

Report about the Fish are Important for Superior Health (FISH) Project Community Events

The Fish are Important for Superior Health (FISH) Project took place in the area near and around Cook County along the North Shore of Lake Superior in Minnesota. The focus of the project was to reduce mercury exposure in women of childbearing age and work with health care providers to provide fish consumption advice. Between May 2014 and June 2015, 499 women of childbearing age enrolled and participated in the project. Two community events were scheduled soon after the enrollment period to report back summary results to participants and the public. This report describes the events, pre-event planning activities, and post-event media coverage.

Pre-Event Planning

Planning for the community events began early in the project. MDH worked closely with local staff to design the events in a way that would be appealing to the targeted communities. Discussion with FISH Project staff took place via phone calls, email, and face-to-face meetings, including consultation with the Sawtooth Mountain Clinic (SMC) Board of Directors in June 2015. Brainstorming topics included:

- event location
- dates (e.g. which month to hold the events)
- timing (e.g. weekday versus weekend, morning versus afternoon or evening, time frame for event/number of hours, etc.)
- meeting format (e.g. formal presentations versus open house)
- possible presenters and local stakeholders
- refreshment ideas
- handouts and posters – The SMC Board recommended a short community report while Project partner staff emphasized the community wanted detailed information.
- incentive ideas to increase attendance
- event advertising/promotion

As a result of collaborations, the following key decisions were made. The event must

- take place in the fall – after school starts but before the holidays (Thanksgiving/Christmas)
- be on a weekday, preferably mid-week - local events already scheduled on fall weekends would compete for attendees
- be no more than 2 hours long
- be held at a well-known location with ample seating, space, and accommodations (kitchen, tables, chairs, restrooms, parking)

- be interactive – include a mix of presentations, speakers, display posters, and activities
- offer a variety of refreshments from local sources
- be well advertised using methods that were successful during project promotion
- include content relevant to both participants and the public with a balance of general and detailed information

It was also decided that two community events (instead of one) would be planned in the same towns where participants took part in the project - Grand Marais and Grand Portage – to encourage greater attendance at convenient locations to local residents. The events were scheduled back-to-back (two nights in a row) so that both communities would hear the summary results at approximately the same time.

Grand Marais: Tuesday, November 17, 2015 (North House Folk School)

Grand Portage: Wednesday, November 18, 2015 (Log Community Building)

Both events were scheduled from 5:30pm-7:30pm using an “open house” format. This format provided a good mix of interactive activities and formal presentations. Activities planned for attendees included: display posters for attendees to read, handouts to take home, choosing local refreshments, assigning staff to answer questions and “man” certain areas in the room, and designing a survey about fish consumption. A final project evaluation was also created for FISH participants to provide feedback on project participation. A variety of speakers were invited to prepare formal presentations with content covering: a description of project promotion, recruitment, and participation; FISH Project summary results; and public acknowledgement of community efforts and support for making the project successful. Staff asked local members of the SMC Board to emcee the events to facilitate discussion and introduce speakers.

Besides providing local refreshments, staff wanted an additional incentive to encourage attendance. Several \$25 VISA gift cards were purchased to give away as part of raffle drawings at the events. Both refreshments and the gift card drawings were mentioned as part of event promotional materials.

Promotional activities began approximately one month prior to the events. Advertisements were placed in local papers, the clinic newsletter, and mailed out to participants. WTIP, the local radio station, also provided live radio time as part of regular programming to talk about the FISH Project and the two community events. Promotion for the events (in Appendix) included:

- A letter to each participant (included a recap of blood results, invitation to the events, community report summary, and a final project evaluation form)
- Advertisements in the local papers: The News Herald, Northern Wilds
- Advertisement in the Sawtooth Mountain Clinic Newsletter (*The Daily Apple*)

- Radio time on WTIP (local community radio station for the North Shore out of Grand Marais) interviewing the SMC CEO Rita Plourde and FISH Project lead nurse Joyce Klees (www.wtip.org/fish-project-info-sessions-are-scheduled).

Event Description

Staff arrived about 3-4 hours prior to each event to set up the room. Set-up included:

- Posting an agenda for the event at the door (in Appendix)
- Arranging tables for refreshments and chairs for attendees to sit during formal presentations
- Setting up display posters, which summarized which fish participants reported eating (in Appendix)
- Putting out handouts for people to take home - information about fatty acids in fish, fish meal serving size and meal planning, the FISH Project background information sheet, and FISH Project summary (in Appendix)
- Organizing raffle materials - surveys, clipboards, pens, evaluations, VISA gift cards, etc. (in Appendix)

Refreshments from local businesses were set out on tables about 15 minutes before the open house started. In Grand Marais, the local Girl Scouts volunteered to help set out and refill refreshments for the event.

- Local smoked fish (Dockside Market)
- Cheese, crackers, and fruit (Co-op)
- Cookies and brownies (Elfin's Bakery)
- Soda and water

The open house started at 5:30pm. Staff greeted attendees as they entered the event. Participants were asked to fill out the final project evaluation to be part of the VISA gift card raffle drawing for participants. All attendees were encouraged to take part in the fish consumption survey for a chance to win VISA gift cards. Raffle drawings were spaced out throughout the evening and facilitated by the emcee. (A description of the raffle process and summary of the fish consumption survey are found in the Appendix.) Most attendees arrived prior to 6:15pm (when formal presentations started) and perused the display boards, gathered handouts, and completed the survey and evaluation.

Formal presentations began at 6:15pm. The emcee introduced each speaker. In Grand Marais, Rita Plourde (SMC CEO) spoke about the importance of the project to the clinic and community. Next, Joyce Klees (FISH Project lead nurse) talked about community support and engagement, project promotion, recruitment, and participation. Then Pat McCann (Minnesota Department of Health Fish Advisory Program) presented about how mercury gets into fish and FISH Project summary results. In Grand Portage, one additional presentation was given by Seth Moore (Director of Biology and Environment, Grand Portage

Band of Lake Superior Chippewa) about local fish consumption recommendations. (Presentations are in the Appendix.)

Following the presentations, the open house continued until about 7:30pm. Many attendees mingled after the presentations to talk with presenters and other community members, look at display boards, enjoy refreshments, and wait for the final raffle drawings. Approximately 40 people attended both the Grand Marias and Grand Portage community events. Local staff felt both events were well attended and successful events for their communities.

Post-Event Activities

To further promote and share findings, FISH Project summary results were posted on the Sawtooth Mountain Clinic (SMC) website (www.sawtoothmountainclinic.org) and shared with local media. Coverage included an interview on WTIP radio (www.wtip.org/fish-project-wraps-public-events), article posted on WTIP's website (in Appendix), and stories in the News Herald (copy not available) and Northern Wilds (in Appendix). The SMC website will be updated with additional FISH Project summaries and materials as they become available.

Appendix

Pre-Event Planning Items

Event Items

Post-Event Items

Pre-Event Planning Items

Final Participant Letter

Event Advertisement

{DATESTAMP()}

{PATIENT.FIRSTNAME} {PATIENT.LASTNAME}
{PATIENT.ADDRESS1} {PATIENT.ADDRESS2}
{PATIENT.CITY} {PATIENT.STATE} {PATIENT.ZIP}

Dear {PATIENT.FIRSTNAME} {PATIENT.LASTNAME},

Your participation made the FISH Project a success! We are excited to share the summary results with you and the community. Please join us at one of the community events to hear about the results and enter two raffles to win \$25 VISA gift cards.

FISH Project Community Events* 5:30- 7:30pm (presentations begin ~6:15pm)	
Tuesday, November 17, 2015 Grand Marais North House Folk School	Wednesday, November 18, 2015 Grand Portage Log Community Building

*Community events are open to FISH participants and the public. An open house will take place before and after presentations. Attendees can view FISH displays, ask questions, and take part in the "Vote to Eat Fish" raffle to win one of several \$25 VISA gift cards given away during the events. FISH participants have 2 ways to win: the Evaluation raffle and the Vote to Eat Fish raffle.

This letter also includes your:

- personal mercury result, fatty acid results, and estimated DHA intake (from fish you reported eating in the questionnaire) to compare to summary results.
- FISH Community Results booklet.
- FISH Project Participant Evaluation. For a chance to win a \$25 VISA gift card, complete the evaluation and bring it to one of the community events or **go online to <https://survey.vovici.com/se/56206EE3187B8528> before Tuesday, November 10.** (Enter your Participant ID: <insert Participant ID>.) Evaluations will also be available at the events. Only one evaluation will be accepted for each FISH participant.

For questions about results or the Community Events, please call a FISH Coordinator at: Sawtooth Mountain Clinic (218-387-2330) or Grand Portage Health Service (218-475-2235).

Thank you again for being a part of the FISH Project!

Sincerely,

{USER.REALNAME} {DATETIMESTAMP ()}



FISH PROJECT:

Fish are Important for Superior Health

You did it!

Two Community Events
to say THANK YOU and share
FISH Project RESULTS

Event Details

Tuesday, Nov. 17

Grand Marais
North House
Folk School

Wednesday, Nov. 18

Grand Portage
Log Community Building

5:30-7:30 p.m.

Presentations start ~6:15 p.m.
with open house before & after

 **REFRESHMENTS PROVIDED:**
Smoked fish, crackers, cheese, dessert bites

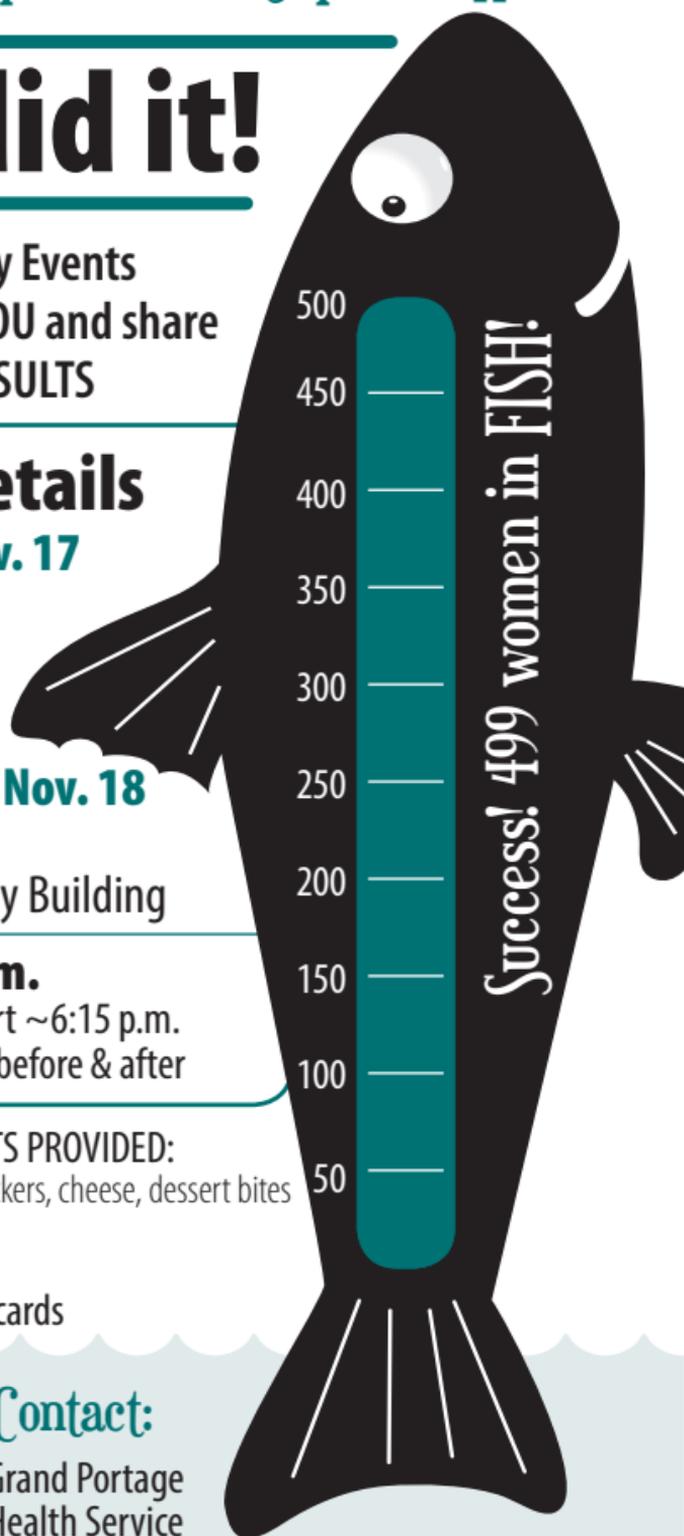
 **Public invited!**

 **Win \$25 VISA cards**

Questions? Contact:

Sawtooth
Mountain Clinic
218-387-2330

Grand Portage
Health Service
218-475-2235



Event Items

Event Agendas (posted at door)

Example of Display Poster

Handouts

- Fatty acids in fish

- Fish meal serving size and meal planning

- FISH Project Background Information Sheet

- FISH Project Summary

Raffle Items

- Raffle Process

- Raffle Summary

- Fish Consumption Survey

- FISH Participant Final Evaluation Form

Presentations

- Grand Marais: FISH Project Summary Results (MDH)

- Grand Portage: FISH Project Summary Results (MDH)

- Grand Portage: Fish Consumption Recommendations (Department of Biology and Environment, Grand Portage Band of Lake Superior Chippewa)



Fish are Important for Superior Health (FISH)

Community Event

November 17, 2015

North House Folk School, Grand Marais

5:30 – 6:15 Open House

5:50 Raffle drawings

6:10 Raffle drawings

6:15 – 7:00 Presentations

7:00 Raffle drawings

7:00 – 7:30 Open House

7:15 Raffle drawings



Fish are Important for Superior Health (FISH)

Community Event

November 18, 2015

Log Community Building, Grand Portage

5:30 – 6:15 Open House

6:10 Raffle drawings

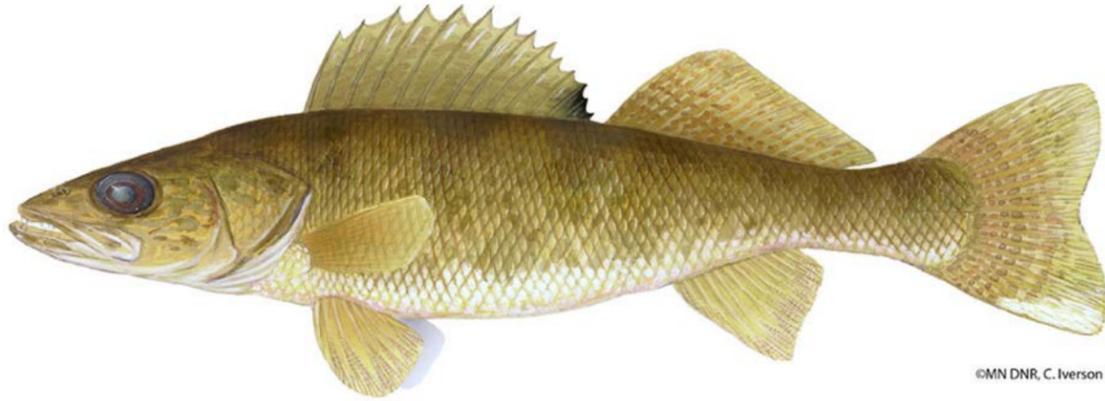
6:15 – 7:00 Presentations

7:00 Raffle drawings

7:00 – 7:30 Open House

7:15 Raffle drawings

Walleye



MDH Fish Eating Guidelines

1 serving per month

How much walleye did FISH Participants eat?

