Mazina'igan
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High winds plague the spring season but lakes yield a substantial treaty harvest

By Sue Erickson
Staff Writer

Odanah, Wis.—Many tribal netters and spearers were riding the waves this spring as blustery gusts blew cold and hard through the ceded territories, presenting challenging conditions, particularly on the expansive Mille Lacs Lake. Her formidable waves on windward shores often forced netters to set from the leeward landings and limited opportunities to spear.

On the smaller Wisconsin lakes, spearers were also often limited to sheltered shorelines. However, despite the cold and wind, the tribes took home a healthy harvest for 2002.

Joe Dan Rose, Inland Fisheries Section leader, noted that the cold, windy conditions at Mille Lacs were much more prevalent this spring than in the past several years.

"When you think about how many people were out in these conditions each day and night, you are thankful that everyone made it through the season safe and sound."

Minnesota 1837 Treaty season

From Mille Lacs Lake, the combined total catch of walleye this spring was 52,999 pounds, a little over half of the total tribal walleye quota of 100,000 pounds. This compares to 41,732 pounds of walleye harvested in spring of 2001.

Additional tribal harvest is likely to occur under the 2002 tribal quota for Mille Lacs Lake, which remains in effect until March 31, 2003.

Also harvested this spring from Mille Lacs Lake were: 7,918.7 pounds of northern pike; 990.3 pounds of perch; 64.6 pounds of cisco; and 630.4 pounds of burbot.

Tribes that participated in the spring netting included the Mille Lacs and Fond du Lac Bands from Minnesota and the Bad River, Lac Courte **(See Spring season, page 11)**

Shelly McRae, Mille Lacs, found a nice catch of walleye when lifting her net on Mille Lacs Lake. (Photo by Sue Erickson)

Wild rice genetic research scrutinized by some Ojibwe tribes

Protesters rally at U of M

By Charlie Otto Rasmussen
Staff Writer

White Earth Ojibwe Paul Schultz (center) talks with a woman at a protest rally at the University of Minnesota on May 20. See page four article "Meddling with manoomin," for more information on the potential impacts of this research. (Photo by Charlie Otto Rasmussen)

Minneapolis, Minn.—Considered a sacred plant from the Creator, manoomin (wild rice) is arguably the most significant plant among tribes in the greater Lake Superior region. It is both sacred and an immensely important food source for humans, waterfowl and a host of other species. A growing sense of unease over the genetic research and manipulation of wild rice for the agricultural industry, however, has raised concerns that naturally-occurring manoomin—and the cultural values it embodies—could be in jeopardy.

Supported by organizations like the Green Party and the Organic Consumers Association, Ojibwe Indians held a protest rally on May 20 at the University of Minnesota (U of M)where wild rice genetic research has been underway for almost a decade.

"They say they can improve upon this gift the Creator gave us," said White Earth's Paul Schultz. "But the potential for catastrophe is just too high."

Around one-half of the Great Lakes Indian Fish & Wildlife Commission's (GLIFWC) eleven member bands have passed tribal resolutions opposing the genetic modification of wild rice.

GLIFWC's Voigt Inter-tribal Task Force (VITF) continues to monitor developments in wild rice research and remains committed to protecting natural manoomin in the 1837 and 1842 ceded territories and whereever it occurs.

"Mother Nature handles her own reproduction and we shouldn't try to fool her," said Tom Maulson, Chairman of both GLIFWC's Board of Commissioners and the VITF. "I think Indian people understand that better than the scientists who are doing this work. Don't mess with Mother Nature."

California and Minnesota lead all states in the production of cultivated wild rice—known as paddy rice. University researchers hope to provide paddy farmers with disease resistant varieties of rice that offer high yields.

Among the concerns of some tribes is that genetically manipulated wild rice might contaminate natural manoomin, threatening both a cherished food and a cornerstone of traditional Ojibwe life.

At the rally, Winona LaDuke, a White Earth Ojibwe and former Green Party vice presidential candidate, addressed the gathering of around 80 people outside the annual conference of the National Agricultural Biotechnology Council. "The sustainability of our rice is contingent on its diversity. It's central to our cultural well being, spirituality as well as economically," she said.

Local singers Thunder Nation and the youth drum from Heart of the Earth Survival School performed drum songs during the two-hour rally.

Over 20,500 walleye tagged at Mille Lacs Lake this spring

By Nick Milroy, GLIFWC Inland Fisheries Biologist

Mille Lacs, Minn.—The wind blew, and the rain and snow flew during the interagency walleye tagging study conducted this spring on Mille Lacs Lake in Minnesota. In a spring that was dominated by strong winds, big waves, and cold temperatures, electrofishing crews from the Great Lakes Indian Fish & Wildlife Commission (GLIFWC), US Fish and Wildlife Service (USFWS), Fond du Lac Band, and St. Croix Band successfully captured, tagged, and live-released around 12,100 adult walleye at Mille Lacs Lake between April 23 and May 7, 2002.

These electrofishing crews worked late into the night, often along lengthy stretches of unprotected shoreline located miles away from the nearest boat landing to complete the initial marking phase of this three year walleye tagging study.

Given the adverse conditions that greeted these crews nearly every night, their efforts and overall contribution to this important interagency study are both significant and worthy of commendation.

While the electrofishing crews were tagging at night, Minnesota Department of Natural Resources (MnDNR) crews were tagging during the day. As a complement to USFWS and tribal use of electrofishing equipment, the MnDNR used large trap nets to capture walleye for tagging. Close to 8,400 additional fish were tagged by the MnDNR for a grand total of around 20,500 walleye tagged.

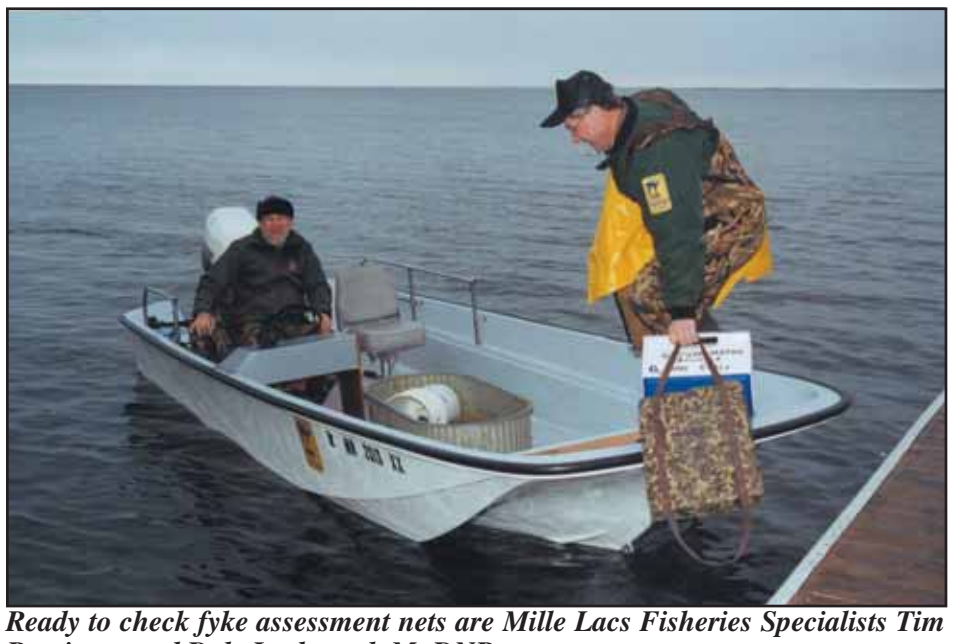
Additional walleye will be tagged this year by GLIFWC during their annual spring and fall juvenile walleye surveys and by MnDNR personnel aboard state licensed commercial fishing launch boats. This effort should contribute several hundred more newly tagged walleye to the population during 2002.

Fishery staffs from GLIFWC, the tribes, and the MnDNR are pleased with the fact that around 20,500 walleye were tagged. This interagency study is expected to provide new insights into the habits, abundance, and size and age structure of the walleye population in this 132,516 acre lake.

Information from tagged walleye will be collected from the tribal harvest in 2002, 2003 and 2004 and during future electrofishing surveys by GLIFWC. The MnDNR will collect information from the state angler harvest and through their future survey work. Tribal anglers, spearers and netters should report all tagged walleye they capture to tribal biologists, creel clerks or wardens. Any tags from harvested fish in the possession of tribal members should be sent to GLIFWC, P.O. Box 9, Odanah, WI 54861. Tags can also be reported by phone at (715) 682-6619 or email (nmilroy@glifwc.org).

GLIFWC conducted an interagency walleye tagging study on Mille Lacs Lake in Minnesota the spring. GLIFWC's electrofishing crew members were, from the right, (kneeling) Don Corbine, Gary Czypinski, Nick Milroy, Jerome Cross and Brian Borkholder. Back row: Neil Kmiecik, Robert Cloud, Dale Corbine, Bill Soulier, Chuck Smart, Shane Cramb, Butch Mieloszyk, Sean Thompson, Ed Whitebird, Gary Martineau, Scott Yess and Duane Soulier. Missing from the photo is Joe Dan Rose. (Photo by Sue Erickson)

Inland fishery crews surveying Wisconsin lakes were, from the left, (front) Ed White, Louis "Buck" Plucinski, David Stone, Ed Wiggins, Jeff Nelsen, Frank Stone, Casey Bigboy and Travis Taylor. Back row, Josh Johnson, Michael Preul, Justin Pelletier, Frank Olds, Phil Doepke and Don Taylor. Missing from the photo is Kris Arbuckle. (Photo by Sue Erickson.)



Ready to check fyke assessment nets are Mille Lacs Fisheries Specialists Tim Rossinger and Dale Lockwood, MnDNR.

Inland fisheries spring walleye population surveys—a success!

By Phil Doepke, GLIFWC Inland Fisheries biologist

Odanah, Wis.—Inland Fisheries survey crews, undaunted by strong spring winds and cold and wet weather, completed fifteen walleye population estimates in Wisconsin and one in Michigan. They also completed eight walleye length frequency surveys in Wisconsin.

The crews consisted of two boats from GLIFWC, one boat from the St. Croix Tribe, one boat from the Mole Lake Tribe and one boat from the US Fish and Wildlife Service (Ashland). A late spring greeted survey crews, which was a relief as GLIFWC staff scrambled to outfit the four new trucks acquired in late March.

Crews began the surveys on April 18th in Wisconsin and finished on May 5th in Michigan, at which time they were sent to help with the ongoing walleye tagging study being conducted on Mille Lacs Lake in Minnesota.

It was a relatively late start for the spring surveys as the lakes were ice covered until a short stint of unseasonably warm weather in early April helped to force the ice to give way.

Once the lakes were free of ice, the weather cooled which kept lake water temperatures in the high 30's and low 40's and held walleye on spawning grounds for an extended period of time.

With more nights to survey lakes, all priority lakes were able to be sampled. Wind and snow returned on a couple nights but survey crews endured cold fingers and icy boat decks to complete their work.

An additional "alternate" lake was also surveyed in Wisconsin. Despite a few nights of near blizzard-like conditions and some extra-long nights it was a safe season.

Wisconsin crews put in some extra long nights compensating for crews sent to survey Mille Lacs Lake. GLIFWC sent two electrofishing boats, and a work-up boat to Mille Lacs Lake.

Data are now being entered so it is too early to report any numbers from the surveys. However, the lake surveys turned up many size classes and plenty of small adult walleye. Small fish are likely the result of young fish being recruited into the adult population and are a good indication that there will be plenty of walleye in the future.

Later this year fisheries technicians Ed White and Henry "Butch" Mieloszyk will age spine samples gathered this spring to confirm whether the small walleye are young fish or slow growing older fish.

Another interesting find was a relatively large number of adult males in Kentuck Lake, Vilas County. GLIFWC in cooperation with the USFWS, Mole Lake, Lac du Flambeau and Red Cliff Tribes have been working hard to rebuild a collapsed walleye population in this lake.

Kentuck Lake had been suffering from a skewed gender structure, characterized by a few large female walleye and near absence of male walleye. Last year we saw evidence that stocking had provided some young adult male walleye into the population. This year's survey confirmed this to be the case. Now hopefully those large females and young males can get together and provide some natural reproduction.

GLIFWC would like to provide a special thanks to the tribes which provided assistance and especially the tireless crew members that made the spring 2002 walleye population estimate surveys a success (see photo).

On the cover

Yolanda St. Germaine, Lac du Flambeau, a veteran spearer and netter, returned to fish Mille Lacs Lake this spring with her mother Betty Jack. The gals pulled in a nice catch of northern pike and walleye. (Photo by Sue Erickson)

Chronic Wasting Disease in our deer

Be concerned, be aware, but don't overreact

By Sue Erickson
Staff Writer

Odanah, Wis.—Concerns about the possible impacts of Chronic Wasting Disease (CWD) recently documented in 15 deer from western Dane and eastern Iowa Counties in Wisconsin were voiced at the May 2 meeting of the Voigt Intertribal Task Force (VITF) at the Mille Lacs reservation.

While in no way minimizing the potential dangers of CWD to the region's deer population, Dr. Jonathan Gilbert, GLIFWC Wildlife Section leader, does not believe deer taken from the ceded territories needs to be discarded or that venison cannot continue to be an important, traditional food resource.

So far, incidence of CWD is in locations well removed from the ceded territories, Gilbert says, and there have been no reports of diseased deer in the north as yet. However, more testing needs to be done, and immediate reaction to CWD as a threat is warranted.

GLIFWC will continue to monitor the CWD situation and also cooperate with the State DNR's to test deer harvested by tribes, both on and off reservation, throughout the ceded territories, including Michigan and Minnesota.

GLIFWC will also investigate issues related to brain tanning, which may carry some risks if using CWD infected brains.

The disease is very difficult to eradicate, Gilbert says. Getting rid of CWD is nearly impossible once it occurs in 5% of the deer population. At 1-2% of the population, the only means of possible control is depopulation, which is why the Wisconsin Department of Natural Resources (WDNR) has begun to implement herd reduction in the targeted area.

A closer look at CWD

(Much of the information below was taken from the WDNR website.)

What is CWD?

CWD comes under a family of diseases known as transmissible spongiform encephalopathies (TSEs) that affect the brain and central nervous system.

Other TSE diseases include mad cow disease in cattle; scrapie in sheep; and Creutzfeldt-Jakob Disease (CJD) in humans. Forms of TSEs have also been identified in cats, mink, and goats. CWD is the TSE that occurs in elk, mule deer and white-tailed deer.

The incubation period for CWD extends from 15 months to 15 years. Only very sick animals appear ill. Infected deer may be thin or in poor condition, have the tremors, stumble, salivate excessively, have difficulty swallowing. Some diseased animals appear healthy. Eventually, the infected animal will die.

Fifteen deer from western Dane and eastern Iowa Counties in Wisconsin have been diagnosed with CWD. (Photo by Charlie Otto Rasmussen)

A non-living, abnormal protein, known as a prion causes the disease. It is not caused by germs. However, it is transmitted animal-to-animal by close contact, such as at crowded feeding areas, or can be picked up in a CWD-contaminated environment.

Simple boiling cannot destroy the prion. Heat in the range of 900 degrees Fahrenheit is necessary to destroy the prion, so common methods of "disinfecting" are not useful with CWD. Bleach is moderately effective in decontaminating, but not 100%.

Diagnosis requires a microscopic examination of a brain sample from a recently killed animal. Brain cell structure is not altered until well after the incubation period. Thus, very young deer (fawns) may be infected but show no clinical signs.

Currently, there is no known method to diagnose a living animal, although researchers are working on developing tests using live tonsil biopsies.

Where does CWD come from?

CWD was first documented in the United States in 1963. It first occurred in an elk research pen in Colorado. The research station had held elk in a pen previously holding scrapie-infected sheep. Later, the elk became sick. Since then CWD has been documented in wild deer and elk herds in Colorado, Wyoming and Nebraska.

In addition to deer herd reduction measures and increased testing, Wisconsin plans to impose tougher regulations on the import of elk and deer to Wisconsin from other states and require mandatory testing of all cervids which die in game farms.

Does CWD infect humans?

There is no scientific information indicating CWD does infect humans. Over 16 years of monitoring the infected area of Colorado has yielded no signs of CWD in humans or cattle.

However, the World Health Organization does not recommend consumption of animals with evidence of CWD by either humans or animals. Caution is warranted because there is still much to learn about CWD.

What precautions can be used?

If field dressing deer in areas where CWD is found, use some simple precautions such as:

- Wear rubber gloves.
- Bone out the meat.
- Minimize the handling of brain and spinal tissues.
- Wash hands and instruments thoroughly, using bleach on instruments and cutting surfaces.
- Avoid consuming brain, spinal cord, eyes, spleen, tonsils and lymph nodes of harvested animals.
- Request that your meat be processed individually, without mixing with meat from other animals.

Is brain tanning hides safe?

Ojibwe have traditionally used deer brains for tanning hides. This involves extensive direct contact with the brain tissue, triggering questions as to the safety of this procedure and also of wearing hides tanned with an infected brain.

As said before, there is no evidence of CWD infecting humans, however, since no one is absolutely sure it cannot be transmitted to humans, care should taken.

It is best not to use brains from infected animals or animals showing questionable symptoms. Again, some precautions are warranted, such as wearing latex gloves when handling the brain tissue. GLIFWC hopes to provide certified disease-free brains for tanning.

What should I do if I suspect an animal has CWD?

Call the local WDNR office or the DNR Wildlife Health Team at 608-267-6751 or 608-221-5375, or call Jonathan Gilbert at GLIFWC's Wildlife Section at 715-682-6619.

The animal should be killed and the head sent in for testing. The remaining carcass should **not be** disposed of in the woods.

Red Cliff Tribe hosts 2002 Partners in Fishing

The 2002 Partners in Fishing event featured special guest Green Bay Packers running back Ahman Green (center). Red Cliff hosted the informal gathering May 30-31 which brings together Wisconsin ceded territory fisheries managers, including tribal, federal, and state representatives. Charter boats guided participants on Lake Superior for fairly good fishing that included lake and brown trout, plus coho salmon. (Photo by Charlie Otto Rasmussen)

Meddling with manoomin

U of M wild rice genetic studies triggering concern

By Peter David
GLIFWC Wildlife Biologist

Odanah, Wis.—Differences in cultural values are creating a local battle in part of a world-wide conflict over the genetic modification of food plants. The plant in the middle of the issue here is a simple annual grass.

To the Ojibwe it is manoomin, a wild plant considered a sacred gift from the Creator; it is known as wild rice to non-Indians, most of whom see it as a gourmet food or an agricultural commodity. Those different perspectives are triggering vastly different reactions to wild rice genetic studies which are being carried out by the University of Minnesota.

Since 1993, University scientists have been working to map the wild rice genetic code. This work could provide a boon to traditional cross-breeding programs, helping the paddy-grown wild rice industry boost production through the development of new seed varieties.

It could also facilitate future genetic engineering of the plant, where a snippet of genetic material from a different species could be inserted into the plant in order to introduce some desired particular trait.

To many Ojibwe, this work raises a host of concerns, some cultural, some political, some biologic, and some economic.

Culturally, there is great concern about the potential for genetic manipulation. Manoomin was and is a special gift from the Creator, and the Ojibwe are its protectors; perfect in its given form, it is not something that should be artificially manipulated or altered.

Politically, the patenting of specific seed varieties is viewed by some as "biopiracy," where individuals or corporations claim ownership of slightly modified strains of what is essentially a wild plant.

Economically, there are concerns that additional enhancements to the paddy industry will further hurt the already struggling pickers and sellers of true, wild-grown manoomin - still an autumn mainstay for some tribal members.

The paddy industry says nothing they are doing interferes with the Ojibwe's spiritual relationship with rice. But what if manoomin itself is altered?

Questions exist about the possibility of genetically altered rice plants—even those altered through traditional cross-breeding processes—contaminating native wild stands, raising concerns both cultural and biological.

Certain traits that might be highly desired in plants grown in artificial paddies may be deleterious to plants growing in natural stands.

Paddy growers, for example, want rice that is "non-shattering," holding its seed until it is harvested in a single pass from a combine.

Although this trait may occasionally pop-up in nature, seed on most wild wild rice matures gradually, and may be dropped over a period of weeks, a trait that is likely ecologically adaptive under natural growing conditions.

All of this might not be much of a concern, except for the fact that there is nothing to prevent paddy rice from being grown in close proximity to wild beds, raising the possibility that seed, and especially pollen, from genetically altered plants could enter and alter natural stands.

