Family and friends all help at the iskigamizigan. Art and Ken especially appreciate having youngsters participate, learning the traditional ways. Everyone takes turns with the never-ending chores.

The wiishkobaaboo that has accumulated in the containers on each of the trees must be collected. The fire needs constant attention with a steady supply of wood. And, to prevent wiishkobaaboo from boiling over, salt-pork must be regularly wiped around the inner lip of the kettles. After the first boiling, the resulting ishkwaagamizege (partially processed sap) needs to be brought home for the finishing boil.

On one sunny and wind-chilled day this last April, Art and Ken enjoyed the company of Ken's grown children, Sonny and Dorothy, and son-in-law, Raoul. Though everyone worked hard, the conversation and forest surroundings made for a pleasant and gratifying day. No one complained about having to be at the iskigamizigan.

Missing that day was Ken's wife, Rose (undeniably, the forthright leader of the operation). She spent the day at home seeing to the finishing boil that, by all accounts, requires considerable finesse as well as experience.

When processing the ishkwaagamizege, she boils some of it just long enough to make ziiwaagamizigan (syrup). For the rest, she continues boiling and stirring to eventually produce ziinzibaakgwe (sugar) and ziiga'iganan (sugar cakes, candies). Her skill and patience result in the most delicious products!

This year, aninaatig (maple) offered generous quantities of wiishkobaaboo. Though kept to an extremely busy pace, the Tainters feel very grateful for having their iskigamizigan and for being able to savor the companionship of family and friends.

200-250 trees are tapped each year by the Tainter family of Lac Courte Oreilles. After the sap is gathered, the boiling process begins. Above, from the left, Sonny Tainter, Art Tainter and Ken Tainter are shown sitting around the family iskigamizigan. Ken's wife, Rose, was at home seeing to the finishing boil which requires considerable finesse as well as experience. (Photo by Karen Danielsen)

Articles by Karen Danielsen
GLIFWC Forest Ecologist

Aniibiiminan (Highbush cranberries)

Crandon, Wis.—Loretta Dietzler, a Sokaogon (Mole Lake) elder, has been gathering aniibiiminan (highbush cranberries) for more than twenty years. She likes cooking this tart fruit into a delectable jelly for her family and friends. She uses Sure-Jell™, adding a little extra sugar to lessen the sour flavor.

During late summer, she starts looking for the attractive pendulous bundles of ripening, bright red berries. Like all fruits, the production of aniibiiminan varies annually, with some years better than others. Locations with good yields also change yearly.

Loretta always visits her traditional gathering areas, places where she played as a child. She also appreciates receiving tips from friends who have seen bushes full of aniibiiminan.

Each year, she gathers just a small quantity of aniibiiminan, only enough to keep her busy for a day or two making jelly. Out of respect, she leaves plenty of fruit on the bushes to allow for the continuity of nature's cycles.

The gathering of aniibiiminan can occur anytime during late summer and fall. Some people prefer gathering after the first frost which causes the fruit to soften. However, the softened fruit tends to produce a musty odor that can be unpleasant. Cooking the fruit with an orange peel helps to mask the odor.

Aniibiiminan may be eaten raw, if one enjoys the exceptionally acerbic flavor. However, consuming too many can cause gastric upset. Aniibiiminan may also be made into savory sauces, which Florence Greensky, a Fond du Lac elder, and Elizabeth Vetterneck, a Lac du Flambeau elder, enjoy preparing.

Aniibiiminan, which contain substantial doses of vitamin C, can be part of a healthy diet. These berries also have a variety of medicinal uses.

For Loretta, gathering aniibiiminan means squeezing more time out of her already busy schedule; she works at the elder center, cares for her ill daughter, and spends hours helping youngsters create arts and crafts. Nevertheless, making jelly from these fruits will likely remain an important activity in her life for many years to come.

Loretta Dietzler, Sokaogon elder. (Photo by Karen Danielsen)

When a cranberry is not a cranberry

Despite its common name, highbush cranberry is not a true cranberry. Taxonomically it belongs to the botanical family of honeysuckles (Caprifoliaceae). True cranberries belong to the botanical family that includes blueberries, bearberry, and wintergreen (Ericaceae).

Other common names for highbush cranberry include pembina, wild gueldes rose, cherry wood, red elder, rose elder, and witch hobble. Botanists refer to it by its scientific name, *Viburnum opulus* L. subsp. *trilobum* (Marshall) R.T. Clausen. Older scientific synonyms include *Viburnum opulus* L. var. *americanum* Aiton, *Viburnum opulus* L. var. *trilobum* (Marshall) McAtee, and *Viburnum trilobum* Marshall.

Highbush cranberry grows throughout northern United States and Canada in damp thickets and moist woods, and occasionally on drier sites. In early summer, it produces clusters of white flowers that, by late summer, transform into glossy, cranberry-sized, red berries.

The berries provide a picturesque contrast, first to the emerald-colored three-lobed leaves and later, after the leaves turn red and fall, to the exposed earthy-grey branches. The berries often persist through the winter.

This tall (10-15 ft.) native shrub can be easily confused with the European variety (*Viburnum opulus* L. subsp. *opulus*) that has been cultivated and used for landscaping in North America. In general, however, the leaves of the European variety have rougher margins and five lobes that seem stunted compared to the more elongated leaf lobes of the American variety.

In addition, many consider the berries of the European variety to be more bitter and less palatable. This particularly bears out true for those cultivars that have been propagated for fruit color, rather than taste.

Fortunately, the introduced cultivars have not yet become prevalent in the wild. Gatherers searching in the woods, at least presently, can be fairly confident of locating the native highbush cranberry and not the introduced European variety.

Aniibiiminan (highbush cranberries). (Photo: some images © 2003 www.clipart.com)

"The heartbeat of our Mother—the earth—that's us"

Women's drum group encourages a return to Anishinaabe roots

By Sue Erickson, Staff Writer

"We embrace the spirit of the cedar—a woman's medicine. Our songs come from the healing power of the cedar, water and the women." This is how Waasnoodegkwe (Judy St. Arnold), Ojibwe of the Otter Clan, explains the name chosen for a women's drum group—Cedar Spirit Singers, formerly known as the Sweet Earth Singers. She is one of six women who have come together to sing, drum and celebrate life.