- Most times eaten in one month by a participant = 13
- Total times eaten in past year (all participants) = 4328
- Average times per month by season

<u>Spring</u>	<u>Summer</u>	<u>Fall</u>	<u>Winter</u>
0.65	1.3	0.52	0.43

MDH Fish Eating Guidelines for Popular Lakes

<u>Lake</u>	<u>1 meal/week</u>	<u>1 meal/month</u>
Caribou	all sizes	---
Cascade	---	all sizes
Crescent	all sizes	---
Devil Track	all sizes	---
Elbow	---	all sizes
Pike	---	all sizes
Saganaga	shorter than 14"	14" or longer
Tom	shorter than 15"	15" or longer
Two Island	---	all sizes

Omega-3 Fatty Acids and Fish

Omega-3 fatty acids come in more than one form. The types found in fish, called DHA and EPA, have been studied the most and appear to have the strongest health benefits. Your body needs DHA and EPA, but it can't make enough of them. You need to get them from your diet. Fish is the best way to get DHA and EPA - it is one of the only foods naturally high in DHA and EPA.

DHA is a very important nutrient for pregnant women and developing babies.

- DHA is a building block of the brain and eyes.
- The brain develops rapidly during pregnancy and in infancy. This is when DHA is needed most.
- Before birth and while breastfeeding, your baby gets all of his or her DHA from you.



Women who are or may become pregnant should eat fish.

In research studies, moms who ate more fish during pregnancy had:



- Lower risk of premature birth
- Fewer pregnancy complications like preeclampsia
- Children with better development and higher IQ

About Omega-3 Supplements...

Most of the encouraging studies have looked at people eating fish, not taking a supplement. Omega-3 fatty acids from supplements may not have the full benefits of what's naturally in fish.

- Supplements don't have the combination of DHA and other nutrients in fish
- A supplement is not a meal! In addition to DHA and EPA, fish is also low in bad fats and a good source of the protein, iodine, and vitamin D.

Vegetable sources of omega-3s (like flax and walnuts, for example) have ALA, which is a related omega-3 fatty acid. But these sources don't have any DHA. Your body can turn ALA into DHA, but it can't make enough for a growing baby.



This table lists the milligrams (mg) of DHA in an 8 oz. serving of fish:

Fish Species	mg DHA per 8 oz serving
Lake Superior fish:	
Lake Trout	1400
Whitefish, Menominee	900
Stream Trout (Rainbow, Brown)	900
Lake Herring (Cisco)	600
Salmon	600
Perch	200
Inland MN waters fish:	
Lake Trout	1000
Whitefish, Menominee	800
Stream Trout	700
Lake Herring (Cisco)	600
Walleye	300
Northern Pike	300
Bass (Smallmouth, Largemouth, Rock)	300
Perch	200
Panfish (Bluegill, Sunfish, Crappie, etc.)	200
Purchased fish:	
Salmon	2300
Tuna (canned)	400
Tuna steak or sushi	400
Halibut	300
Walleye	300
Fish sticks or fish sandwiches	300
Shrimp and Shellfish	200
Tilapia	200
Cod	200

FISH Project: Choosing Fish Low in Mercury

Examples of monthly fish choices for:
*Pregnant Women, Women who may become pregnant,
 and Children under age 15*



The meal plans offered in this table give you an example of how to plan fish meals that include northern Minnesota-caught fish that are low in mercury.

Month 1	Month 2
<p>1 meal of halibut AND</p> <ul style="list-style-type: none"> • Week 1: 2 meals of salmon (not Lake Superior) • Week 2: 1 meal of lake whitefish (Lake Superior) • Week 3: 1 meal of canned light tuna • Week 4: 1 meal of herring (Lake Superior) and 1 meal of tilapia 	<p>1 meal of northern pike (inland MN-caught) AND</p> <ul style="list-style-type: none"> • Week 1: 1 meal of salmon (not Lake Superior) and 1 meal of fast food fish sandwich • Week 2: 1 meal of menominee (Lake Superior) • Week 3: 1 meal of crab and 1 meal of salmon (not Lake Superior) • Week 4: 1 meal of herring (inland MN-caught)
Month 3	Month 4
<p>1 meal of MN-caught walleye AND</p> <ul style="list-style-type: none"> • Week 1: 1 meal of shrimp and 1 meal of tilapia • Week 2: 1 meal of splake (inland MN-caught) • Week 3: 1 meal of herring (Lake Superior) and 1 meal of cod • Week 4: 1 meal of salmon (not Lake Superior) and 1 meal of rainbow trout (inland MN-caught) 	<p>1 meal of canned white (albacore) tuna AND</p> <ul style="list-style-type: none"> • Week 1: 2 meals of salmon (not Lake Superior) • Week 2: 1 meal of lake whitefish (MN-caught) • Week 3: 1 meal of canned light tuna • Week 4: 1 meal of cod and 1 meal of tilapia

Note: Where the guidelines recommend one meal per week or month, you may prefer to have two smaller-sized meals over that week or month.



Exposure Assessment Unit – Fish Advisory Program

625 Robert Street N
 P.O. Box 64975
 Saint Paul, MN 55164-0975
 651-201-4915

<http://www.health.state.mn.us/divs/eh/fish/index.html>

August 2014

How Much Fish Makes a Serving?

The amount of fish in a serving is based on the body weight of the person eating the fish.

If you weigh 150 pounds, you can have a serving of one-half pound (equal to eight ounces) of uncooked fish to stay within the MDH Safe-Eating Guidelines. Eight ounces of uncooked fish is equal to about six ounces of cooked fish.



Here are examples of some typical servings of fish:

- One piece of sushi is about one ounce.
- A fast food fish sandwich is typically between four and five ounces of cooked fish.
- The salmon in the picture above weighed six ounces before cooking, so it is about 4 ½ ounces cooked.

To adjust meal serving size for a heavier or lighter weight person, add or subtract one ounce of fish for every 20 pounds of body weight.

A Serving of Fish		
Body Weight	Weight in ounces of uncooked fish	Approximate weight after cooking
50	3	2.25
70	4	3
90	5	3.75
110	6	4.5
130	7	5.25
150	8	6
170	9	6.75
190	10	7.5
210	11	8.25



Community FISH Report: Background

Fish are Important for Superior Health (FISH) Project



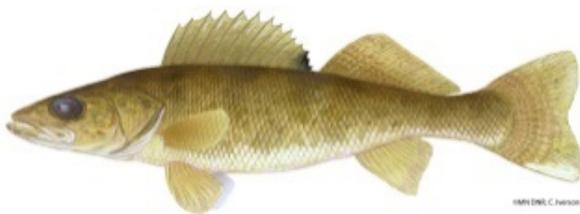
November 2015

Women of childbearing age recently participated in a project with Sawtooth Mountain Clinic, Grand Portage Health Service, and the Minnesota Department of Health (MDH). The Fish are Important for Superior Health (FISH) Project focused on helping women and their families enjoy the health benefits of eating fish while lowering their exposure to mercury. The FISH Project took place in Cook County, Minnesota, along the North Shore of Lake Superior.

Why did we do this project?

The main reason for doing the FISH Project was to reduce mercury exposure in women who are or may become pregnant and, therefore, reduce exposure in future babies.

- A recent study (*Mercury in Newborns in the Lake Superior Basin*) showed that 10% of Minnesota babies tested from the North Shore area had mercury in their blood above the level considered safe.
- Fish and fishing are an important part of history and culture for communities along the North Shore of Lake Superior. Women living in this area have reported frequently eating fish that have higher levels of mercury.



Who participated in FISH? What did we find out?

Between May 2014 and June 2015, 499 women ages 16 to 50 who live in or near Cook County took part in FISH. The results for the FISH Project can be found online at www.sawtoothmountainclinic.org and click on the FISH Project news link. A final technical report will be completed and available on the website later in 2016.

Why is mercury a concern?

Most people's exposure to mercury comes from eating fish. Mercury in Minnesota waters and fish is a result of worldwide emissions from coal combustion, mining, other human activities, and natural sources.

Mercury exposure can affect a person at any age. However, the developing fetus and young children are most at risk from mercury in fish. Too much mercury can affect a child's ability to learn and process information.

Are there benefits from eating fish?

Even though fish contain mercury and possibly other contaminants, there are good reasons to eat fish. Fish is low in bad fats and a good source of protein, iodine, and vitamin D. Fish is also one of the only foods naturally high in DHA and EPA omega-3 fatty acids, which are needed by the body, especially for eye and brain development.

For more info...

MN Fish Consumption Guidelines

www.health.state.mn.us/fish ¹

1-800-657-3908

What made the FISH Project a success?

Community involvement, collaboration, and cooperation made the FISH Project a huge success! FISH promotional venues included newspaper and media outlets, flyers and brochures at local businesses, special events, and word-of-mouth advertising. Thank you to our many project partners and community supporters. Most of all, we are grateful to the 499 women who volunteered their time to take part!

Project Partners

Sawtooth Mountain Clinic
Grand Portage Health Service
Cook County North Shore Hospital
Grand Portage Trust Lands and
Reservation Tribal Council
Minnesota Department of Health

Community Supporters

WTIP North Shore Community Radio
North Shore Journal
Northern Wilds
Cook County News Herald
Two Dogs in the Web
Birch Grove Community Center
Numerous local businesses, schools,
and churches

What do participants say about the FISH Project?

- *“Cook County North Shore Hospital is really good at drawing blood – I almost didn’t participate, but they made it so easy.”*
- *“I liked the amount of information provided on the types of fish and how much is recommended to eat.”*
- *“Fun and easy! It’s a great project and a good reminder for me to still be careful which types of fish I eat, even though I don’t intend to get pregnant again.”*
- *“In my diet, I believe the [too many meals of] Saganaga Lake, Lake Trout are the culprits for my high mercury levels. I have eaten less meals of Lake Trout since my last blood draw.”*
- *“Good opportunity to learn more about the health benefits of eating fish.”*
- *“Thank you for allowing me to be a part of your project. Women’s health is very important to me, and I feel that this project will help shed light on our local mercury levels.”*
- *“I think it is so important to know how to eat healthy and incorporate fish into your diet... I eat some fish, but not a lot, and I should do a better job of eating more.”*
- *“Very interesting to be a part of the study - mercury in fish is not something I really thought about before, so it’s good to be more aware and have resources about it.”*
- *“It is neat to be participating in the FISH project and even though I don’t like needles it is worth the information learned.”*

What did FISH participants have to do?

After signing an informed consent, each participant:

1. Answered questions about fish they ate:
 - three simple screening question about fish they ate recently, and
 - detailed questions about the fish they had eaten in the past year.
2. Provided a blood sample to be analyzed for mercury and fatty acids.
3. Received information about the health benefits of eating fish and how to choose fish to eat that are low in mercury.
4. Received \$50 in VISA gift cards for taking part.

Most women completed the confidential FISH visit in about 45 minutes. Some women were asked to return for a second visit 6 months later.

What if I have more questions about the FISH Project?

Check out the FISH website: www.sawtoothmountainclinic.org and click on the FISH Project news link

Sawtooth Mountain Clinic
218-387-2330
Grand Portage Health Service
218-475-2235



FISH Community Results

Fish are Important for Superior Health (FISH) Project

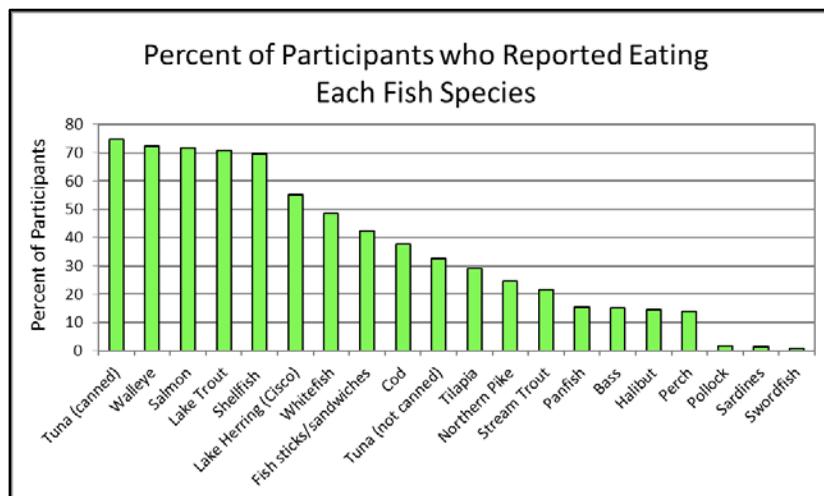
November 2015

Community participation for FISH was incredible!

From May 2014 through June 2015, 499 women age 16-50 who live in or near Grand Marais and Grand Portage participated in FISH.

Altogether, participants reported eating over 40,000 meals of fish the year prior to their FISH visit - 28% of these fish meals were locally-caught.

- About 70% of participants ate canned tuna, walleye, salmon, lake trout, and shellfish.
- 80% of participants reported eating locally caught fish –the most meals eaten were lake trout, walleye, herring, and whitefish.
- 4% of participants did not eat fish.



