

Masinaigan Supplement

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Ogaa: Make a healthy choice Maps show mercury levels in speared lakes

Introduction

For many native people giigoonh (fish) are part of a traditional diet and, as such, provide health benefits. One benefit from eating as few as two to three meals of giigoonh per month is that it may reduce your risk of death due to heart disease.

Another benefit is that certain giigoonh contain high levels of beneficial nutrients that are also important in child development. So, if you rely on giigoonh as part of your normal diet, try to achieve a balance. Continue to eat the same amount of giigoonh, but reduce the amount of mercury you and your family become exposed to by choosing safer giigoonh.

This *Masinaigan* supplement contains the Great Lakes Indian Fish and Wildlife Commission's (GLIFWC) Mercury in Ogaa (walleye) Maps. These maps focus on the lakes speared by each of the six GLIFWC member tribes in Wisconsin.

Each map is actually two maps depicting the same geographic region. The top map is more restrictive and is for use by pregnant women, women of childbearing age, and children under 15 years of age. The bottom map is less restrictive and is for use by women beyond childbearing age and by men.

The lakes on the map are color-coded to show the lengths of ogaa that are low in mercury and safer to eat. A detailed description on how to use the map as well as a description of the meaning of each color code is given on page 8 of this supplement. By using these maps, you can select sizes of walleye from speared lakes that are low in mercury and that can be consumed in your normal way.

General advice for finding safer giigoonh (fish)

Giigoonh will have different mercury concentrations depending on the type and length of the giigoonh, as well as the lake that the giigoonh was harvested from. The type of giigoonh makes a difference based on what the giigoonh eats for food. Ogaa are a top predator giigoonh similar to muskellunge, largemouth bass, smallmouth bass and northern pike.

Top predator giigoonh are known to accumulate mercury to higher concentrations than giigoonh lower in the food chain such as bluegill, herring, sunfish, crappie, perch or lake whitefish. So regardless of the lake you are fishing in, the ogaa and other top predator fish will have higher mercury concentrations compared to bluegill, herring, sunfish, crappie, perch or lake whitefish.

You can also assume that if all sizes of ogaa are safe to consume in your normal way (based on the GLIFWC Mercury in Ogaa Maps), then the bluegill, herring, sunfish, crappie, perch or lake whitefish from the same lake are also safe to consume.

A second general guide to selecting safer giigoonh is length. For a single species, longer giigoonh will likely have higher concentrations of mercury than shorter giigoonh. Thus, absent any information about mercury levels in fish, choosing to eat the smaller size giigoonh will expose you to less mercury.

The amount of mercury in giigoonh can depend on the lake from which the giigoonh were harvested. For example, large ogaa taken from red or orange colored lakes, as defined in this supplement,



GLIFWC collects samples and information from speared and netted fish for a variety of purposes. Above, Joe Dan Rose, Inland Fisheries section leader and John Shubat, fisheries aid, take a spine sample for aging. Biologists record length and sex information, and also collect some fish specimens to be used for contaminant testing. (Photo by Sue Erickson)

will have higher levels of mercury than large ogaa taken from blue or green colored lakes. Harvesting any top predator giigoonh from blue or green colored lakes will allow you to select top predator giigoonh lower in mercury.

eliminated over several months. However, when the amount taken into the body is more than the amount that can be eliminated, mercury can build up to an unhealthy level.

Based on the maps in this supplement, if you carefully select lakes and lengths of ogaa that are low in mercury and safer to eat, then you can reduce your exposure to mercury, while still retaining the nutritional benefits from eating giigoonh.

Who is most at risk?

Mercury is neurotoxic (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 or soon-to-be-born children.

However, pregnant women and breast feeding mothers should not avoid all giigoonh, 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 (See Mercury maps, page 8)

How does mercury get into giigoonh?

In general, there are two different types of mercury, inorganic and organic mercury. Inorganic mercury is the mercury you find in mercury thermometers, the mercury you find in fluorescent light bulbs, and the mercury that is released from coal burning utilities and many mining operations. Much of this inorganic mercury is released into the atmosphere.

When returning back to the earth, this inorganic mercury finds its way into rivers, streams, lakes, and wetlands. In these aquatic environments, the inorganic mercury can be converted to organic mercury by bacteria. This organic mercury is the mercury that accumulates in giigoonh.

All giigoonh, including tuna, will likely contain some mercury. Mercury accumulates to its highest concentrations in the giigoonh muscle tissue (the fillet). Because the mercury is in the muscle tissue and not the fat of the fish, mercury can not be removed by trimming or cooking. And whatever eats the giigoonh, like humans, also consumes this mercury.

Small amounts of mercury that are consumed by humans can be safely

General advice for finding safer giigoonh (fish)

In Lakes

- * Use these maps to find lakes and sizes of ogaa that are lower in methyl mercury.
- * Lakes with lower levels of methyl mercury in the ogaa should also have lower levels of methyl mercury in other types of giigoonh.