Listening to their recently cut CD while en route to my interview with Judy in Ironwood, Michigan, I could feel the healing power of their songs. The music became something of a gentle, spiritual massage, and I found myself relaxing, singing along in Ojibwemowin (the Ojibwe language), even though I was only familiar with a few words and phrases. Perhaps it's the soft, strong, steady drumbeat, like a mother's heartbeat, that soothes the spirit.

The Cedar Spirit Singers emerged as a group in 2000 following a social get together of women with drums and shakers in the Sault Ste. Marie area. They now meet monthly to sing and drum—an experience that the individual singers find both healing and uplifting.

First and primarily, the drum group respects their drums, their deer-toe shakers, shells, horns, and their songs, many which have been gifted to them. "Everything is always smudged before we use them," Judy explains, as she carefully unwraps her drum, enveloped in a hand-appliquéd blanket. "The drum, like our babies, needs to be protected," she points out. "The drum must be kept warm and safe and not be carried in harm's way. The drum bag has all our medicines; things that keep us safe and positive are all in that bag."

Judy actually has two drums, one 14" hand drum she received as gift about fifteen years ago and a smaller 12" drum she had made by a drum maker in Ohio. Constructed from all natural materials, deer hide is stretched tautly over a cedar rim. The tightness of the hide and diameter of the drum determine the sound—the larger drum producing a deeper sound. She makes her own drumsticks, using deerskin with the hair turned to the inside and wrapped around the end of a cedar stick.

Before ever being used, the drum is taken to elders for a blessing and teachings, and then it is feasted. Judy views her drums and her shakers as vessels to carry love and prayers to Gichi Manidoo, much like using asemaa (tobacco) or medicines in a prayer.

Her spiritual connection to the drum is clear. She carries the drum as part of her medicine bundle when going to ceremonies or on a fast. Four otters, Judy's clan symbol, each with a spirit line in one of the four sacred colors, decorate the drum. When playing, she hits the drum directly in the center, sending the sound out in all four directions.

She and her five "sisters" that compose the Cedar Spirit Singers sing for the love of people, their families and especially the youth. They hope the youth can also learn to embrace the drum, the songs and the traditions of the Anishinaabekwe. The first song on their CD, *Coming Home Again*, sung in English, encourages all native people "to bring back and hold onto the sacred way of life the Creator has given us to follow."

Cedar Spirit Singers have a volume of songs, including a lullaby, traditional songs from several tribes, and the humorous, light-hearted *Anna's Kitchen Jam.* Some songs have been given to the group; others come from the women themselves. "A lot of songs come from our dreams, or occur to us during a walk on the shoreline," Judy explains. "I always sing a new song to the water and the Creator first, before sharing it with other singers." Many of their songs are constructed around vocables, or repeated chants, with Ojibwemowin or English words added to create the song.

The Cedar Spirit Singers sing, drum and celebrate life at a Woman's Gathering in Bay Mills this spring. Members of the group are Numkomgokwe, Vivica Sherman; Lou Ann Bush; Waasnoodegkwe, Judy St. Arnold; Mourning Star Woman, Maggie Maracle; Lowansa, Kat Memegos; and Anna Rogers-Stott. (Photo Submitted)

Although the Cedar Spirit Singers originated as a casual group of women who simply enjoyed coming together to sing and drum, they have made two appearances at Indian Summer in Milwaukee, Wisconsin and will be returning there for an appearance in 2003. They also appeared in a video produced by the Michigan Inter-Tribal Council encouraging healthy prenatal care, and they are asked to sing at funerals, pow-wows, schools, elder gatherings and weddings—"wherever the women's songs of the heart are needed," Judy says.

For Judy the experience with the group has been meaningful and powerful. The group shares a sense of sisterhood and feels like a family. "There's a real sense of unity and reaching out with one heart." The group is thankful for elder ekwe who guide them and a youthful friend, Miigizhee kwe, the daughter of one of the singers, who brings the joy and antics of childhood to the troupe.

Other members of the group include Lowansa, Kat Memegos, Southern Cheyenne, Wolf Clan; Numkomgokwe, Vivica Sherman, Cherokee, Wolf Clan; Mourning Star woman, Maggie Maracle, Mohawk, Wolf Clan; Lou Ann Bush, Crane Clan; and Anna Rogers-Stott, Ojibwe, Turtle Clan.

Judy hopes that the groups' music not only brings healing and a return to tradition to their listeners, but also encourages other women to take up the drum and seek their own visions and voices through song. *Niiswa (From the Heart),* one of their songs, adeptly describes the Cedar Spirit Singers. Their songs are women's celebration of birth and life; they are prayers of thankfulness and joy expressed through song and the drumbeat. Judy explains it best—"the beat of the Mother—the earth—the planet—that's us."

For more information on the Cedar Spirit Singers contact Judy St. Arnold at (906) 932-2095.

