

# Great Lakes Consortium Fish Guidelines Outreach Project

## Building on Existing Knowledge: Updating Minnesota's Fish Consumption Educational Outreach for the Hmong Community

Tannie Eshenaur, M.P.H.<sup>1</sup>

Patricia McCann, M.S.<sup>1</sup>

Mary Elizabeth Berglund, P.H.N., M.A.O.L.<sup>2</sup>



<sup>1</sup> *Minnesota Department of Health, Environmental Health Division, Environmental Surveillance and Assessment Section.*

<sup>2</sup> *St. Paul-Ramsey County Department of Public Health, Environmental Health*

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### **Great Lakes Consortium Grant**

The Great Lakes Consortium is a collaboration of eight states' Fish Advisory Programs bordering the Great Lakes that have a long history of cooperation in working towards uniform fish advisories and risk communication. Funding from the Great Lakes Consortium was provided to each Great Lakes state to develop a new fish guidelines outreach product. When complete, these State products would then be combined into a toolbox and shared among the states.

The Minnesota Department of Health (MDH), with additional support from EPA and ATSDR, decided to focus on improving outreach to the Hmong community. The goal of this project was to gain information about fish eating practices and communication preferences of the Hmong community living in Ramsey County by learning from the community and to use this knowledge to guide communication of information on fish consumption advice. Products from this project include;

1. a novel survey method for use with limited English proficiency populations, and,
2. *Talk about Eating Fish and Way of Eating Fish*, a DVD about mercury in fish in the Hmong language.

### **History of Outreach to Southeast Asians/Hmong in Minnesota**

Hmong refugees first began arriving in Minnesota in about 1979. From then until 2007, 21,891 Hmong refugees arrived in Minnesota as their first destination in the United States. (MDH Refugee Health Program, accessed at <http://www.health.state.mn.us/divs/idepc/refugee/stats/refcummm.pdf> on July 31, 2009). Also, subsequent to arrival at other places in the United States, many Hmong relocate in the Twin Cities of St. Paul and Minneapolis. St. Paul has the largest population of Hmong in the United States. It is estimated that 60,000 Hmong live in Minnesota, about half in the City of St. Paul, Ramsey County.

Southeast Asians, including Hmong, often have limited English proficiency. Past MDH efforts at outreach to Southeast Asians and, specifically Hmong, has largely been in collaboration with the Minnesota Department of Natural Resources Southeast Asian Outreach Program (MDNR-SEA) and has included presentations at community events, filleting demonstrations, radio announcements, translated newspaper articles and information sheets translated into several Southeast Asian languages. However, translation of written materials into Hmong was discontinued due to difficulties in translating, concern that not all Hmong read written Hmong and lack of consensus in the Hmong community about using different dialects.

Previous MDH outreach to southeast Asian populations is described in "Fish Consumption Advisories and Outreach programs for Southeast Asian Immigrants" by Shubat, Raatz and Olson, Volume 12, Numbers 3 and 4 of *Toxicology and Industrial Health* 1996. This paper describes interviews and a behavioral survey used to determine health messages and communication methods suited to Southeast Asians and Hmong, in particular. Methods used included specialized advisories, translations, signage, a Hmong language video, and workshops.

In 2006 the St. Paul-Ramsey County Department of Public Health (SPRCDPH) partnered with Emergency Community Health Outreach (ECHO) to develop fish consumption outreach resources. ECHO is a collaborative in St. Paul that helps ensure that people with limited English

proficiency receive life-saving health and safety information. SPRCDPH contracted with ECHO to develop a modified “safe eating for fish” two-page information sheet (based on an MDH brochure) as well as a 20 minute TV program on mercury in fish. Both are available in seven languages.

**Why this project? Why now?**

The unexpected discovery of perfluorochemicals in metro area lakes in 2006 and 2007 raised citizen concern about the potential for disproportionate exposure to subpopulations often observed to be fishing at metro area lakes. The concern expressed was that many Hmong are subsistence fishers and would be a vulnerable population that is not reached by normal outreach efforts. This concern prompted MDH and SPRCDPH to reconsider fish consumption advisory outreach and education for limited English proficiency populations, particularly the Hmong.