To date no one seems able to answer questions about the likelihood and consequences of that scenario unfolding.

And until someone can, many Ojibwe will continue their fight to protect manoomin.

Genetic research into wild rice is causing a stir among some Ojibwe people and others concerned that natural growing manoomin may be put in jeopardy. Protesters at the University of Minnesota called upon researchers to rethink their designs for wild rice. (Photo by Charlie Otto Rasmussen.)

Gathering dedicated to Walter, water and wild rice

Two events this summer will be honoring the late Red Cliff Ojibwe Walter Bresette, water and manoomin (wild rice). One will be held at the Lac Courte Oreilles (LCO) reservation on June 21 and the other at the Mole Lake/Sokaogon reservation on June 29-30.

The events follow a tradition of "Protect the Earth" gatherings begun by Walt in an effort to bring native and non-native people together around environmental issues on behalf of Mother Earth.

Walter Bresette.

Water and manoomin are critical to the existence of the Ojibwe people. Tribes, such as the Mole Lake/ Sokaogon, are especially concerned about protecting these resources when proposals such as the Crandon Mine or genetic alteration of wild rice present impending threats to the well being of these precious resources. The gatherings will celebrate wild rice and water and honor Walt's work and leadership. They are intended to join people in an effort to keep the world healthy for generations yet to come.

The gatherings will be held outdoors. At LCO, the gathering will be held at noon on June 21 at the LCO Anishinaabe Cultural Healing Center. It will begin with a pipe ceremony by Frank Dickenson and Wanda Baxter, spiritual leaders from Red Lake, Minnesota.

This will be followed by "Walking Walter's Way," a five mile walk. Five miles symbolizes the mere five miles of atmosphere that support our lives.

At Mole Lake, highlights of the weekend will include performances by Ojibwe folk singer Bobby "Bullet" St. Germaine and Skip Jones, plus the Mole Lake Sokaogon Drum. Al Gedicks, author of **Resource Rebels**, will be the keynote speaker. A five-mile walk to the top of Spirit Hill will also take place.

Participants are asked to bring honor and respect and a good heart. There will be a wild rice feast on Saturday. Food to share would be appreciated.

Both events incorporate talking circles, opportunities to share memories of Walt and a "Gathering of the Waters" ceremony. Bring a small container of your own water for the ceremony because each person will speak briefly about their water and then pour it into a common container to symbolize how all waters of the world are one.

For more information: www.protecttheearth.com, or call (715) 634-5806 or (715) 766-2725

Winona LaDuke, left, was among the Ojibwe speakers at a rally protesting wild rice genetic research on May 20 at the University of Minnesota. LaDuke is a leader in the White Earth Land Recovery Project and a former Green Party vice-presidential candidate. (Photo by Charlie Otto Rasmussen.)

Knock it off!

Help stop the spread of Eurasian watermilfoil

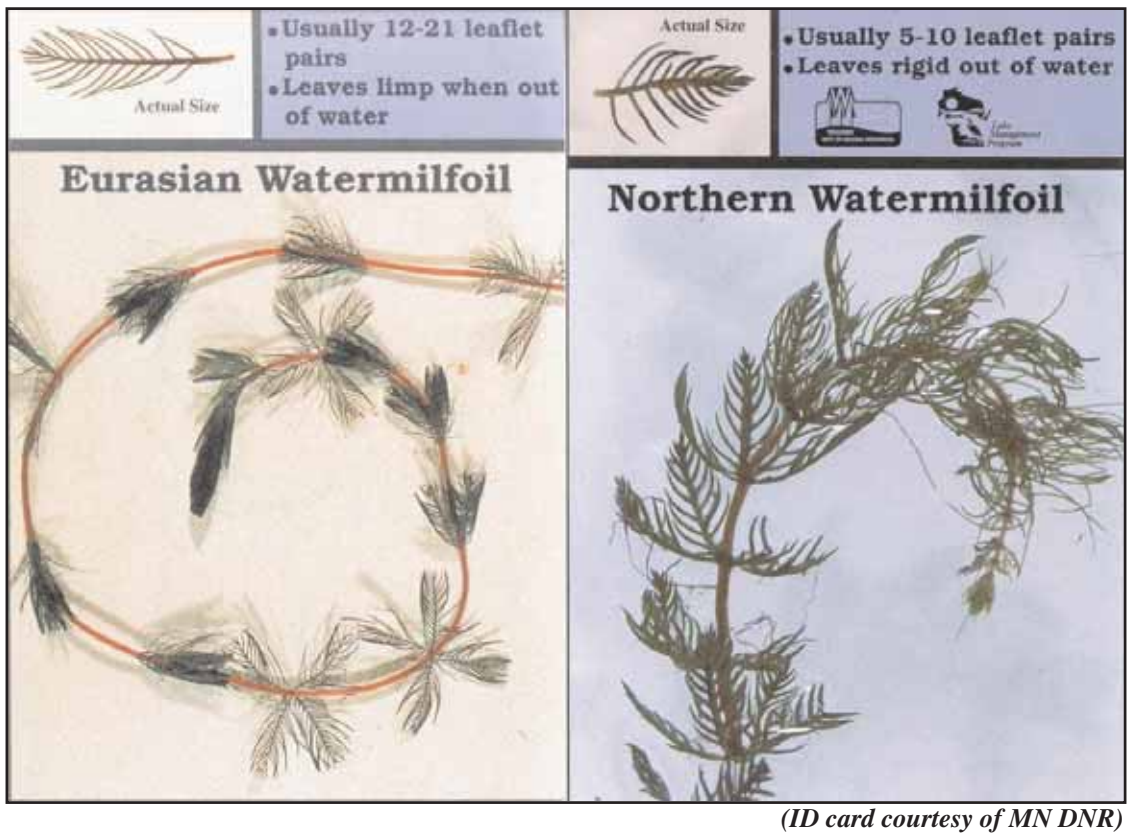
By Miles Falck, GLIFWC Wildlife Biologist

Odanah, Wis.—"Knock It Off!" is the key to controlling the spread of a nasty non-native plant, Eurasian watermilfoil. It's up to individuals to take control and clean their boats before leaving landings.

Eurasian watermilfoil *(Myriophyllum spicatum)* is an aquatic herb native to Europe, Asia, and North Africa. The plant consists of a long underwater stem that branches out near the surface to form dense canopies of floating vegetation. It can be distinguished from the native Northern watermilfoil *(M. sibiricum)* by the shape of its leaves and the number of leaflets.

Eurasian watermilfoil has feather-shaped leaves with 12-21 leaflet pairs, and falls limp when removed from the water. Northern watermilfoil has triangular-shaped leaves with five to 10 leaflet pairs, and remains rigid when removed from the water. Eurasian watermilfoil degrades fish and wildlife habitat, creates a nuisance for boaters, and alters water chemistry and quality.

The dense floating beds shade out native aquatic plants, limiting food and cover choices for fish and waterfowl. Significant fish kills can result from oxygen depletion caused by the decaying biomass of watermilfoil over winter. Watermilfoil can also increase the frequency and severity of algal blooms and reduce water clarity by accumulating phosphorous from the sediment and releasing it in the water column. Finally, the dense mats of Eurasian watermilfoil create a nuisance for boaters by impeding access and clogging props and water intakes.



(ID card courtesy of MN DNR)

Although a prolific seed producer, Eurasian watermilfoil spreads primarily by vegetative means. Small stem fragments are capable of developing into new plants. Numerous stem fragments are released annually through a natural fragmentation process, and additional fragments are created by wave action and boat props.

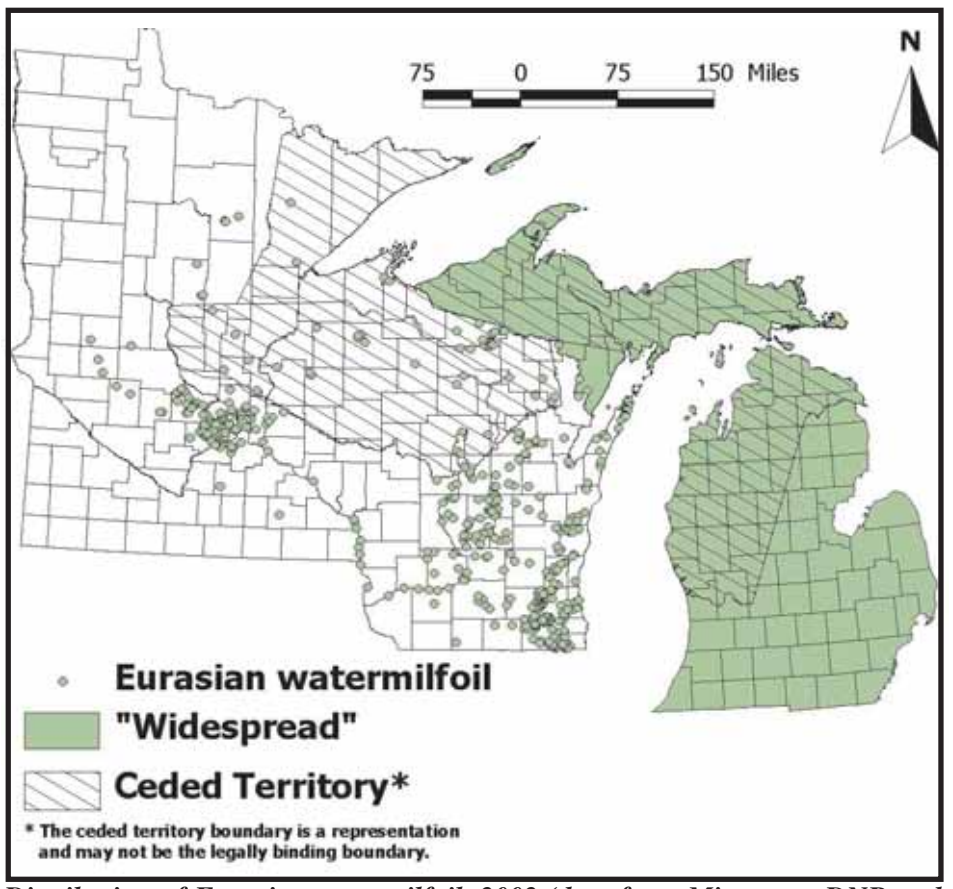
The first record of Eurasian watermilfoil in North America was documented in 1942 in the District of Columbia. It has since spread to 45 U.S. states and three Canadian provinces.

While ship ballast and the aquarium trade have been important dispersal routes historically, transportation on boats and boating equipment (including trailers, motors, bilges, and live wells) currently accounts for the vast majority of new introductions to uninfested waters. Eurasian watermilfoil is currently found in 476 lakes and streams in Minnesota and Wisconsin, and is also widespread in Michigan.

While the use of mechanical harvesters and herbicides can provide short term relief to infested waterways, the economic and ecological costs can be quite high. Several biocontrol agents have also been considered for possible use against Eurasian watermilfoil.

Natural declines in Eurasian watermilfoil abundance at some sites have been attributed to *Euchrychiopsis lecontei*, a native freshwater weevil. However, results have varied widely and research using this biocontrol agent are still in progress. The most effective control is to prevent future introductions by cleaning your equipment prior to leaving a lake or river.

The 1837 Treaty Conservation Code (see sidebar)for the Minnesota Ceded Territory identifies specific actions that must be taken to prevent the spread of Eurasian watermilfoil and other exotic species.



Distribution of Eurasian watermilfoil, 2002 (data from Minnesota DNR and Wisconsin DNR).

The Voigt Intertribal Task Force recently recommended that member tribes adopt similar regulations for waters in the Wisconsin portion of the 1837 and 1842 ceded territories. Minnesota state law also prohibits the transportation of aquatic vegetation on public roads. Wisconsin recently passed an emergency order that prohibits launching a boat with aquatic plants or zebra mussels attached and is developing more comprehensive laws to control the spread of aquatic nuisance species.

While several of these regulations apply to waters officially designated as "infested," distribution data is incomplete. Good stewardship dictates that the following guidelines be followed regardless of a waterbody's official designation. **(See Controlling Eurasian watermilfoil, page 10)**

Excerpted from

1837 Treaty Conservation Code for the Minnesota Ceded Territory

(a.) For the purposes of this ordinance, the term "infested waters" means waters and waterbodies identified by the Commissioner as having populations of select harmful exotic species such as zebra mussel (all species of the genus *Dreissena*), Eurasian milfoil *(Myriophyllum spicatum)*, ruffe *(Gymnocephalus cernuus)*, spiny water flea, or white perch *(Morone americana)*.

(b.) No member shall take any wild animal from infested waters for bait purposes.

(c.) No member shall fail to:

(i) dry for a minimum of 10 days or freeze for a minimum of 2 days before use in noninfested waters any net or associated piece of equipment, including any trap, buoy, anchor, stake or line;

(ii) remove all aquatic vegetation from nets or associated equipment when they are removed from infested waters; or

(iii) notify the Commissioner or a Band or Commission warden when removing nets from infested waters and before re-setting those nets in noninfested waters.

(d.) No member shall use water from infested waters to transport fish without a permit from the Commissioner.

(e.) No member leaving infested waters identified as having populations of zebra mussels or spiny water flea shall fail to drain bait containers, other boating related equipment holding water, and live wells and bilges by removing the drain plug before transporting the watercraft and associated equipment on public roads.

(f.) No member shall transport infested waters on a public road or off property riparian to infested waters except as otherwise authorized by Minnesota state law or under special permit issued by the Commissioner, and no member shall divert infested waters except in compliance with Minnesota state law or in accordance with a special permit issued by the Commissioner.

Getting the bugs out of spring

Tent caterpillars and gypsy moths on the move

By Sue Erickson, Staff Writer

There is a possible upside to our frigid spring. If the May frost stunted your tulips, it could also have taken a toll on those tent caterpillars that invaded our forests and yards last year. Cold, wet springs can help to crash forest tent caterpillar numbers. The young larvae hatch from egg masses in mid-May, so are vulnerable to the unseasonably cold conditions.

Last spring, much of the ceded territories experienced widespread tree defoliation as hordes of forest tent caterpillars munched on the tender leaves freshly budded on our forest trees, leaving a stark scene of denuded branches. Misguided caterpillars hung from our homes or turned our walkways and roads bug-crunchy.

Outbreaks of forest tent caterpillars normally last two to five years in the northern Midwest, so we can stand ready to see masses of fuzzy, black and blue creatures clamoring up aspen, birch, balsam, poplar, basswood, oaks, ashes, alder, fruit trees and other broadleaf plants. An outbreak occurs about every six to 16 years.

They are often called army worms because, once a tree has been stripped, they rappel down using a silk strand and march, like an advancing army, across the ground to the next stand of trees.

Forest tent caterpillars can be recognized by the distinct line of white, keyhole-shaped markings on their backs, set off by the black and blue colors on either side.

Besides being an unsightly nuisance around homes or in the forests, the defoliation of the trees can cause damage. Although most trees can survive a season or two of defoliation, their growth can be stunted.

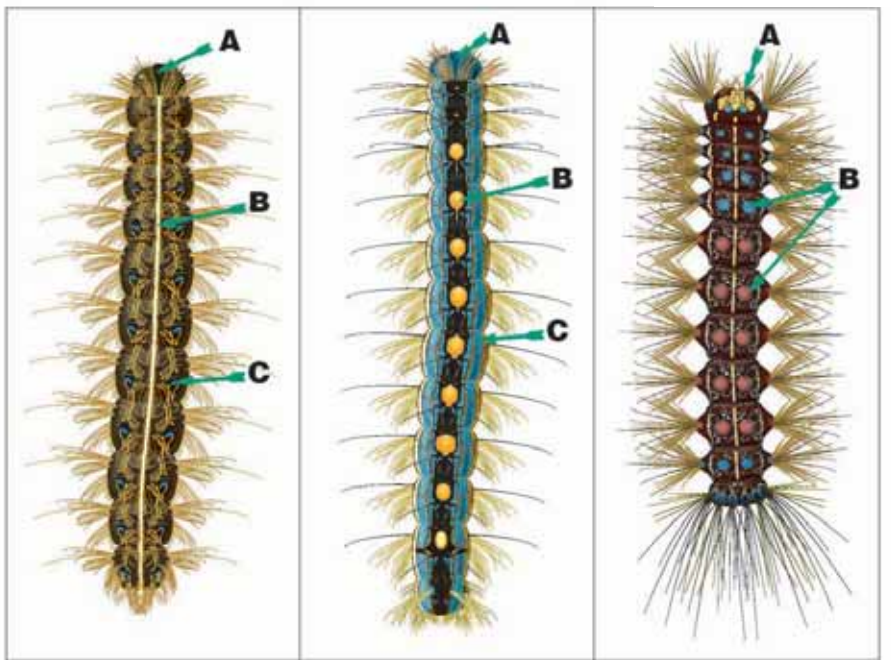
The term "tent" caterpillar refers to the tent or mat made by the larvae on a tree trunk or branch. The forest tent caterpillar actually uses a mat. The related eastern tent caterpillar uses a tent. After eating foliage, the larvae return to the mat/tent to rest, usually in the evening. Destroying the tents is one method of controlling tent caterpillars, especially when the larvae are small and in the tent, which is usually evening or early morning. The tents may be brushed off or limbs with tents pruned off.

Also unsightly and difficult to remove are the cocoons attached to trees, shrubs or sides of buildings. It's near the end of June that the caterpillars abandon their quest for food and find a place to spin a cocoon. The forest tent caterpillar will emerge from the cocoon mid-July as a tan-colored, adult moth with two dark brown stripes on the front wings.

The moth is nocturnal and attracted by light, so turning off lights around your home at night will help keep them away. The moth will deposit approximately 100 to 350 eggs in whitish, circular masses that surround small twigs and branches. The eggs remain enclosed until spring when they emerge as larvae and once again seek fresh foliage as feed. Branches with egg masses can be pruned in fall or winter or sprayed to kill eggs.

While in the cocoon as pupae, the forest tent caterpillar is highly susceptible to one of its worst natural predators – the friendly fly. It's called a friendly fly because it lands on anything, including people, but does not bite. The friendly fly lays eggs on the tent caterpillar's cocoon, and the hatching maggot consumes the pupae before it emerges as a moth. Populations of the friendly fly usually expand in correspondence with the forest tent caterpillar population. Other natural predators include beetles, true bugs, birds and small animals.

The eastern tent caterpillar, with similar life cycles and the same potential to defoliate trees and shrubs, is distinguished by the solid white stripe running down the center of its back. Both the eastern and forest tent caterpillars are native species.



	Eastern Tent Caterpillar *(Malacosoma americanum)*	Forest Tent Caterpillar *(Malacosoma disstria)*	Gypsy Moth Caterpillar *(Lymantria dispar)*
Markings	**A**) Dark head; **B**) prominent white or yellow stripe down the center of the body; **C**) small blue spots to the side.	**A**) Blue head; **B**) prominent central row of white or yellow markings in keyhole or footprint shape; **C**) bluish on sides of body.	**A**) Yellow head with black markings; **B**) prominent blue and red spots.
Tents	Prominent silk tent in branch junction.	They do not spin silk tents; resting sites on leaves may have small silk layer.	No silk tents.

Reprinted with permission from Michigan State University Extension Service. (Illustration by Peter Carrington)

The eastern tent caterpillar is likely to be found munching on ornamental trees often in urban areas. It prefers wild cherry, apple and crabapple trees, but will also feed on ash, birch, blackgum, redgum, willow, witch-hazel, maple, oak, poplar, cherry, peach and plum.

Coming to the ceded territories—the gypsy moth

A 19th Century French naturalist seeking to develop a stronger silkworm through interbreeding first introduced the gypsy moth, a non-native species, into the United States. Some of the exotic moths escaped in 1869 in his hometown of Medford, Massachusetts. By 1889 the population exploded, and they have been heading south and westward ever since.

Wisconsin is now on the leading edge of the gypsy moth's westward expansion. In fact, this spring the Wisconsin Department of Natural Resources used aerial spraying in twenty-two Wisconsin counties in order to reduce gypsy moth populations. They treated with pheromone flakes and with Bacillus thurigiensis (Btk).