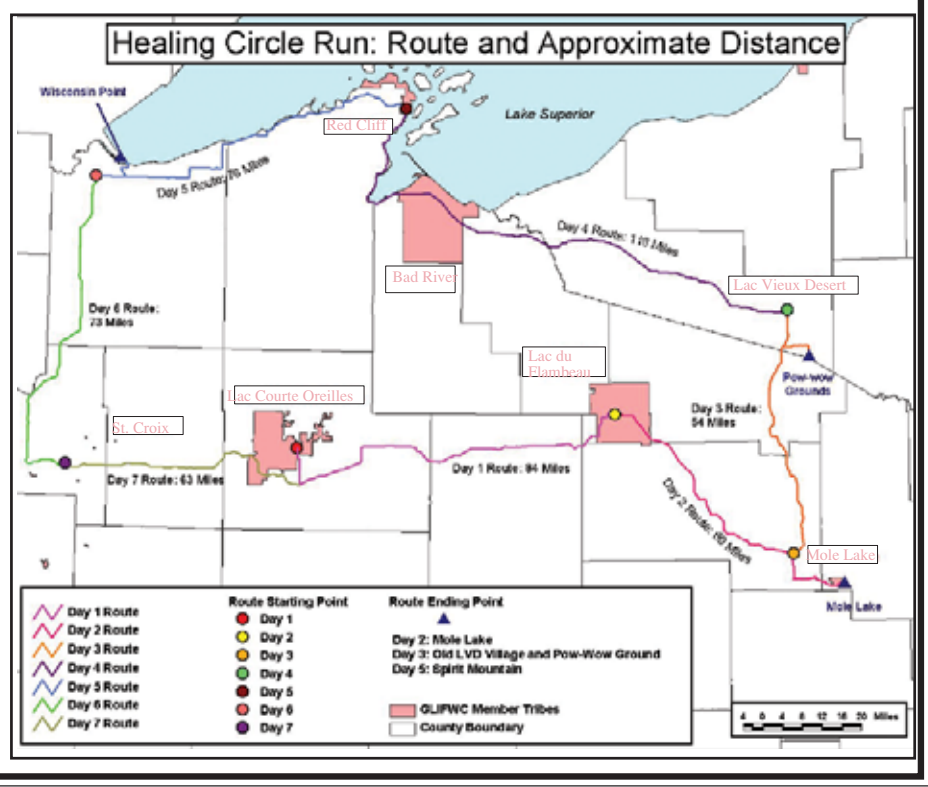
Healing Circle Run—July 11-17, 2003

The 2003 "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 intergenerational trauma and scars left by war, racism, oppression, and many destructive policies aimed at assimilation.

The 2003 "Healing Circle" run/walk will occur from July 11-17, 2003. The run/walk will connect eight Ojibwe reservations in northern Wisconsin and Michigan, and Minnesota (see map) starting at the Lac Courte Oreilles Reservation on July 11, at Lac du Flambeau on July 12, at Mole Lake on July 13, at Lac Vieux Desert on July 14, at Bad River/Red Cliff on July 15, at Spirit Mountain–Duluth on July 16, at St. Croix and returning to Lac Courte Oreilles on July 17.

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 James Schlender or Neil Kmiecik at (715) 682-6619, or giiwegiizhigookway Martin at (906) 366-7040. All participants must assume personal liability, as well as responsibility for their own transportation and expenses.



Snapping Turtle (Mikinaak)

We're cold-blooded reptiles—just woke from our winter naps (hibernation). We can get crabby—especially if we're hungry. Watch out! We bite.

As snapping turtles, we lure fish into our mouths by tricking them—the tips of our tongues look like worms!

We can be from 8 to 18 inches long. Our shells can get pretty big—great for Native American ceremonies. The 13 plates on our shells represent the 13 moons in a lunar year.

Painted Turtle (Miskwaadesi)

Soon the ladies will lay their eggs and in 45-90 days, baby turtles! We grow from 4 to 7 inches long.

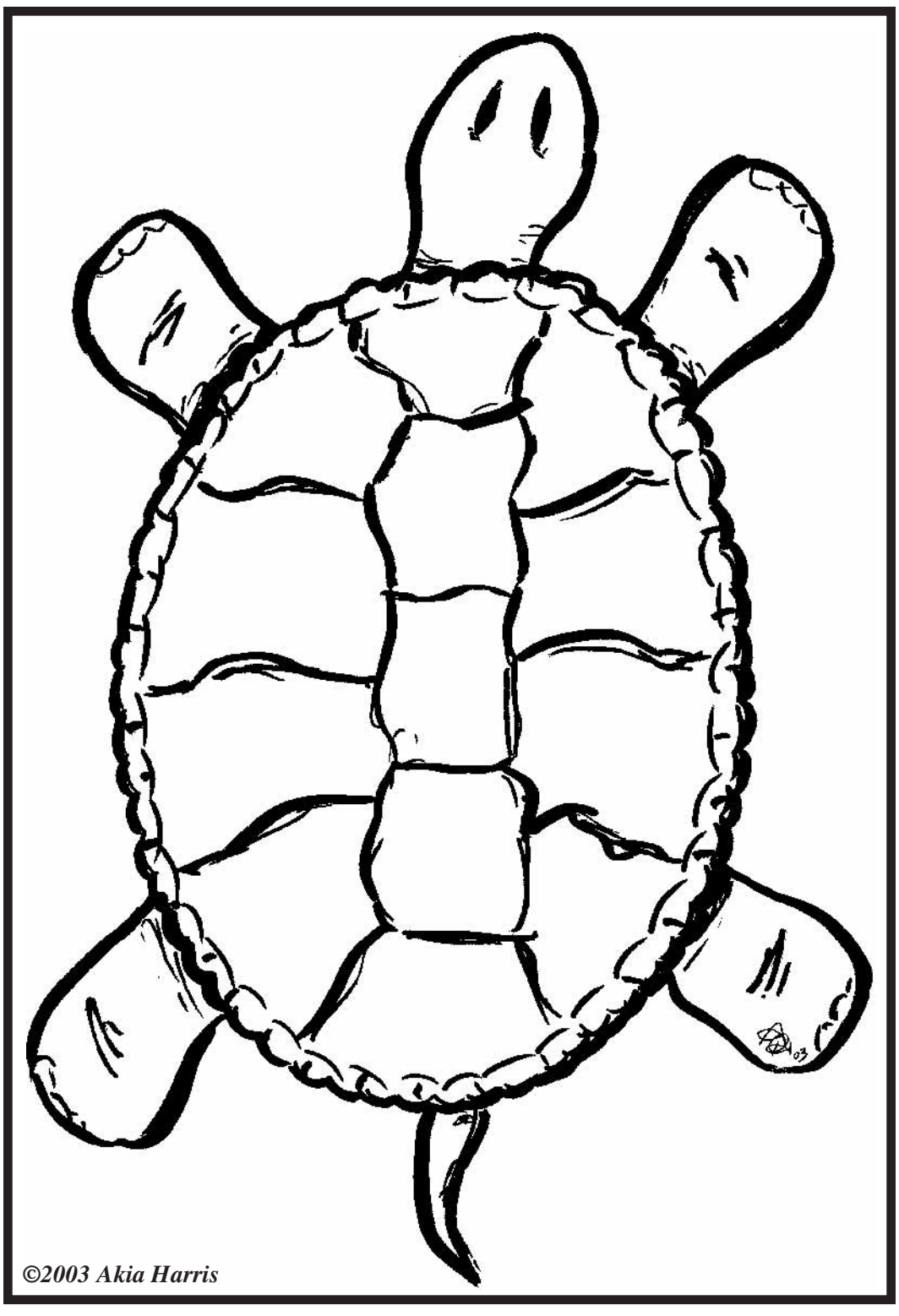
Insects, plants, some carrion (dead animals), and small animals feed our hunger.