Type of giigoonh

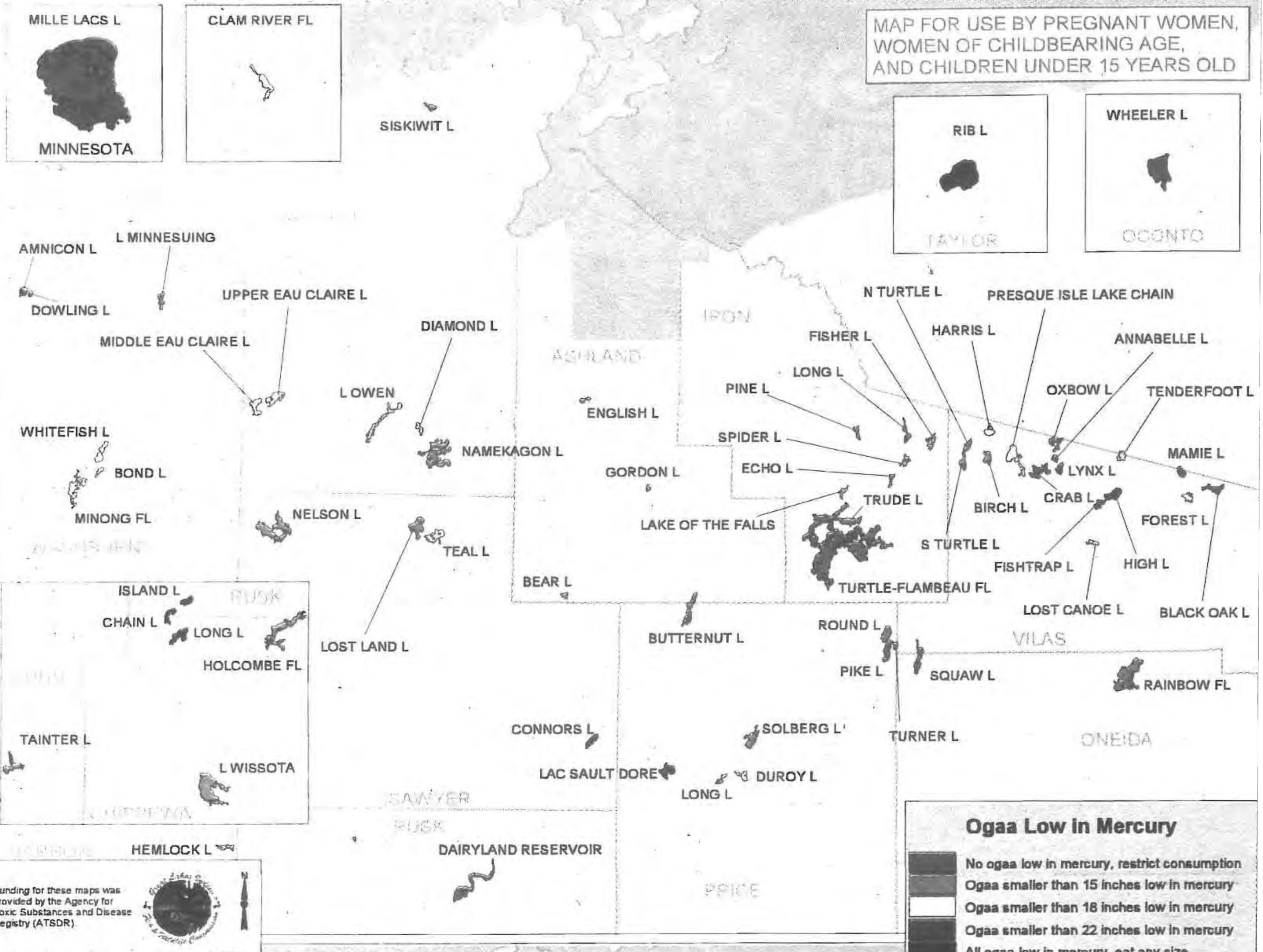
- * Generally, top predator giigoonh such as ogaa, muskellunge, largemouth bass, smallmouth bass, and northern pike will have more methyl mercury than giigoonh such as lake whitefish, herring, bluegill, sunfish, crappie or perch.

Size (Length)

- * Eat smaller giigoonh, they will likely have lower amounts of methyl mercury.

Finding Safer Ogaa (Walleye) in Lakes Harvested by Bad River

MAP FOR USE BY PREGNANT WOMEN, WOMEN OF CHILDBEARING AGE, AND CHILDREN UNDER 15 YEARS OLD



Funding for these maps was provided by the Agency for Toxic Substances and Disease Registry (ATSDR)