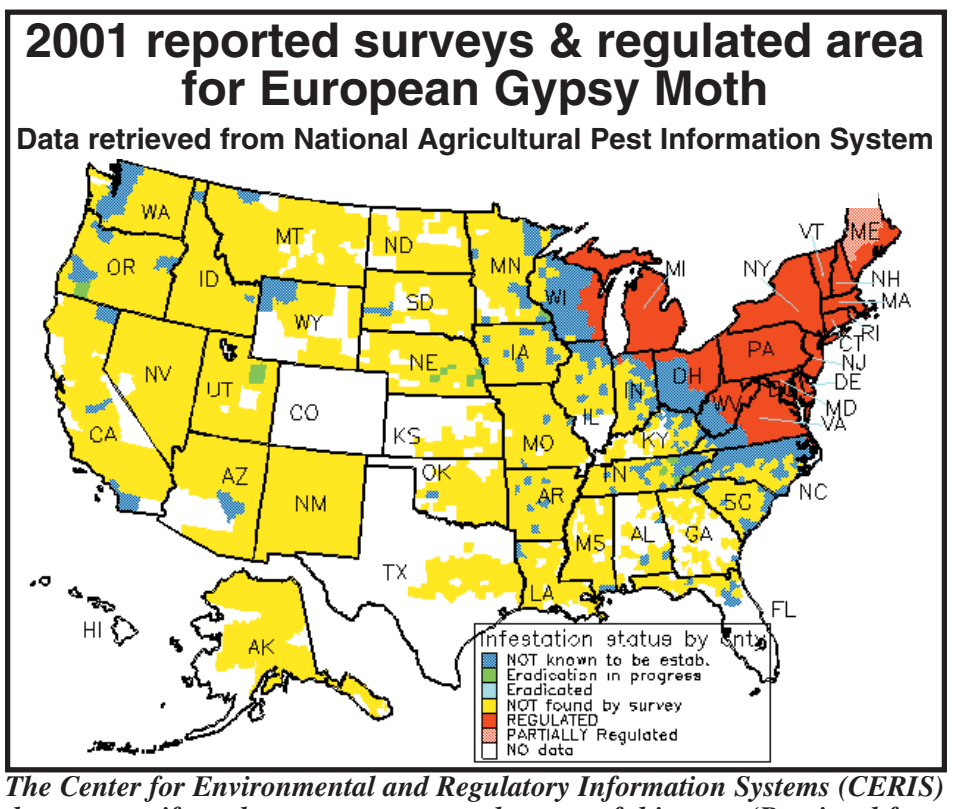
Every five to fifteen years gypsy moths tend to have a population outbreak, similar to the forest tent caterpillar. Following a May hatch, the caterpillars feed into July. The gypsy moth caterpillars feed on oaks, crabapple, linden, willow, birch, aspen, and over 250 other species of trees. Trees can be striped of foliage in a week.

Gypy moths generally spread by hitchhiking on outdoor articles that get moved to uninfested areas. That is why people should check outdoor equipment for eggs before traveling to a new area with it. In some instances, eggs are carried by high winds. A barrier zone was set up along the Hudson River in the early 1900s, but a hurricane blew the moths across the river into western New York.

Currently, the federal government works in conjunction with state agencies to curb the spread of gypsy moths. Several insecticides have been used against gypsy moths, including carbaryl (Sevin), acephate (Orthene) and diflubenzuron (Dimilin). The newest treatment is Bacillus thuringiensis (B.t), a naturally occurring substance consisting of biological spore, spore fragments and toxin specific to caterpillars. It is sold under the trade names Thuricide, I and Dipel.

Treatment with insecticides are combined with eradication measures such as quarantines and inspections, the release of parasites and predators, traps with a sex attractant, sterile-male release, and the use of pheromone flakes. Pheromones are chemicals produced by a species to communicate with individuals of the same species, often used to attract a mate, mark territory, or warn of danger. When released at a time that males are seeking mates, the males become confused and cannot find a mate.

Editor's note: *Information for this article was taken from the websites of the Wisconsin Department of Natural Resources, University of Minnesota Extension, University of Kentucky Extension, University of Michigan Extension, the US Department of Agriculture and from a gypsy moth fact sheet published by the Animal and Plant Health Inspection Service (APHIS).*



The Center for Environmental and Regulatory Information Systems (CERIS) does not certify to the accuracy or completeness of this map. (Reprinted from http://www.ceris.purdue.edu/napis/pests/egm/imap01/egm2001.html)

"There are tent worms, gypsy moths, and forest tent caterpillars. All different. All can be killed (and their larvae) using a hose end sprayer filled with about 1/2 Dawn liquid detergent. This works on all caterpillars and will not hurt the plants. Skip the chemicals and use the soap. Cheaper and harmless except to the worms."

—gardenweb.com

Upstream travel restricted on St. Croix River to help control zebra mussel spread

St. Croix Falls, Wis.—Boats on the St. Croix River can no longer travel upsteam past a checkpoint at river mile 28.5, approximately 3 1/2 miles upstream of Stillwater, Minnesota.

National Park Service rangers stop boats at this point from a houseboat named the Big Dipper and explain the program to stop the spread of the zebra mussel.

"The Big Dipper marks the point in the river that we can't allow zebra mussels to cross," stated Tom Bradley, Superintendent of the St. Croix National Scenic Riverway.

"Boat traffic has enabled zebra mussels to spread from the Mississippi River up the St. Croix all the way to Stillwater. If boats are allowed to carry the mussels farther upstream, the entire native mussel population in the river could be lost," Bradley said.

The St. Croix River has one of the richest populations of mussels in the country. Forty species live in the river, including two on the Federal Endangered Species List: Higgins' eye and winged mapleleaf. Ocean going vessels transported zebra mussels to the Great Lakes from eastern Europe; from there they spread into the Mississippi River system.

The zebra mussel reproduces quickly and attaches to anything hard, including native mussels. If enough zebra mussels attach to a native mussel, it can't feed or breathe, and it dies.

Zebra mussels did not expand their range in the St. Croix in 2001. "We found no zebra mussels north of Stillwater, and substantially fewer numbers of zebra mussels than anticipated between Stillwater and Hudson," said Byron Karns, St. Croix National Scenic Riverway Zebra Mussel Program Coordinator."

"From Hudson to Afton, young of the year and juvenile mussels were found, but not in explosive numbers and not until late in the season," said Karns.

Riverway biologists and other experts are not sure why zebra mussel numbers were lower in 2001.

Prolonged flooding in the spring and high water temperatures in the summer may have been important factors, but attention to the problem by river users certainly helped prevent zebra mussel spread.

Not all of the news on the zebra mussel last year was good. The population on the stretch of the St. Croix from the Kinnickinnic River to the Mississippi River increased. Also troubling were the large numbers of zebra mussels found close to St. Croix Bluffs Regional Park, the busiest public landing on the river.

Some restrictions on upstream travel have been in effect since 1995. Zebra mussel reproduction was discovered in the St. Croix River in 2000 when divers located populations of zebra mussels in many areas south of Stillwater.

In January, 2001, the Minnesota Department of Natural Resources declared the St. Croix River infested with zebra mussels downstream of the St. Croix River Boomsite Wayside at mile 25.4.

For a copy of the **2002 Zebra Mussel Prevention Action Plan** call Byron Karns at 715-483-3284 (ext. 616); or email byron_karns@nps.gov.

Zebra mussel facts

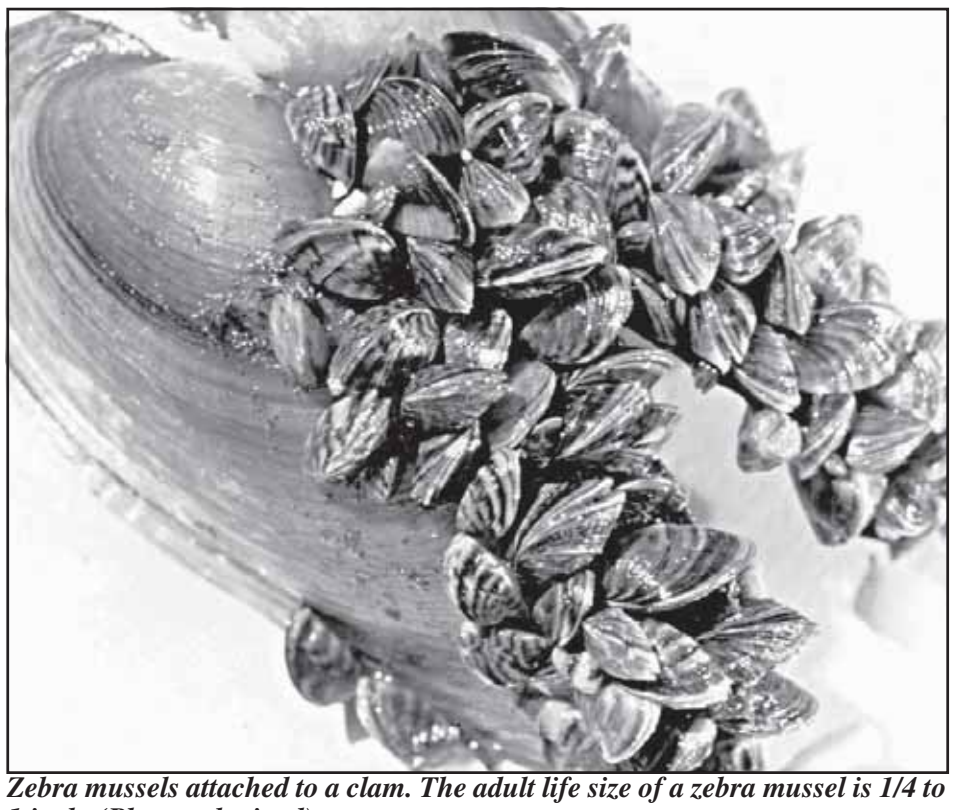
Zebra mussels and related species are small, fingernail-sized mussels native to the Caspian Sea region of Asia. They were discovered in Lake St. Clair near Detroit in 1988. Tolerant of a wide range of environmental conditions, zebra mussels have now spread to parts of all the Great Lakes and the Mississippi River and are showing up in inland lakes. Zebra mussels clog water systems and power plants and water treatment facilities, as well as irrigation systems. They have severely reduced and eliminated native mussel species.

Female zebra mussels can produce as many as 1 million eggs per year. These develop into microscopic, free-living larvae that begin to form shells. At about three weeks, the sand grain-sized larvae start to settle and attach to any firm surface. They will cover rock, metal, rubber, wood, docks, boathulls, native mussels, and even aquatic plants.

Zebra mussels filter plankton from the surrounding water. Each mussel can filter about one quart of lake water per day. However, not all of what they remove is eaten. What they don't eat is combined with mucus and discharged onto the lake bottom where it accumulates. This material may benefit bottom feeders while reducing the plankton food chain for upper water species.

Microscopic larvae may be carried in livewells or bilge water. Adults can attach to boats or boating equipment that sit in the water. For a checklist of what you can do to control the spread of exotic species, see page five article "Help stop the spread of Eurasian watermilfoil."

*(Reprinted from **A Field Guide to Aquatic Exotic Plants and Animals**, available from GLIFWC, P.O. Box 9, Odanah, Wisconsin or call (715) 682-6619.)*



Zebra mussels attached to a clam. The adult life size of a zebra mussel is 1/4 to 1 inch. (Photo submitted)

VITF opposes Rainbow Family gathering in Cheq-Nic/Ottawa National Forest

By Sue Erickson, Staff Writer

Mille Lacs, Minn.—Imagine, if you can, 25,000 people simultaneously converging on a forested area for a two-week camp-out.

Think of the stress on the immediate environment, the packed and worn forest floor, the campfires, the gathering of fire wood, the strain on sanitary facilities and on the facilities of the surrounding communities.

Would there even be enough food in the grocery stores? Where would all the vehicles be parked?

This scene could happen in the Great Lakes region if the Rainbow Family of Living Light decides to hold their annual gathering in the region.

Current information on their website states the Rainbows are planning on coming to the Great Lakes this summer, but a specific area has not been designated. US Forest Service (USFS) officials believe the Ottawa and Chequamegon-Nicolet National Forests are the target sites.

Bob Lueckel, recently appointed Supervisor of the Ottawa National Forest, right, addresses the VITF at Mille Lacs regarding the Rainbow Family's interest in staging a gathering on National Forest land in the ceded territory. (Photo by Charlie Otto Rasmussen)

Meeting on May 2 at the Mille Lacs reservation, the Voigt Intertribal Task Force (VITF), representing nine Ojibwe bands with off-reservation treaty rights, passed a motion opposing the Rainbow Family's gathering on either the Chequamegon-Nicolet or the Ottawa National Forests this summer.

The VITF also called upon the USFS to deny the Rainbow Family of Living Light a permit for the gathering.

The VITF took this action to protect natural resources and habitat in the treaty ceded territories and to prevent interference with the exercise of Ojibwe treaty rights in the national forests.

The Rainbow Family has held annual gatherings since 1972, the last eight being on various national forests lands. Drawing approximately 18,000 to 25,000 people to the gathering place, the huge encampment impacts the forest habitat as well as neighboring communities for about a two-week period between June 20 and July 7.

In a letter to the USFS, James Schlender, GLIFWC executive administrator stated that the "gathering will unacceptably interfere with the Tribes' ceded territory treaty rights and damage the habitats of treaty protected natural resources. He also noted that such a gathering "poses a threat to locations and natural resources that are sacred."

The motion followed consultation with representatives of the USFS after the USFS became aware of the Rainbow's plans to visit the Great Lakes region.

Following the Rainbow gathering last year, tribes in Idaho expressed concerns about the adverse impact of the Rainbow gathering on the treaty fishery habitats and on sacred sites.

Historically, a number of issues have surrounded the Rainbow gatherings, issues related not only to habitat and natural resource degradation, but also to social and legal incidents. Consequently, the USFS works with the neighboring communities to prepare for the sudden deluge of Rainbows into the area.

South shore lamprey round-up

GLIFWC fishery crews monitor Lake Superior rivers

By Charlie Otto Rasmussen
Staff Writer

L'anse, Mich.—Using some apparatus familiar to livestock ranchers on open range land, Great Lakes Indian Fish & Wildlife Commission (GLIFWC) fishery technicians rigged nets in a handful of ceded territory rivers for the annual sea lamprey round-up in May.

But this is like no cattle drive. It's part of a massive inter-agency effort to curb and monitor sea lamprey numbers as they swim up Lake Superior tributaries to spawn in the spring.

On Upper Michigan's Silver River along the northeast edge the Keeweenaw Bay Indian Community, staff and interns from GLIFWC's Great Lakes Section centered a fyke, or hoop net, below a stretch of gurgling rapids.

The crew drove steel fencing into the gravel riverbottom with a post driver and strung up two lengths of netting, creating a V-shape with the fyke net in the middle. Lamprey swimming upriver to their spawning grounds are guided into a series of mesh hoops and trapped.

"Lamprey seem to be showing up a little late this year, possibly due to cold water temperatures," said GLIFWC technician Mark Pero in late May. "However, I've already seen an increase in spawning lamprey on the Firesteel River over last year."

Pero, an Environmental Engineering student at Michigan Technological University, makes regular trips to the Silver, Firesteel, and Misery Rivers with GLIFWC fishery aids to collect data from captured sea lamprey.

Population estimates are figured by mark-and-recapture analysis—a process of "marking" lamprey by clipping the dorsal fin, returning them to the river downstream, and recording how many clipped lamprey show up in the trap again.

Since 1986 GLIFWC has been a partner in the Sea Lamprey Control Program—a division of the Great Lakes Fishery Commission (GLFC) managed locally by the U.S. Fish & Wildlife Service (USFWS).

Among Wisconsin rivers that feed Lake Superior, GLIFWC lamprey control crews monitor the Bad, Middle and Amnicon Rivers. Federal and state natural resource agencies supervise seven additional rivers across the South Shore where spawning lamprey are known to exist.

While lamprey in the Silver and Firesteel Rivers are ensnared in fyke nets, Pero uses steel box traps to survey the Misery River.

Box traps are situated adjacent to barriers like small waterfalls or the remnants of old dams where lamprey are forced to enter a restricted passage to get upstream. The lamprey spawning run generally occurs from late April through July.

Native to the Atlantic Ocean, sea lampreys worked their way into the Great Lakes along water routes created to accommodate large ships. Lampreys were found in all five Great Lakes by 1940. During their peak in the 1960s, lamprey ravaged native fish species like lake trout. Since that time, control efforts including construction of barrier dams that stop lamprey but allow fish to pass through and river treatments with the lethal chemical agent TFM, have checked lamprey numbers.

Despite efforts to eradicate the eel-like exotics, sea lamprey still consume large amounts of prey. Some estimates indicate that lamprey kill as many fish are harvested by humans through sport and commercial fishing. GLFC and USFWS are exploring new control methods, including the use of pheromones and low frequency sound waves.

Mark Pero, GLIFWC fishery technician, (left) and Nate Bigboy, ANA field assistant, rig-up a guide net in Upper Michigan's Silver River. The net acts like a fence and steers sea lamprey migrating from Lake Superior into a fyke net where they are trapped. (Photo by Charlie Otto Rasmussen)

GLIFWC lends a hand with sturgeon tagging

By Sue Erickson, Staff Writer

Odanah, Wis.—Tagging sturgeon in the Bad River comes under "other duties as assigned" for the Great Lakes Indian Fish & Wildlife Commission's (GLIFWC) lamprey control crew this spring. They've agreed to help out the Bad River Tribe and the U.S. Fish and Wildlife Service (USFWS) by watching for spawning sturgeon when checking lamprey traps in the Bad and White Rivers.

The USFWS and the Bad River Tribe are cooperating in a sturgeon tagging project and sturgeon population assessment in the Bad River.

To date, GLIFWC's crew captured three adult sturgeon in the Bad River, two females and one male. Once captured, each fish is measured, weighed and tagged with a floy tag and a passive internal transmitter (PIT) tag. The floy tag is an external tag, easy to see. The PIT tag is actually injected into the muscle tissue at the base of fish's skull, so is an internal tag. The benefit of the PIT tag is that it does not get lost.

Of the three captured sturgeon, one was a "recapture." It was first captured and tagged by the USFWS on May 7, 1995 in the lower Bad River. At that time, the sturgeon had spent her eggs and weighed 41.5 pounds. In 2002, the sturgeon had not spent her eggs yet, and she weighed 60 pounds. The weight gain has to factor in that she had not spent her eggs. The fish had grown three inches in seven years, less than one-half inch per year.

GLIFWC also works with the USFWS and the Bad River Tribe each summer performing juvenile sturgeon assessments.

Fishery managers are in the process of building a data base on lake sturgeon, a fish that has totally disappeared from many Lake Superior tributaries.

Depending on location in Lake Superior, lake sturgeon populations appear to be stable or increasing, according to Bill Mattes, GLIFWC Great Lakes Section leader.

Mike Plucinski, Great Lakes Fisheries technician, tags a sturgeon captured in the Bad River, while Nate Bigboy, ANA field assistant, holds the writhing fish. (Photo by Carrie Cannon.)

Fish is essential for healthy heart

Note: The following is a transcript of a report that aired on NBC's Nightly News with Tom Brokaw.

Many of the lunchtime customers at Legal Seafoods in Boston have already heard of the health benefits of fish.

"We love fish, and my husband had a heart attack and a bypass, and I have been told I have high cholesterol," said Joan Romanish.

The research out today leaves no doubt. A 16-year study of almost 85,000 women found that those who ate fish two to four times weekly cut their risk of heart disease by 30 percent, compared with women who rarely ate fish.

Women who ate fish five or more times weekly reduced their risk 34 percent. Past studies showed similar benefits for men, but this was the first to look specifically at the effect in women, according to the new research published in the Journal of the American Medical Association.

Plus, a 17-year study of men with no history of heart disease published in **The New England Journal of Medicine** found that those with the highest blood levels of omega-3 fatty acid, the healthy fat found in fish, were more than 80 percent less likely to die suddenly from heart disease.

"It's a low-risk, very inexpensive way to lower the risk of heart disease," said Dr. JoAnn Manson of Boston's Brigham and Women's Hospital, co-author of the men's study.

The key to the heart benefits of fish is omega-3 fatty acid. Some kinds of fat are bad for you, but the fat in fish actually lowers cholesterol, helps prevent blood clots that form in heart attacks, and lessens the chances for the irregular heart beats that cause about 250,000 sudden deaths a year.

The best sources of the healthy fatty acid are ocean fish such as salmon, tuna, mackerel and arctic char. But even if you can't afford these tasty, sometimes-expensive fish, canned tuna or sardines work just as well.