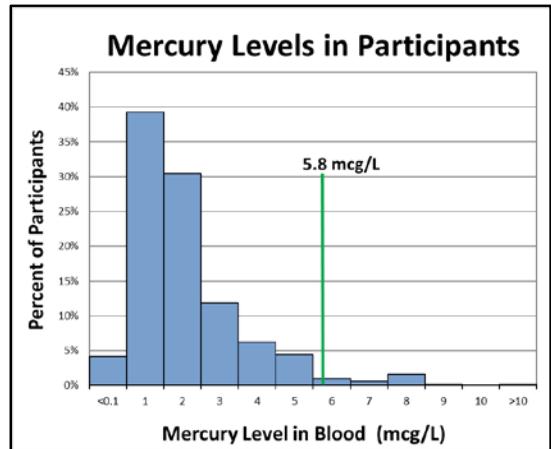
Mercury and Eating Fish

All fish contain at least a small amount of mercury. When you eat fish, the mercury in the fish gets into your body. Your body is able to get rid of mercury over time.

Mercury blood results

Mercury levels were low in most FISH participants. Results are shown in the graph.

- **The middle value[†] for FISH was 1.16 micrograms per liter (mcg/L).**
 - This is slightly higher than women in the U.S. (0.64 mcg/L)¹ and in Canada (0.82 mcg/L)².



- **3% of participants had mercury levels above the level considered safe for a developing fetus.** This level is 5.8 mcg/L and is shown as a green line in the graph.
 - All participants with mercury levels above 5.8 mcg/L reported eating more fish than recommended in the MDH Fish-Eating Guidelines and were given individual advice to lower their mercury exposure based on their reported fish consumption.
 - Lake trout, walleye, and canned tuna were the species eaten too often, especially in summer. In general, up to one meal per month is the MDH guideline for eating walleye and lake trout. Advice for specific lakes may be more or less restrictive than this general guideline. For guidelines on specific lakes and general guidelines for MN fish, go here www.health.state.mn.us/fish.
- Not everyone who ate more fish than recommended by the guidelines had a mercury level above 5.8 mcg/L. This is because **mercury is handled differently in different people, and mercury levels in fish vary between lakes.**
- Fish consumption varies by season and so can mercury levels, depending on the types of fish eaten.

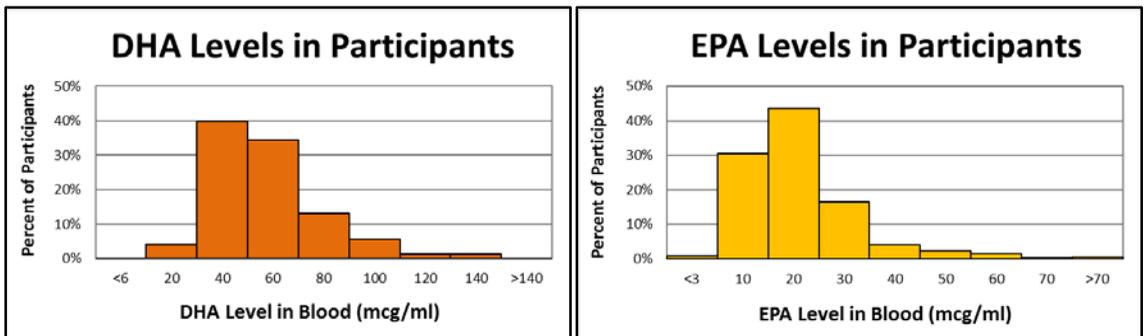
[†] The “middle value” is where half of participants were below and half were above the value. It is like an average. A middle value is also known as a “median” or “50th percentile”.

Fatty Acids and Eating Fish

Omega-3 fatty acids come in more than one form. The types found in fish, called DHA and EPA, have been studied the most and appear to have the strongest health benefits.

DHA and EPA blood results

- **The average DHA level in FISH participants was 47.0 micrograms per milliliter (mcg/ml).** This is above the U.S. average of 41.9 mcg/ml³ for women age 19 to 50.
- **The average EPA level in FISH participants was 16.5 mcg/ml.** This is above the U.S. average of 13.7 mcg/ml³ for women age 19 to 50.
- 37% of participants had both DHA and EPA at or above national averages.

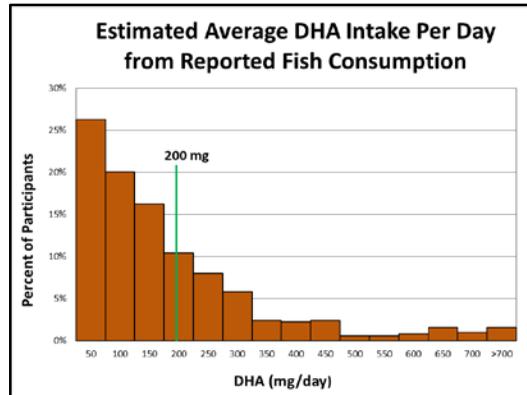


Estimated DHA intake from reported fish consumption

DHA is important for brain and eye development in a fetus. Studies⁴ show that getting about 200 milligrams (mg) of DHA per day (or 1400 mg per week) maximizes health benefits in a developing fetus. Currently, the exact level of DHA in blood that results from eating 200 mg DHA per day is not known. However, we do know the more DHA in your diet the higher the level of DHA in your blood.

DHA intake from eating fish was estimated from reported fish consumption and is shown in the graph.

- **27% of participants had estimated DHA at or above 200 mg/day.**
 - Most of these (94%) also had mercury at or below 5.8 mcg/L – the level considered safe for women who are or may become pregnant.
 - This shows that **women can get enough DHA while also keeping their mercury at a low level.**



Take home these FISH bites!

Most FISH participants could safely eat more fish that are low in mercury and other contaminants. Studies⁴ show the benefits to developing babies are maximized when women who are or may become pregnant eat 1-2 fish meals per week.

- Blood mercury levels in 97% of participants were at or below 5.8 mcg/L – the level considered safe for women who are or may become pregnant to protect the developing fetus.
- About half of participants reported eating fish less than once per week and can safely eat more fish low in mercury.

Follow the **MN Fish-Eating Guidelines** - www.health.state.mn.us/fish

- It's important to know that some fish species should only be eaten once a month. Participants who had high mercury levels were eating walleye and lake trout more than the one meal per month guideline.



the FISH project



www.sawtoothmountainclinic.org – click on FISH Project link

Sawtooth Mountain Clinic
218-387-2330

Grand Portage Health Service
218-475-2235

¹ Mortensen, et. al. (2014). Total and methyl mercury in whole blood measured for the first time in the U.S. population: National Health and Nutrition Examination Survey (NHANES) 2011-12. Environmental Research.

² Health Canada 2015. THIRD REPORT ON HUMAN BIOMONITORING OF ENVIRONMENTAL CHEMICALS IN CANADA. Results of the Canadian Health Measures Survey Cycle 3 (2012–2013).

³ CDC 2012. Second National Report on Biochemical Indicators of Diet and Nutrition in the U.S. Population.

⁴ Ginsberg, et.al. (2015). Updated Risk/Benefit Analysis of Fish Consumption Effects on Neurodevelopment: Implications for Setting Advisories. Human and Ecological Risk Assessment: An International Journal.

FISH Community Events Raffle Process

FISH Participant Evaluation Raffle

In the final mailing, participants were mailed a paper evaluation and the link (<https://survey.vovici.com/se/56206EE3187B8528>) for the online evaluation. They have the choice to complete the paper evaluation and bring it to one of the community events or complete it online. The online evaluation closes on Tuesday, November 10, 2015.

1. Once the online evaluation closes, MDH will compile the list of Participant IDs for participants who completed the evaluation online. MDH will send this list to Joyce by ____.
2. Joyce will create a log to record completion of the evaluation and raffle ticket distribution. The log will also include both the participant names and IDs. The log will be updated prior to Nov 17 (first community event) to indicate which participants did the online evaluation.
3. At the community events, Joyce will document completed evaluations and raffle ticket distribution.
 - a. Participants will go to the evaluation table.
 - b. Joyce will get the participant's name and do one of the following:
 - i. give them a raffle ticket (if they already did the online evaluation)
 - ii. take the completed paper evaluation (previously mailed to them/completed prior to the event) and give them a raffle ticket
 - iii. give them a paper evaluation to complete and return for a raffle ticket
 - c. Joyce will use the log to record completed evaluations and who received a raffle ticket.
 - d. Duplicate raffle tickets will be placed in a basket for the raffle drawing.

Eat Fish Now Raffle

Anyone (participants and public attendees) may take part in the Eat Fish Now Raffle.

1. People will pick up the scenario questions at the display table and use the guidelines on the display board to answer the questions. The guidelines will be shown in 2 formats: Format A (wallet card) and Format B (brochure).
2. The completed form will be given to staff in exchange for a raffle ticket.
3. Duplicate raffle tickets will be placed in a basket for the raffle drawing.

Gift Card Distribution

Throughout the events, winners from the Evaluation Raffle and Eat Fish Now Raffle will be drawn from the baskets to win \$25 VISA gift cards.

1. Raffle winners will go to the table to turn in their ticket and pick up their gift cards.
2. Winners will sign a receipt and staff will complete the log indicating the gift card distribution.



“Eat Fish Now” Guidelines Raffle

Summary

The “Eat Fish Now Raffle” took place at the FISH Community Events in Grand Marais (11/17/15) and Grand Portage (11/18/15). The purpose of this raffle was to ask people to use the current fish eating guidelines to determine how much fish and which fish species were safe to eat during a one-month time period for a pregnant woman. All event attendees over the age of 16 were invited to take part. Almost everyone over the age of 16 participated in the raffle.

Raffle participants were asked to pretend they were a pregnant woman and handed a 1 page survey attached to a clip board and then asked to look at 2 formats of the fish eating guidelines to answer the survey questions (see below). The 2 guideline formats were attached to clipboards and on a poster near the raffle table. Format A was the Wallet Card, and Format B was the Brochure. Both of these were given to FISH participants during their clinic visit. Raffle participants were instructed to indicate which format was most helpful to answer the questions.

After answering the questions, people turned in their completed survey and were given a raffle ticket. A duplicate ticket was placed in a basket for the drawings. Multiple raffle drawings took place at different times during the Community Event (7 in Grand Marais, 3 in Grand Portage). Raffle winners each received a \$25 VISA gift card and signed a receipt stating they received the card.

Survey for “Eat Fish Now” Raffle

Scenario: Pretend you are pregnant and need to decide which fish you can eat this month. Using the guidelines (see Formats A and B), answer each question Yes or No. Then indicate which format was most useful in figuring out how much fish you can eat.



1. This month, I can eat...

	Circle One
a) 1 meal of walleye (& no other fish)	Yes or No
b) 1 meal of walleye & 1 meal of lake trout from an inland lake (& no other fish)	Yes or No
c) 1 meal of walleye & purchased salmon 2 times each week this month (& no other fish)	Yes or No
d) 1 meal of walleye & canned light tuna 1 time each week this month (& no other fish)	Yes or No
e) 1 meal of walleye & 1 meal of lake trout from an inland lake & purchased salmon 2 times each week & canned light tuna 1 time each week this month (& no other fish)	Yes or No

2. Circle which format was most helpful for you to answer the scenario questions above.

Format A (wallet card) OR Format B (brochure)

 **Return your completed answer sheet to get a raffle ticket!** 

Format A (Wallet Card)

Eating Guidelines for Women who are or may become pregnant and Children under 15

<p>2 Servings per Week</p> <p><i>Lake Superior fish:</i> Herring (Cisco) Coho Salmon Rainbow Trout/Steelhead Smelt</p> <p><i>Inland fish:</i> Rainbow Trout</p> <p><i>Purchased fish:</i> Salmon (Atlantic & canned) Shrimp Sardines Scallops Tilapia Crab Cod</p>	OR	<p>1 Serving per Week</p> <p><i>Lake Superior fish:</i> Lake Whitefish Menominee Brown Trout Lake Trout <22" Chinook Salmon <32"</p> <p><i>Inland fish:</i> Herring (Cisco) Lake Whitefish Splake Sunfish & Crappie Yellow Perch</p> <p><i>Purchased fish:</i> Canned Light Tuna</p>	AND	<p>1 Serving per Month</p> <p><i>Lake Superior fish:</i> Lake Trout 22" to 37" Chinook Salmon 32"+ Walleye</p> <p><i>Inland fish:</i> Walleye Northern Pike Trout-Lake, Brown, Brook</p> <p><i>Purchased fish:</i> Canned White (albacore) Tuna Tuna (steak, fillet, sushi) Halibut</p>
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Format B (Brochure)

Eating Guidelines for Women who are or may become pregnant and Children under 15

Serving Guideline	Mercury Concentration	Species (Kind of Fish)	Image
2 per week	0.1 µg/g	<p>Purchased Fish: Salmon (Atlantic and canned), Shrimp, Sardines, Scallops, Tilapia, Crab, Cod, fast food fish sticks and sandwiches</p> <p>Lake Superior Fish: Herring (Cisco), Coho Salmon, Rainbow Trout/Steelhead, Smelt</p> <p>Inland Fish: Rainbow Trout</p>	
1 per week	0.2 µg/g	<p>Purchased Fish: Canned Light Tuna</p> <p>Lake Superior Fish: Lake Whitefish, Menominee, Brown Trout, Lake Trout <22", Chinook <32"</p> <p>Inland Fish: Herring (Cisco), Lake Whitefish, Splake, Sunfish, Crappie, Yellow Perch</p>	
1 per month	0.4 µg/g	<p>Purchased Fish: Canned White (albacore) Tuna, Tuna (steak/fillet/sushi), Halibut</p> <p>Lake Superior Fish: Lake Trout 22" to 37", Chinook Salmon 32"+, Walleye</p> <p>Inland Fish: Walleye, Northern Pike, Trout (Lake, Brown, Brook)</p>	
Avoid	HIGH 1 µg/g	<p>Purchased Fish: Shark, Swordfish</p> <p>Lake Superior Fish: Siscowet Lake Trout > 36"</p>	

Bonus: During one month you can eat up to one serving of fish in the "1 per month" group AND eat fish from either the "1 per week" or "2 per week" groups.

Results

A total of 47 "Eat Fish Now" surveys were completed (26 in Grand Marais, 21 in Grand Portage). Using 2 guideline formats, people correctly answered Question 1 (parts a-e) about 70% of the time and preferred the wallet card format (78.7%) over the brochure (17%).