Like snapping turtles, we live in freshwater rivers, lakes and ponds.

Text by: Barbara Sanchez, Northland College Intern.

Photos: (some images © 2003 www.clipart.com).

color me mizhiikae (turtle)



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Thirteen moons on turtle's (mizhiikae) shell

(**Editor's note:** According to Ojibwe legend, the thirteen sections on a turtle's shell represent the thirteen cycles of the moon. These thirteen moons are reprinted below:)

Gichi-manidoo-giizis—Great Spirit Moon

Namebini-giizis—Sucker Moon

Onaabani-giizis—Hard Crust on the Snow Moon

Iskigamizige-giizis—Maple Sugar Moon

Waabigwanii-giizis—Flower Moon

Ode'imini-giizis—Time for Picking Strawberry Moon

Miskwimini-giizis—Red Berry Moon

Miinin-giizis—Blue Berry Moon

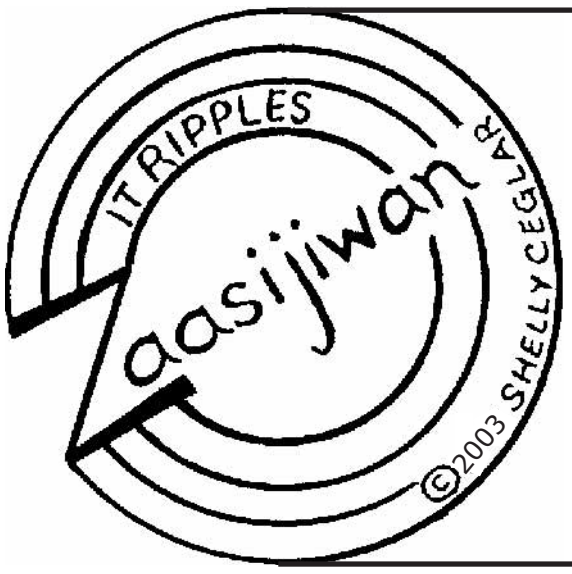
Manoominike-giizis—Ricing Moon

Waatebagaa-giizis—Leaves Changing Color Moon

Binaakwii-giizis—Falling Leaves Moon

Gashkadino-giizis—Ice is Forming Moon

Manidoo-giizisoons—Little Spirit Moon



Niibing...

nimawinzomin. Aabita-Niibino-Giizis gemaa Miini-Giizis izhinikaazo wa'aw giizis. Ninandawaabamaag ingiw gozigwaakominagaawanzhiig, miskominagaawanzhiig, ode'iminagaawanzhiig, bawa'iminagaawanzhiig, bagesaaniminagaawanzhiig, idash miinagaawanzhiig. Nimiigwechiwendamaag.

When it is Summer...

we pick berries. Halfway-Summer-Moon or Blueberry Moon (July) she is called this moon. I look for them those juneberry bushes, raspberry bushes, strawberry bushes, pincherry bushes, plum bushes, and blueberry bushes. I am thankful for them.

Bezhig—1

OJIBWEMOWIN
(Ojibwe Language)

Double vowel system of writing Ojibwemowin.
—Long vowels: AA, E, II, OO
Gemaa—as in father
Gaye—as in jay
Gaawiin—as in seen
Adoopowin—as in moon
—Short Vowels: A, I, O
Idash—as in about
Imaa—as in tin
Omaa—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.

Particles

Add these with no inflections. They're adverbs, conjunctives or exclamatory!

dash; idash—and
gemaa—or
ganabaj—maybe, perhaps
baanimaa—later, not until a certain time
gaye—also
apii—when, at the time
geyaabi—yet, still
mamaawi—together
miinawaa—again
mewinzha—long ago
gego—don't

Niizh—2

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

A. Waabigwaniin, oginiin, ginimaagaawanzhiig.

B. Nimaamiganaanan iniw miinan idash bawa'iminan.

C. Niwii-chiibaakwaadaanan iniw baashkiminisiganan.

D. Nawaj waabigwaniin, apisiin, nesobagak, idash anaaganashkiin.

E. Gaye ningitige dash ninaajimiijime niibing.

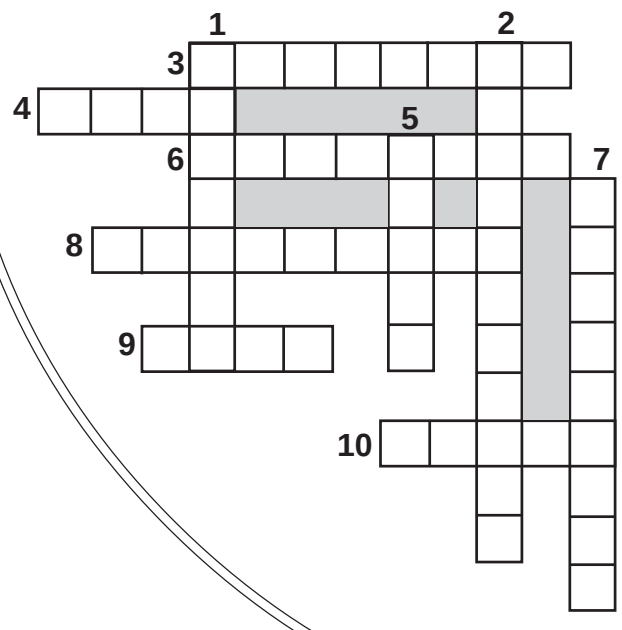
F. Mindimoyeyag geyaabi manash-kikiiwesag.