Eating fish twice a week can give almost all the benefits that there is to eating fish in general, said Dr. Walter Willett of the Harvard School of Public Health.

The best advice, experts say, is to eat fish, because the more science studies it, the more it seems to be a miracle food.

(Reprinted from ***Worldcatch News Network.)***

GLIFWC developing lake trout model to compute lake trout quotas

By Sue Erickson, Staff Writer

Odanah, Wis.—The goal of a one-year project funded by the Administration for Native Americans (ANA) is to develop a computer model capable of producing a total allowable catch (TAC) figure for lake trout in MI-2, a management unit in the Michigan waters of Lake Superior. MI-2 is one of several units fished by treaty, commercial fishermen.

A model is essentially a combination of formulas that can receive data and compute a result. In this case the lake trout model would receive information such as numbers and ages of lake trout captured in assessment nets, number and ages of lake trout harvested, and estimated numbers of sea lamprey in any given year.

The model would "crunch" the inputted numbers and provide a TAC or quota to be used in the treaty, commercial fishery, according to Great Lakes Indian Fish & Wildlife Commission's (GLIFWC) Great Lakes Section Leader Bill Mattes.

As part of the program, Mattes took a computer-programming course at Northland College, Ashland, and hired Nathan (Nate) Bigboy for a nine-month position as a field technician. Bigboy is involved in assessment work and collecting the necessary data on lake trout and sea lamprey.

The need for a new model became apparent in 1996 when stocking of lake trout was discontinued. Spreadsheet models had been developed, but they relied heavily on lake trout stocking figures. A spreadsheet model for the treaty fishery was developed in the mid 1980's by the Wisconsin State/Tribal Technical Working group for Wisconsin waters of Lake Superior. A few years later, this model was adapted by GLIFWC's Lake Committee biologists for teh 1842 Treaty area in Michigan waters of Lake Superior.

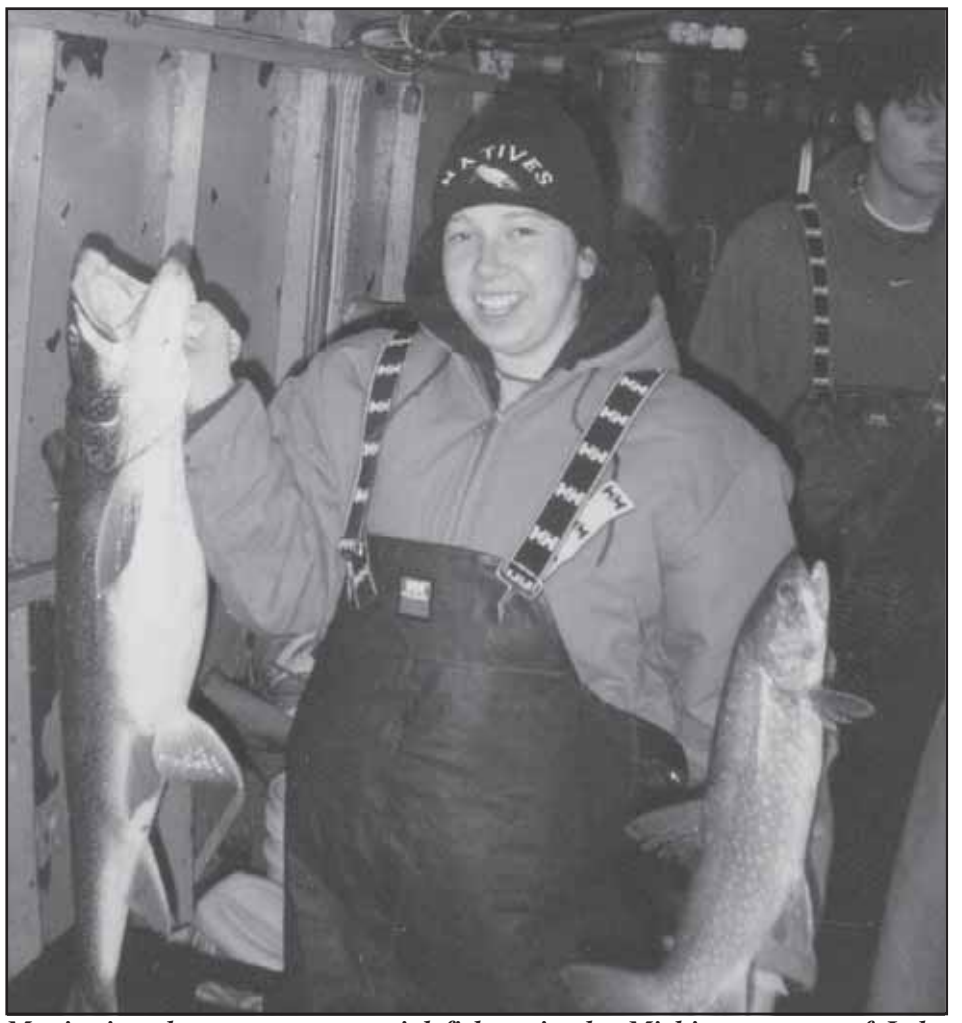
Then in the mid-1990's, Jim Bence, Michigan State University professor, modified and improved this spreadsheet model for portions of the Michigan and Wisconsin waters of Lake Superior under an ANA grant to the Red Cliff Band.

Besides being skewed by the discontinuation of stocking, the older spreadsheet models were cumbersome. "It became clear we had to use a different approach to crunch the numbers," Mattes says.

The Lake Superior Technical Committee discussed and decided upon an approach which relies on developing programs using AD Model Builder software. Programs that model lake trout populations have been developed for eastern Lakes Superior and northern Lake Huron.

Shawn Sitar, Michigan Department of Natural Resources fishery research biologist, initially developed the model for Lake Huron as part of his graduate studies. While this model can be used as a starting point, it will need to be tailored to the MI-2 fishery, Mattes says. That is the objective of the ANA project.

The project will be completed by April 2003. Mattes hopes to obtain another ANA grant to develop a lake trout model for MI-3 and update those developed for MI-4 and MI-5, all management units in the Michigan waters of Lake Superior.



Monitoring the treaty commercial fishery in the Michigan waters of Lake Superior, Great Lakes Fisheries Section crew record data from the catch of Joe Newago, Bad River tribal fisherman. Above, Carrie Cannon, Great Lakes intern, displays a large trout, while the "flying trout" in the lower righthand corner is enroute from the measuring boards to the fish box. Nate Bigboy, ANA field technician, looks on. (Photo by Mike Plucinski).

Lake Superior 2002 State of the Lake Report

By Bill Mattes,GLIFWC Great Lakes Biologist

Duluth, Minn.—Each year one of the Great Lakes is highlighted and the Lake Committee puts together a State of the Lake Report.

This year it was Lake Superior's turn and Lake Superior Technical Committee (LSTC) members and others provided the State of the Lake Report.

This included twenty-five presentations which summarized existing data on habitat, fisheries, and biota in Lake Superior. These presentations will be published under the Great Lakes Fisheries Commission's (GLFC) special publications series.

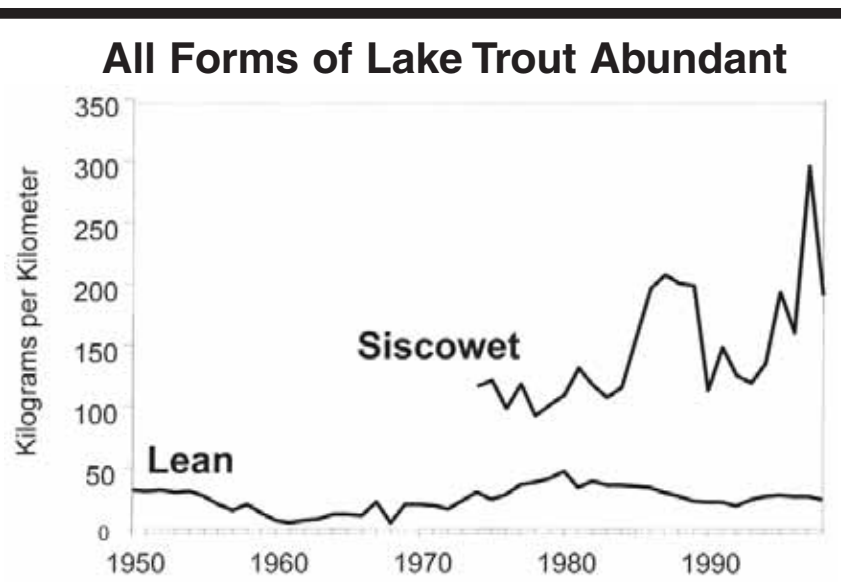
Overall indications are that Lake Superior and its fisheries are doing well, and the fish community is reverting to a more natural state resembling pre-European settlement conditions.

However, the fish community has been permanently altered by non-indigenous species and remains at risk from further introductions.

For example, progress in restoring the lake and its native species rests upon successful control of sea lampreys, which requires continuous intervention by managers, and Pacific salmonids and hybrids continue to be stocked.

Emphasis for the conference was on native species biology, habitat protection, and prevention of additional introductions of non-indigenous species.

The following graph is reprinted from Mark Ebener's Where do we go from here presentation at the State of the Lake Conference, Duluth, Minesota, March 19-20, 2002.



Reprinted from "Where do we go from here?" presentation by Mark Ebener, Chippewa Ottawa Resource Authority biologist, at the State of the Lake Conference, Duluth, Minneosta, March 19-20, 2002.

LaMP 2002 Progress Report released

By Ann Mcammon Soltis, GLIFWC Policy Analsyt

The Binational Program to Restore and Protect Lake Superior has released the Lakewide Management Plan, or LaMP 2002 Progress Report, which, as its name suggests, reports on progress made in implementing the LaMP 2000.

The document discusses the successes and challenges facing the Lake Superior basin with regard to chemical contaminants as well as terrestrial and aquatic ecosystems. The document also emphasizes the concept of sustainable use of basin resources.

Some accomplishments highlighted in the report include a continuing decrease in contaminant levels in Lake Superior, the almost complete rehabilitation of lake trout to historic levels, continuing collection of banned or cancelled pesticides through "Clean Sweep" programs, and integrated land use planning such as in the Whittlesey Creek refuge in northern Wisconsin.

Challenges that remain for the basin include the continuing need for fish advisories, poor land use practices that threaten water and land based habitats, the introduction and spread of exotic species and insufficient resources to implement top priority projects.

The LaMP 2002 can be accessed on the internet at http://www.epa.gov/grtlakes/lakesuperior/lamp2000/index.html.

GLIFWC also has a limited number of copies. Please contact Ann McCammon Soltis if you would like a copy of the report.

Christina Dzonkowski joins GLIFWC's Enforcement Division

Odanah, Wis.—New to GLIFWC's Enforcement Division is Christina Dzonkowski, who joined the enforcement staff on May 20. She will be stationed with Frank White at the Lac du Flambeau enforcement satellite office.

Christina Dzonkowski.

Christina is a member of the Bad River Band; however, she grew up in California and in the Rockford, Illinois area, spending time during the summers on the reservation. She heard about possible opportunities with GLIFWC through Bad River family members who encouraged her to apply.

Pursuing an early interest in a law enforcement career, she enrolled in the Rock Valley College to pursue an Associate of Arts degree in criminal justice. She is a few credits shy of the degree, so will be completing the course while working with GLIFWC.

As part of the school's program, she served two internships in law enforcement, putting in 225 hours with the Winnebago County Sheriff's Department and 150 hours with the Loves Park Police Department, both in Illinois. She has also worked with the Belvidere Police Auxiliary in Illinois, assisting with routine police work in the company of a full-time officer.

Christina says her love of the outdoors and related activities, such as hunting, fishing and four-wheeling, contributed to her interest in the enforcement field, especially conservation enforcement.

After undergoing orientation at the GLIFWC main office in Odanah and completing firearms training, she will assume her position at Lac du Flambeau. However, she will be enrolled in basic recruit training at the Chippewa Valley Technical College, Eau Claire, this fall or winter.

Masinaigan becomes Mazina'igan

Means the same, but sounds different

Perhaps you noticed the spelling change in our masthead this edition. The **Mazina'igan** Editorial Committee decided to change the spelling to reflect the usage in **A Concise Dictionary of Minnesota Ojibwe** by John Nichols and Earl Nyholm. GLIFWC uses the Nichols and Nyholm dictionary as a standard reference for the organization in order to provide some consistency in use of the language.

The spelling also better reflects the pronunciation, particularly by emphasizing the "z" sound and the glotteral stop which is characteristic of Ojibwemowin (Ojibwe language). Mazina'igan means "book, paper, letter, document," according to Nichols and Nyholm.

The Editorial Committee feels it is important to show respect for the language by trying to use it correctly.

Controlling the spread of Eurasian watermilfoil

(Continued from page 5)

What you can do

Prior to leaving a lake or a river:

- ☞ **INSPECT** and **REMOVE** all aquatic vegetation.
- ☞ **DRAIN** water from all boating equipment (motors, live wells, bait containers).
- ☞ **DISPOSE** of unwanted bait on land.
- ☞ **RINSE** your boat and equipment with hot high pressure water, or
- ☞ **Dry** your boat and equipment for at least 5 days.

Information for this article was obtained from the following web sites:
Minnesota Seagrant: http://www.seagrant.umn/exotics/eurasian.html
WI DNR: http://www.dnr.state.us/org/land/er/invasive/factsheets/milfoil.htm
U.S. Geological Survey: http://nas.er.usgs.gov/plants/docs/my_spica.html
Invasive Exotic Plants of Canada: http://infoweb.magi.com/~ehaber/factfoil.html

For a list of infested waters:
Minnesota: http://files.dnr.state.mn.us/ecological_services/exotics/infested.pdf
Wisconsin: http://www.dnr.state.wi.us/org/water/wm/glwsp/exotics/milfoil.html

For Regional Distribution Maps:
http://www.glifwc-maps.org

Ceded territory news briefs

By Sue Erickson, Staff Writer

Federal government goes to bat for Mole Lake/Sokaogon TAS

The federal government is weighing in on the side of the Mole Lake/Sokaogon Band in an appeal filed in the U.S. Supreme Court by the state of Wisconsin opposing the band's "Treatment-As-State (TAS)" status within the Environmental Protection Agency.

The TAS status would potentially allow the Band to impose strict water quality standards to protect the reservations' waters. Those standards could possibly impede the plans for a copper-zinc mine about one mile from the reservation's border.

U.S. Solicitor General Ted Olson filed a brief in May defending the right of the Band to exercise authority over its reservation. The State of Wisconsin contends that the TAS status dramatically expands the tribe's inherent and limited rights.

St. Croix considers power plant

The St. Croix Band of Chippewa is considering the development of a small-scaled, natural gas-fired power plant in northwestern Wisconsin. The plant would serve as an alternative source of revenue for the tribe with the power being sold into the wholesale market.

A feasibility study, managed by E.Vironment, a Texas-based business and environmental consulting firm, has been commissioned by the tribe to recommend where and how the plant would be built.

Upon completion of the study, the tribe would sell the project to a utility company or other investors who would actually build the facility under a negotiated agreement with the tribe.

New supervisors assume their posts at the Chequamegon-Nicolet and Ottawa National Forests and the Eastern Region

Recently appointed as the Eastern Regional Forester is Randy Moore. The Eastern Region includes 15 national forests in 20 states. He is leaving his position as forest supervisor for the Mark Twain National Forest (NF), Missouri.

Robert Lueckel, former Acting Forest Supervisor for the Chequamegon-Nicolet NF, is the new Forest Supervisor to the Ottawa NF. Lueckel has a forestry and business management background. Besides experience with the Chequamegon-Nicolet NF, he has worked in the Green NF, Vermont and the Mountain NF, New Hampshire as well as in the Washington D.C. Forest Service office.

Anne Archie assumed the post of Forest Supervisor to the Chequamegon-Nicolet NF on May 20. She was formerly the Deputy Forest Supervisor on the Boise NF, Idaho. Her career with the Forest Service began in 1977 on the Malheur NF, Oregon as a wildlife biologist. She has also worked on the Tongass NF, Alaska and the White Mountain NF, New Hampshire as a district ranger.

Mole Lake/Sokaogon receive grants to study zebra mussels

The Wisconsin Department of Natural Resources recently announced recipients of grants intended to help communities study ways to improve their lakes. The Mole Lake/Sokagon Band's proposal to study the impact of zebra mussel on Lake Metonga, Forest County, was among those selected. They were awarded $7,500 for each part of a two-part proposal. The multi-year study is now in its initial stages, according to Mole Lake Fishery Biologist Mike Preul.

Clean boats and bait buckets —stop the invaders!

26 new lakes invaded by exotic species

According to a release from the Wisconsin Department of Natural Resource (WDNR), 2001 saw zebra mussels and Eurasian watermilfoil invade 26 new Wisconsin lakes. In order to stop the dramatic increase, boaters and anglers must take the time and precaution to clean their boats and gear.

The WDNR plans to have boat inspectors at some popular boat launches to educate the public about invasive aquatic species, pass out "watch cards," and show people where invasive species are likely to be attached.

Wisconsin spring treaty harvest yields plenty of walleye—up from 2001

(Continued from page 1)

Oreilles, Lac du Flambeau, Mole Lake/ Sokaogon, Red Cliff, and St. Croix Bands from Wisconsin.

In addition to Mille Lacs Lake, 86.6 pounds of walleye were harvested from Green Lake, Chisago County.

All open landings were monitored as nets were set and lifted. Both spearing and netting landings are monitored by conservation officers and creel clerks.

GLIFWC conservation officers stationed at off-reservation landings on Mille Lacs Lake, Jim Mattson and Zebulon Retka, were assisted by officers from Wisconsin, including Vern Stone, Bad River; Mark Bresette, Red Cliff, and Mike Soulier, Red Cliff.

At on reservation landings, Mille Lacs Band conservation officers, Ralph LaPlant, Loyd Ligneel and Mike Taylor worked with GLIFWC creel clerks to monitor the harvest.

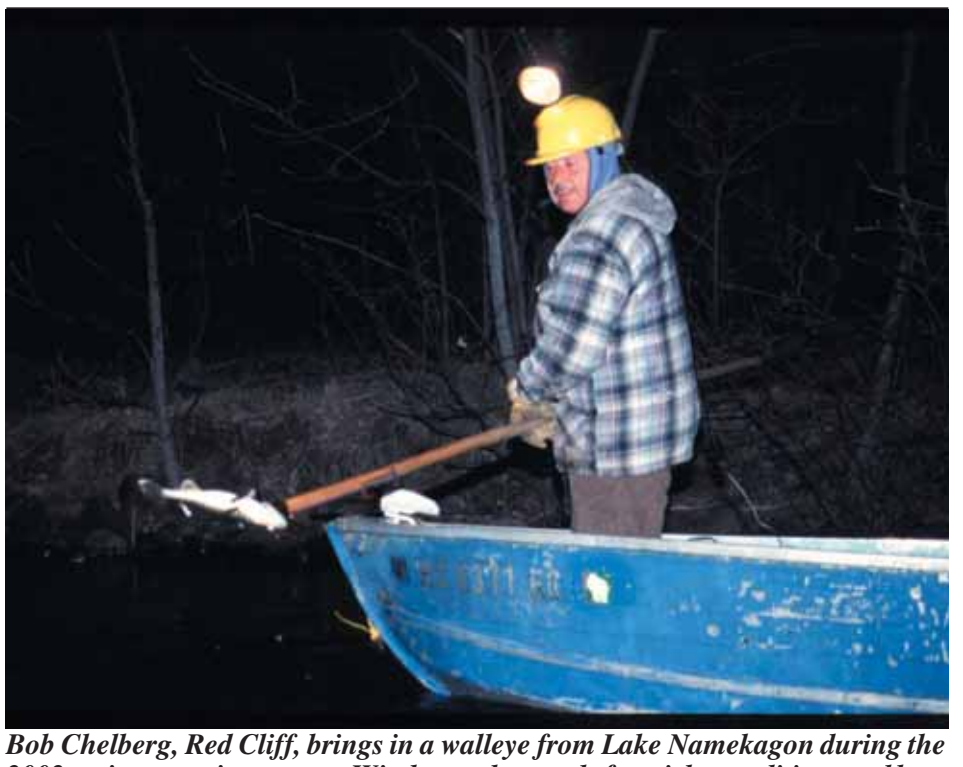
With nets set at night and lifted in the morning, many hours are required of the harvest monitoring teams,which include both creel crews and wardens, throughout the season.