Question 1: This month, I can eat...	Correct Answer	Total	Grand Marais	Grand Portage
a) 1 meal of walleye (& no other fish)	Yes or No	Yes = 21 No = 25 blank = 1	Yes = 13 No = 12 blank = 1	Yes = 8 No = 13
b) 1 meal of walleye & 1 meal of lake trout from an inland lake (& no other fish)	No (68.1%)	Yes = 15(31.9%) No = 32 (68.1%)	Yes = 7 No = 19	Yes = 8 No = 13
c) 1 meal of walleye & purchased salmon 2 times each week this month (& no other fish)	Yes (74.5%)	Yes = 35 (74.5%) No = 12 (25.5%)	Yes = 19 No = 7	Yes = 16 No = 5
d) 1 meal of walleye & canned light tuna 1 time each week this month (& no other fish)	Yes (72.3%)	Yes = 34 (72.3%) No = 13 (27.7%)	Yes = 17 No = 9	Yes = 17 No = 4
e) 1 meal of walleye & 1 meal of lake trout from an inland lake & purchased salmon 2 times each week & canned light tuna 1 time each week this month (& no other fish)	No (74.5%)	Yes = 12 (25.5%) No = 35 (74.5%)	Yes = 8 No = 18	Yes = 4 No = 17

Question 2: Circle which format was most helpful for you to answer the scenario questions above.

	Grand Marais	Grand Portage	Total	% Total
Format A (Wallet Card)	22	15	37	78.7%
Format B (Brochure)	4	4	8	17.0%
Blank	0	2	2	4.3%
Total	26	21	47	

**Fish Consumption Survey
for
FISH Community Events**

Scenario: Pretend you are pregnant and need to decide which fish you can eat this month. Using the guidelines (see Formats A and B), answer each question Yes or No. Then indicate which format was most useful in figuring out how much fish you can eat.



1. This month, I can eat...

	Circle One
a) 1 meal of walleye (& no other fish)	Yes or No
b) 1 meal of walleye & 1 meal of lake trout from an inland lake (& no other fish)	Yes or No
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d) 1 meal of walleye & canned light tuna 1 time each week this month (& no other fish)	Yes or No
e) 1 meal of walleye & 1 meal of lake trout from an inland lake & purchased salmon 2 times each week & canned light tuna 1 time each week this month (& no other fish)	Yes or No

2. Circle which format was most helpful for you to answer the scenario questions above.

Format A (wallet card)

OR

Format B (brochure)



Return your completed answer sheet to get a raffle ticket!



FISH Final Participant Evaluation

Fish are Important for Superior Health (FISH) Project



We are interested in hearing from you! Please **complete the Evaluation online at survey.vovici.com/se.ashx?s=56206EE3187B8528 prior to Tuesday November 10**, or complete this Evaluation and bring it to the Community Event for a chance to win a \$25 VISA gift card. Thank you for taking part in the FISH Project!

Participant ID: <insert ppt ID>

1. How did you hear about the FISH Project? *(mark all that apply)*

- | | | |
|--|--|---|
| <input type="checkbox"/> Friend or family | <input type="checkbox"/> Local business | <input type="checkbox"/> Sawtooth Mountain Clinic
Newsletter |
| <input type="checkbox"/> WIC or clinic staff | <input type="checkbox"/> Local newspaper | <input type="checkbox"/> Boreal Access |
| <input type="checkbox"/> WTIP North Shore
Community radio | <input type="checkbox"/> Church | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Facebook | | |

2. What was the main reason you decided to take part in FISH? *(mark only one)*

- Wanted to know my mercury and/or fatty acid levels
- Knew others who were doing it
- Wanted to help out or be involved in the community project
- Getting \$50 in VISA gift cards
- Other: _____

3. Do you think your health care provider is a good source of information about making choices to eat fish low in mercury and other contaminants? *(mark only one)*

- Yes
- Yes, and this is another way to share this information: _____
- No
- No. I think this would work better to share this information: _____

4. **Think about how you interact with your health clinic. At what point in the care process would you be interested in learning about resources for safe fish consumption?** *(mark all that apply)*

- I would like a brochure given to me at appointment check-in or in the exam room for me to read when I have time.
- I would like to discuss safe fish consumption by going through a brochure with the nurse prior to seeing the health care provider (e.g. same time as blood pressure reading, general health questions, reason for visit, etc.).
- I would like to go to the clinic website to read about safe fish consumption.
- I would like to read about safe fish consumption in the “Patient Instructions” given to me after my health care provider visit.
- Other: _____

5. **Did the FISH brochure that you received from us provide enough information for you to make choices about which fish to eat?** *(mark only one)*

- Yes
- No. Which of these topics do you need more information about? *(mark all that apply)*
 - Benefits of eating fish
 - Risks of eating fish
 - How much fish is in a serving/meal size
 - Which fish not to eat
 - Which fish to eat
 - Why there is mercury in fish
 - Why women who are or may become pregnant should eat fish as part of a healthy diet

6. **How often have you used the Wallet Card?** *(mark only one)*

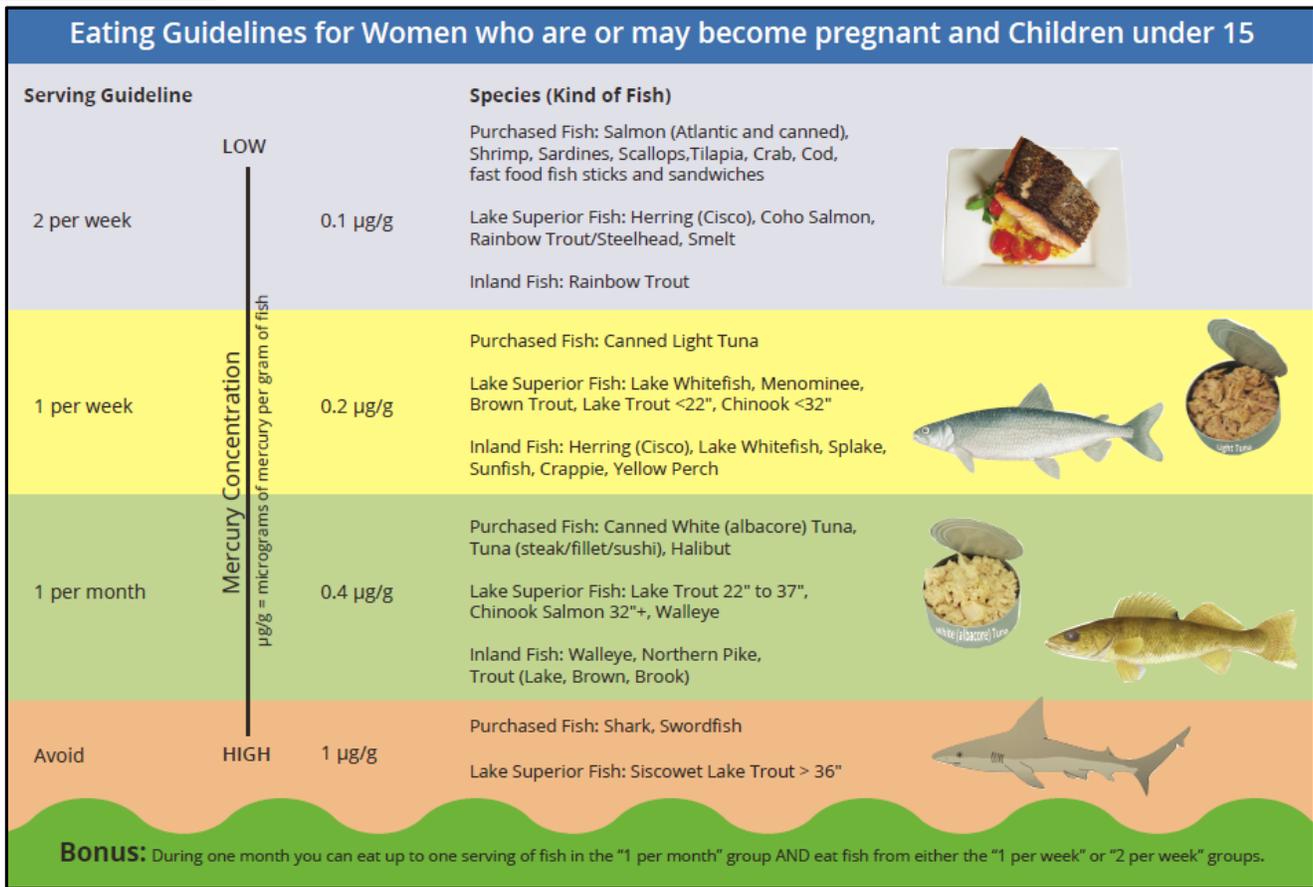
- Frequently (more than 10 times)
- Occasionally (about 5-10 times)
- Rarely (1-5 times)
- Not at all

7. **You received both the Brochure and Wallet Card (2 formats of the same information) to help you make healthy fish choices. Please think about how helpful these items are for you.** *(mark only one)*

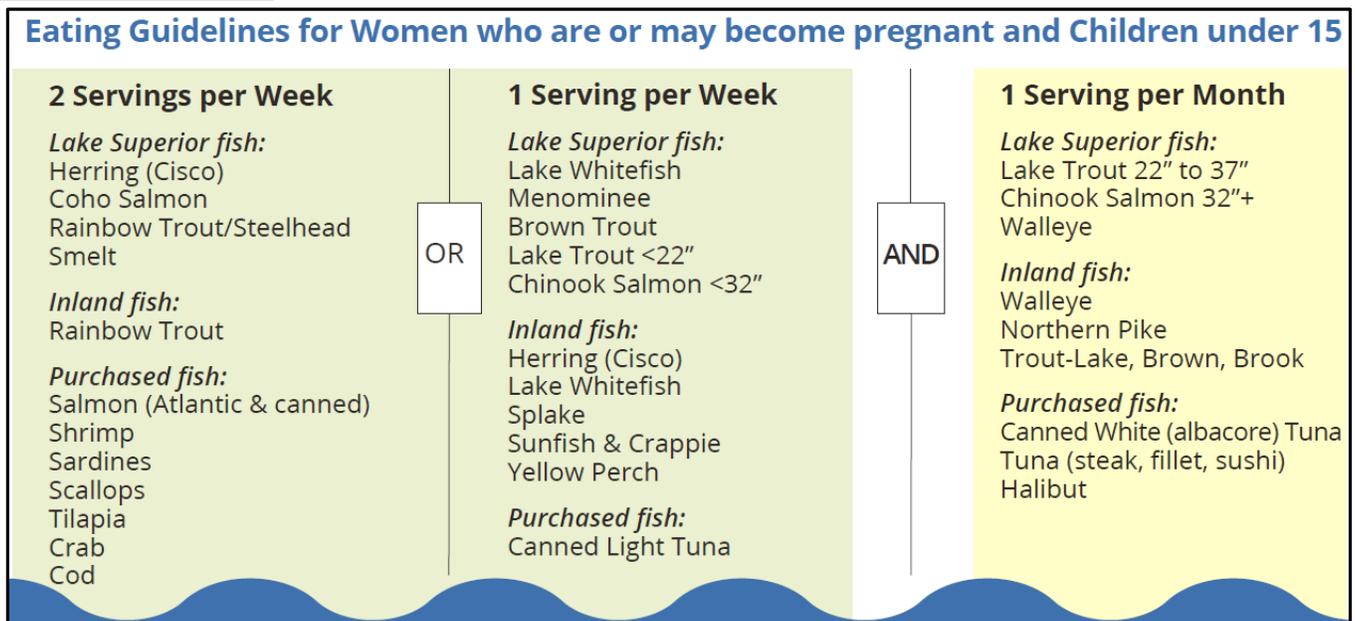
- Both the Wallet Card and Brochure are useful for me to make fish choices. I like having both.
- The information is redundant, and the Brochure is all I need.
- The information is redundant, and the Wallet Card is all I need.
- I am not using these items and don't plan to use them.

On the next page are the **MN Fish-Eating Guidelines** from the brochure and wallet card you received at your FISH visit. **Please use these guidelines to answer the next 2 questions.**

Brochure Format:



Wallet Card Format:



8. **Pretend you are in this scenario: You are pregnant and you eat 1 meal of walleye this month. Is it okay to also eat lake trout from an inland lake 1 time this month (and eat no other fish)?**
- Yes
 - No
9. **For you, which one was the most helpful to figure out the scenario?** *(mark only one)*
- Brochure
 - Wallet Card
10. **How did you change your fish eating habits after participating in FISH?** *(mark all that apply)*
- I eat more fish meals now.
 - I eat more of some species.
 - I eat less fish meals now.
 - I eat less of some species.
 - I eat smaller fish of some species now.
 - Other changes: _____
 - I did not make any changes.

Thank you!