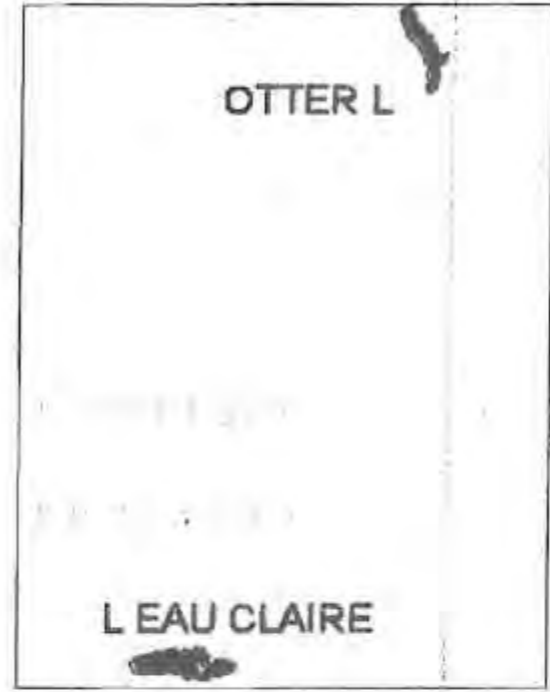
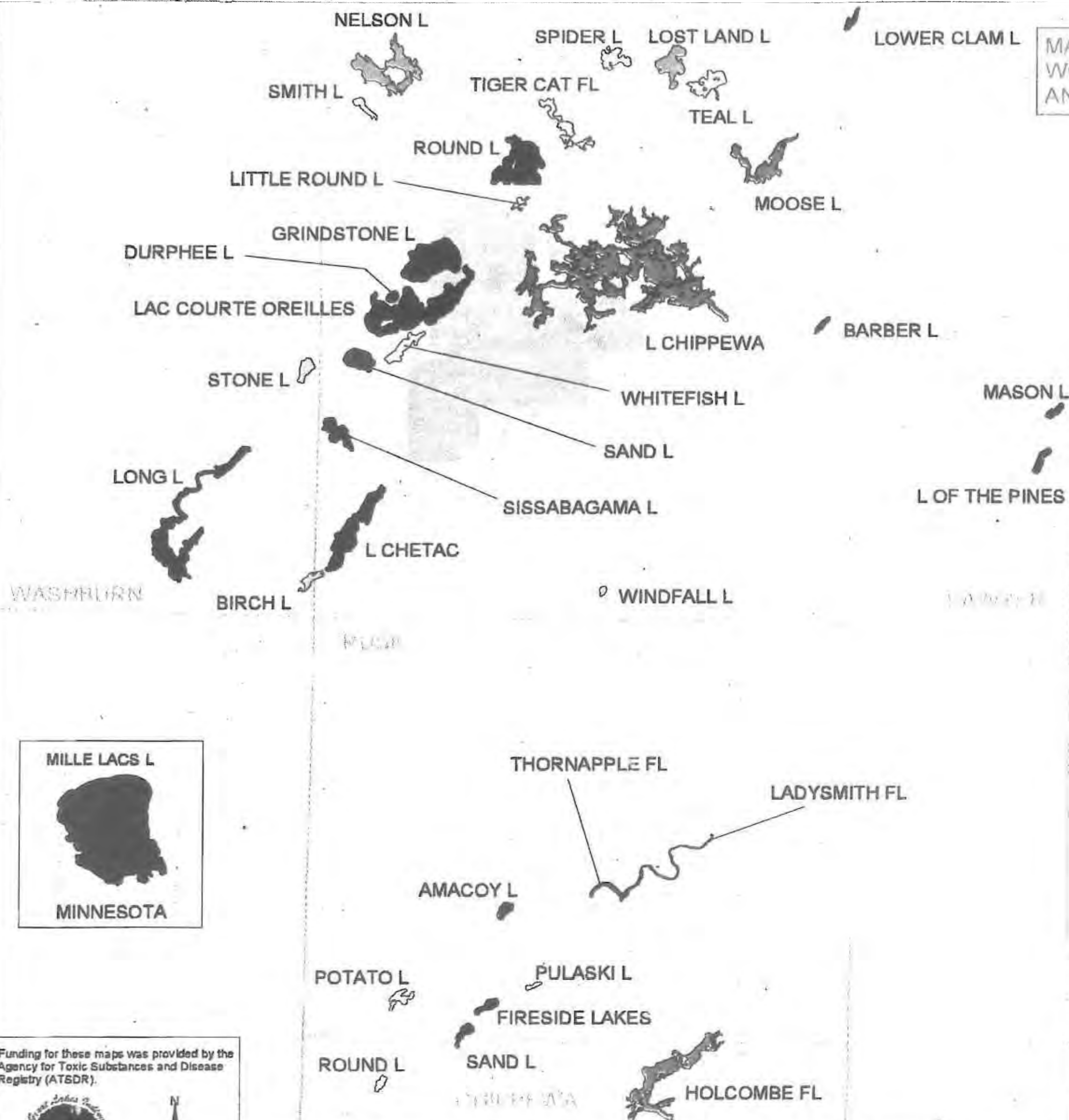
2 0 2 4 6 8 Miles



MAP FOR USE BY WOMEN BEYOND CHILDBEARING AGE AND BY MEN

Finding Safer Ogaa (Walleye) in Lakes Harvested by Lac Courte Oreilles

MAP FOR USE BY PREGNANT WOMEN, WOMEN OF CHILDBEARING AGE, AND CHILDREN UNDER 15 YEARS OLD



Funding for these maps was provided by the Agency for Toxic Substances and Disease Registry (ATSDR).