Wisconsin spring treaty harvest

The St. Croix Band opened the 2001 Wisconsin spring spearing season on April 17, harvesting 231 walleye from five lakes. In Wisconsin, the tribes harvested a combined total of 25,543 walleye from ceded territory lakes this spring. The total walleye harvest was 52% of the declared quota of 48,321.

In 2001, the tribes harvested a combined total of 22,999 walleye, equaling 51% of their combined declaration. To date, the tribes took the most walleye during the 2000 spring season when they harvested 30,367 walleye, equaling 74% of their total declaration.

The tribes harvested a combined total of 218 muskellunge from Wisconsin's ceded territory lakes this spring, a few less than the 2001 muskellunge harvest of 233. The spring seasons in both Wisconsin and Minnesota went well with no reports of protesters, according to GLIFWC's Chief of Enforcement Jerry White. "Besides the fact that Ma Nature tried to whoop us, the season went smoothly," he said.



Bob Chelberg, Red Cliff, brings in a walleye from Lake Namekagon during the 2002 spring spearing season. Windy weather made for tricky conditions and kept him and his partner, Don Gurnoe, to the leeward shorelines of the lake.

GLIFWC officer Ken Pardun prepares a midnight snack at a Shell Lake boat landing.

Zeb Retka, GLIFWC warden at Mille Lacs, put in his first spring season as a warden at Mille Lacs Lake this year, encountering long hours and rough weather.

St. Croix's Tristan Oustigoff plucks a walleye from Shell Lake, Wisconsin on April 26. Record high water levels brought spearers to the edge of flooded timber to find fish on the 2,500 acre lake.

Photos by Sue Erickon & Charlie Otto Rasmussen

Perry Staples, St. Croix, pulls up a net on Mille Lacs Lake.

Taking data on a morning's catch, Pete Halfaday, GLIFWC creel clerk at Mille Lacs Lake, mans the measuring board and scale.

Out for fun and fish LdF seniors net Mille Lacs

Mille Lacs, Minn.—A chill breeze blew off Mille Lacs Lake nipping the fingers of Lac du Flambeau (LdF) elders as they worked to clean and package fish from the morning's lift. With a production line set-up at the Mille Lacs pow-wow grounds, the 'Shinaabes each concentrated on his or her particular task to process the catch. A few jokes and jibes flew as fillet knifes separated bone and meat. Then the next fish was flapped on the picnic table from the buckets brought from the landing. In another area, women washed and packaged the fillets. An overcast sky offered no glimmer of warmth, but no one in the bustling group seemed phased by the weather.

"I love to fish, and it's important that we exercise our treaty rights," said Virginia Chosa, as she slipped fillets of walleye into small plastic bags and deftly sealed the zip lock.

That is why Virginia, along with over thirty other LdF elders, arrived at the Grand Casino Mille Lacs Hotel on April 29 for four days of netting on Mille Lacs Lake. The LdF Senior and Disabilities Program coordinated the expedition. For some, this was the first-time-ever netting experience; for others it was the first time netting Mille Lacs Lake. Yet others are veterans of the three previous seasons when LdF seniors ventured to Mille Lacs Lake to exercise their treaty rights.

Once fillets were neatly packaged, tables were rinsed and the grounds picked up. Thankful that the Mille Lacs Band provided them with a place to process their fish and a freezer for storage, the elders were careful to show respect to the grounds and leave them clean.

Leonard Sam, Mille Lacs Band member, arrived at the pow-wow grounds to check on the group and show them where to dispose of the fish remains. Then, gear, fish and Shinaabes with folding chairs in hand, all loaded into several vans to return to the hotel until evening, when the nets would once again be set.

Actually, four or five of the guys got the daily permits, set the nets at night and lifted the nets in the morning, says Goldie Larson, LdF Senior and Disabilities Program coordinator. Around nine a.m., another crew arrived at the landing to pick fish from the nets before they were taken to the pow-wow grounds for processing. So, everybody had his or her role in the joint effort.

Preparing five new nets purchased by the Lac du Flambeau Band, elders stretch them out across the landing to make sure they are tangle-free. From the left, Robert Schuman, senior helper, Goldie Larson, LdF senior program coordinator, Roland Larson, Billy Martin, and Joe Valliere.

Roland Larson and Leroy Cardinal untangle a troublesome net.

Roberta Schuman, LdF senior helper, and Joe Valliere make sure the net is coiled correctly in the tub so it is easy to set.

Larson organized the first spring netting expedition to Mille Lacs four years ago, because "we struggled hard for our off-reservation treaty rights, and its important to get our elders involved and include them. Some of our elders are still leery of exercising their off-reservation rights, while others were out on the landings in the 80s during the hostile nights in Wisconsin."

For LdF elder Betty Jack, the communal effort is reminiscent of her childhood, when family groups camped during specific seasons for ricing, berry picking or fishing. "It was a communal lifestyle," she says. "During ricing, the families camped at the lakeside. We would dance and thrash the rice and roast the rice during the day; drum and tell stories at night. The rice would be divided up to families in the end."

"I've been doing this since I was knee-high," she says. "There was no electricity, no transportation. You could be working side by side with some you didn't like, but you put differences aside and fought later."

A bundle of energy and enthusiasm, Betty joined the LdF seniors when they arrived on Monday after netting with her daughter, Yolanda St. Germaine, over the weekend.

(See Netting Mille Lacs Lake, page 13)

Article and photos by Sue Erickson, Staff Writer

Betty Jack sends off another crew ready to set nets in Mille Lacs Lake. Ed Chosa and grandson, Ed, are forward. Skipper (Loyd) Schuman is midship. Not seen, at the helm is Randy Schuman.

Netting Mille Lacs Lake attracts more elders each year

(Continued from page 12)

Seniors' interest in spring netting has grown, says Larson. The netting excursion drew twelve participants the first year. This year forty signed up and about 36 actually came on the trip, some arriving independently with their own gear.

The LdF Band provided five nets to the seniors. Both the work and the fish are shared among the group. This year each senior brought home three meals each. "They were happy with that," says Larson, "and they had a good time." The catch was considerably less than last year's, when participants brought home twelve packages each. Conditions on the lake were tough this spring, and netting was a struggle with windy conditions limiting where nets could be set, says Larson.

This was the first year to net Mille Lacs Lake for Joe Durant, LdF senior, who has speared fish since he was twelve and netted whitefish in Wisconsin as a child. Durant had to rearrange his work schedule in order to come, but he definitely enjoyed the netting and plans to return in 2003.

For Ed Chosa, LdF elder, it was truly a celebration to be out fishing after having missed several seasons due to a heart condition. He and his grandson, Ed, set and lifted nets. Towards noon, the air carried the delicious smell of fish soup rising from Chosa's campfire cookpot. He was waiting for his wife, Margaret, to return with fry bread dough for a small cookout. They were thoroughly enjoying the Mille Lacs experience. "It's quiet here," Chosa commented, checking his simmering pot. "Maybe we oughta have Bud Grant over for a fish fry," he quipped.

The LdF seniors are especially enthusiastic about fishing, says Larson. Some of them even came to Mille Lacs Lake for ice-fishing last February, and it was cold! Larson and Pat Graveen, however, won a prize for the perch they caught through the ice. The group would like to go fishing in Canada, has shown interest in some turkey hunting, and plans to go gathering blueberries and strawberries again this summer.

Also along for the action were Roberta and Randy Schuman, LdF senior helpers, and LdF volunteer, Skipper (Loyd) Schuman.

Larson and the elders greatly appreciate the assistance and hospitality provided at the landings, especially by Leonard Sam, Mille Lacs Band member, who has gone out of his way to accommodate the visiting elders. Larson also extends a chi miigwech to GLIFWC warden Zebulon Retka who assisted elders as well as to other tribal members, such as Wayne LaBine, Mole Lake, who shared his time and boat.

Ross Allen and Leonard Gauthier pull in the morning's catch.

Leonard Sam, Mille Lacs, has been helpful in accommodating the LdF elders when they visit Mille Lacs.

Alex Maulson, veteran of numerous spearfishing landings in Wisconsin, works on picking walleye from a net.

Getting the knive sharp, Joe Durant, a veteran and traditional dancer, is ready to fillet fish. Looking on is Roberta Schuman, senior helper.

To the left, Patsy Graveen works with a group of women to package the fish. She cuts fillets into smaller pieces before they are counted and bagged.

Above, it's almost noon and time to go. The work is done for the morning, so the elders clean up the grounds, fold up their chairs and load into the van. They'll have a brief rest before setting the nets in the late afternoon.

Have a very berry summer!

Find something good in the woods this summer.

Raspberries—miskominag
Red berrries ripen in July and August.

Watch out, they have thorns!

Blueberries—miinan
Blueberries ripen in July and August.

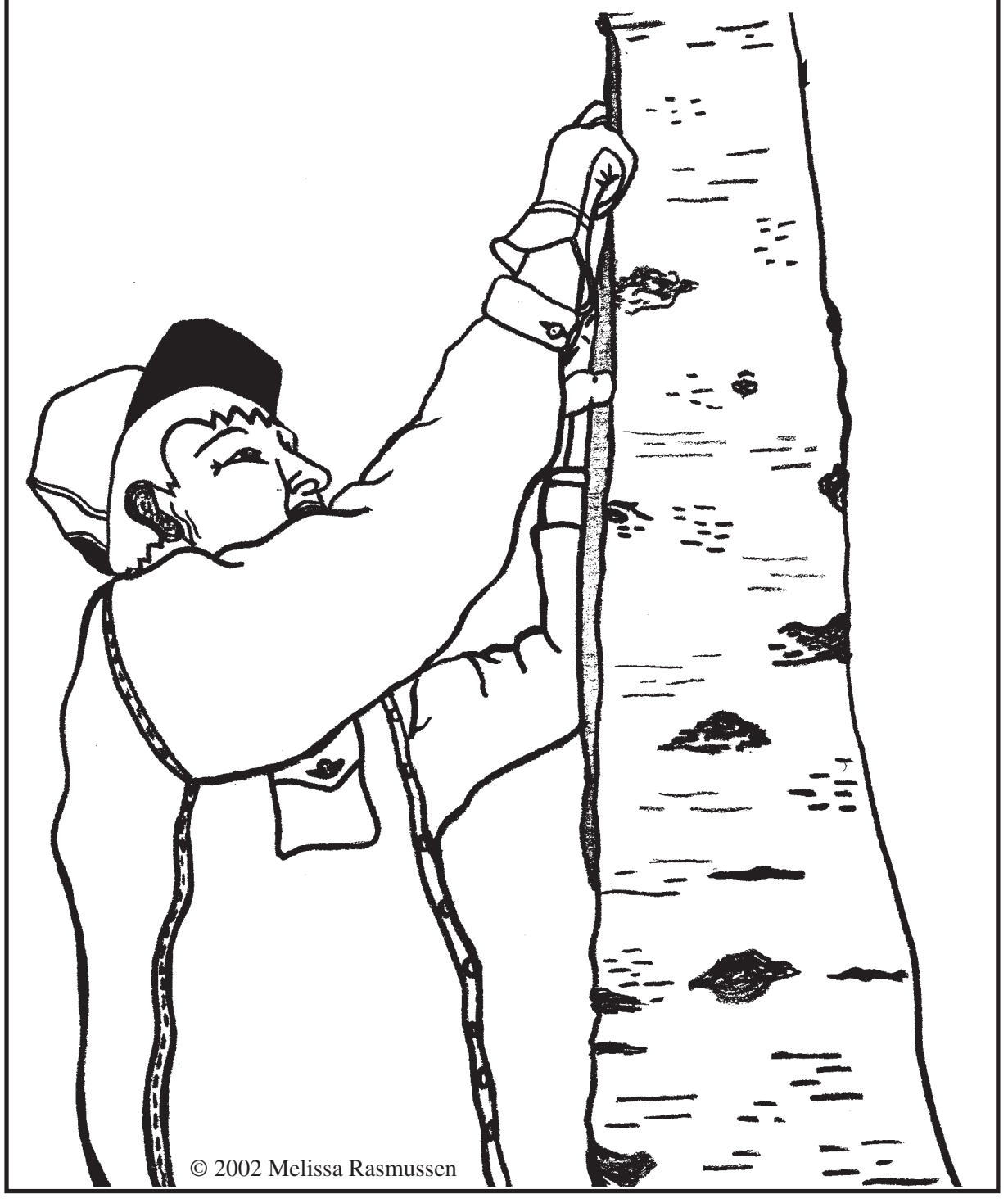
Wild blackberry—odatagaagominag
Blackish berries ripen from July through September.

They have thorns. Wear long sleeves!

Wild strawberries—ode'iminan
Bright red berries ripen in July.

(Photographed by Kenneth J. Sytsma, courtesy of Wisconsin State Herbarium: UW-Madison.)

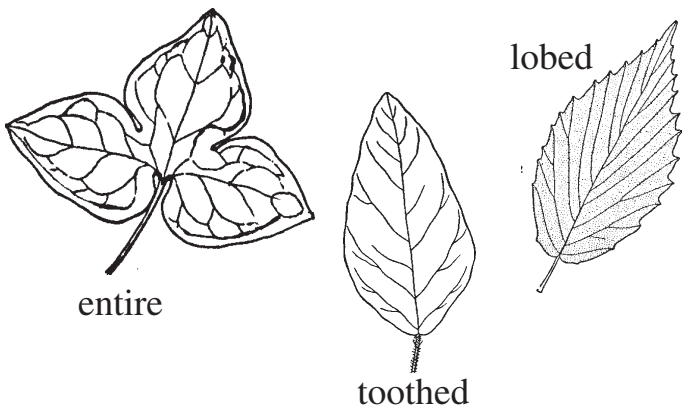
color me—maniwiigwaase (gather birch bark)



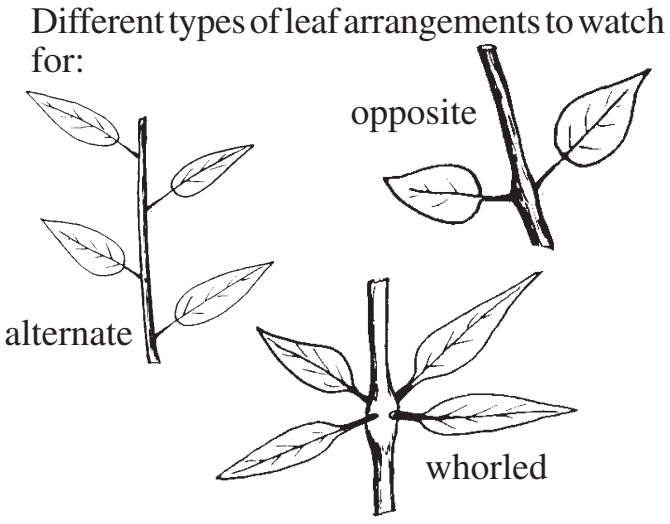
When walking in the woods, watch out for poison ivy/animikiibag. It looks like this (below) and if you touch it, it will make you itch.

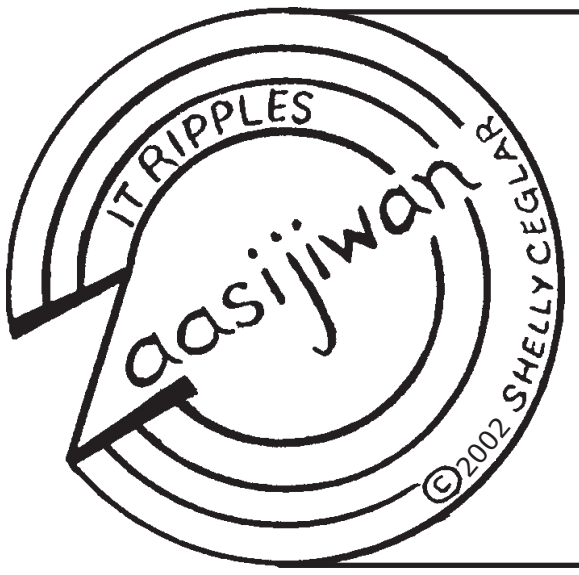
(Photographed by Robert R. Kowal, courtesy of Wisconsin State Herbarium: UW-Madison.)

Different types of plant leaves to watch for.



Different types of leaf arrangements to watch for:





Niibin—It Is Summer

Niibing, nindizhaa niimilidiwing. Gaye, nimaamaa dash nindede izhaawag imaa. Niwaabamaag ninosheyag idash ninzhisheyag. Nimawadishaag ingiw niijikweg. Niniim. Nindamwaa zaasakokwaan. Onzaam, nimbaap. Nindanamilaa. Niminotawaa alaw deweligan. Biindigen! Ambe imaa.

(When it is summer, I go to the traditional dance (powwow). Also, my mother and my father they go there. I see them my uncles and my aunts. I visit with them those friends (girls). I dance. I eat him/her frybread. Plenty, I laugh. I pray. I like to hear him, that drum. Come in! Come there.)

Bezhig—1

OJIBWEMOWIN
(Ojibwe Language)

Double vowel system of writing Ojibwemowin.
—Long vowels: AA, E, II, OO
Aaniin–as in father
Ambe–as in jay
Niibin–as in seen
Noodin–as in moon
—Short vowels: A, I, O
Idash–as in about
Nimbaap–as in tin
Ozaam–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.

Dependent Nouns

My, Your, His/Her Family

Nimaamaa—My mother.
Gimaamaa—Your mother.
Omaamaa—His/her mother.
Nimise(yag)—My older sister(s).
Gimise(yag)—Your older sister(s).
Odimise(yag)—His/her older sister.
Nisaye(yag)—My older brother.
Gisaye(yag)—Your older brother.
Odisaye(yag)—His/her older brother.

These nouns always speak for who the family member belongs to. Also works with body parts!

Niizh—2

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

A. Noongom gimiwan agwajiing. Noodin gaye.

B. Gii-izhaayaan zaaga'amoowigamigong, gii-kisinaa.

C. Ningabesh zaaga'iganing. Mino-gabeshiwin.

D. Giziibiigiisaginige-giizhigak, Anishinaabeg izhaawag imaa niimi'idiwining.

E. Gaye gabeshiwag. Anaami-wiigwaasi-mitigoog.

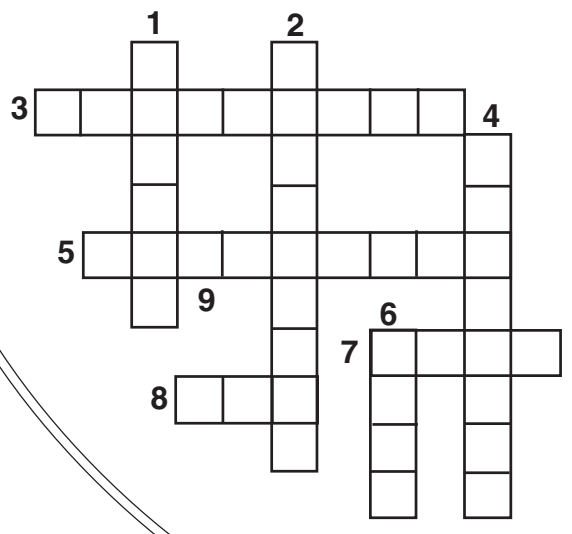
F. Abinoojiiyag odaminowag.

G. Ininiwag makizinataage-wag, dibikak.

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

Niswi—3

IKIDOWIN ODAMINOWIN (word play)



Down:
1. I dance.
2. I eat it (animate).
4. They go.
6. Come.

Across:
3. Come in!
5. I camp.
7. That (animate).
8. Question marker.

Niiwin—4

Dependent Nouns

Nishiime(yag)—My younger brother or sister(s).
Gishiime(yag)—Your younger brother or sister(s).
Nishtigwaan—My head.
Gishtigwaan—Your head.
Oshtigwaan—His/her head.
Ninik(an)—My arm(s).
Ginik(an)—Your arm(s).
Onik(an)—His/her arm(s).

Goojitoon! Try it! Translation below.

Ni

Gi

O

yag

an

1. ____shiime obiizikaan ziibaaska'iganagooday.
2. Niwii-giziibiiginaanan ginik_____ ningozis.
3. Nimise_____ apane niimiwag.
4. Mandy ina a'aw ikwe awedi _____maamaa?
5. _____dede ogizhaanaag ingiw abinoojiiyan.