**FISH Project Summary Results
Presentation
Pat McCann (MDH)
Tuesday, November 18, 2015
Grand Marais**

Fish are Important for Superior Health

FISH



Project Partners

Sawtooth Mountain Clinic

Grand Portage Health Service

Cook County North Shore Hospital

Grand Portage Trust Lands and Reservation
Tribal Council

Minnesota Department of Health

Fish are Important for Superior Health

FISH



Community Supporters



WTIP North Shore Community Radio

North Shore Journal

Northern Wilds

Cook County News Herald

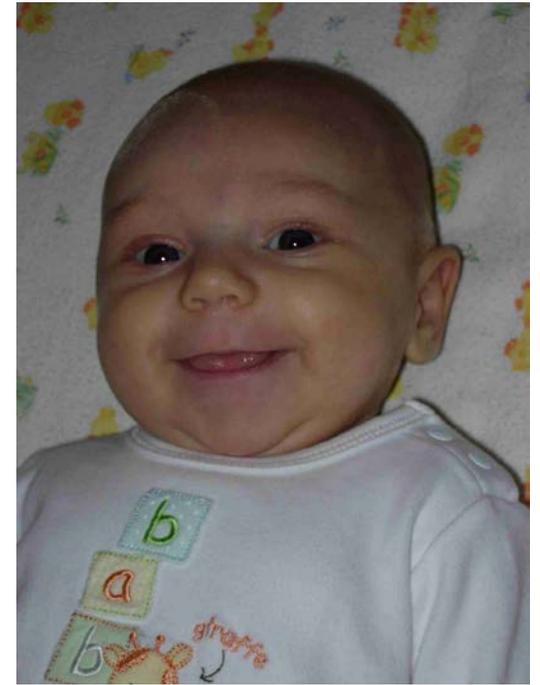
Two Dogs in the Web

Birch Grove Community Center

Numerous local businesses, schools, and churches

FISH Project: Preventing Mercury Exposure in Babies

- Provide information to women who are or might become pregnant



Provide information to women through a trusted source – Healthcare Providers



Reporting Results

- Individuals received results as they became available
- Community events – Individual results grouped together and summarized
- More analysis of data reported by Fall 2016

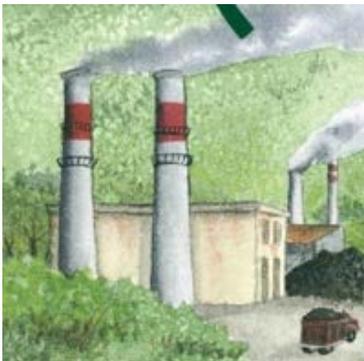
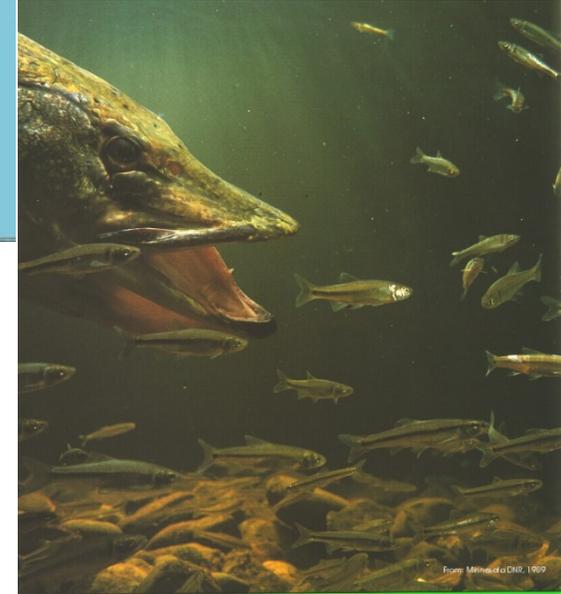
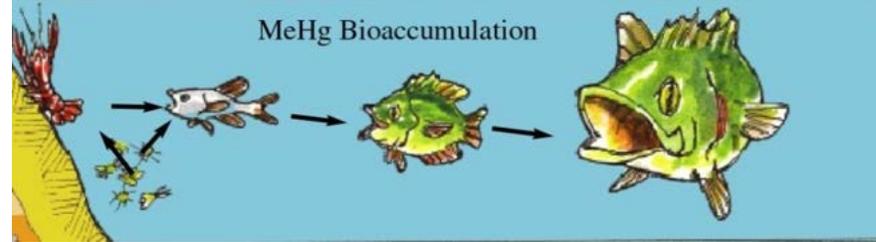
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How does mercury get into fish?



Why do we need to keep mercury out of babies?

- Mercury can harm the nervous system
 - A developing nervous system is more sensitive to exposure
 - Can impact ability to learn and process information
- It takes more mercury to harm an adult nervous system. Women who will not get pregnant and men can be exposed to about three times more mercury.
 - Separate guidelines for this group
 - Not the focus of FISH

Benefits outweigh risks if eating fish low in mercury & other contaminants



- Studies show babies do better developmentally if their mothers ate fish 1-2 times per week during pregnancy
- DHA is one of the fatty acids found primarily in fish
 - Needed for brain and eye development
- Benefits to Adults – reduced risk of cardiovascular disease and other chronic illness

Why do the FISH project here?



WTIP 90.7 FM
NORTH SHORE COMMUNITY RADIO

HOME ABOUT NEWS PROGRAMS PLAYLISTS EVENTS COMMUNITY & CULTURE SUPPORT

Mercury levels high in North Shore babies



Local News | Associated Press (AP)- Tue,
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Newborn feet

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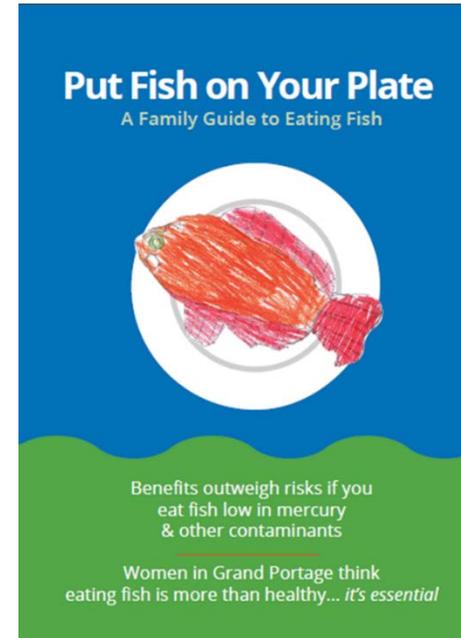
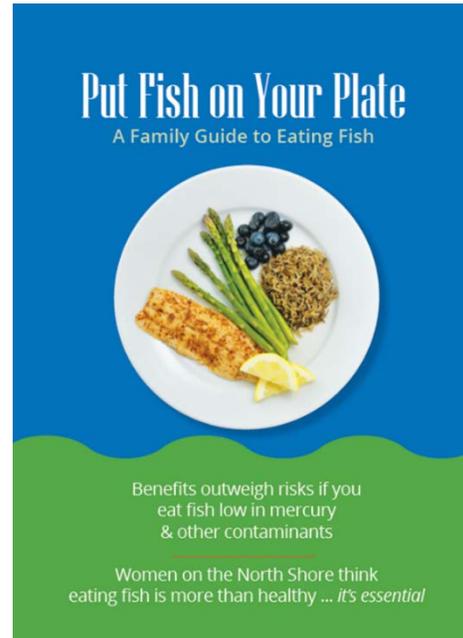


What we achieved through FISH (so far)



- Reached 499 women with information on choosing to eat fish low in mercury and other contaminants
 - Participants received information on levels of mercury and fatty acids in their blood
- 3% had mercury levels above a level of concern for a developing fetus
 - These participants received individualized advice about reducing mercury exposure -- which fish to eat
 - Follow-up visit
- Raised community awareness overall
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Updated Communications for FISH



- Community specific
- Input from FISH project partners
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Updated Communications (continued)

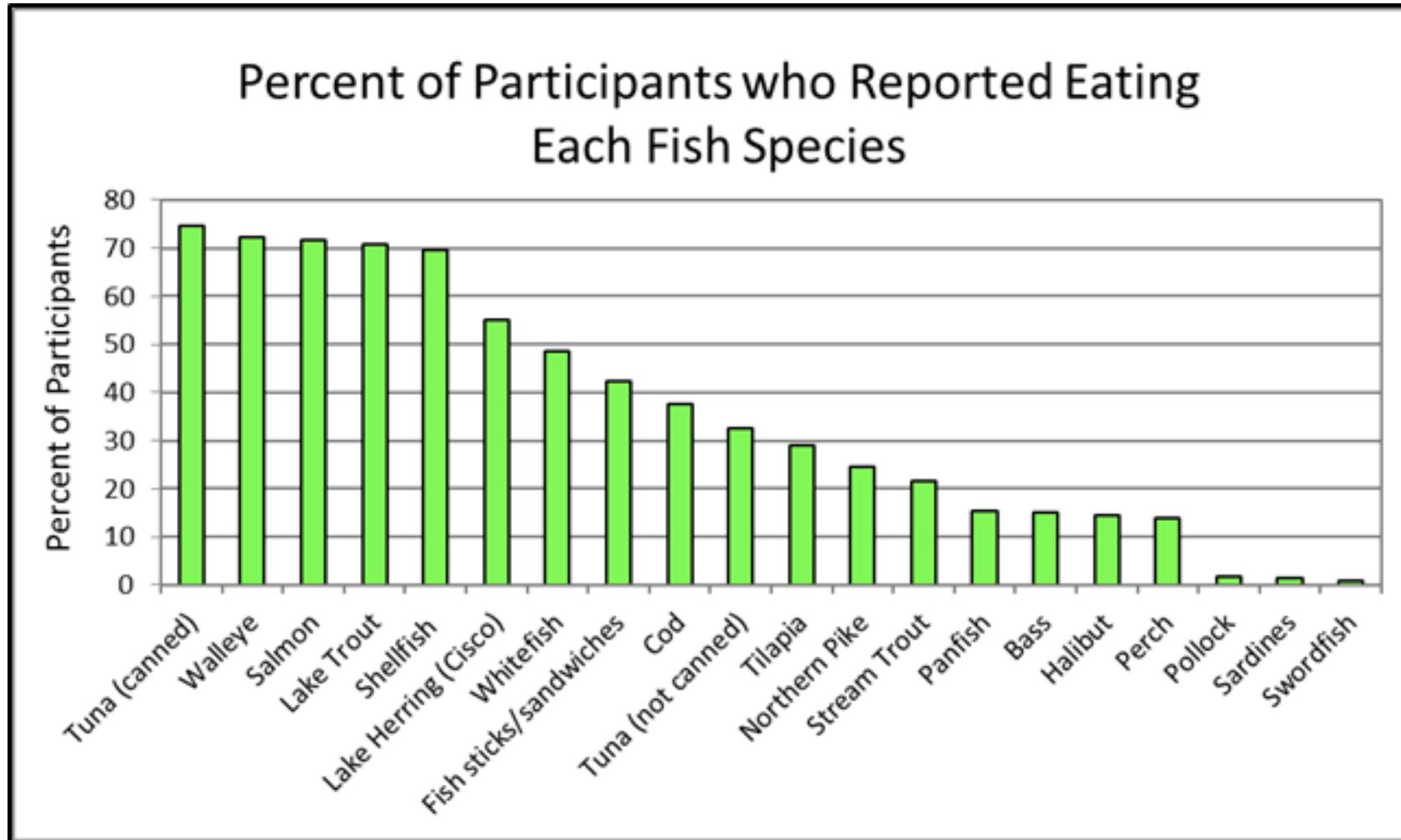
- Easier for women to make choices to eat fish low in contaminants
- Don't scare women away from eating fish



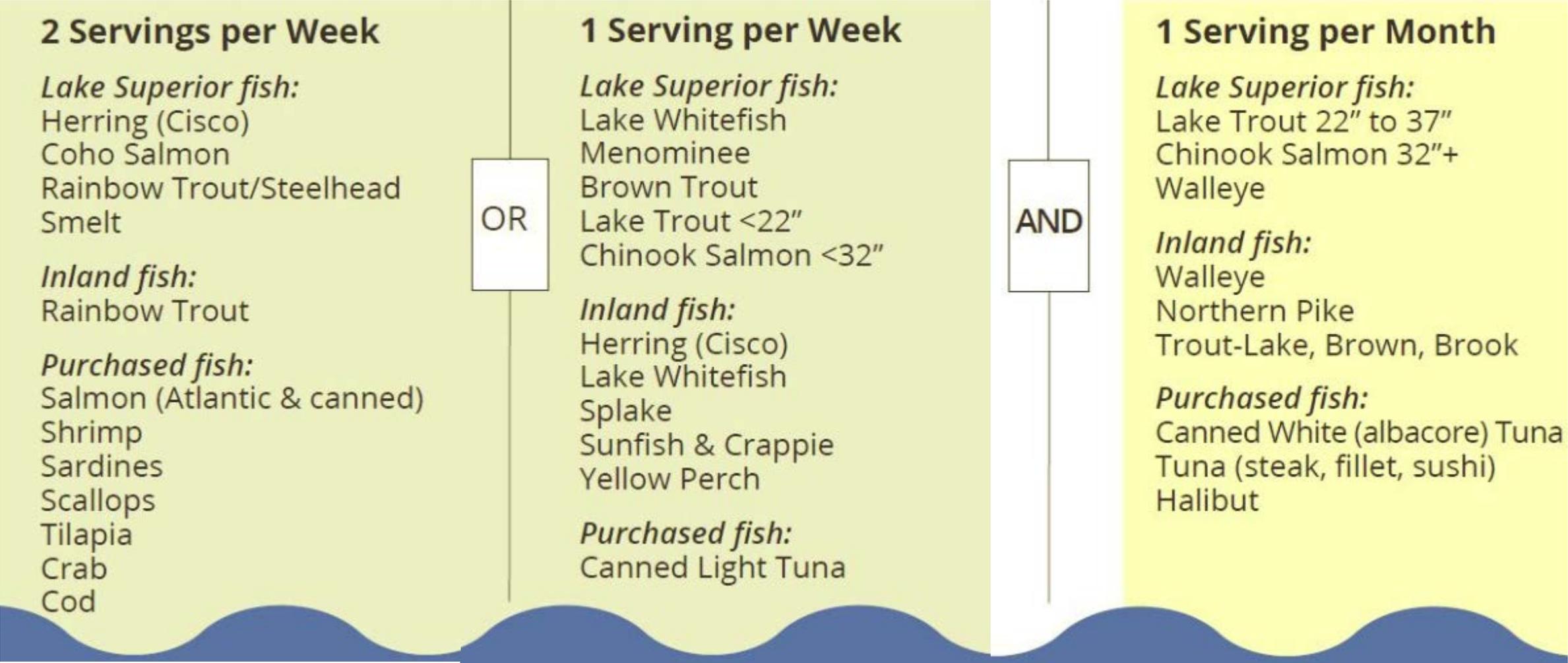
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 - Essentia Health and WI Department of Health Services

Participants reported eating over 40,000 meals of fish in the year prior to enrolling in FISH



MDH guideline categories are based on mercury levels



Consider all meals of fish when making choices: caught and bought fish

- Total amount of fish eaten not just individually by species
 - Tell us if our guidelines are helpful --- Eat Fish Raffle
- Canned tuna is fish!
- 75% of participants reported eating canned tuna.
- Canned white tuna has more mercury than canned light.
 - Participants who ate canned white tuna tended to eat it more often.

Eat fish from mainly one lake? Important to check site-specific advice.

LakeFinder

Lake Name/ID: and/or County:

Search Results

Click on a lake name to open a detail page or hover over a lake name to view a quick list of available information.

Search returned 3 results.

Name	ID	Nearest Town	County
Greenwood	16007700	Grand Marais	Cook

Fish consumption guidelines

These [fish consumption guidelines](#) help people make choices about which fish to eat and how often. Following the guidelines enables people to reduce their exposure to contaminants while still enjoying the many benefits from fish.