2 0 2 4 8 Miles

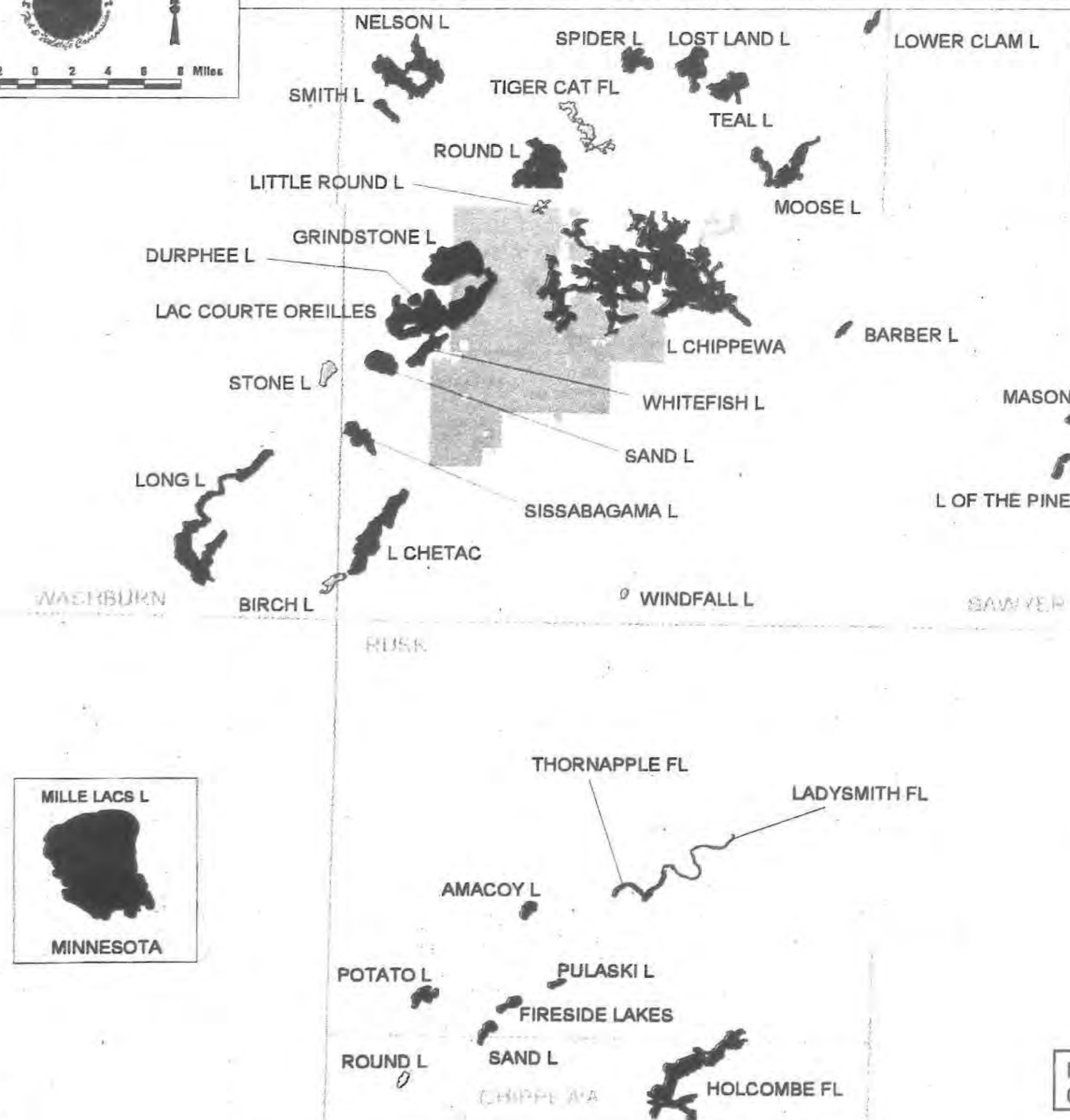
Ogaa Low In Mercury

- No ogaa low in mercury, restrict consumption
- Ogaa smaller than 15 inches low in mercury
- Ogaa smaller than 18 inches low in mercury
- Ogaa smaller than 22 inches low in mercury
- All ogaa low in mercury, eat any size
- No information available

Lac Courte Oreilles Reservation

County Boundary

Tribal reservation boundaries are representations and may not be the actual legally binding boundaries.



MAP FOR USE BY WOMEN BEYOND CHILDBEARING AGE AND BY MEN

Finding Safer Ogaa (Walleye) in Lakes Harvested by Lac du Flambeau

MAP FOR USE BY PREGNANT WOMEN, WOMEN OF CHILDBEARING AGE, AND CHILDREN UNDER 15 YEARS OLD



Funding for these maps was provided by the Agency for Toxic Substances and Disease Registry (ATSDR)

Ogaa Low in Mercury

- No ogaa low in mercury, restrict consumption
- Ogaa smaller than 15 inches low in mercury
- Ogaa smaller than 18 inches low in mercury
- Ogaa smaller than 22 inches low in mercury
- All ogaa low in mercury, eat any size
- No information available

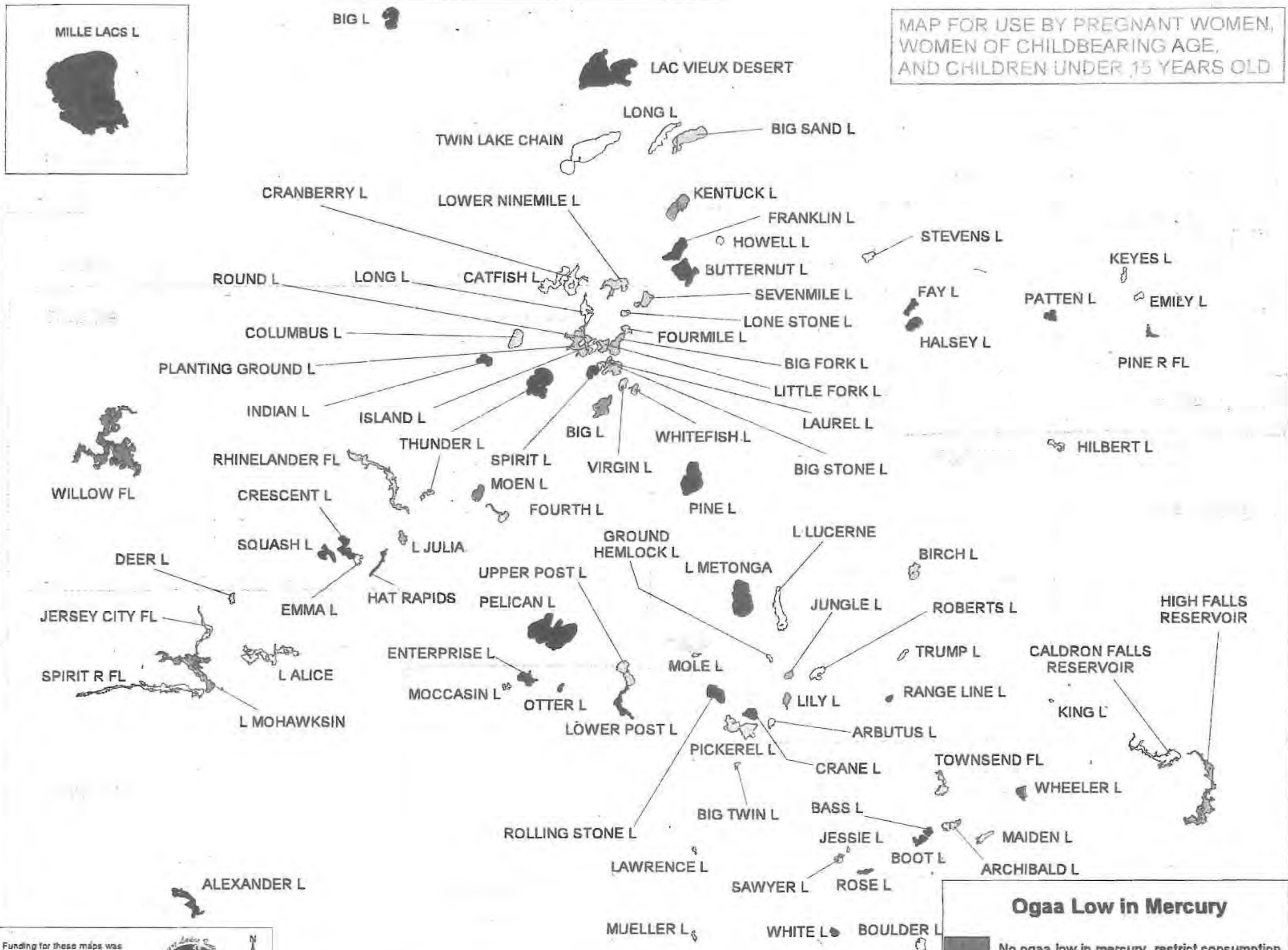
Lac du Flambeau Reservation County Boundary