G. Giin dash? Ganabaj gaye giwii-kitige.

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

Niswi—3

IKIDOWIN ODAMINOWIN (word play)



Down:

1. Together
2. S/he is named so
5. More
7. Sit!

Across:

3. Raspberry
4. Here
6. Long ago
8. Flower
9. Blueberry
10. Far

Niiwin—4

Nawaj Particles & Phrases

apane—always, continually
Ambe.—Come.
Amanj iidog.—I am not certain.
Bekaa!—Wait!
gaawiin wiikaa—never
omaa—here imaa—there
waasa—far
bangi—a little bit, few
Inashke!—Look!
Miigwech!—Thanks!

Goojitoon! Try it! Translation below.

–Bekaa!

–miinawaa

–Inashke!

–apane

–imaa

–Ambe!

1. Mamaawi Ojibwemon _____!
2. _____ waasa iwidi! Giwaabamaa na maang?
3. Anishinaabeg, miigwech _____!
4. _____ omaa! Namadabin imaa adoopowining.
5. _____! Daga ikidon miinawaa, miigwech.

Translations:

Niizh—2 A. Flowers, roses, rose bushes. B. I gather up those blueberries and pincherries. C. I will cook them preserves. D. More flowers: violets, clover, and ferns. E. Also I garden and go get food when it is summer. F. Elder women still gather medicine. G. And you? Perhaps also you want to garden.

Niswi—3 **Down: 1.** Mamaawi **2.** Izhinikaazo **5.** Nawaj **7.** Namadabin **Across: 2.** Miskomin **4.** Omaa **6.** Mewinzha **8.** Waabigwan **9.** Miin **10.** Waasa

Niiwin—4 **1.** Together speak Ojibwe always! **2.** Look far over there! Do you see the loon? **3.** Ojibwe people, thanks again! (can be "you're welcome" too) **4.** Come here! Sit there at the table. **5.** Wait! Please say it again, thank you.

Return to the traditional diet

(Continued from page 4)

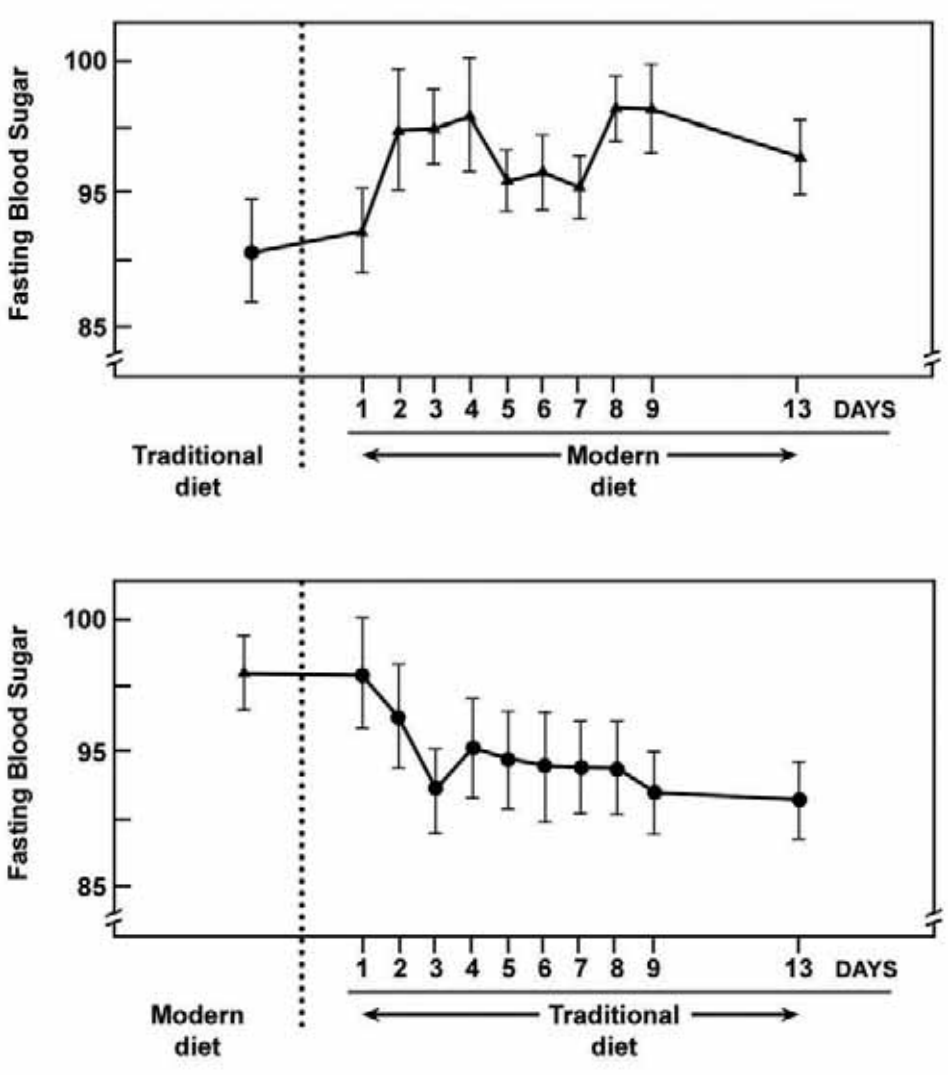
Fortunately, many of the health problems associated with the metabolic syndrome can be reversed by diet, exercise and weight loss. Two recent studies have shown that persons at high risk for developing type-2 diabetes who followed a program of regular exercise (30 minutes per day) and moderate weight loss (10 pounds) decreased their rate of type-2 diabetes by 50%

Return to the traditional diet

In 1991 an interesting study was conducted with a group of Pima Indians from Gila River, Arizona. Twelve tribal members who did not have diabetes volunteered to eat a "traditional" diet for two weeks followed by a "modern" diet for another two weeks. Blood sugar and other values were measured during each diet period.