Pregnant Women, Women who may become pregnant and Children under age 15

LAKE NAME County, DOWID	Species	Meal Advice				Contaminants
		Unrestricted	1 meal/week	1 meal/month	Do not eat	
GREENWOOD Cook Co., 16007700	Cisco			All sizes		Mercury
	Lake Trout			All sizes		Mercury
	Smallmouth Bass			All sizes		Mercury
	White Sucker			All sizes		Mercury

See posters for guidelines for lakes in Cook Co.
where participants most frequently reported getting fish



On a mobile device? [Go to the LakeFinder Mobile Website](#) »

Good news:

- Almost ½ of participants reported eating 1 meal of fish per week
 - 1-2 meals per week is recommended to maximize benefits
- On average participants had higher fatty acid levels - DHA and EPA - than US average

Walleye & lake trout (sometimes canned tuna) = the main species that were eaten too frequently by participants with higher mercury

- Summer average for walleye was just over 1 per month
 - Greater than our general statewide guideline.
 - Maximum reported was 13 meals of walleye per month.
- See posters for information on other species

Data from FISH will help us...

- Promote more fish consumption
- Improve ways women get info on which fish are low in mercury and other contaminants
- Improve info on:
 - differences in canned tuna (white and light)
 - fish species should be eaten less frequently (walleye and lake trout)
- Provide recommendations on popular waters and species
- Continue to provide recommendations based on size - most participants knew the size of fish they ate if locally caught

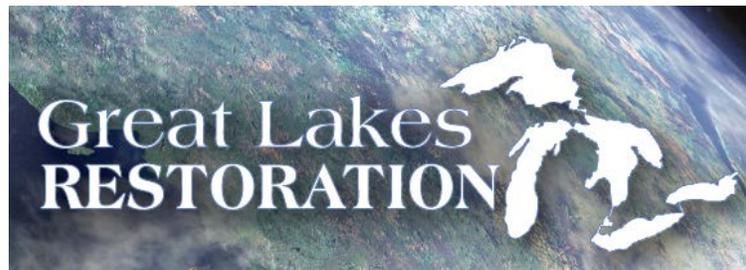
FISH Project Schedule

- Report summary results to community - now
- Continue follow-up with women who had higher levels (thru February)
- Continued data analysis – report available by Fall 2016 (Posted on Sawtooth Mountain Clinic Website)
 - Compare mercury blood levels to predicted level from questions about what fish were eaten
 - Compare FISH results with results from other studies
 - WI South Shore Project
 - Projects by University of Illinois at Chicago

Thank you!

- Participants
- Project Partners
- Community supporters

- EPA GLRI



**FISH Project Summary Results
Presentation
Pat McCann (MDH)
Wednesday, November 19, 2015
Grand Portage**

Fish are Important for Superior Health

FISH



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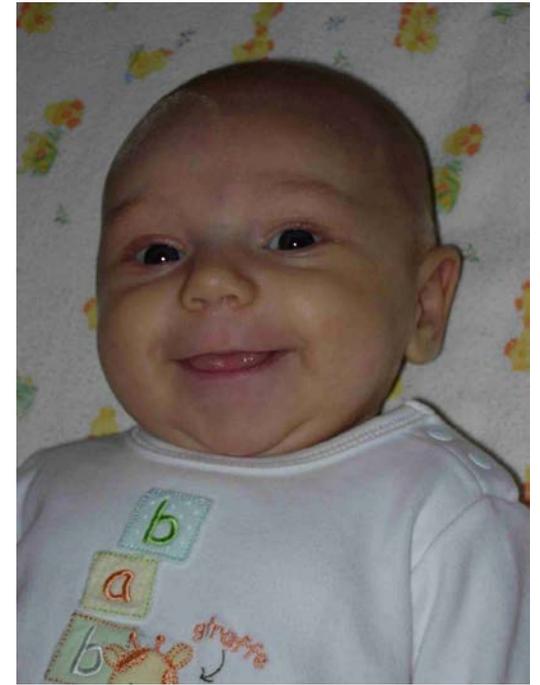
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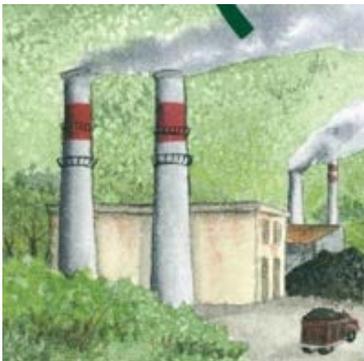
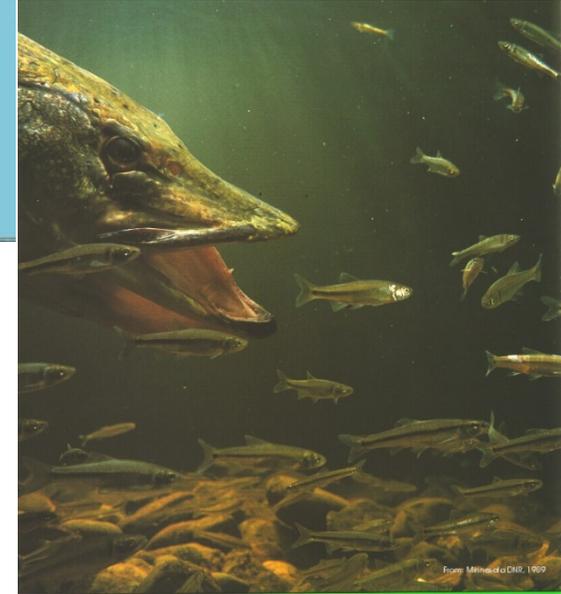
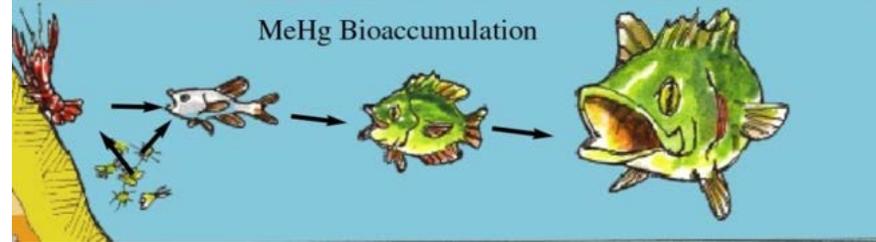
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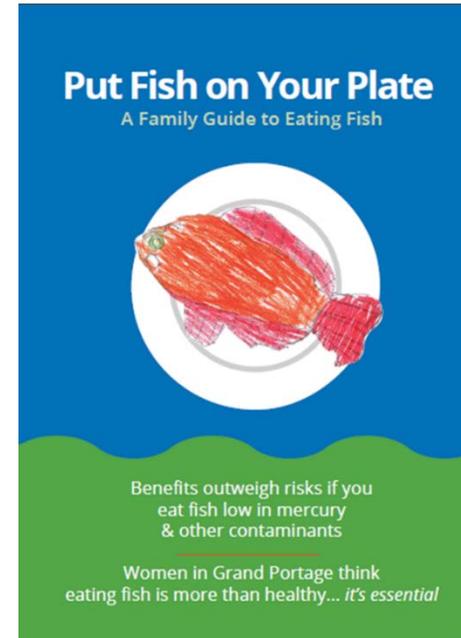
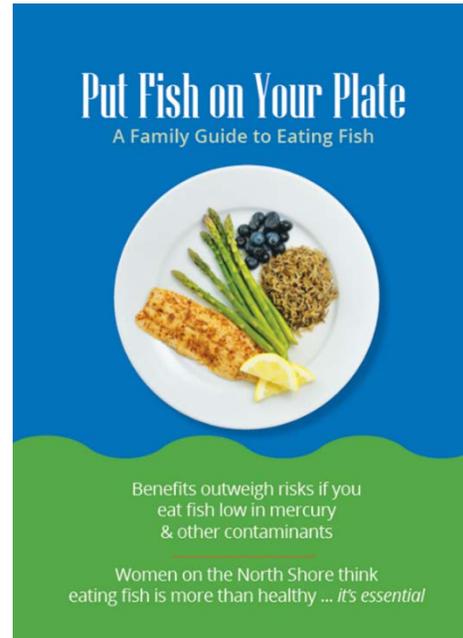


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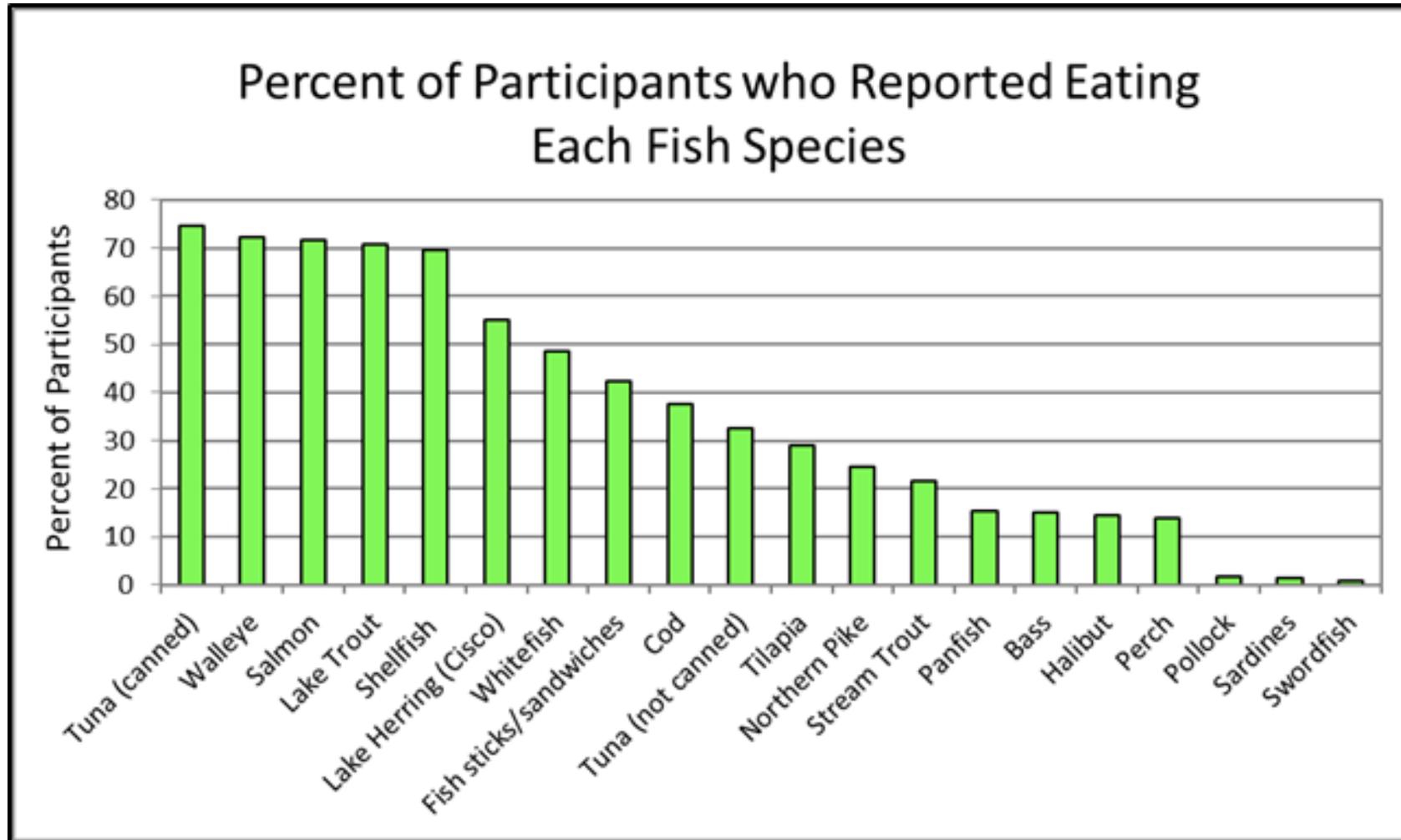
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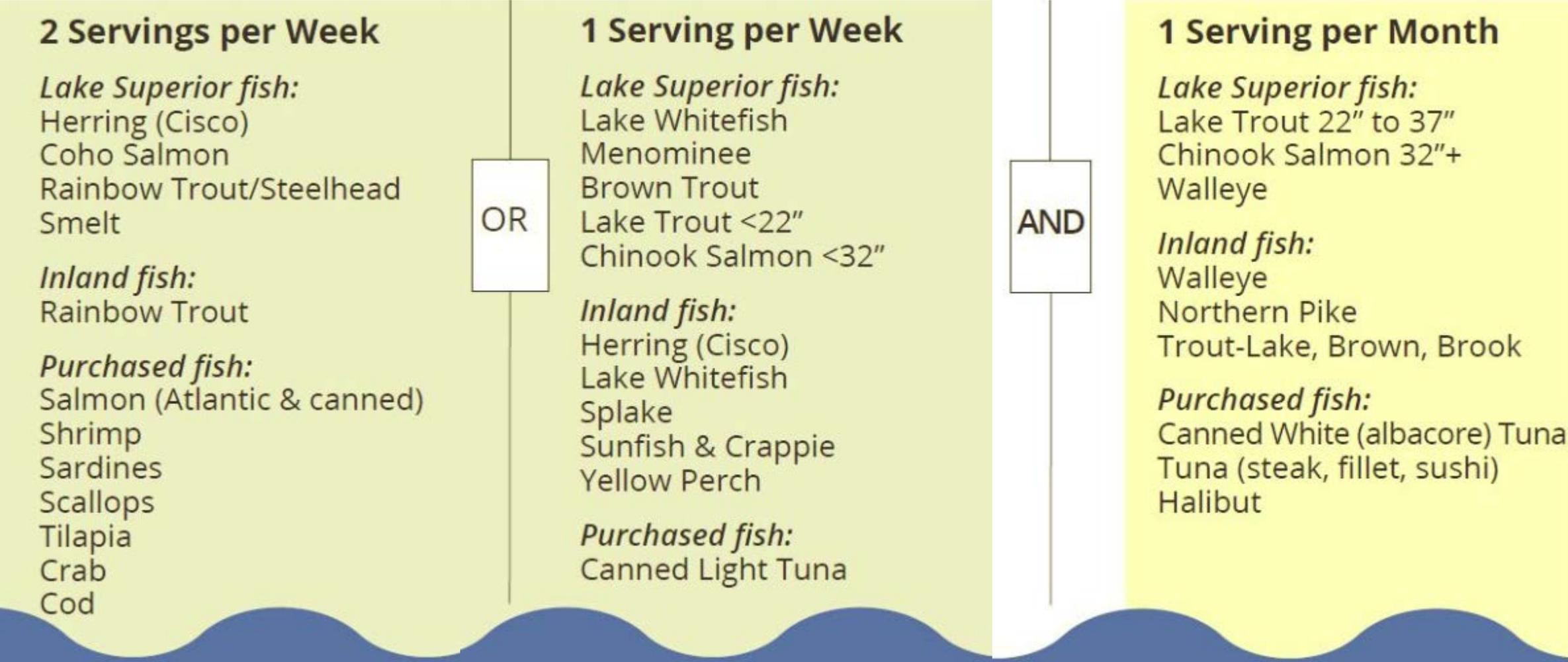
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Advice for waters near Grand Portage may be different

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 - Tell us if our guidelines are helpful --- Eat Fish Raffle
- Canned tuna is fish!
- 75% of participants reported eating canned tuna.
- Canned white tuna has more mercury than canned light.
 - Participants who ate canned white tuna tended to eat it more often.