Tribal reservation boundaries are representations and may not be the actual legally binding boundaries.



MAP FOR USE BY WOMEN BEYOND CHILDBEARING AGE AND BY MEN

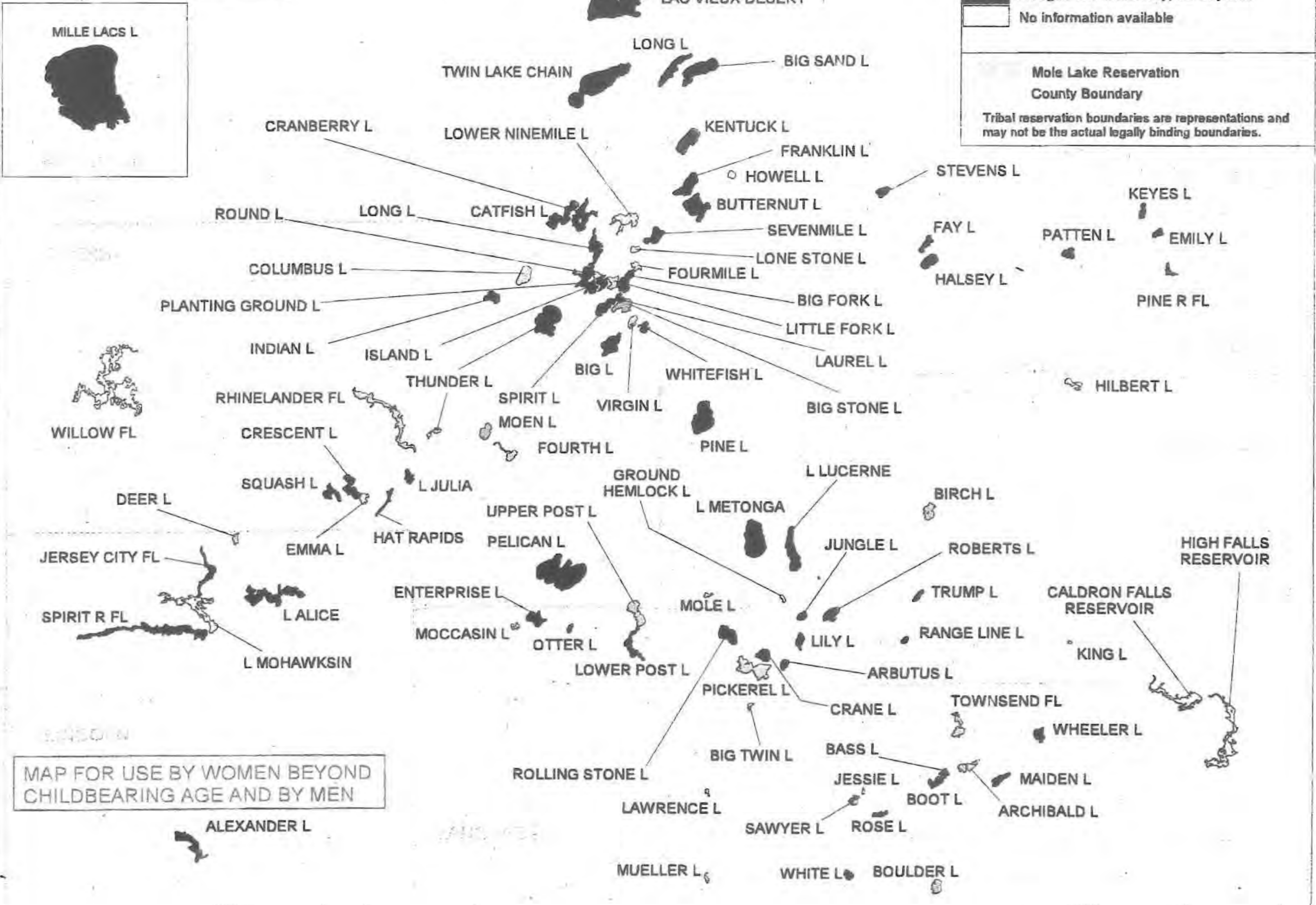
Finding Safer Ogaa (Walleye) in Lakes Harvested by Mole Lake