The traditional Pima diet was low in fat, cholesterol and protein and high in fiber and "complex" carbohydrate from hominy corn, beans, acorns and other native plants. The modern diet was higher in fat and cholesterol, about equal in protein and lower in complex carbohydrate and fiber. Both diets had the same daily calories (3000).

Blood sugar levels during each diet period are shown in the figure below. Notice that the modern diet soon produced higher blood sugar levels, while the traditional diet returned the blood sugar levels back to normal levels. The investigators concluded that the traditional high fiber-complex carbohydrate and low fat diet resulted in a slower release and uptake of sugars from the intestines.



A similar study was also reported for Tarahumara Indians living in Mexico. When they ate an "affluent" diet high in saturated fat and cholesterol, they showed a sharp rise in cholesterol levels and also gained weight over a period of six weeks.

There are no similar studies of the Woodland-Anishinaabeg diet versus the modern diet. So just for fun lets compare the nutritional value of an Anishinaabeg summer meal versus a "Fast Food" lunch. The traditional food values were obtained from Health Canada (see reference at end of article). The fast food lunch was analyzed be Gail Underbakke, senior dietician at University Hospital.

Ambe Wiisinidaa!

Traditional food	**calories**	**%fat**	**fiber & nutrients**
Venison roast 4oz	200	5	Iron, B vitamins
Wild rice 1 C	180	0	Fiber, B vitamins
Fiddle heads 1 C	35	0	Fiber, vitamin C
Bannock 4 oz	150	7	Fiber, B vitamins
Raspberries 1/2 C	30	0	Vitamin C

Fast Food	**calories**	**% fat**	**fiber & nutrients**
Cheeseburger 1/4#	530	51	Iron, B vitamins
Fries 2 C	610	29	None
Soda beverage 16 oz	200	0	None
Ice cream 1 C	320	45	Trace Calcium

The traditional meal provides about 600 calories and is low in fat, high in fiber and also has a number of important nutrients—and there is some room for second helpings of low calorie fiddle heads and raspberries. But this meal is a little short on calcium so a serving of low fat milk or other dairy should be added

The Fast Food meal contains 1660 calories, with a large amount of fat and little fiber or nutrients. Now think about the "thrifty gene" and why obesity is such a problem in Indian Country!

Healthy eating in 2000

Traditional foods are not always available, so it is best to choose the healthiest food groups which we now know are good for your heart and may help to prevent heart attacks and strokes.

Fiber rich foods including oat bran, oatmeal, barley, whole-grain bread and wild rice all help to reduce blood cholesterol. These high fiber foods also slow the rise in blood sugar after you eat "refined carbs" (carbohydrates). Diet fiber can lower cholesterol 10-20%, if you also limit intake of fatty foods. (see below).

Fish rich in "omega-3" fat will decrease blood clot formation in arteries and also lower the blood triglyceride levels. Many studies have shown that a high fish diet will help prevent heart attacks and strokes. The best fish to eat are cold water "fatty" fish like salmon, sardines, herring, tuna, halibut and also oysters.

Plant oils which are rich in "omega-3" fat or "mono-unsaturated" fat have also been shown to reduce heart attacks and strokes. The best oils for omega-3 fat are flaxseed, canola and soybean. Olive oil has a high content of mono-unsaturated fat. These oils should always be used for cooking, baking and for salad dressings.

Nuts and seeds are a good source of protein, omega-3 oils, vitamins, minerals and antioxidants. A diet rich in nuts helps to prevent heart attacks. Recent studies have also reported that eating nuts will reduce the risk of diabetes in women. Some of the best nuts and seeds are walnuts, flaxseeds, almonds, soybeans and wheat germ.

Fruits with red or purple skins contain various "flavonoids" which act to decrease blood clotting activity and to increase blood flow in arteries. The flavonoids are powerful antioxidants, and this may help to explain why a diet high in fruit, nuts and fish helps to prevent heart attacks and strokes.

Some fruits which are high in flavonoids include red and purple grapes, cranberries, blueberries, and raisins. Studies at UW Medical School show that drinking a glass of purple grape juice improves blood flow in arteries and reduces the blood clotting activity. (But you need to watch the high sugar content of grape juice and cranberry juice.)

Garlic has been shown to reduce blood clotting activity, and garlic also has a modest cholesterol lowering effect. Fresh garlic is most effective. During cooking garlic may lose much of its beneficial action.

Foods to avoid include "saturated fats" and trans-fats" which are found in lards, vegetable shortening and "hard" margarines. They are used in the preparation of many commercial fried foods and bakery (deep fried fish, chicken, doughnuts, french fries, and yes, our beloved frybread). These fats will increase blood cholesterol and are associated with a higher risk of heart attacks and strokes. You should change to "soft" or near liquid margarines or spreads which are high in omega-3 oil or olive oil.

A diet high in "refined carbs" is now thought to be a major factor causing the high rate of obesity and diabetes which is sweeping across the US, especially in Indian Country. These foods cause a rapid rise in blood sugar and blood triglyceride fat. Much of the sugar is stored as body fat—unless you are exercising or doing similar work to burn up the sugar and fat in the blood.

What about eggs? Egg yolks are almost pure cholesterol and one yolk daily is the limit of cholesterol intake recommended for adults. But the egg white has no cholesterol and is a good source of protein. So do your cooking and baking with egg whites or egg substitutes.

Remember, eating heart healthy foods and avoiding the bad fats and carbs can help to reduce your risk of heart and blood vessel disease. But if you have high cholesterol or diabetes or both, you should be evaluated and treated with medications in addition to eating the food groups outlined in this article.