Eat fish from mainly one lake? Important to check site-specific advice.

LakeFinder

Lake Name/ID: and/or County:

Search Results

Click on a lake name to open a detail page or hover over a lake name to view a quick list of available information.

Search returned 3 results.

Name	ID	Nearest Town	County
Greenwood	16007700	Grand Marais	Cook

Fish consumption guidelines

These [fish consumption guidelines](#) help people make choices about which fish to eat and how often. Following the guidelines enables people to reduce their exposure to contaminants while still enjoying the many benefits from fish.

Pregnant Women, Women who may become pregnant and Children under age 15

LAKE NAME County, DOWID	Species	Meal Advice				Contaminants
		Unrestricted	1 meal/week	1 meal/month	Do not eat	
GREENWOOD Cook Co., 16007700	Cisco			All sizes		Mercury
	Lake Trout			All sizes		Mercury
	Smallmouth Bass			All sizes		Mercury
	White Sucker			All sizes		Mercury

See posters for guidelines for lakes in Cook Co.
where participants most frequently reported getting fish



On a mobile device? [Go to the LakeFinder Mobile Website](#) »

Good news:

- Almost ½ of participants reported eating 1 meal of fish per week
 - 1-2 meals per week is recommended to maximize benefits
- On average participants had higher fatty acid levels - DHA and EPA - than US average

Walleye & lake trout (sometimes canned tuna) = the main species that were eaten too frequently by participants with higher mercury

- Summer average for walleye was just over 1 per month
 - Greater than our general statewide guideline.
 - Maximum reported was 13 meals of walleye per month.
- See posters for information on other species

Data from FISH will help us...

- Promote more fish consumption
- Improve ways women get info on which fish are low in mercury and other contaminants
- Improve info on:
 - differences in canned tuna (white and light)
 - fish species should be eaten less frequently (walleye and lake trout)
- Provide recommendations on popular waters and species
- Continue to provide recommendations based on size - most participants knew the size of fish they ate if locally caught

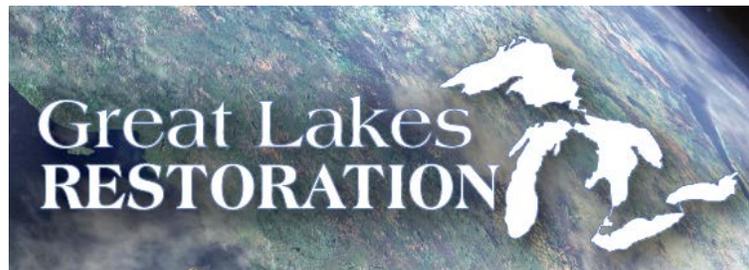
FISH Project Schedule

- Report summary results to community - now
- Continue follow-up with women who had higher levels (thru February)
- Continued data analysis – report available by Fall 2016 (Posted on Sawtooth Mountain Clinic Website)
 - Compare mercury blood levels to predicted level from questions about what fish were eaten
 - Compare FISH results with results from other studies
 - WI South Shore Project
 - Projects by University of Illinois at Chicago

Thank you!

- Participants
- Project Partners
- Community supporters

- EPA GLRI



Fish consumption recommendations to reduce mercury exposure for women of child bearing age

Seth Moore, PhD
Director of Biology and
Environment
Grand Portage Band of Lake
Superior Chippewa



What defines Grand Portage?



Our priorities

- Maintain cultural ties to the natural environment
- Environmental protection
- Natural resources management
- Subsistence species
- Environmental toxins
- Environmental education of tribal youth

Eat:

- Lake Superior Herring
- Menomonee
- Lake Whitefish
- Rainbow trout (Steelhead)



Eat Less:

- Northern Pike
- Large Walleye
- Large Lake trout



Avoid:

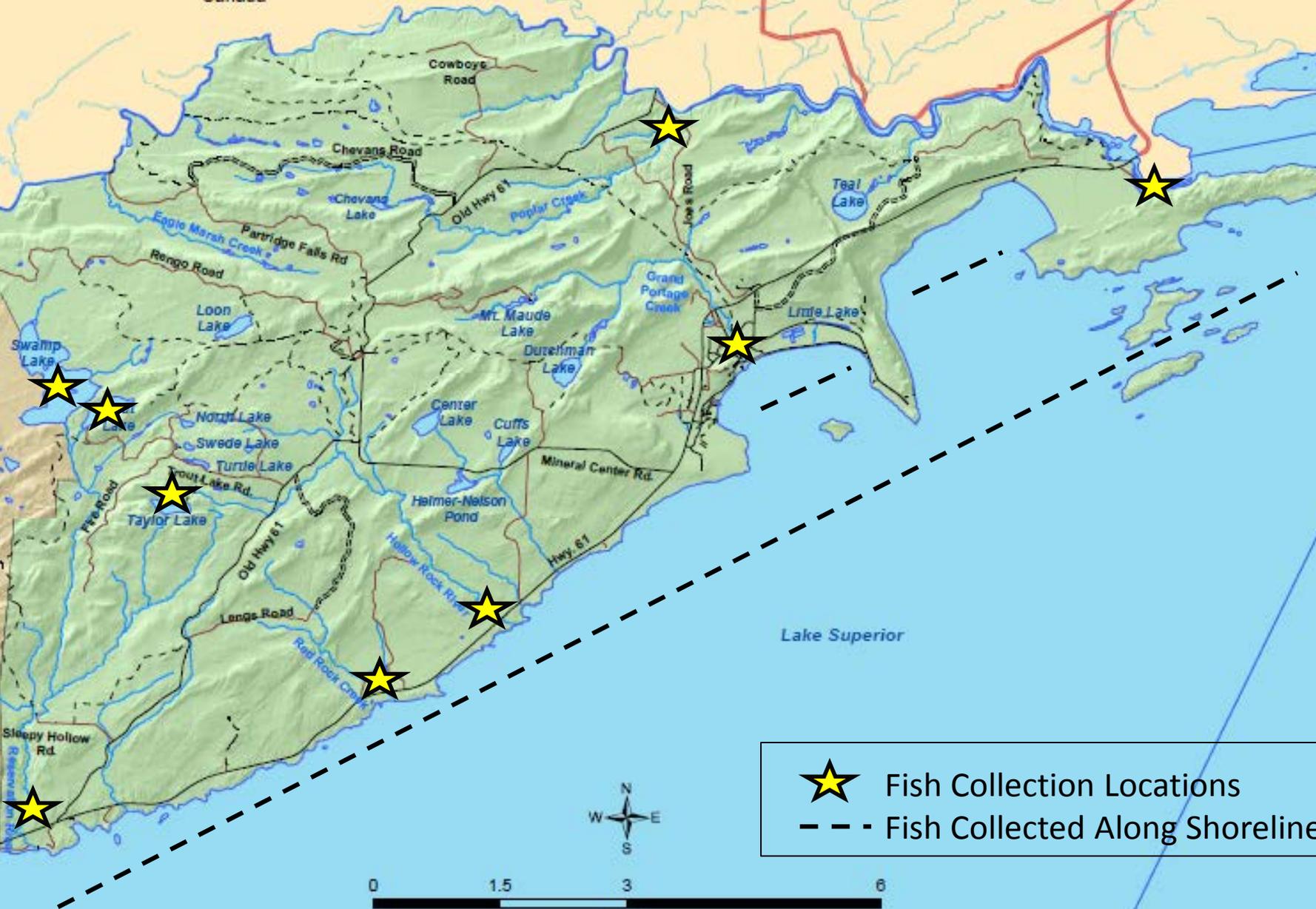
- Trout Lake Yellow Perch
- Large Pigeon River Pike and Walleye

Methods

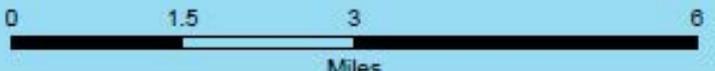
- Fish collected with multiple gears
 - Gillnets, fyke nets, electrofishing
- Sampling locations
 - Rivers/Lakes: walleye, northern pike, rainbow trout , brook trout, yellow perch, smallmouth bass
 - Lake Superior: lake trout, herring, lake whitefish, round whitefish, rainbow trout, burbot, coho salmon
- Fish data: length, weight, location
- Fillets removed and analyzed (Lake Superior Research Institute: Mercury)
- 255 samples analyzed from 1995-2012
- 151 samples waiting to be processed (2013-present)

Grand Portage Reservation

Canada

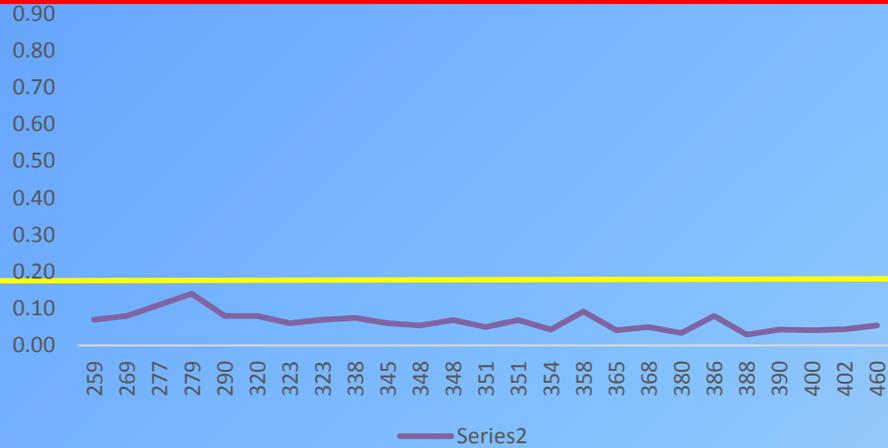


- ★ Fish Collection Locations
- - - Fish Collected Along Shoreline

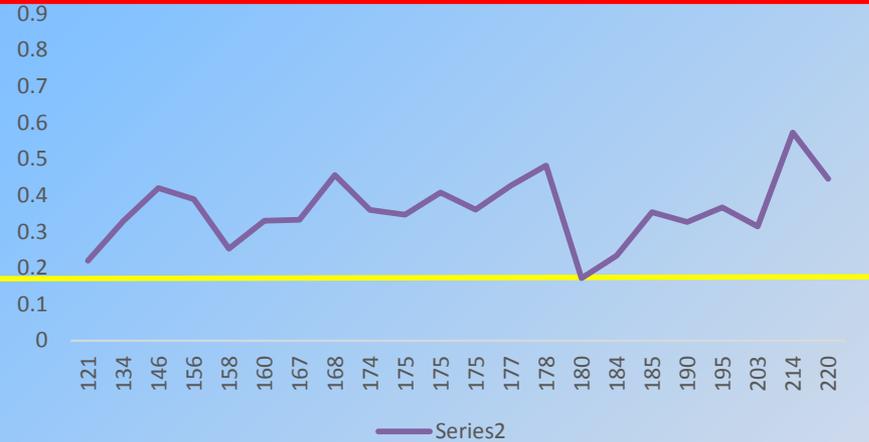


Species comparisons

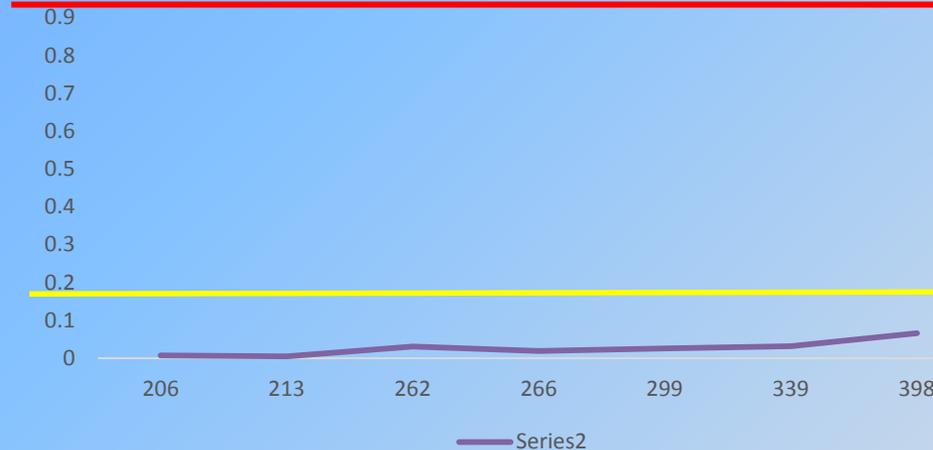
Lake Superior Cisco (Lake herring)



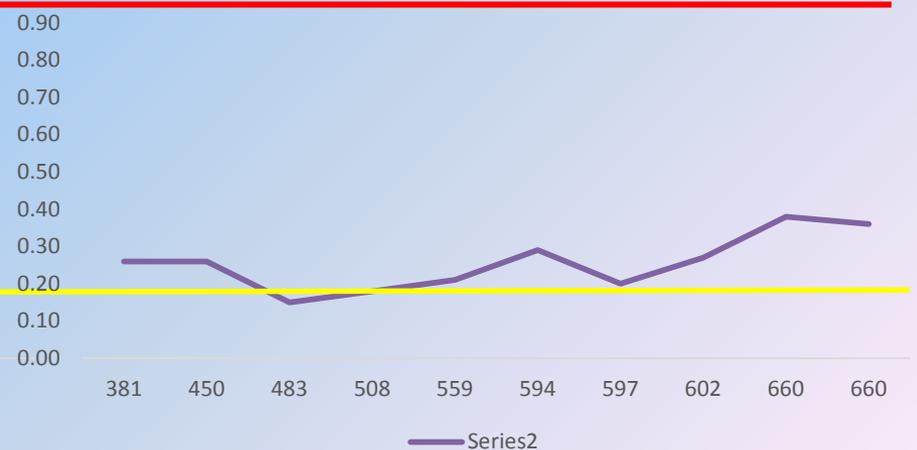
Mercury levels from Trout Lake Yellow Perch