Based on a news release about detections of perfluorooctanoic sulfonate (PFOS) in fish in metro area lakes issued by MDH on August 16, 2007, the Ramsey County Parks and Recreation Department talked with both MDH and SPRCDPH, requesting help in developing language for warning signs at lakes in city parks. In response to this request, SPRCDPH convened a meeting including MDH, St. Paul Parks and Recreation, Ramsey County Parks and Recreation, the MDNR-SEA and also SPRCDPH staff from the department’s internal Hmong Resource group. During this meeting MDH presented information on the history of Minnesota’s specialized outreach to Southeast Asian populations and a rationale for using strategies other than signs to promote safe fish consumption. It was agreed by all parties that while signage was not an appropriate response to the discovery of PFOS in metro fish, it was time to revisit fish consumption outreach to the Hmong community.

A series of meetings followed to discuss possible areas of collaboration and to decide where to focus efforts. Several other individuals with relevant experience and knowledge were also consulted in the process of gathering information on fish and the Hmong community. Staff met one time with the Hmong Healthcare Coalition: a group of health insurance company employees, University of Minnesota researchers, and public health professional staff who were already meeting together once a month to work together on health issues related to the Hmong community. Ms. Chao Vue, who at the time was a community educator for the American Red Cross, provided valuable information about creating a traditional storycloth to teach new information to elders in the Hmong community. Jennifer Winkelman gave a presentation that highlighted the work of the Mississippi Watershed Management Organization with the Hmong community and provided insight into best practices for outreach to the Hmong community. Michele Schermann, a research fellow with Bioproducts and Biosystems Engineering at the University of Minnesota, provided practical advice based on her years of experience with several research projects focused on Hmong Americans.

Preliminary conclusions from these meetings were:

1. Health care providers are a key gatekeeper for health information in the Hmong community as they are trusted and respected.
2. Currently, there is a transition in the Hmong community as the first generation ages and a growing proportion of the population has grown up and had their primary education in the U.S.

3. The effectiveness of written materials in Hmong is unclear. There are several Hmong dialects and using only one may exclude a portion of the population. Literacy in the Hmong language is limited, although there does seem to be growing interest in some subsets of the population.
4. Face-to-face communication is clearly preferred.
5. There is a strong sense that full participation of the Hmong community is essential to the success of any efforts to develop new resources.
6. The extent of sport-caught and market fish consumption in the Hmong community is largely based on anecdotal observation. The extent of fish consumption is likely variable by age and income, and seasonal, especially for sport-caught fish. Due to the large number of Hmong in the Twin Cities, casual observers are likely to assume that any Asian observed fishing is Hmong.

### **Outreach to health care professionals**

Because health care providers were initially identified as a trusted and credible source of information in the Hmong community, eight clinics that serve Hmong were identified and contact information for possible fish consumption advice “champions” obtained. One medical director from a larger clinic expressed interest and provided contact information for a Hmong physician and a Hmong health educator on staff; neither responded to numerous messages left on voicemail. Discussions with two smaller clinics led to invitations to present at staff educational meetings sometime in the future. While this approach may be pursued at a later date, given the lack of response, the focus of this project was redirected to gathering more information to develop a communication piece that would not be clinic-based, but rather targeted broadly in the lay community.

### **Information gathering**

Based on these preliminary conclusions, Environmental Health specialists from SPRCDPH and MDH collaborated to listen to Hmong fishers, youth, parents and elders in several structured settings. The goal was to learn about fish and health in Hmong culture, the kinds and amounts of fish consumed, and preferred ways of receiving information about fish.

#### **1. Lake Phalen Shoreline Survey**

The St. Paul Parks and Recreation Youth Corps Program volunteered their youth to conduct interviews of people fishing at park lakes during the second half of August 2008. MDH and SPRCDPH staff designed the survey (Appendix A) and then met with the youth who implemented the survey. The purpose of this brief survey was to look at practices, beliefs, and attitudes relating to fishing habits and consumption among St. Paul residents, with a special focus on the Hmong community.

Of the 44 respondents interviewed while fishing, 7 (16%) were Hmong. While the usefulness of this survey is limited due to the small number of Hmong interviewed, the responses are similar to results obtained from other larger surveys of the Hmong community in Minnesota. Two important concepts are consistent across surveys: people understand that mercury is found in predator fish, and some have the misconception that mercury concentrates in the fat of fish. While the limited number of Hmong participants was a disappointment, the survey did accomplish outreach to Hmong teenagers in the Youth Corps program through the training

process and enabled a connection with other youth corps programs that involve Hmong youth elsewhere in St. Paul. The training provided to the youth gave us a first opportunity to work together on messaging and helped us better define our project goals.