Translations:
Niizh—2 **A.** *Today it is raining outside. It is windy also.* **B.** *When I went to the outhouse, it was cold.* **C.** *I am camping by the lake. A good campsite.* **D.** *When it is Saturday (floor washing day), Indian people they go there to the dance.* **E.** *Also they camp under birch trees.* **F.** *Children they are playing.* **G.** *Men they play the moccasin game when it is night.*
Niswi—3 **Down: 1.** *Niniim.* **2.** *Nindamwaa.* **4.** *Izhaawag.* **6.** *Ambe!* **Across: 3.** *Biindigen!* **5.** *Ningabesh.* **7.** *A'aw.* **8.** *Ina.*
Niiwin—4 **1. Your** *younger sister is wearing it a jingle dress.* **2.** *I want to wash them your* **arms** *my son.* **3.** *My older* **sisters** *always they dance.* **4.** *Mandy? Is that lady over there* **her** *mother?* **5. My** *father he watches over them those children.*
There are various Ojibwe dialects, check for correct usage in your area. Note that the English translation will lose its natural flow as in any foreign language translation.

Harvesting bagaanag (hazelnuts) for winter storage

Red Cliff, Wis.—Joe Duffy, a Red Cliff tribal elder, remembers gathering bagaanag (hazelnuts) in gunny sacks during late summer and early autumn.

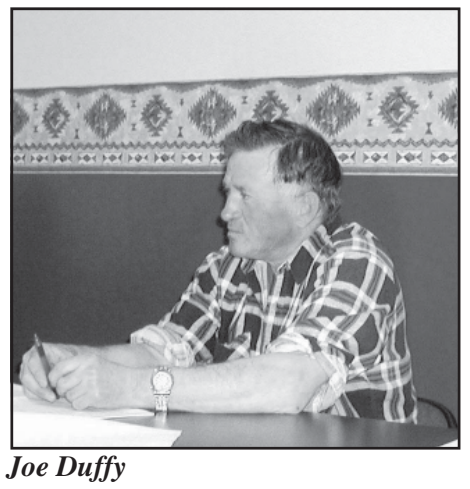
The gathered bagaanag would be spread out over a tarp on a flat roof and left to dry for four or five days. During drying, the outer husks would loosen and turn brown, allowing for easy removal.

His mother would fill many storage jars with bagaanag. One season's worth of gathering would last through the winter. She liked to use them in cookies, cakes, breads, and other baked items.

Of course, they taste delicious all by themselves. Joe has never tasted a more flavorful nut—surprising given its small size.

He doesn't remember eating any other kinds of nuts as a youngster. His family, nor any others he knew, shopped at food stores. They would buy flour and sugar in bulk, but certainly not nuts.

His family never had much money, but always had plenty to eat. Most of their food came from the land—venison, fish, berries, dandelion greens, bagaanag, etc. They had a vegetable garden and a cow from which they got fresh milk.



Joe Duffy

Nowadays, everyone just drives down to the local grocery store. Joe would like to see the tribal youth do more hunting, fishing, and gathering. He thinks television and videos have created too much of a distraction.

Two of his children, with their children, still gather bagaanag. He hopes that his great-grandchildren will continue the tradition as soon as they get old enough.

Unfortunately, bagaanag do not grow as plentiful as before. Joe can still find bagaanwaniminzhiig (hazelnut plants), but he rarely sees them with bagaanag. Instead of utilizing gunny sacks to gather bagaanag, now he gathers, at most, just handfuls.

He used to find bagaanag along logging roads, but those have all grown over. He thinks fire suppression probably has been a factor. When he was young, fires used to occur every five or six years. He says that other plants, like miinagaawanzhiig (blueberry plants), also benefit from fire.

Other tribal elders have made observations similar to Joe's. Isabelle Chosa, Keweenaw Bay; and Ruth Antone, Lac Vieux Desert, have always gathered bagaanag beside roads. They believe that roadside chemical spraying and mechanical brushing have caused the decline in bagaanag. Audrey Lyons, Bay Mills, blames road salt.

Isabelle, along with, Marcella Beson, Lac du Flambeau; Geraldine Parish, Bay Mills; and Elmer J. LeBlanc, Bay Mills, see urban development and construction as a factor. Margaret Ojibway, Fond du Lac, and Virgil Loonsfoot, Keweenaw Bay, think excessive logging has also impacted bagaanwaniminzhiig.

Temperance E. Debe simply believes that no one takes care of bagaanwaniminzhiig anymore. She knows of few tribal members that continue to gather bagaanag.

It seems understandable that with so few bagaanag to find, thus considerably increasing the labor of gathering, not many tribal members take time for this tradition. However, with knowledge from tribal elders, combined with western science, bagaanwaniminzhiig may again produce "gunny sacks" of bagaanag.

Joe hopes to see that some day. He hopes that his great-grandchildren and their great-grandchildren will be able to and want to gather bagaanag for winter storage.

Bagaanag recipes

American hazelnut

Hazelnuts mature in late summer or autumn. To prepare nuts remove husk, shell, and eat as is or use in any recipe calling for nuts or grind into meal to use as a flour in pancake recipes. To toast hazelnuts, bake on a sheet pan until golden brown and the hull starts to break off. Rub hull to remove. Grind to nice fine meal.

No cook candy

Mix 1 egg white with 2 cups confectioner's sugar. Add 2 tsp. butter or margarine and blend until smooth. Work in 2 cups chopped hazelnuts and form into balls. Eat and enjoy.

Hazelnut hot cakes

Finely grind 1/2 pound dried hazelnuts. Boil in 2 cups water until mushy, about 30 minutes. Add 1 tsp. maple syrup and 1/3 cup fine cornmeal, stir well, let stand for 20 minutes or until thick. Heat 1/3 cup frying oil in skillet. Drop batter by tablespoonfuls into hot oil. Brown on one side, flip, flatten, brown on other side. Drain and serve hot or cold.

Beaked hazelnut Hazelnut torte

Preheat oven to 350 degrees. Beat 11 egg yolks well, add 1 pound confectioner's sugar, continuing to beat. Add 1 pound ground hazelnuts and 1 tsp. instant coffee. Fold in 11 stiffly beaten egg whites. Bake in 12 inch greased and floured spring baking form for 50-60 minutes.

Hazelnut apple pancakes

In bowl combine 1 1/4 cups flour, 1/4 cup hazelnuts (toasted and finely ground), 2 tsp. baking powder, 1/2 tsp. baking soda, 1/4 cup applesauce, 1 egg, 1 1/3 cup nonfat milk, 1/2 tsp. vanilla. Stir until it comes together. Cook on hot griddle.

Recipes reprinted from Field Guide to North American Edible Wild Plants, by Thomas S. Elias and Peter A. Dykeman. and www.ediblewild.com.

Articles by Karen Danielsen
GLIFWC Forest Ecologist

Bagaaniminzhiig (hazelnut plants) in the Northwoods

Two species of bagaaniminzhiig (hazelnut plants) grow in the Northwoods. Both species, American hazelnut (Corylus americana) and beaked hazelnut (Corylus cornuta), grow as shrubs and generally occur in similar habitats.

The American hazelnut can grow as high as 15 feet. The hard-shelled nut has a protective, bristly husk. Reddish-brown glandular hairs usually cover its smaller branches. Many tribal elders refer to the nuts of this plant as bear nuts or cluster nuts.

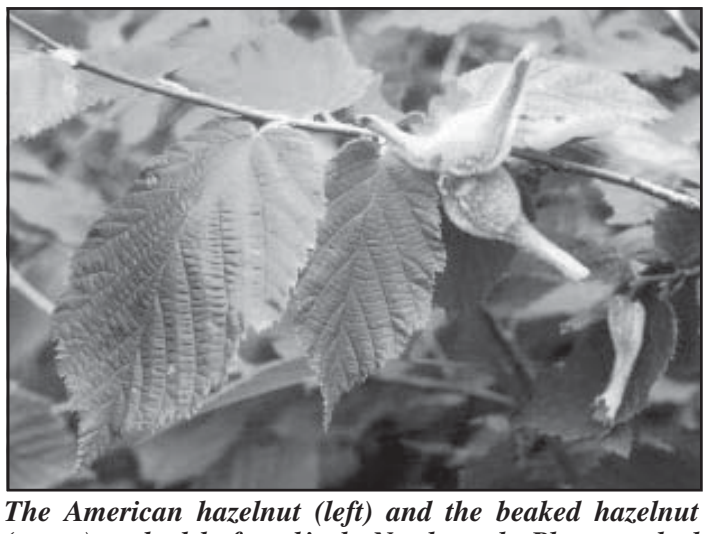
The beaked hazelnut rarely grows taller that 10 feet. Its hard-shelled nut also has a bristly husk which tapers into a long, slender beak-like appendage. Glandular hairs seldom cover its branches. This species appears to be more common than the American hazelnut.

Both species grow in well-drained uplands in pine and hardwood forests and grasslands. They may often be found in clearings and along roads.

A few of the plants that grow with bagaaniminzhiig include apakwanagemag (red pine—Pinus resinosa), zhingwaak (white pine—P. strobus), ininaatig (sugar maple—Acer saccharum), zhiishiigimiiwanzh (red maple—A. rubrum), wiigwaas-mitig (paper birch—Betula papyrifera), giiziso-mashkiki (goldenrod—Solidago canadensis), miskominagaawanzh (raspberry—Rubus spp.), and miinagaawanzh (blueberry—Vaccinium spp.).

Reproduction occurs by seed and often by underground rhizomes (stems) which form new identical shrubs nearby. This results in the typical "thicket" of bagaaniminzhiig often seen in the woods.

Many animals eat bagaanag (hazelnuts) including misajidamoog (grey squirrels), ajidamoog (red squirrels), agongosag (chipmunks), waawaashkeshiwag (deer), diindiisiwag (blue jays), and waawaabiganoojiinyag (mice). These animals also use bagaaniminzhiig for shelter.



The American hazelnut (left) and the beaked hazelnut (upper) can both be found in the Northwoods. Photographed by Robert N. Freckmann, courtesy of Wisconsin State Herbarium: UW-Madison.

Fall harvest opportunities

Introduction

Over the last two years, GLIFWC has been interviewing tribal elders regarding the non-medicinal uses of plants. Elders discussed hundreds of plants and uses. With approval from the elders, we will be sharing this information as a regular feature in *Mazina'igan* in the form of a seasonal harvest guide. In this issue, the harvest guide will be devoted to those plants that may be gathered during the summer 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
mashkiigiminang—cranberries
aniibiimin—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 water lily roots
bagwaji zhigaagawinzhiig—wild leeks
bagwaaji zhigaagananzhiig—wild onions
apakweshkway ojiibikan—cattail roots
anaakanashk ojiibikoon—bulrush roots
anaakanashk ojiibikoon—rush roots

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.

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

Cattails (left) photographed by Kenneth J. Sytsma and highbush cranberries (upper) photographed by Kitty Kohout. Photos are courtesy of Wisconsin State Herbarium: UW-Madison.

Greens

raw, sauteed, steamed, boiled

*watercress leaves

Cold Beverages

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

Tea

oginiig—rosehips
apaakwaanaatig miinesan—sumac fruits
wiinisiibag miinesan—wintergreen berries
wiinisiibag aniibiishan—wintergreen leaves
mashkigobag aniibiishan—swamp (Labrador) 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
gagigebag—princess pine

Utility Items

mazaanaatigoons—nettle stems (twine)
*angelica stems (whistles)
giiziso-mashkiki inaskoon—goldenrods stems (pipes)
apakweshkway waabigwaniin—cattail flowers (torches)
nookwezigan waabigwaniin—fleabane flowers (smoke attracts deer bucks)
apakweshkwey aninbiishan—cattail leaves (weaving)
anaakanashk inaskoon—bulrush stems (weaving)
anaakanashk inaskoon—rush stems (weaving)
mashkodewashk aniibiishan—wild sage leaves (smudge)

Commercial Products

gagigebag—princess pine
zhingob waatigwaanan—balsam fir boughs

Disclaimer

While the list identifies those plants that can be harvested during the summer 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 plant before eating it.

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 it. In addition, those elders can also help you in different uses of these plants.

Wisconsin wolf population climbs

Stakeholders review Depredation Control Plan

By Peter David, GLIFWC Wildlife Biologist

Odanah, Wis.—Few animals trigger human emotional responses the way wolves do. At a meeting of "Wisconsin Wolf Stakeholders," convened April 13th in Wausau by the Wisconsin Department of Natural Resources (WDNR), news that the state over-winter wolf population had climbed to 320 animals (including 13 that reside primarily on Indian lands) triggered varying reactions.

Wolf advocates celebrated the fact that the population, which had demonstrated little growth the previous year, was again moving towards the state population goal of 350 wolves (exclusive of those living primarily on tribal lands).

But to some anti-wolf advocates, that same number was touted as evidence that the state wolf population is reaching "crisis" proportions.

Federal reclassification proceeding

The expanding wolf populations in Wisconsin and Michigan open the door for federal downlisting of the species. However, the change in federal classification, from Endangered to the less critical Threatened status, has proceeded more slowly than had been expected.

A year ago, it was anticipated that wolves in the two states would be downlisted sometime this spring; it is now thought this change may be in place by August. This change has significance because a broader range of management options are allowed to be applied to Threatened populations—including the use of lethal control on wolves that depredate livestock or pets.

It is also anticipated that once our regional population has been downlisted, a proposal to delist it altogether will be developed. At the soonest, that process would be completed sometime in 2004, though the track record on status changes suggests it will probably take longer.

Ma'iingan (wolf). (Staff Photo)

Depredation control guidelines reviewed

In preparation for the proposed downlisting, the stakeholders group spent much of their meeting reviewing draft guidelines that will describe how depredation control will be implemented when wolves become federally listed as Threatened in the state. The WDNR plans on taking these guidelines to the Natural Resources Board for action in June. Overall, the stakeholders group did not suggest many substantive changes be made to the draft guidelines that had been prepared by the WDNR Wolf Committee.

Under the proposed guidelines, Federal Wildlife Services agents will offer non-lethal alternatives of wolf control where appropriate. However, lethal control would be permissible after 1 or 2 verified "significant losses," depending on wether or not they are listed as state Threatened. (State classification is done separately from the federal process, and the state and federal classifications may be different.)

Control, like verification, would be conducted by federal agents, under contract with the state. A "significant loss" is defined as "the killing or maiming of one or more domestic animals by wolves where the imminent threat of attacks on additional domestic animals is apparent." For poultry or other small animals, a loss equivalent to $250 would be considered significant.

The stakeholders had an extensive discussion about depredations to bear hunting dogs. Currently, hunters who lose dogs can be reimbursed for their losses, something that many stakeholders felt was inappropriate—although it may be difficult to change this without legislative action.

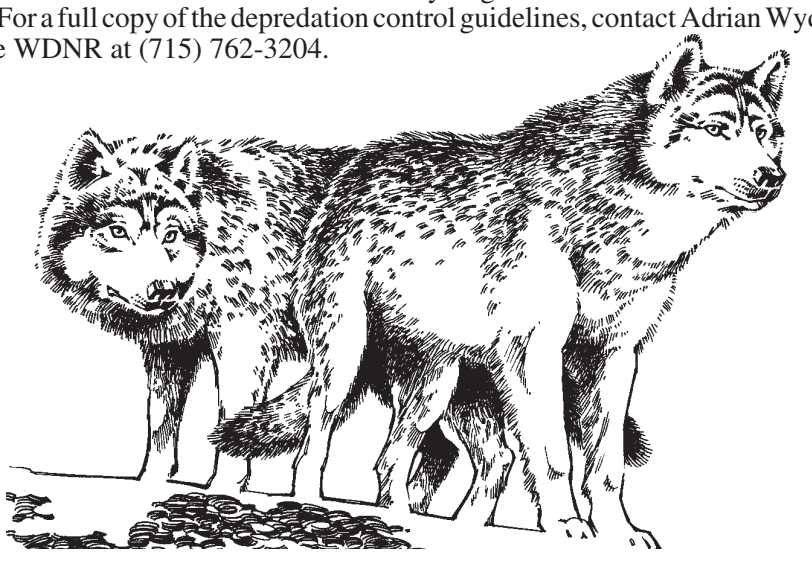
At the other end of the spectrum, a representative for the Bear Hunters Association felt strongly that wolves that kill bear dogs should also potentially be subject to lethal control, even in instances where the dog had been killed on public land. However, there generally was strong sentiment against this by other stakeholders, and the guidelines were left as they were, stating that wolf control in the case of dog depredations would only occur if the dog attacked was leashed, confined, or under the owner's control on the owner's land.

The proposed guidelines touch upon a number of other details, including:

- ☞ On private lands in Indian Reservations, and any area surrounding the reservation negotiated between a tribe and the state, the state will consult with the tribe before trapping and dispatching wolves. Trapping on tribal lands will only be done at the tribe's request.
- ☞ Trapping could occur up to 1/2 mile from a depredation site in wolf zones 1 and 2, and up to 1 mile from a site in zones 3 and 4.
- ☞ The duration of trapping will be at the discretion of federal Wildlife Services staff—generally up to 15-21 days.
- ☞ Any wolf-dog hybrids that are trapped will be dispatched; dogs will be turned over to town chairmen, the owner, or animal shelters.

The guidelines were also clarified with regards to the requirement for a farmer to sign a "depredation management plan" before lethal control would proceed. This is likely to be a fairly simple document, but would allow any obvious animal husbandry problems to be addressed. An example might be a farmer who drags dead livestock to the "back 40" where they might serve to attract wolves.

For a full copy of the depredation control guidelines, contact Adrian Wydeven of the WDNR at (715) 762-3204.



Wisconsin's elk herd comes through winter in fine condition

Hayward, Wis.—Wisconsin's elk herd came through the winter in excellent condition, according to state wildlife officials who estimate the state herd to now be between 85 and 90 animals.

Laine Stowell, a wildlife biologist and elk specialist for the state Department of Natural Resources said that all the state's elk appear to have survived the winter. He added that because the weather was mild—causing little or no stress on the elk—the females should have "vigorous, healthy calves this spring."

Most of the elk are within a 20-mile radius around Clam Lake in Ashland County. A seed herd of 25 elk were released in the area in 1995 to reestablish the animal in the state.

Stowell said researchers were busy over the winter monitoring radio-collared elk, and trapping elk to place new or replace warn radio collars on them and checking the health of the state herd. There are currently 36 working radio transmitter collars on the air.

Elk staff conducted ground telemetry location surveys of on elk on 13 days, 26 telemetry mortality checks and four days of aerial telemetry surveys. "During these surveys we made about 293 elk telemetry locations and 586 individual elk mortality checks," Stowell said. The latter determine if any elk have died or if collars were dropped. None were found.

Weather conditions determined the outcome of the aerial surveys. Stowell said the best results were on a February day that had light winds, clear skies and temperatures in the 20s. "Elk seemed to be out sunning themselves everywhere and we counted 52 animals," he said.

Researchers from universities at Connecticut, Wisconsin, Ontario, and Alberta working together as the Turchin Group conducted snow depth and vegetation surveys and initiated feces collection for food habit studies. The group also provided the Department of Natural Resources (DNR) with 10 Geographic Positioning System (GPS) radio collars eight of which were attached to elk that were trapped this winter.

"These collars are configured to take GPS locations once every four hours and on each Wednesday every 30 minutes," Stowell said. "The collars will be recovered and data downloaded 54 weeks from application."

Stowell said this winter was one of the best for trapping elk. Traps look like corrals with a trip door on one end. Elk are lured with bait into the corral through a passageway with doors that shut behind them. Individual animals can then be collared, a blood sample taken and inoculated for any diseases.

A total of 31 elk were caught. Sixteen of these were recaptures either from this year or previous years. Stowell said of interest to the researchers was that eight of the adult cow recaptures were of the original 16 female elk released in 1995.

As part of elk research efforts, University of Stevens Point researchers also went into nine bear dens in the Clam Lake elk range and placed collars on five yearlings, replaced collars on several of the adult sows, and assessed birthing and mortality rates of yearlings. The bear research along with wolf studies provides information on predator prey relationships with elk.

Stowell credited this year's trapping success to the cooperation and hard work of fellow DNR staff, local neighbors, and Rocky Mountain Elk Foundation members.

*(Reprinted from **Wisconsin DNR News & Outdoor Report**.)*

Surveying sharpies in the Moquah Barrens

By Peter David
GLIFWC Wildlife Biologist

Moquah, Wis.—Light was already beginning to tinge the cloudless eastern sky—A bit more than I liked—when we pulled up near the dancing ground a little before 5:00 am.