Geget igo, giwiisiniwin dibishkoo mashkikiwan. Apane minwanjigeyan gaye giga-ganawedaan gid'e.

For sure your food is like medicine. Always eat well, and you will take care of your heart.

Mii iw.

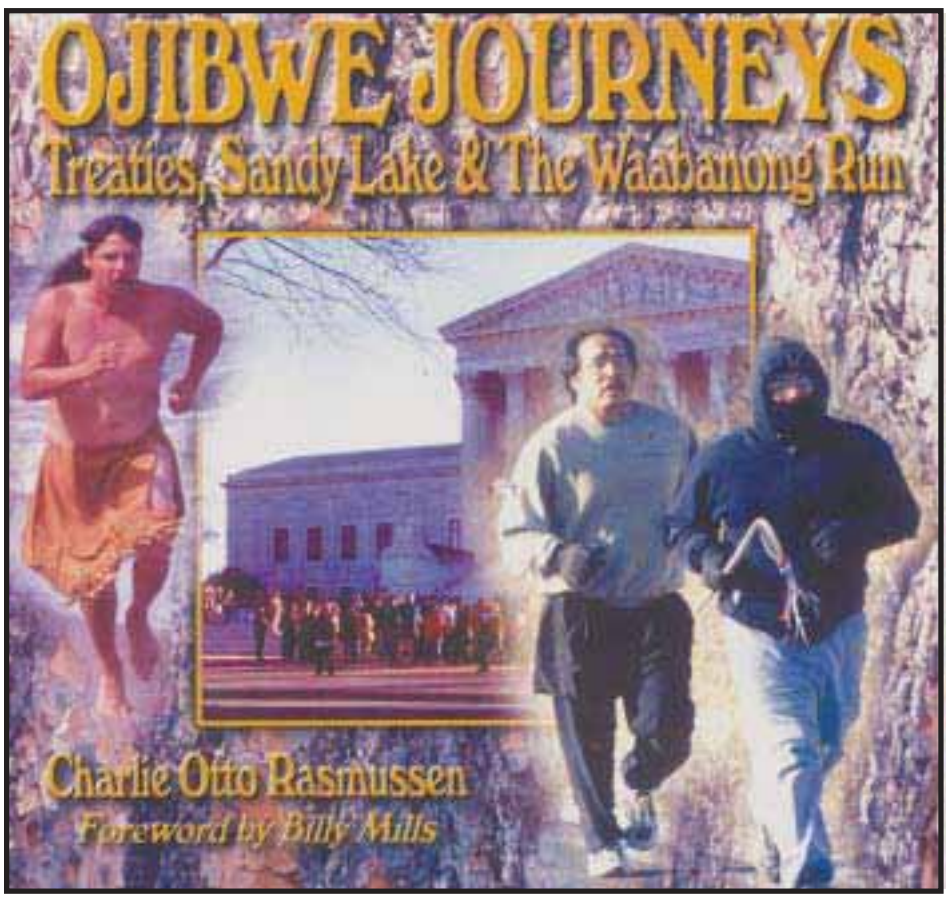
Reference

Native Foods and Nutrition, An Illustrated Reference Manual, Health Canada, 1994.

Miigwech to Elder Joe Chosa (Ozaawaabik) and Leon Valliere (Ozaawaagosh) both of Lac du Flambeau for editing the Ojibwemowin.

(Dr. Hanson is an Emeritus Professor, Section of Cardiovascular Medicine at UW Medical School–Madison and a consultant to Great Lakes Intertribal Council Indian Health Program. He is a long time student of Anishinaabemowin.)

Ojibwe Journeys now available



Ojibwe history and traditions come alive in the new release from GLIFWC Press, *Ojibwe Journeys: Treaties, Sandy Lake and the Waabanong Run*. The book explores key events in the Ojibwe treaty-making period of the early 1800s and traces the ensuing journey to protect reserved rights from formidable governments and anti-Indian groups.

Over a 150 year period the Ojibwe utilized a fusion of running traditions, cultural directives and legal skills to maintain their lifeway in the greater Lake Superior region. Extensively researched and documented, the book provides a rare and intimate look into Ojibwe culture and how the tribes approached the court hearings of the1990s.

Olympic running champion and Oglala Sioux Billy Mills authored the book's foreword. Mills, a Gold Medal winner in the1964 Tokyo Olympic games, places the spiritual and legal journey of the Ojibwe people into relief with his own experiences.

Written by Charlie Otto Rasmussen, *Ojibwe Journeys* contains color maps and pictures, footnotes, a bibliography, plus the runners' journal from the 1998 Waabanong Run that brought the Treaty Staff from Lac du Flambeau, Wisconsin to Washington, DC entirely on foot.

Books are $16.00, which includes postage. Retail and educational discounts are available.

"Rasmussen brings a warm humanity to his writing and has a gift for blending his extensive research with the words of the Ojibwe themselves."

John Little Bird Anderson
Professor of American Indian Studies Emeritus
St. Scholastica & Mount Scenario Colleges

Order Form

Please send your $16.00 check or money order (U.S. Funds only) to: Great Lakes Indian Fish & Wildlife Commission, Public Information Office, P.O. Box 9, Odanah, Wisconsin 54861; phone (715) 682-6619 ext. 108 or e-mail pio@glifwc.org.

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Red Cliff hits the airways

Red Cliff, Wis.—On the air since April 24, 2003, Red Cliff's new radio station, WRZC 92.3FM, has been entertaining the community with an eclectic selection of music deejayed by voices of Red Cliff.

"It was like a breath of fresh air in this community," commented Executive Director of the First American Prevention Center Lynne Basina. "People are excited about it—they're charged about it."

With a mission "to translate indigenous teachings into life long learning skills," the station strives to work at being "educational and cultural in focus," as well as tuned-in-to the musical interests of the community.

Incubated by the persistence of Station Manager Dean Cadott, the idea of the radio station came as a result of a brainstorming session by the youth service component of the Center for Substance Abuse Treatment, envisioning a means to a better future for the Red Cliff community.