## **2. Listening sessions**

MDH and SPRCDPH staff conducted listening sessions as a way to continue to gather information about fish consumption in the Hmong community. These listening sessions were convenience samples of existing Hmong groups who met together regularly because they participated in another community program such as a summer youth corps or a gardening collaborative. Four listening sessions provided a rich collection of information about eating habits, fish stories, recipes, reflections on contamination in fish, and suggestions for communicating with the Hmong community. These informal meetings provided an opportunity to ask follow up questions and gather a broader range of information than could have been obtained in structured surveys.

### **Roosevelt Housing Community Center Hmong Women Gardeners**

The first two listening sessions were conducted with a convenience sample of Hmong women gardeners from the Roosevelt Homes Housing Community Center of St. Paul. The District 2 (a neighborhood association in the City of St. Paul) Hmong gardens are subsistence gardens worked by Hmong elders from the nearby Roosevelt Homes housing. They have organized the area into garden plots and grow traditional vegetables using compost and other environmentally friendly methods.

Participants were recruited by Xe Susane Moua, the District 2 coordinator, who is also a Master Gardener. She led and interpreted the listening sessions. Groups met on two evenings, October 13 and October 20, 2008, with 10 women and 4 men in the first group, and 12 women in the second group. In exchange for their participation a financial contribution was made to their “water fund,” designated to be used to bring piped water to their community garden plots. Modest refreshments were also served.

Three staff from MDH and SPRCDPH observed, listened, and took notes on the sessions. Notes were later compiled and reviewed by the three staff. The intent of the listening sessions was to answer these questions:

- What kinds and amounts of fish are consumed?
- What are the preferred sources/delivery methods for information?
- What are cultural meanings/themes related to fish in Hmong culture?

The list of questions is included in Appendix B of this report.

Each session began with posters of fish spread out on the floor in order for participants to easily identify species of interest. The participants were excited and engaged in discussions about the pictures, their fishing experiences both at “home” and in the U.S, and ways to prepare fish. Discussion quickly turned to questioning the staff about safe eating, how to tell if a location was a safe place to fish, and even requesting recipes for preparing fish. While staff were reluctant to give advice because they did not want to bias the responses of the participants, when they asked participants to tell how they chose a location, the participants were insistent that they wanted the

“government” to give advice. In response to this request, staff did give a brief summary of fish consumption guidelines.

Based on the request for advice in the first listening session, staff prepared a simple story about how mercury gets into fish, using fish pictures and a flannel board to illustrate the process. This story was shared midway through the second listening session when the participants had shared their thoughts and stories and then requested information from staff.

### **Community Design Center Youth Corps**

The previous shoreline youth survey led to contact with another summer youth program administered by the Community Design Center (CDC) of Minnesota. The CDC is a St. Paul-based organization whose mission is to help revitalize low-to-moderate income communities by providing technical assistance and conducting programs that will enhance the physical, economic, social, ecological, and spiritual well being of the community and its residents. Among these programs is a youth program on the east side of St. Paul where youth plant and work in community gardens, engage in cooking classes and plant rain gardens. Youth who are aged 14-18 years old can also be Youth Conservation Corps interns, learning basic job skills, discovering career opportunities related to the environment and learning the importance of being actively involved with their community.

The third listening session was conducted with eight Hmong young people who participate in the CDC’s Youth Corps. The fourth session was conducted later the same evening with four parents of Youth Corps members. All shared an evening meal together in-between the two sessions. Participants were given a fifteen dollar gift card to a local store in appreciation of their participation. Xe Susane Moua also facilitated and interpreted these two sessions, although the youth primarily responded in English. The list of questions was the same as used for the earlier listening sessions (Appendix C) with slight modifications for the youth session.