Though we had driven the last quarter mile or so without headlights, the half moon provided more than enough light to follow the familiar two-track to the low spot where we parked the car.

I grabbed the duffel bag we had packed the night before with blankets, snacks, binoculars and flashlights, while my 11 year-old son reached for the thermos of hot chocolate, and we stepped out. Slowly but firmly, we pushed the doors shut, and then stood listening.

The first lung-full of dawn air woke us more than dressing or the drive had. Plenty fresh for the first week of May; lower 20's I guessed, but still scented with a hint of sweet fern, a fragrance somehow still shared though their brown leaves were now encrusted in the frost that coated everything in view. Lit by the moon, the barrens sparkled with a diffuse, dreamy light.

Almost instantly, however, my fear of being a bit late was confirmed with the sound of gentle booming. The sharptails were already on the dancing ground—or what biologists refer to as a lek. "We gotta move fast," I whispered to Ben, "and no lights."

Walking quickly, we ascended the small rise and approached the edge of the dancing grounds heading for the rectangular silhouette of the blind. A sudden fluttering of wings indicated that two birds had gotten up in front of us, disappearing unseen into the dark.

Within another minute we were inside the blind, spreading a blanket on the frozen bench. Unfortunately, we discovered that our disturbance of the birds was not quite over. It had rained fairly heavily the evening before, and the water had pooled into the center of the canvas roof.

Overnight it had hardened into an ice mass weighty enough to sag the roof a foot, pulling the connected canvas walls of the blind several inches above the ground. A heave from inside sent the ice tumbling to the back, and a few tugs got the canvas envelope back in place. Now it was time to sit still.

We didn't have long to wait. Within minutes, a male strutted into the small opening directly in front of us, seemingly oblivious to the disturbance we had caused. The peak of his white triangular tail aimed for the heavens, while his extended wings arced groundward near their tips.

Then the dance itself began, a rapid fire blur of thumping footwork, paired with booming calls produced by the extended purplish neck sacs, and a flashing of the yellow combs above the eyes.

His display seemed to trigger other birds into action. A second bird emerged to our left, and the two came together. Both hunkered down, breasts flattened to the earth, like squat tanks facing off. Both birds issued a new call, an almost purring-like communication, that seemed to be reserved for these challenges.

A sudden exchange of pecks left a small feather lying on the lek, then each bird moved back towards the core of its small display territory on the dancing grounds, seemingly having lost interest in the fight.

As the sun arrived and slowly climbed behind us, the display continued. It was difficult to count the total number of birds dancing since the brush, which was getting a bit thick for sharpies, obscured all but the white tail-tips of some birds from being seen.

We also had other birds dancing to the side of, or behind the blind where we had no viewing holes, but the lek appeared to be holding 10-12 males—the only gender to strut their stuff in this annual spring show.

Not that females were lacking, which probably explains the sustained intensity of the performance to which we were privy. At one point a trio of hens came sashaying through the heart of the lek like a party of tight-knit sisters, driving the males to a maximum of display motivation. But at least on this morning they were playing hard to get, fluttering into low willows to pluck frosty pussy toes, seemingly oblivious to the three showy males that had converged to surround them with their ardent display.

Our time passed quickly; son absorbed by the wonder of evolution playing out before him—and father silently wondering if his son would be taking some lesson from this morning into his upcoming years of courtship.

Maybe, maybe not, and maybe it didn't matter, because right then we were just happy to be sitting together cold-toed, sipping hot cocoa, and watching the sharp-tails dance on the barrens.

GLIFWC staff have been surveying sharp-tailed grouse on the Moquah Barrens for the past decade. (Photo by MJ Kewley)

Sharp-tail notes:

Sharp-tailed grouse are the barrens-habitat cousin of the more common ruffed grouse or partridge. The decline of barrens habitat in the state has resulted in a parallel decline in sharptails, who's long-term future in the state appears to be tied to a few public properties that are specifically managed to provide this type of habitat.

GLIFWC staff has been surveying sharp-tailed grouse on the Moquah Barrens since it participated in a restoration effort there a decade ago, in a joint project with the Wisconsin Department of Natural Resources, the (then) Chequamegon National Forest, and local volunteers.

Birds were trapped and transplanted from the Crex Meadows and Kimberly-Clark Wildlife Areas, because the tiny remnant population of local birds had failed to respond to the habitat restoration efforts the Forest Service was making at Moquah. Now, in cooperation with Gus Smith and students at Northland College, annual surveys continue to be done to monitor the bird's population status.

Sharp-tailed grouse are most easily surveyed in the spring, when male birds display on the dancing grounds, or leks, to attract females. Biologists generally assume that about as many females exist as males, and that the population may double from spring to fall with annual production. Thus, a count of 30 males on spring leks translates to a fall population of about 120 birds.

This spring's count indicated that there were approximately 35 males on 4-5 grounds, well above the estimated population of just 2-3 males in the late 1980's. However, given the still relatively small size of the population, the area has remained closed to sharp-tail hunting.

Harvest opportunities ahead

Upcoming off-reservation, treaty seasons

For specific information and dates regarding any off-reservation treaty seasons, tribal members should contact their reservation conservation department or the on-reservation Great Lakes Indian Fish and Wildlife Commission satellite enforcement office or registration station.

Seasons may vary some from state to state, or from tribe to tribe. However, some of the opportunities for off-reservation hunting, fishing, and gathering in June through August 2002 are as follows:

Wisconsin 1837, 1842 Treaty ceded territory

Netting
Hook and line fishing
Gathering (birchbark, berries, ricing, etc.)

Minnesota 1837 Treaty ceded territory

Netting
Hook and line fishing
Gathering (birchbark, berries, ricing, etc.)

Michigan 1836, 1842 Treaty ceded territory

Netting
Hook and line fishing
Gathering (birchbark, berries, ricing, etc.)

Treaty commercial fishing in Lake Superior, Michigan and Wisconsin waters
(Consult with tribal codes for specific quotas, units, and dates.)

GLIFWC initiates water quality study on eight frequently speared lakes

By Sue Erickson, Staff Writer

Odanah, Wis.—As part of GLIFWC's ongoing effort to document and understand mercury contamination in walleye, a water quality study on eight Federal Energy Regulatory Commission (FERC) waters used by tribal spearers was initiated this spring.

Funded by a grant from the Administration for Native Americans (ANA), the study is searching for correlations between water quality and mercury contamination levels in walleye in waters with FERC dams.

Concern about the health risk related to consumption of fish with high levels of mercury has prompted GLIFWC to test walleye fillets from speared lakes and provide mercury level maps to tribal members which indicate mercury levels in specific lakes.

Testing results on some water bodies have shown a great deal of fluctuation from year to year as far as what size of fish is safe to eat, especially for children, pregnant women and women in their childbearing years.

For example, the Turtle Flambeau Flowage provides tribal members with the most walleye from a single lake in Wisconsin, about 2,200 walleye per year. However, tests reveal sufficiently high mercury walleye concentrations to warrant consumption advisories especially to children, pregnant women and women in their childbearing years (sensitive population).

GLIFWC's Environmental Section has observed statistically significant differences between years of testing for mercury levels in fish harvested from the Turtle Flambeau Flowage by tribal members. These shifts significantly change the size of walleye available to the sensitive population for unrestricted consumption.

Between 1996 and 1998 the size recommended for unlimited consumption dropped for 16 inches to 12 inches. But in 2000 unrestricted consumption would be allowable up to 18 inches.

This study is designed to look at several factors that may relate to mercury levels in the lakes and help understand reasons for fluctuating test results. Some of the factors to be studied include the physical characteristics; e.g. wetlands which may contribute methyl mercury to the lake; water quality, and water level fluctuations.

Ed Kolodziejski, ANA field assistant, and Kory Groetsch, environmental biologist, will be testing water quality in the eight selected lakes this summer into the fall. These lakes are all significant sources of walleye for tribal members. Ranking by numbers of walleye harvested over a five-year period, they all rank within the top 24 lakes. Consequently, the mercury contamination in the fish is a serious concern for tribal members who rely on this food source.

Getting equipment plus boat ready, Kory Groetsch, GLIFWC environmental biologist and Ed Kolodziejski, ANA field assistant, prepare to test water quality on eight water bodies in the ceded territories this summer. The study is looking for a correlation between water quality and mercury contamination levels in walleye in waters with FERC dams. (Photo by Sue Erickson)

The lakes are divided into two categories. Category A lakes show high levels of mercury in tested walleye fillets, high meaning over 0.5 ppm. They include the Chippewa Flowage, Sawyer County; the Turtle Flambeau Flowage, Iron County; the Willow Flowage, Oneida County, and Squirrel Lake, Oneida County.

The Turtle Flambeau and Chippewa Flowages rank first and second in number of fish harvested by tribal members over the past five years.

Walleye fillets tested in Category B lakes show mid to low levels of mercury. Those lakes include Lake Minocqua, Oneida County; Lac Vieux Desert, Vilas County; Pelican Lake, Oneida County, and Twin Lake, Vilas County.

Testing will take place at the deepest part of each lake as the most stable part of the lake and most representative of what the lake's walleye are experiencing, says Groetsch.

They will be testing several aspects of water quality, one being turbidity. Turbidity generally refers to the amount of sediment in the water. Using a hand held probe as well as secci disk, the team will test for turbidity at the top, middle and bottom of each lake. They will also be measuring for true color using a spectrophotometer which measures absorbed light, or true color, versus reflected light or apparent color.

Both color and turbidity correlate with increasing mercury levels in walleye. Mercury, produced in wetlands that drain into lakes, is likely to be at higher levels in darker, more turpid waters, according to Groetsch.

The sulfide level in the water is a third element being tested in the project. Sulfide and methyl mercury are both excreted by a bacteria exposed to mercury. For this reason, Groetsch expects there will be a correlation between the sulfide level and mercury levels in fish.

The crew will also get a reading on the pH level of the water, a determination of the acidity or alkalinity of a substance, as well as assess conductivity.

GLIFWC will investigate the relationship between water level fluctuations, physical characteristics, water quality, and the methyl mercury levels in walleye harvested by tribal members, to help determine the roles of each in the creation of methyl mercury contamination and the fluctuation of contamination levels on a yearly basis.

Mercury regulations under development in Wisconsin

GLIFWC pushes for greater mercury reductions

By John Coleman, GLIFWC Environmental Section Ldr.

Odanah, Wis.—Great Lakes Indian Fish & Wildlife Commission (GLIFWC) staff have been participating in committees advising the Wisconsin Department of Natural Resources (WDNR) on issues of mercury emissions to Wisconsin waters and air.

Since early in 2001 staff have discussed new rule provisions being considered by the WDNR to regulate the discharge of mercury in industrial and municipal waste water.

GLIFWC staff have taken the position that dischargers should be required to reduce the mercury content of their discharges so that discharged waters meet the standards set for waters in the Lake Superior watershed of 1.3 ng mercury per liter of wastewater.

The new provisions would permit a variance from the 1.3 ng of mercury per liter of wastewater standard under certain conditions.

In order to obtain the variance to the standard, dischargers would be prohibited from increasing their discharge of mercury, would be required to sample for mercury in their wastewater, and would be required to demonstrate that they are making an effort to reduce mercury.

Since 1999 GLIFWC staff have participated in discussions with the WDNR about goals and regulations for reduction of mercury emissions to the air by industry and electric power producers.

In June of 2001 the WDNR proposed rules that would require a 90% reduction in mercury emissions by major power producers within 15 years. The Wisconsin Natural Resources Board required that the WDNR staff discuss the provisions of the rule with industry and others.

GLIFWC staff have participated in discussions with the WDNR, industry and environmental organizations to develop recommendations on the proposed rules.

GLIFWC staff have argued for greater reductions in both the short and long term than were proposed by the WDNR. Industry representatives have proposed a 10% reduction in 5 years and a 40% reduction of mercury emissions in 10 years.

This compares to the WDNR's proposal of 30% reduction in 5 years, 50% in 10 years and 90% reduction in mercury emissions in 15 years. The WDNR will be making their final recommendation for mercury reduction rules to the Wisconsin Natural Resources Board in the fall or winter of 2002.

Who is most at risk?

Mercury is neurotixoc (toxic to nerve cells); it affects the brain and spinal cord. The fetus is the most at risk from exposure to too much mercury because its nervous system is developing.

Therefore, women who are pregnant or are breastfeeding should follow fish consumption advisories to keep their mercury exposure low and at safe levels for their young and soon-to-be-born children.

However, pregnant women and breastfeeding mothers should not avoid all giigoonh (fish), because nutrients in giigoonh especially oily giigoonh, may be important for the mental development and vision of babies. Lake Superior whitefish and herring contain these beneficial nutrients and are low in mercury.

Children under the age of 15 years old are still forming new brain tissue, and for this reason are also at a higher risk from mercury exposure than an adult. Therefore, children under 15 years of age should follow the more restrictive advice given to pregnant mothers.

Finally, because mercury does require several months to be eliminated from the body, women of childbearing age should follow the same advice as pregnant women, breastfeeding mothers, and young children. Thus, if they become pregnant, their fetus will be protected from mercury.

Preventing the spread of aquatic nuisance species the focus of workshops

Aquaculture, fish stocking, and wild baitfish harvest may pose risks for spreading aquatic nuisance species (ANS) based on their operations. Movements with fish, fingerlings, larvae, eggs, and water can potentially spread ANS.

Knowing whether your operation is at risk is the first step in the ANS-Hazard Analysis Critical Control Point (HACCP)—pronounced "has-sip"—process.

Hatchery and baitfish operations are diverse and complex, as are the risks for spreading ANS. Most operations pose a very low risk, however, without adequate risk assessment of individual operations, unwanted species may be inadvertently spread.

Examples of species that may have spread via such operations include: gizzard shad in the Southwest, New Zealand mudsnail in the Northwest, and white perch in the Great Lakes region.

For private businesses, regulations could be imposed that would negatively impact them and still not effectively reduce the risk of spreading ANS.

In fact, some natural resource management agencies have closed ANS-infested waters to harvest and culture; some states have banned importation of live bait, and others only allow shipments of ANS-free certified bait into their state.

ANS-HACCP is a flexible approach that stresses appropriate procedures and verification that can ensure that operations pose minimal risk for spreading unwanted species.

One approach to this problem is to adapt the HACCP concept used by the seafood industry to minimize seafood consumption health risks. Advantages of this approach are that it manages a diverse industry, fosters partnership between industry and government regulators, and is effective if properly applied.

The approach concentrates on the points in the process that are critical to the safety of the product, minimizes risks, and stresses communication between regulators and the industry. And most importantly, it requires records be kept and procedures verified, which provides assurance that the ANS-HACCP plan is being followed and that it works.

Several regional ANS-HACCP Training Workshops will be hosted by the U.S. Fish and Wildlife Service and state natural resource management agencies in 2002 and 2003.

Participants at the workshops will receive a training manual, companion video, and other materials.

Coursework is designed to train fish farmers, bait harvesters, and management agencies in the use of HACCP fundamentals to control the spread of ANS via hatchery, fish farming, and baitfish operations. HACCP is an approach that brings together management agencies and industry representatives to establish a plan to prevent the spread of ANS.

It can also be used to certify ANS-free products for those businesses that choose to seek this certification. These workshops will provide the information necessary for those involved in fish stocking, aquaculture, and baitfish operations to learn how to apply ANS-HACCP principles.

The ANS-HACCP approach was adapted from the National Seafood HACCP Alliance for Training and Education by members of the Great Lakes Sea Grant Network through a grant from the National Oceanic and Atmospheric Administration (NOAA) to the National Sea Grant College Program.

For more information on dates, times and locations for a regional workshop near you, contact Phil Moye, Wisconsin Sea Grant, at (920) 683-4697.

Seven HACCP principles

1) Conduct a hazard analysis.
2) Identify the critical control points (CCP) in the process.
3) Establish controls for each CCP identified.
4) Establish CCP monitoring requirements.
5) Establish corrective actions to be taken when monitoring indicates that there is a deviation from an established critical limit.
6) Establish procedures to verify that the HACCP system is working correctly.
7) Establish effective record-keeping procedures.

ANS-HACCP hazards

An aquatic nuisance **plant, invertebrate,** or **fish** (or other aquatic vertebrate) that is reasonably likely to be transported by aquaculture or baitfish harvest and establish reproducing populations that could negatively impact existing species, recreation, or other existing use of water resources in the absence of its control.

Common herbicide linked to sexual side effects in frogs

By Cat Lazaroff, Environmental News Service

Berkeley, Cal.—Atrazine, the top selling weed killer in the United States, disrupts the sexual development of frogs at concentrations 30 times lower than levels allowed by the U.S. Environmental Protection Agency (EPA). The researchers who uncovered the problem join environmentalists in expressing concern about heavy use of the herbicide on corn, soybeans and other crops in the U.S. Midwest and around the world.

University of California at Berkeley developmental endocrinologist Tyrone Hayes and his colleagues report that exposing male tadpoles to atrazine in the laboratory, using levels often found in the environment, demasculinizes the tadpoles, preventing male characteristics from fully forming. The atrazine exposure turns the tadpoles into hermaphrodites—creatures with both male and female sexual characteristics.

An African clawed frog, Xenopus laevis, the type used in Hayes' laboratory studies.
Photo:(allaboutfrogs.org/info/species/clawedordwarf.html)

The herbicide also lowers levels of the male hormone testosterone in sexually mature male frogs by a factor of 10, to levels lower than those found in normal female frogs. As Hayes later discovered, many atrazine contaminated ponds in the Midwest contain native leopard frogs with the same abnormalities.

"Atrazine exposed frogs don't have normal reproductive systems," Hayes said. "The males have ovaries in their testes and much smaller vocal organs," which are essential in calling potential mates.

An article in the "*Proceedings of the National Academy of Sciences*," Hayes and his colleagues note that it is unclear whether these abnormalities lead to reduced fertility. Hayes now is trying to determine how the abnormalities affect the frogs' ability to produce offspring.

"The use of atrazine in the environment is basically an uncontrolled experiment—there seems to be no atrazine free environment," Hayes said. "Because it is so widespread, aquatic environments are at risk."

More than 60 million pounds of atrazine were applied last year in the United States alone. Manufacturer Syngenta estimates that farmers use the herbicide to control weeds on about two-thirds of all U.S. farm acres planted with corn and sorghum. On average, atrazine improves corn yield by just over four percent.

Atrazine has been considered safe because it decomposes rapidly in the environment and, being water soluble, is quickly eliminated from the body.

Aquatic species, however, swim and breed in atrazine contaminated field runoff. Though previous studies showed deformities and abnormalities in adult amphibians only at very high doses, no one had looked in detail at hormone levels in frogs or at effects on tadpoles, the larval stage of frogs.

The findings come at a time when the EPA is reevaluating allowable levels of atrazine in drinking water, which stand today at three parts per billion (ppb). The EPA has drafted new criteria for the protection of aquatic life, limiting four day average exposures to 12 ppb.

Hayes found hermaphroditism in frogs at exposure levels as low as 0.1 ppb. Levels of 40 ppb of atrazine have been measured in rain and spring water in parts of the Midwest, while atrazine in agricultural runoff can be present at several parts per million.

The herbicide also contaminates drinking water supplies in many communities in the Midwest, leading some environmental groups to voice concern about its effect on children, infants and the developing fetus. France, Germany, Italy, Sweden and Norway are among the nations that have already banned the use of atrazine.

(This article is reproduced from ens-news.com/ens/apr2002L-04-15-06.html.)

Letter to the Editor

Dear Editor:

I have listened to the "mascot" debate for years now. I think I just realized why awards and honors are often given posthumously—the honoree cannot disparage the source of the award or otherwise decline the honor, and surviving relatives usually do not feel competent to argue that what is offered is not an honor.

Surely it is obvious that sports teams be named after respected historical people in order to give the **team** some credibility and borrowed valor from this naming. The naming honors the **source** of the name only indirectly, as imitation indirectly honors that which is imitated.

If public relations people desecrate this honor by creating pathetic or comical **mascots**, this should be discouraged and is a proper situation for native Americans, padres, cowboys, forty-niners, lumber jacks, saints and other affected minorities to protest.

But don't throw the baby out with the wash water! Think of how listless and basically misleading our joint history would be to the generations to come if they knew only what the history books mentioned of the Apache, Geronimo, Crazy Horse, Braves, Indians, Redmen, Chiefs—people who were put in impossible situations but who gave the finger to the "authorities" and earned the respect of the world: survivors, foes, and observers alike.