Mercury levels in Lake Superior Round Whitefish (Menomonee)

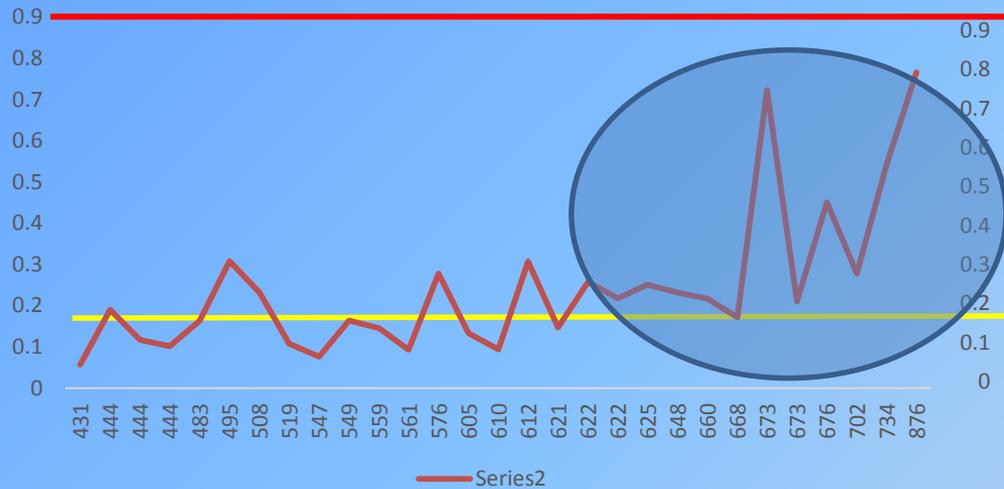


Mercury levels from Pigeon River Northern Pike

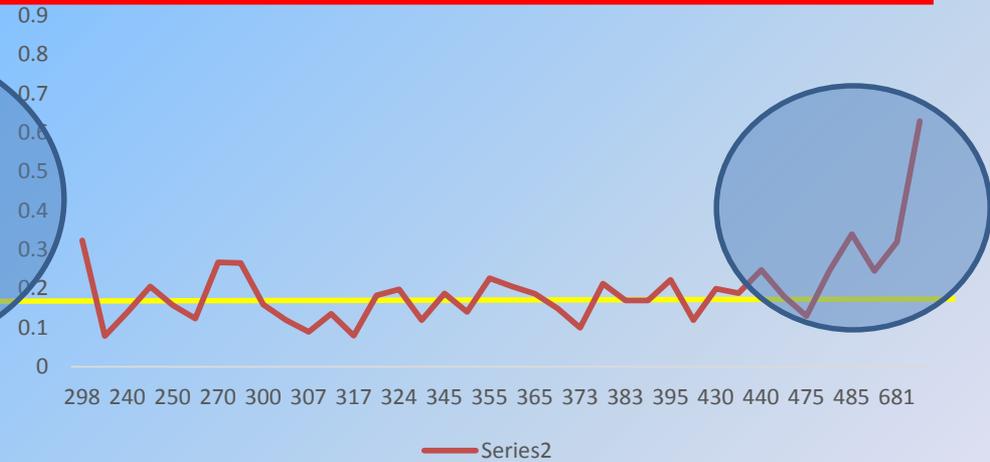


Why Avoid Eating Large Fish?

Mercury levels in Lake Superior Lake Trout



Mercury levels in Pigeon River Walleye

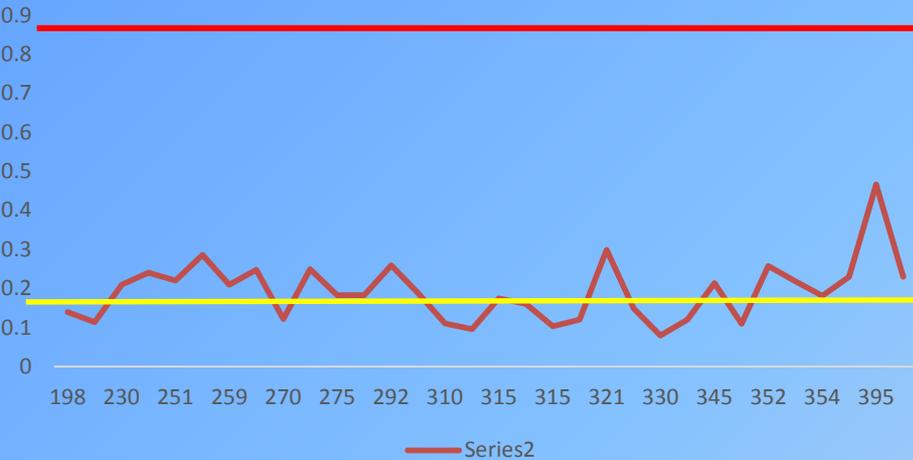


All Lake trout over 24"

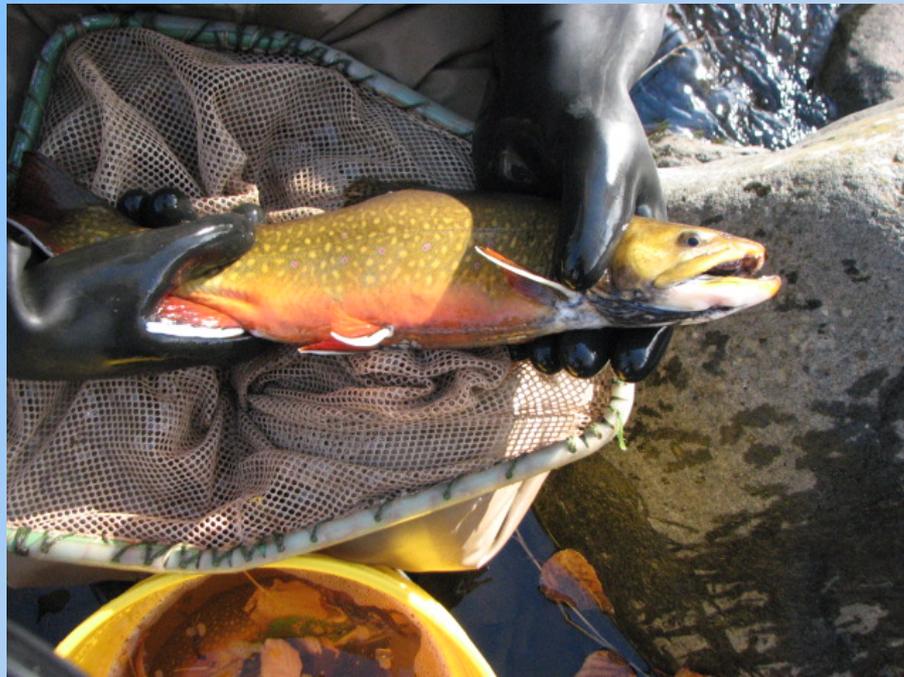
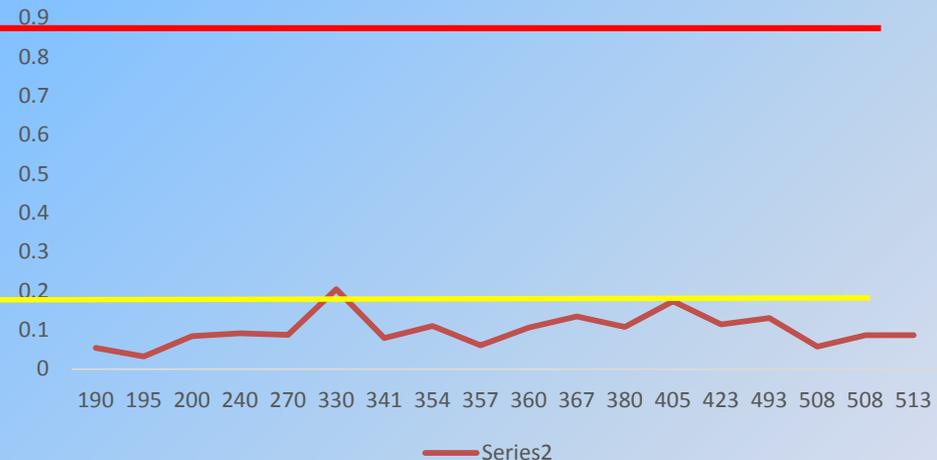
All Pigeon River Walleye over 17"

All brook trout are not the same

Mercury levels in Swamp Lake Brook Trout



Mercury levels from Taylor Lake Brook Trout





Post-Event Items

WTIP web posting

Northern Wilds article

WTTP

NORTH SHORE COMMUNITY RADIO

90.7 FM

HOME ABOUT NEWS PROGRAMS PLAYLISTS EVENTS COMMUNITY & CULTURE SUPPORT

FISH Project results show most women have safe mercury levels

Local News - Wed, 11/18/2015 - 6:00am

FISH PROJECT:
Fish are Important for Superior Health

You did it!

Two Community Events to say **THANK YOU** & share FISH Project **RESULTS**

Event Details
5:30-7:30pm
Presentations start -6:15pm with open house before & after

Tues Nov 17 Grand Marais North House Folk School	Wed Nov 18 Grand Portage Log Community Building
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- REFRESHMENTS PROVIDED - smoked fish, crackers, cheese, dessert bites
- Public Involvement
- WIN \$25 VISA cards

Questions? Contact...
Sawtooth Mountain Clinic 218-387-2330
Grand Portage Health Service 218-475-2235

FISH graphic

Design credit: Cook County Press Herald

On Tuesday of this week, The Sawtooth Mountain Clinic and Grand Portage Health Service in cooperation with the Minnesota Department of Health held a public information meeting on the FISH Project. FISH stands for Fish are Important to Superior Health. It's the completion of a study of North Shore women of child bearing age.

The meeting highlighted community results of the study and will be repeated in Grand Portage tonight starting at 5:30 p.m. Recently research has found that a large percentage of infants born along the North Shore have elevated levels of mercury in their systems. From May of last year through June of this year, 499 women between the ages of 16 and 50 who live in or near Grand Portage and Grand Marais participated in the study.

The results show most of the FISH participants had low levels of mercury, though slightly above the U.S. and Canadian averages. Three percent of the participants had levels above what is considered safe for a developing fetus. All of those with the higher level of mercury reported eating more fish than recommended in the department of health's guidelines.

The guidelines recommend one meal per month of lake trout or walleye, as well as canned tuna. Not everyone who ate more than the recommendations had high mercury levels, because the levels in fish vary lake to lake as well as different people may handle mercury differently.

The good news from the study is that an omega-3 fatty acid known as DHA in the FISH participants was higher than the national average and that the overwhelming majority of these women had mercury levels below the unsafe level. That means women can get enough of the beneficial DHA while keeping their mercury levels low.

DHA is important for brain and eye development in a fetus. The take away for women of child bearing age is eating one to two fish meals per week of fish low in mercury can be beneficial to developing babies.



FISH Project update

GRAND MARAIS—Over the past year and a half, eating fish has received some extra attention on the North Shore. Nearly 500 women participated in a study examining fish consumption, mercury exposure and health. The Fish are Important for Superior Health Project, also known as the FISH Project, has been focusing on helping women and their families to enjoy the health benefits of eating fish, while lowering their exposure to mercury. This project came about after a study found that 10 percent of babies tested from the North Shore area had mercury in their blood above the level considered safe. Mercury exposure is of concern for individuals of all ages, but developing fetuses and children are most at risk. Exposure can affect a child's ability to learn and process information.

This project brought together several key partners, including the Sawtooth Mountain Clinic, Grand Portage Health Service and the Minnesota Department of Health, to recruit participants to complete a survey and provide a blood sample for testing of mercury and omega-3 fatty acids levels. Overall, the results thus far have been interesting and helpful for many study participants and community members.

The 499 participants reported eating over 40,000 meals of fish in the previous year, with 28 percent of them being locally caught fish. The testing showed that most participants had low levels of mercury in their blood. However, the middle value or median level for the group, 1.16 micrograms per liter (mcg/L), was higher than the U.S. and Canadian averages for women. In addition, 3 percent of participants did have mercury levels above the level considered safe for a developing fetus (5.8 mcg/L). The participants with high mercury levels had self-reported eating more fish than recommended, according to the Minnesota Department of Health Fish Eating Guidelines. As part of the project, these participants were counseled on how to lower their mercury exposure based on the fish they were eating. As one study participant shared, it was "interesting to be a part of the study—

mercury in fish is not something I really thought about before, so it's good to be more aware and have resources about it."

Three species of fish were eaten too often by the participant pool, based on the guidelines: lake trout, walleye and canned tuna. This was especially of concern during the summer months, when consumption was higher as local fishing is more prevalent. Walleye and lake trout are recommended no more than one meal per month for women of childbearing age and children age 15 and younger. However, lower mercury fish can be eaten along with one serving of a higher mercury fish.

In addition to participants' mercury levels being tested, the levels of two omega-3 fatty acids, DHA and EPA, were also tested. DHA is important for brain and eye development in a fetus. "I think it is important to know how to eat healthy and incorporate fish into your diet...I eat some fish, but not a lot, and I should do a better job of eating more," shared another study participant, highlighting the balance between achieving the health benefits from fish while reducing the negatives with mercury exposure.

The Minnesota Department of Health will continue to analyze the data from this study to better understand the relationships between reported fish consumption and blood mercury/fatty acids levels, reported fish consumption and variation in blood mercury level, and comparing these results to results from other similar projects.

"Results from these analyzes will help improve future communication of fish consumption advice and identification of women who may be at higher risk of too much exposure to mercury," said Patricia McCann with the Minnesota Department of Health.

Analysis of the data from this study is ongoing and a final report will be available by late fall 2016. Updates will be available on the Sawtooth Mountain Clinic website and information about safe fish consumption is available at www.sawtoothmountainclinic.org.—Maren Webb