### **Listening Session Findings**

Findings from all four listening sessions are summarized below:

#### **Frequency and Preferences**

- None of the participants in any of the four groups would characterize themselves as eating “a lot” of fish. The women gardener groups primarily relied on fish given to them by relatives or purchased fish.
- The consumption frequency seems to be at most 1 time per week, with some exceptions. Exceptions include eating fish more frequently for health reasons.
- Participants stated that they eat a variety of locally caught fish. While the crappie seems to be most popular, they also mentioned sunfish, bass, catfish, and buffalo fish. This is contrast to verbal feedback from the Capitol Sportsman’s Chapter that indicated a strong preference for white bass.
- Participants reported that they didn’t eat a lot of store bought fish, except tilapia. This was especially true for the low income, older participants. Common store bought fish were tilapia and the “red tailed fish.” Youth also reported eating salmon.
- Participants did not report eating the “do not eat” fish or fish with moderate levels of mercury in Minnesota.

- Fish may be used in a traditional meat salad (“lab” in the Hmong language), or prepared with one of the following methods; fry, grill, stew, steam, or smoke.

#### Understanding of Contamination

- There is a general awareness of contamination, but specific details are fuzzy.
- Knowledge of the MN Fish Consumption Guidelines is not accurate.
- There is a perception that clean looking water will have fish that are safe to eat and dirty looking water will have fish with higher contamination – and that fish from city lakes are contaminated.
- Many participants mentioned that proper filleting is a good way to reduce contaminants.

#### Value of Fish and Health

- Participants have a strong desire to make changes to improve health.
- The value of fish was related to diet and health (one specialty medicine fish mentioned is associated with intelligence, but the exact species could not be determined).
- The value of fishing as an activity is more than obtaining food; family activity, fresh air, and exercise were all mentioned as benefits of fishing.
- Eating fish is part of Hmong culture. Information on how to prepare fish is traditionally passed down from parents to children. This process may be modified in the U.S. For example, participants mentioned learning from an older brother who is a teacher, from a physician, from the Food Network on TV, from young Hmong professionals and still sometimes from parents.
- Participants perceive that they are experiencing a new group of diseases here in the U.S. as compared with what they saw in their elders in Laos.

#### Educational orientation

- Participants expressed a desire to learn.
- Participants see the government as an authoritative source of information.

#### **Mental Models Mapping**

Information gathered from the Shoreline Survey and the four Listening Sessions was used to construct a modified “mental model” that reflected Hmong community understanding of fish contamination and safe eating guidelines. A mental model is a representation or “map” of a person’s perception of reality. (Morgan, M. G., Fischhoff, B., Bostrom, A., and Atman, C.J. *Risk Communication: A Mental Models Approach*. Cambridge; Cambridge University Press, 2002). A mental model may include concepts and relationships that are true and also other concepts that are incorrect. People use their mental model to make choices and decisions, anticipating a predictable result. This lay version of reality can be compared to a subject matter expert’s mental model. Educators can then identify concepts that are correct that should be reinforced, misconceptions that should be corrected and new concepts that are necessary for making informed decisions or adopting a new behavior.

Information from the survey and listening sessions was grouped as follows:

**Existing Concepts**

Fishing is a fun family activity.

Fish is good for your heart and health.

In America, we are experiencing different diseases than our elders did in Thailand and Laos.

We need to make changes in lifestyle and habits to prevent disease and maintain health.

Children and pregnant women are a special population that requires special care.

**Misconceptions**

Lakes and rivers that are rural or look clean have fish that are healthy to eat.

Lakes and rivers that are urban or look dirty have fish that are not healthy to eat.

Removing fat while cleaning/cooking will remove contaminants including mercury.

**New Concepts**

The look or location of lake is not a good way to decide if fish will be healthy to eat.

We can't see, smell or taste mercury.

Mercury falls from air into all lakes in Minnesota.

Look to the guidelines to find fish healthy to eat.

Choose fish that don't eat other fish.

Choose fish that are smaller and younger.

Choose which species, more than which location

Wait the right amount of time between eating meals of fish.

**Main Messages for Hmong Fish Consumption Guidelines Outreach**

1. A rural/clean-looking lake/river does not mean the fish are healthy to eat.
2. Choose fish that are healthy to eat by choosing the right kind and size of fish and waiting the right time in-between meals of fish.
3. The advice is different for mothers/children than it is for men.
4. Eating fish plays an important role in preventing diseases here in America and good for babies and young children..
5. Eat a variety of locally caught fish. (not just white bass)

### **Needs Assessment and Field Testing**

The information gathered above also indicated the need to work with a larger group of active fishers with limited English proficiency. Although we had anecdotal information indicating that fish consumption was high for some members of the Hmong community, we had not yet heard from people who fished and ate fish frequently. To facilitate interaction with frequent anglers and consumers, the MDNR-SEA invited MDH and SPRCDPH to participate in a joint meeting with a local chapter of Hmong sportsmen, the Capitol Sportsmen's Chapter of the Minnesota Deerhunters' Association (CSC) and the MDNR-SEA.