Jim Kurz
Ladysmith, Wis.

Opportunities for future Indian journalists

American Indian students will be paid to write for their school newspaper even if their tribal colleges don't have one.

Reznet a new on-line newspaper, will hire 20 Native American college students around the country as reporters and pay them $50 a story to cover their tribal communities or colleges. "Reznet" reporters potentially can write one story per week, earning as much as $200 per month. Some of the reporters also will receive digital cameras.

Transmitting the stories and photos to the newspaper will all be done via email. In addition to salary, the Reznet reporters will receive college credit for their work, making the project the first distance-learning journalism course available to tribal colleges.

While the intent of Reznet is to produce more Natives entering professional journalism, project organizers also hope the newspaper will become an important, popular and crowded place for Native students to gather on the internet.

"I really believe it will make a difference," said Denny McAuliffe, Reznet project director. The electronic newspaper's first edition is available at www.reznetnews.org.

Reznet became a reality earlier this year when the John S. and James L. Knight Foundation funded McAuliffe's longtime idea with a $250,000, two-year grant to the University of Montana School of Journalism. McAuliffe, enrolled in Oklahoma's Osage tribe, is the University of Montana's Native American journalist in residence.

McAuliffe said he will be recruiting students for "Reznet" this summer at the second annual American Indian Journalism Institute, "a journalism boot camp for Native Americans," as he calls it.

he summer institute at the University of South Dakota trains American Indian students in a three-week course that covers reporting, editing and photography. The program is funded by the Freedom Forum, a foundation dedicated to diversity in newsrooms.

McAuliffe said he plans to work closely with the Native American Journalists Association (NAJA) and the American Indian Journalism Institute (AIJI) both to recruit and place "Reznet" reporters. Untrained reporters would be steered to AIJI and NAJA's Native Voice, the annual conference newspaper produced by college students.

Graduates of AIJI and Native Voice would be hired for "Reznet" so they could collect enough clips to land internships—and eventually jobs—at daily or tribal newspapers.

"Reznet" initially will hire 20 reporters—one per tribal college—but eventually one or more from each tribal college could work for the newspaper once it grows. In this way, said McAuliffe, "Reznet" will bring a newspaper to tribal colleges that don't have one.

Ultimately, the publication will provide aspiring Native journalists with clips, which can help them get internships that will help them get jobs, he said. McAuliffe will be chief editor of the on-line publication, teaching student journalists from a distance via email.

Before stories are published in the newspaper, he said, they will be subjected to thorough editing. The give-and-take of the editing process over email or the telephone is where the teaching of journalism will transpire, said McAuliffe.

In fact, Reznet will become a distance-learning course, with credit provided by the University of Montana, and it will be the first distance learning journalism course offered to tribal colleges.

Anyone interested in working for Reznet or in obtaining more information should call McAuliffe at 406-243-2191, or email him at mcauliff@selway.umt.edu.

New mystery novel debuts in June featuring a Red Cliff setting and an Ojibwe heroine

By Sue Erickson, Staff Writer

Red Cliff, Wis.—You'll find plenty of "Injunuity" and intrigue a soon-to-be-released "who dunit" murder mystery set on the Red Cliff reservation. Author Mardi Oakley Medawar keeps you guessing as heroine, Tracker, uncovers the scheme behind a murder that jolts the otherwise sleepy Red Cliff community in *Murder on the Red Cliff Rez.*

Due to be released in June, *Murder on the Red Cliff Rez* is great summer time reading—fast-paced and entertaining, especially for anyone familiar with life on the rez.

Medawar, a Cherokee, has lived on the Red Cliff reservation since 1999. While many of the places used in the setting, such as the Red Cliff Lanes, are real, Medawar emphasizes that the characters and the story are pure fiction. The book was written prior to a murder that did occur at Red Cliff in recent years.

She wrote her first novel in 1998 to entertain her father during a fight with cancer, producing a chapter after each of his therapy sessions. The book, *People of the Whistling Waters*, is historical fiction about the Crow Tribe and later won Best First Novel Award from the Western Writers of America. She went on to produce the Tay-bodal mysteries, a four-book series reflecting 19th Century Kiowa life. Though the plot and characters are fictional, Medawar says the historical information is very accurate. The series is now being taught in four U.S. colleges.

Medawar uses her fiction to help breakdown Indian stereotypes. She chose a contemporary mystery this time because so little is understood about modern Indian life. "People always tend to view Indian people as living in the past." She makes use of Indian humor, gossip, thought processes, values, and even some of the Ojibwe language as she develops her characters and plot in a 20th Century setting.

"Contrary to popular opinion, when Indian people are using their native languages, the language is not Pidgin English," Medawar states. Due to movie portrayals, people think Indian languages are just that—"How! Me, you smokem pipe." So, she makes an effort to weave some real native language into the text.

Karen Charboneau, nicknamed Tracker, is the lead character in *Murder on the Red Cliff Rez.* She shares center-front stage, and sometimes upstages, Red Cliff Police Chief David Lameraux. Medawar gave the lead role to Tracker because of her admiration for the strength of Indian women. Raised by Indian women, Medawar says Indian women had to be courageous, hard working, spirited and able to use "Injuniuity" to survive. Many western novels, however, have glamorized Indian men who win the love of a white heroine, as though Indian women are not up to the challenge. "Indian men have had it good so long in our fiction, it's time for them to move over," she says.

Medawar intends to keep on writing, hoping to produce a Tracker series, so there may be some more good reading coming our way.

Besides writing, Medawar works part-time for TRIAD (Team Response to Indian Apartheid and Defamation). "Being anti-Indian is the last o.k. prejudice in this country," Medawar says. "You see it on television and the internet." TRIAD works to breakdown prejudice, using humor and knowledge, attempting to show people how ridiculous their prejudice is, she says.

For a list of her titles and more information on the author, visit her website at www.mardioakleymedawar.com.

Mardi Oakley Medawar is the author of the new murder mystery novel, Murder on the Red Cliff Rez. Mardi, a Cherokee, has lived on the Red Cliff reservation since 1999.

The Honorable Judge Edward Barber (May-dway-osh) walks on

His legacy of wisdom, courage and kindness whispers in the wind

By Sue Erickson
Staff Writer

Lac Courte Oreilles, Wis.—On April 12 an educator and mentor in the broadest scope of the words walked on, a week shy of his 85th birthday, leaving us with the wisdom and gentle spirit he so graciously shared.

Judge Edward Thomas Barber (May-dway-osh), Lac Courte Oreilles (LCO), was a friend and tutor to many, including those of us at the Great Lakes Indian Fish & Wildlife Commission (GLIFWC).

With unending patience and a quick, warm smile, Judge Barber worked with GLIFWC staff on Ojibwe culture and learning to use Ojibwemowin (the language). He was always available as a resource, helping us as we searched for the correct Ojibwa words to incorporate in texts or struggled with the pronunciations. GLIFWC is thankful for the time and knowledge he so willingly shared. Miigwech May-dway-osh!

Edward Thomas Barber began his long and well-lived life on April 19, 1917. He was born at Old Barber Town on the LCO reservation, the son of Thomas "gaiashkibos" and Charlotte "Nigoue" (Munedo) Barber. He grew up speaking Ojibwemowin, the language of his parents. He received his Indian name, may-dway-osh (whispering wind), from Tom Baker, LCO.

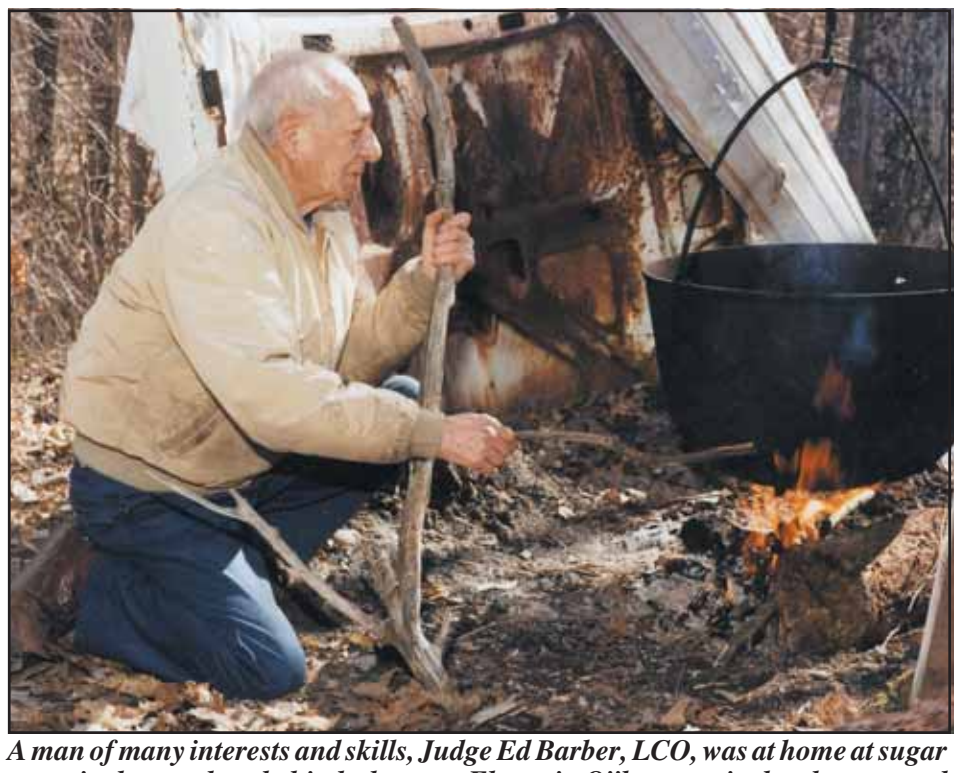
He graduated from the Hayward High School in 1938 after also completing a three-month stint with the Civilian Conservation Corps and attending Haskell Institute in Lawrence, Kansas.

He graduated from Superior State Teachers College in 1942. In later years he furthered his education, earning a master of education degree and a doctorate of humane letters from the University of Wisconsin-Superior.

Shortly after graduation in 1942, Barber left with 60 others from the Hayward area to be inducted into the U.S. Army. He trained as a medic and infantryman in the service and saw battle in North Africa, Sicily and Italy. He also trained with the 10th Mountain Division, learning to ski and scale mountainous terrain.

Honorably discharged in 1945, he was later honored with the Good Conduct Ribbon and the EAME Ribbon with three Bronze Service Stars.

Following his military discharge, Ed began work for the Bureau of Indian Affairs, Chicago, Illinois. There he met his bride-to-be Alberta Young. The couple married in 1946 and moved to the Lac du Flambeau reservation in Wisconsin.



A man of many interests and skills, Judge Ed Barber, LCO, was at home at sugar camp in the woods or behind a lecturn. Fluent in Ojibwemowin, he also pursued many traditional Ojibwe activities such as maple sugaring. He generously shared his knowledge of both. (Submitted photo)

Barber then began a long career in education as a teacher and principal. His career in education brought him to Grand Portage and Red Lake in Minnesota, and Pierre Indian School and Thunder Butte in South Dakota, where he was also a government agent for 23 families.

In 1965 he returned to LCO reservation and worked for the Job Corps, teaching reading and driver's education at the camp in Clam Lake and later at Blackwell Wisconsin. He then took a position as a public health educator, which put him on the road throughout the upper Midwest.

In 1972, Alberta began teaching Ojibwa language at the Lake School, Hayward School District, and Ed worked for two years as the home-school coordinator. He received a degree from the Parent Education Program, UW-River Falls and subsequently helped 50 "at-risk" students from northern Wisconsin reservations. He also served on the advisory board for Mount Senario College, Ladysmith, Wis.

Ed's life took a new twist when the LCO Tribe asked him to serve as the tribal court judge. Since the Tribe had no money to pay him as judge, he worked as an enrollment clerk for a time. Meanwhile he attended numerous judicial training sessions nationally. He became chief judge for life for the LCO Tribe and an appellate court judge for other tribes.

He also served on the LCO Ojibwa Community College Board of Regents and the Great Lakes Education Council. He was a member of the Veterans of Foreign Wars post in Hayward and the vice president of the LCO AARP.

Judge Barber is survived by his three daughters, Valerie Barber, Hayward; Darlene (Rodney) LaRose, Eau Claire, and Rosanne Charlotte (Bruce) Barber-Minano, Hayward; and two granddaughters, Amy Barber and Ruth LaRose; and many nieces and nephews.

He was preceded in death by his parents; wife, Alberta; seven brothers; and stepfather, Paul Carol "Beneshi".

Midewiwin services were held on April 15 at the New Post Elderly Center with Jerry Smith and Eugene Bearheart officiating. The LCO veterans accorded military rites. Internment was at the Round Lake Cemetery.

His daughter, Rosanne, remembers him as a wonderful father and someone who was greatly admired. Education was important to him and he supported his daughters as they sought college degrees and to learn the Ojibwe culture and language.

"Teaching the importance of children was something I will always remember him for," says Rosanne. "He'd say a child is a gift from the Great Spirit, and we are to be careful, nurture and allow the child to grow and learn at his own pace, not ours."

And so his words, wisdom, patient caring and gracious smile remain with us, softly whispering in the wind each day.

(Information was taken from a Sawyer County Record article written by Terrell Boetcher and run on April 17, 2002. The article credits the book, "Spirit of the Ojibwe: Images of Lac Courte Oreilles Elders" by James Bailey, Thelma Nayquonabe and Sara Balbin. Rosanne Barber-Minano also provided information.)

North American Indigenous Mining Summit

Mole Lake Sokaogon Chippewa Community (Wisconsin site of the proposed Crandon mine) June 12-15, 2002

The North American Indigenous Mining Summit is hosted by the Sokaogon Chippewa Community. The event is co-sponsored by The Sokaogon Chippewa Community and the Indigenous Mining Campaign Project which is a partnership between the Indigenous Environmental Network and Project Underground. The theme of the mining summit is:

"Uniting to address mining in Indian Country"
with and emphasis on
"Preserving Mother Earth by empowering her peoples."

Objective: The purpose of the mining summit is to bring indigenous people together from across Turtle Island (United States, Canada and Mexico) to develop strategies (a strategic working document) to empower their communities to form and create perpetual alliances and networks with each other and our allies.

Focus: The mining summit will focus on hard rock mining, gold mining, uranium mining, coal mining and other mining on and near indigenous lands. It will also look at the use of current laws with an emphasis on changing legislation. This summit will be a consolidation of knowledge from indigenous people and their non-native allies, which will produce a working document (schematic) to help communities create perpetual alliances and foster effective campaigns.

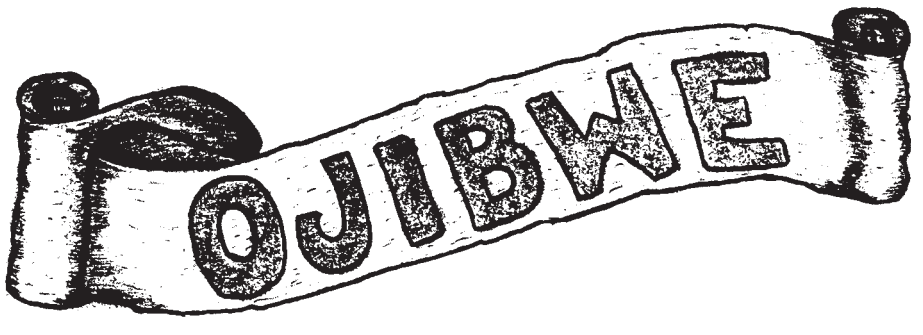
Other topics: How mining and mining extraction affects and effects human rights, tribal sovereignty, government to government relationships with the federal government and its agencies, state/provincial and federal legislatures, sacred sites, traditional knowledge, right to food and food security. International discussions on WTO, NAFTA, IJC, World Summit on Sustainable Development and Globalization. US discussions on treatment as state, policies on historical, cultural and sacred sites and delegated authority.

Volunteers: For security, cooking, daycare, first aid and Sacred Fire keepers.

Donations: Monetary, posting information/flyers in your newspaper and on your web sites, airtime on radio stations, and food.

For more information contact Colleen Poler (715) 478-5033 or e-mail mtn@igc.org or polersdc@newnorth.net.

This is a traditional gathering with a Sacred Fire and focused workshops. No drugs or alcohol allowed. Outdoor camping. Daycare will be provided. Bring you own dishes and utensils. No dogs or pets allowed.



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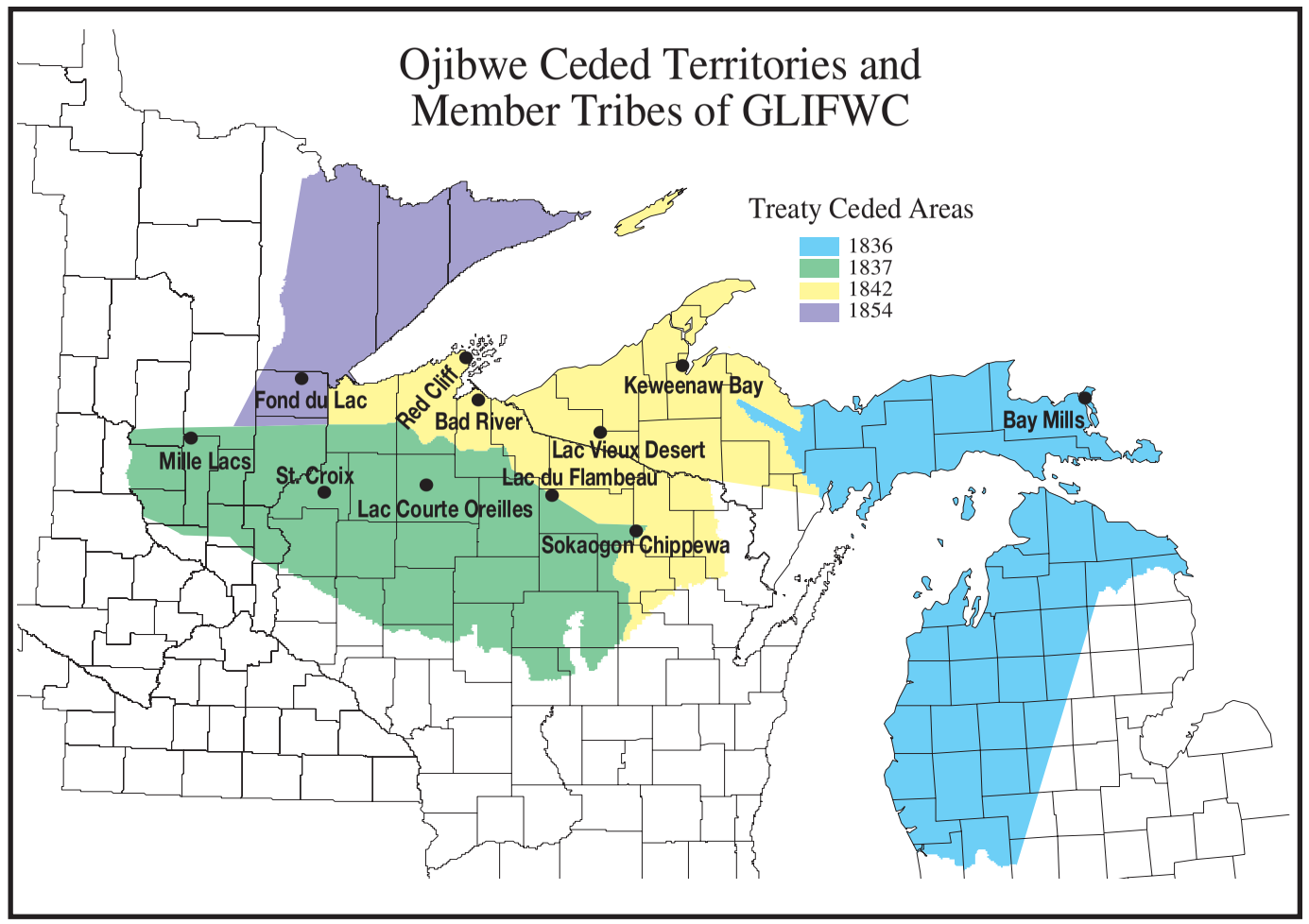
MAZINA'IGAN reserves the right to edit any letters or materials contributed for publication as well as the right to refuse to print submissions at the discretion of the editor.

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

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

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



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A Chronicle of the Lake Superior Ojibwe