MAP FOR USE BY PREGNANT WOMEN, WOMEN OF CHILDBEARING AGE, AND CHILDREN UNDER 15 YEARS OLD

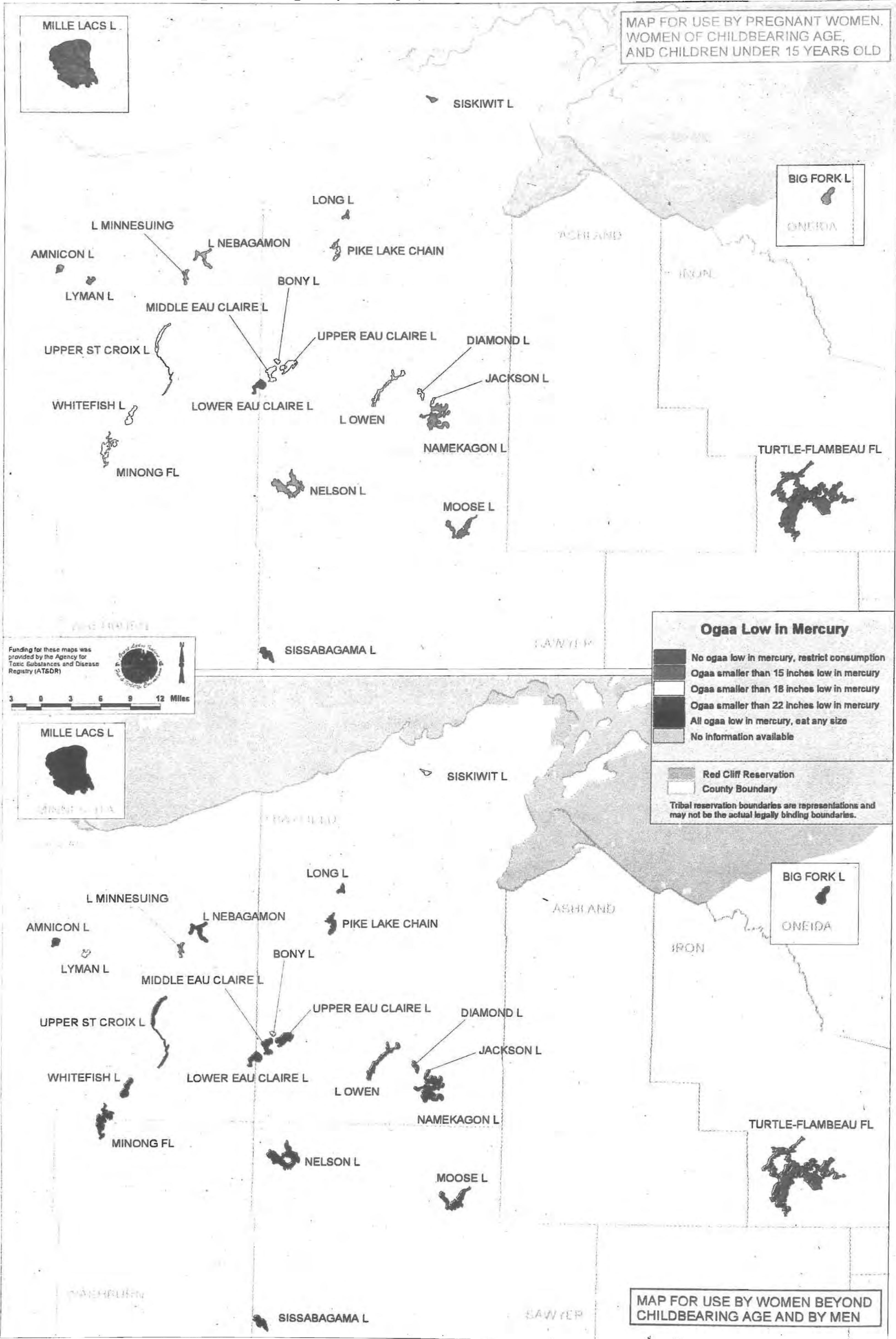
Funding for these maps was provided by the Agency for Toxic Substances and Disease Registry (ATSDR).