Prior to the community event, staff from MDNR-SEA, MDH and SPRCDPH met with leaders from the CSC. After discussing each group's purpose and goals for the event, MDH presented ideas for surveying attendees. CSC leaders John Ny Vang and John X Vang provided valuable input on expected preferred species and endorsed the survey methodology. Because these leaders organized and hosted the event, the credibility of MDH/SPRCDPH staff was enhanced.

Tong Vang, part of the MDNR-SEA outreach staff, announced the event on Hmong radio. He encouraged listeners, specifically those who are anglers and eat fish, to call and register with him. He screened callers to make sure they did catch fish and eat fish. Mr. Vang is well known in the Hmong radio listening community for his periodic announcements on changes in regulations, new updates and fishing advice.

At the beginning of the meeting, the MDNR provided an update on fishing regulations, discussed plans for improving white bass fishing and provided time for attendees to ask questions, give input, and share their experiences and views. The majority of attendees were male, although there were a number of females. A wide range of age groups appeared to be represented.

During the second part of the meeting, MDH and SPRCDPH staff conducted a unique needs assessment of Hmong fisher preferences for fish species and consumption frequencies at a community event that included more than 120 Hmong participants. Staff also field-tested a home-made video version of the flannel board story about mercury in fish with a pre- and post-test evaluation.

John Ny Vang emceed the event, translated the English presentations and facilitated the needs assessment and video evaluation questions.

Results from the survey and video evaluation were summarized by John Ny Vang on Hmong Radio KPNP 1600 am on June 22, 2009 and were re-broadcast several times over the summer months.

**Product #1**  
**A Novel Needs Assessment**

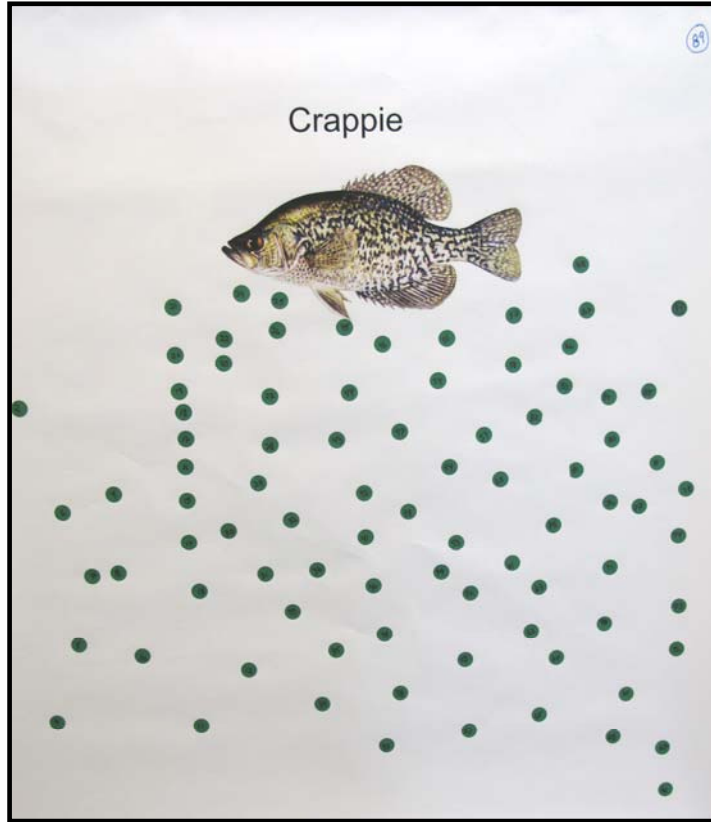


Picture 1- Participants view the life-sized fish posters.

Due to language issues, the needs assessment engaged participants in active responses using pictures, video and spoken words. Participants were animated and enthusiastically provided qualitative and quantitative data on fish preferences and eating frequencies. Fifteen posters, each with a life-size picture of a different fish species were posted on the walls of the meeting room. The posters seemed to initiate interaction, as attendees were drawn to these colorful pictures of fish when they arrived. Five green dot stickers were given to each of the participants. Participants were invited to place one dot on up to five posters with the picture of the fish species they most preferred to eat.