"It gives the whole community a voice—an actual voice," asserted deejay Tiffany "Lady T" Hurley.

All volunteers from Red Cliff, the deejays contribute their personalities and passions in hopes of keeping the station running and growing. Funded by grants through the Center for Substance Abuse Treatment, with donations of music, money and time from the tribe and the community, it's a challenge accepted.

Led by Dean Cadott and Lynne Basina, the deejays include Charlie Babineau, Chuck Basina, Fran DePerry, John and Tim Gokee, Jim Gordon, Ray Hanson, Tiffany "Lady T" Hurley, Joe Lamoreaux, Mardi "Little Hawk" Medawar, and Maurice "Sikwitit Styles" Thomas.

From Monday through Friday, these dedicated workers feature music for everyone: blues and classic rock (6-11 a.m.) with "Little Hawk," hip hop and R&B (11 a.m.-5 p.m.) with "Sikwitit Styles," and a regular talk show, "Dibaajiimowin," (5-6 p.m.) hosted by Charlie Babineau and Dean Cadott.

"Dibaajiimwin" features local musicians, interviews with area political candidates and discussions on social issues, cultural teachings and environmental concerns.

On Saturdays, Lynne and Chuck Basina read from "Song of Hiawatha," two stories a show (1-3:30 p.m.).

Planning a grand opening in May or in the near future, the station hopes to gain continued support from everyone.

Although the listening area only covers a 15-mile radius, the deejays see Red Cliff Radio as a first step forward toward a greater vision.

For more information and updates, or if you are interested in contributing money, time or ideas to WRZC, contact Lynne Basina or Dean Cadott at the First American Prevention Center at (715) 775-3755.

Red Cliff's new radio station, WRZC 92.3FM, has been entertaining the community with an eclectic selection of music deejayed by voices of Red Cliff. WRZC deejays include (from the left) Lynne Basina, Charlie Babineau, Tiffany "Lady T" Hurley and Maurice "Sikwitit Styles" Thomas.

Article & photo by
Barbara Sanchez, Northland College Intern

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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.

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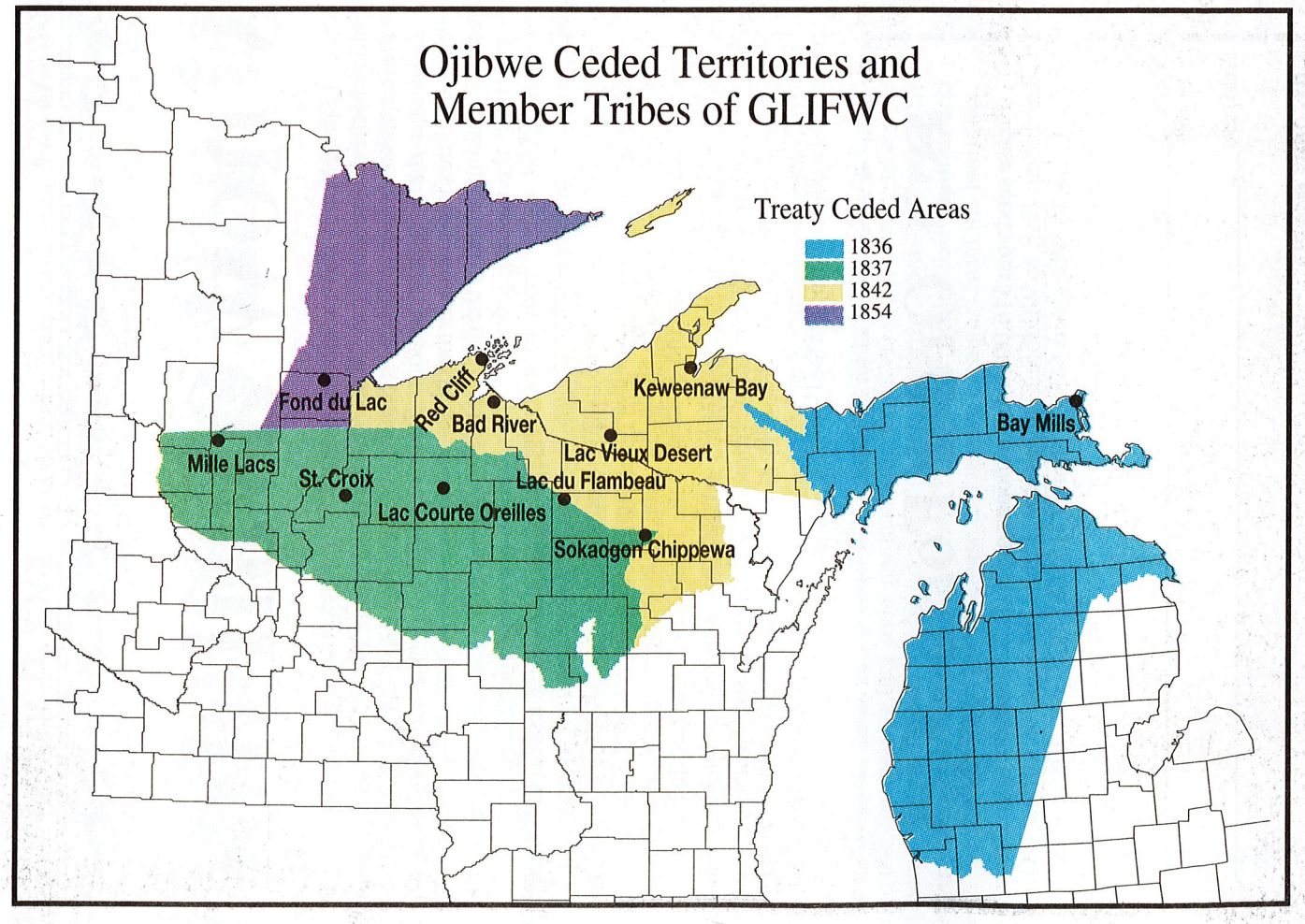

Mazina'igan

A Chronicle of the Lake Superior Ojibwe