3 0 3 6 9 12 Miles



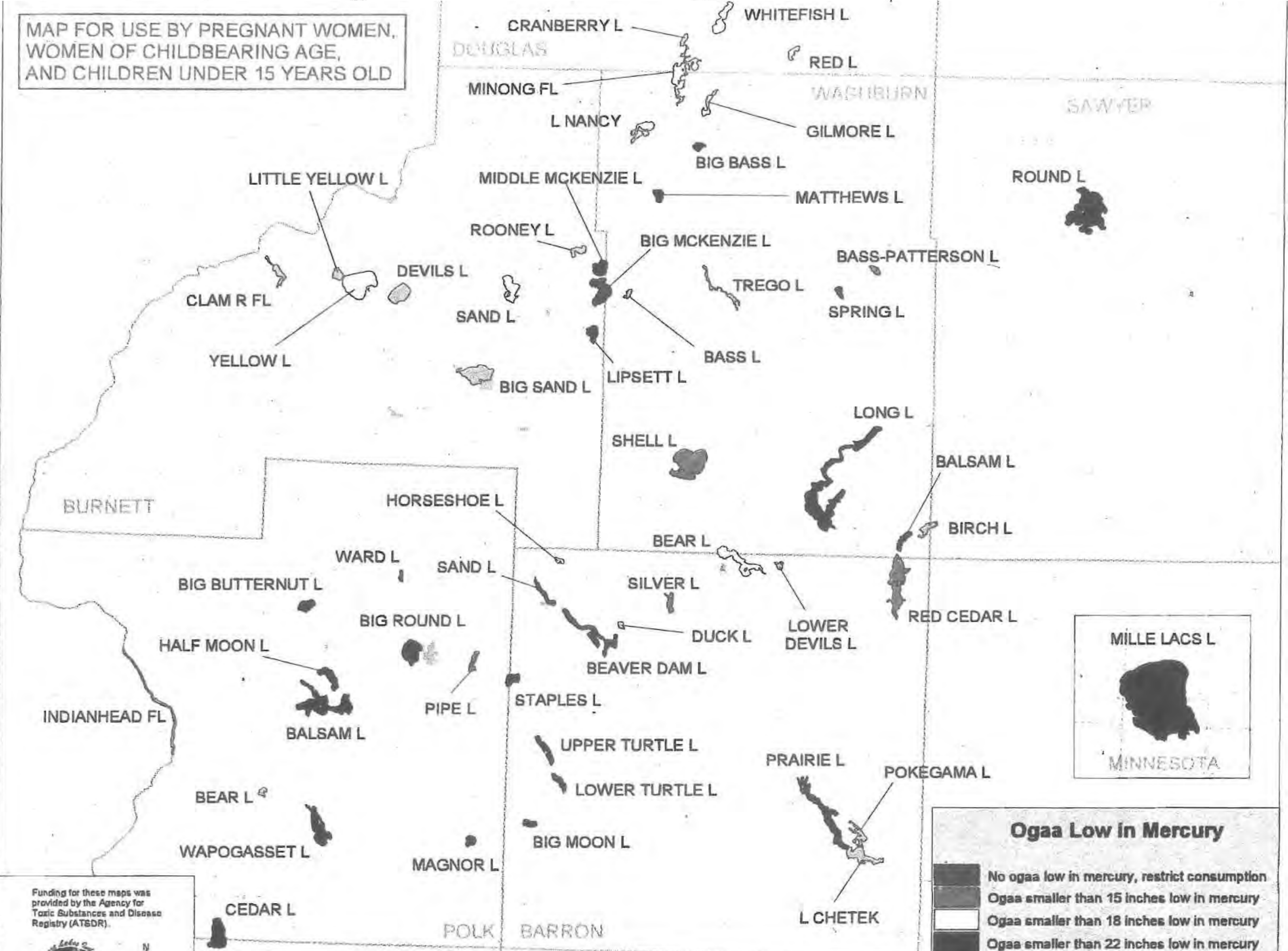
MAP FOR USE BY WOMEN BEYOND CHILDBEARING AGE AND BY MEN

Finding Safer Ogaa (Walleye) in Lakes Harvested by Red Cliff



Finding Safer Ogaa (Walleye) in Lakes Harvested by St. Croix

MAP FOR USE BY PREGNANT WOMEN, WOMEN OF CHILDBEARING AGE, AND CHILDREN UNDER 15 YEARS OLD



Ogaa Low in Mercury

- No ogaa low in mercury, restrict consumption
- Ogaa smaller than 15 inches low in mercury
- Ogaa smaller than 18 inches low in mercury
- Ogaa smaller than 22 inches low in mercury
- All ogaa low in mercury, eat any size
- No information available