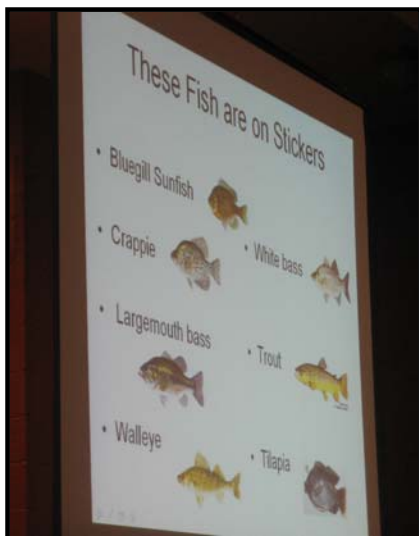


Picture 2 – Fifteen of the fish species reported to be most popular for the Hmong community were displayed on the posters.



Picture 3- Participants placed each of their five green dots on a different poster.

Next, a new set of posters were hung and participants were given a strip of mailing label size stickers with pictures of seven species of fish. They were invited to place the picture of the fish onto posters that best represented how often they ate that species of fish; once a week, twice a week, more than twice a week and once a month. The species pictured on the labels had been selected based on input received during the pre-meeting about the most popular species to eat. There was also space provided on the stickers to write in other species. This exercise was completed two times, once for fish eaten during the time of year they fish and once for year round consumption.



Picture 4 – The fish choices on the stickers were also displayed on the screen and the interpreter named them one by one.



Picture 5 – The frequency poster



Picture 6 – A participant places her fish sticker on the poster.

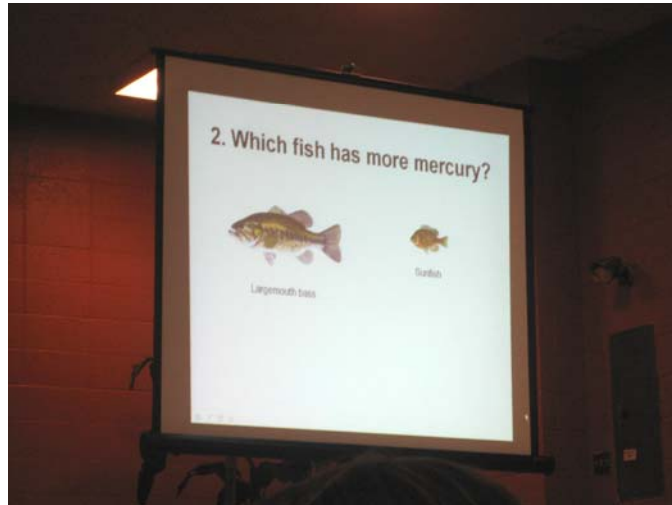
The methodology that staff used for determining fish preference and frequency is based on a process called Participatory Rural Appraisal. It bridges the language and culture barrier by allowing participants with limited English proficiency to physically respond to oral and visual cues. This methodology facilitates acquisition of qualitative and quantitative data in a cross-cultural context.



Pictures 7 and 8 – Participants were engaged and enthusiastic.

Finally, the participants took a brief pretest, viewed a homemade video on mercury in fish and then completed a post test. The video was shown once with English narration and then a second time with the interpreter speaking Hmong. The tests contained questions written in English and

pictures to illustrate the question. For both the pre and post tests (Appendix D), the questions and pictures identical to the paper version were displayed on a screen while the interpreter translated the questions, one by one. The data from this assessment will be valuable in tailoring outreach about MDH fish consumption guidelines for the Hmong community.



Picture 9 – The PowerPoint slides showed the same questions as were on the test papers, one by one.

### **Fish Preference Results– What kind of fish do you eat?**

The most popular species to eat indicated by the group were crappie and white bass. Walleye were also popular. The results of the needs assessment were very similar to the list of most popular fish provided by John Ny Vang and John X. Vang in the pre-meeting discussion. While the fish stickers did allow for participants to add in a fish not pictured, the pictured fish were most popular and the “write-ins” few.

The least popular fish to eat were bullhead, sucker, perch, carp and drum (Table 1). Drum is the same as sheepshead (the name more commonly used). While anecdotal reports suggested that drum is popular in the Hmong community, this was not true for participants in this survey. This finding should be further evaluated.