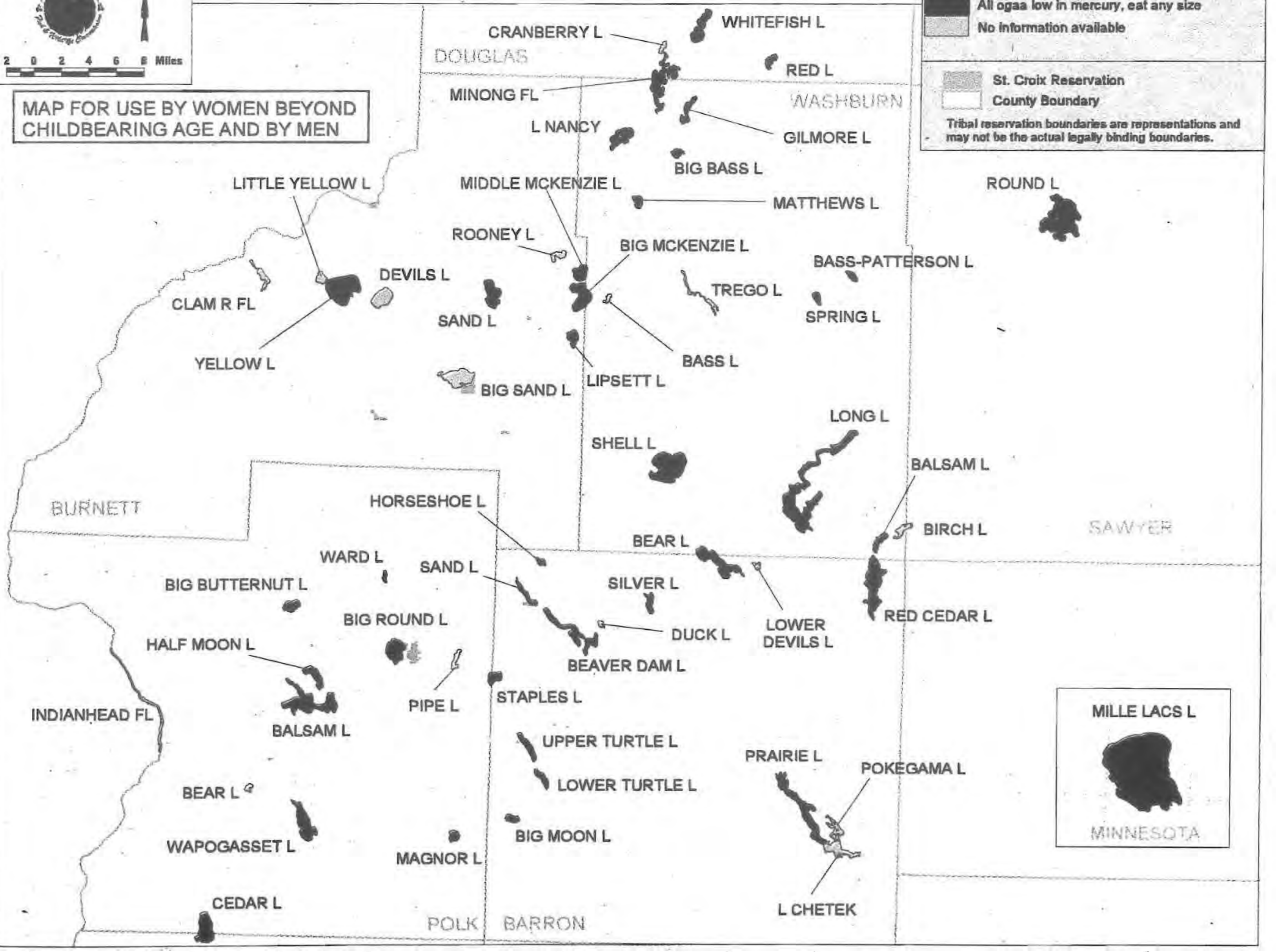
St. Croix Reservation
County Boundary

Tribal reservation boundaries are representations and may not be the actual legally binding boundaries.

Funding for these maps was provided by the Agency for Toxic Substances and Disease Registry (ATSDR).

Scale: 0 2 4 6 8 Miles

MAP FOR USE BY WOMEN BEYOND CHILDBEARING AGE AND BY MEN





How to use these maps to find safer ogaa (walleye)

- Choose a Map.** Are you making ogaa consumption choices for pregnant women, women of childbearing age, breast feeding mothers, or children under 15 years old?
 - If YES.** Use the map titled "Map for use by pregnant women, women of childbearing age and children under 15 years old."
 - If NO.** Use the map titled "Map for use by women beyond childbearing age and by men."
- Locate a lake.** Compare its color to the map's color key and carefully consider the advice.



Fresh ogaa taken in spring time is part of the traditional Ojibwe diet. Enjoyed by young and old, it is frequently served during community feasts. Because of mercury contamination in many of the inland lakes within the ceded territories, it is best to take fish from lakes with lower mercury levels and be careful about the fish served to children and women who are pregnant or in childbearing years. (Photo by Amoose)

Mercury maps available through GLIFWC

Continued from page 1
years of age should follow the more restrictive advice given to pregnant mothers.

Finally, because mercury does requires 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.

Maps available at GLIFWC or at reservation permit stations

Higher quality (11" x 17") glossy versions of the mercury maps are available at no cost either at GLIFWC's main office on the Bad River Reservation or at tribal permit/registration stations on each GLIFWC member reservation. Information on mercury contamination is printed on the back of each map.

To obtain maps from GLIFWC write to GLIFWC at P.O. Box 9, Odanah, Wisconsin 54861 or call (715) 682-6619. The maps are also available on GLIFWC's website at www.glifwc.org.

Ogaa consumption advice

- Top Map:** Do not eat *ogaa* greater than 15 inches. Restrict consumption of *ogaa* less than 15 inches.
- Bottom Map:** Only eat 1 meal per month of any size *ogaa*.
- Eat *ogaa* smaller than 15 inches in your normal way, and restrict consumption (see below) of *ogaa* greater than 15 inches.
- Eat *ogaa* smaller than 18 inches in your normal way, and restrict consumption (see below) of *ogaa* greater than 18 inches.
- Eat *ogaa* smaller than 22 inches in your normal way, and restrict consumption (see below) of *ogaa* greater than 22 inches.
- Eat any size *ogaa* in your normal way.
- No information available.

Restrict consumption of ogaa advice

Top Map—eat no more than one meal of these larger sized *ogaa* per month, but then this should be the only meal of *ogaa* you eat in a month.

Bottom Map—eat no more than one meal of these larger sized *ogaa* per month in combination with the *ogaa* you normally would eat; or eat no more than 2 meals per month, but then these should be the only 2 meals of *ogaa* you eat in a month.

Labeling ogaa prior to freezing

When saving *ogaa* for later, mark or label freezer bags so you know which *ogaa* are safe for consumption by pregnant women, women of childbearing age, breast feeding mothers, and children under 15 years old. For example, you could write on the freezer bag "safe for mom and kids."

Risks vs. benefits of eating giigoonh

Benefit Nutrients in fish, especially oily fish, may improve the mental development and vision of babies. Lake Superior whitefish and herring contain these beneficial nutrients and are low in methyl mercury.

Risk Remember, mercury can damage the nervous system, especially the brain. Fetuses and babies are the most at risk because their nervous systems are rapidly developing. Children exposed to unsafe levels while in the womb have been found to experience delayed development in walking and talking, even though the mother was not affected.

Benefit Eating even as few as two to three meals of giigoonh a month may greatly reduce your risk of death due to heart disease.

Supplement credits:

Text:
Kory Groetsch & Sue Erickson

Editing:
Neil Kmiecik, John Coleman & Esteban Chiriboga

Maps:
John Coleman, Esteban Chiriboga, Rick Madsen & Kory Groetsch

Layout:
Lynn Plucinski

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