**Table 1. Species Preference**

<b>Species</b>	<b>Number of Dots</b>
White Bass	92
Crappie	89
Walleye	75
Largemouth Bass	33
Trout	32
Tilapia	29
Sunfish (Bluegill and Pumpkinseed)	27
Channel Catfish	24
Buffalo	11
Northern Pike	10
Carp	9
Perch	7
Sucker	5
Bullhead	3
Drum	3

**Fish Frequency Results – How often do you eat fish?**

Again, the most frequently eaten fish reported were crappie and white bass (Tables 2 and 3). The results of the preference question and the frequency question are consistent. It is expected that people consume less self-caught fish year round than during the time of year they fish. This pattern was reported for the popular species but not for the species eaten less often. This result indicates a need to further test the survey directions and logistics. There may have been a misunderstanding of the question. People may have reported how often they would like to eat a species versus how often they actually eat it.

**Table 2. Fish Consumption Frequency**

	Bluegill	Crappie	Largemouth bass	Walleye	Trout	White bass	Tilapia
<b>Year round consumption</b>							
more than 2 times/week	1	8	13	15	9	16	3
2 times/week	1	12	5	5	5	14	8
1 time/week	6	12	2	6	2	8	4
1 time/month	14	14	9	14	13	12	19
Total	22	46	29	40	29	50	34
<b>“During the time of year you fish”</b>							
more than 2 times/week	6	11	9	15	3	21	11
2 times/week	7	25	10	13	9	18	13
1 time/week	14	27	11	13	10	24	6
1 time/month	9	17	17	20	19	18	19
Total	36	80	47	61	41	81	49

**Table 3. Fish Consumption Frequency: Species Write-ins**

	<b>Write-ins</b>
<b>Year round consumption</b>	
more than 2 times/week	salmon-1, buffalo-1, catfish-1, striper-1, Dic-1
2 times/week	none
1 time/week	buffalo-1, carp-1, smelt-1
1 time/month	smelt-1, salmon-1, buffalo-1, catfish-1, carp-1, sauger-1
<b>“During the time of year you fish”</b>	
more than 2 times/week	catfish-1, buffalo-1
2 times/week	none
1 time/week	northern pike-1, catfish-1, sturgeon-1
1 time/month	striper-1, sauger-1, catfish-1, bullhead-1, rainbow-1, carp-2, muskie-1/yr

**Results from Fish and Mercury Pre and Post Tests:**

The draft video talks about how mercury gets into fish, which fish have the lowest amounts of mercury and which fish have the most mercury and how fish from city lakes are safe to eat.

People generally understood (Table 4):

- Eating fish can be good for your health
- Smaller/younger fish have less mercury
- Pregnant women and kids need to be more careful about which fish they eat and how often

People demonstrated less understanding of the concept that fish from city lakes are sometimes less contaminated with mercury than rural lakes. The persistent perception that the appearance or location of a lake can predict the level of contamination is a construct that is consistent with what we heard in our listening sessions.

**Table 4. Pre and Post Test Results:**

	Before Video	After Video
Do fish from city lakes have more mercury than fish from country lakes?		
yes	74	56
no	4	36
missing	8	4
total	86	96
Which fish has more mercury?		
largemouth bass	54	79
sunfish	25	11
missing	6	5
both	1	1
total	86	96
Which fish has more mercury?		
14 inch walleye	16	6
21 inch walleye	65	86
missing	5	2
both		2
total	86	96
Which fish is safer to eat more often?		
white bass	20	26
crappie	61	62
missing	3	3
both	2	5
total	86	96
Who needs to be more careful?		
Pregnant women and kids	64	76
Men	14	12
missing	5	3
both	3	5
total	86	96
Eating fish can be good for your health		
TRUE	85	88
FALSE	0	5
missing	1	2
both		1
total	86	96

MDH staff plan to use the same evaluation methodology with other Hmong groups and also other limited English proficiency groups as resources and time permit. Staff found that needs assessment of limited English proficiency populations benefits from the active participation of the target population. Using pictures and oral communication, the participants can provide

quantitative and qualitative responses that provide helpful information for the community as well as the environmental health staff.

## **Project #2**

### **“Talk about Fish and Way of Eating Fish” (Tham txog ntse thiab kev noj ntse)**

The first draft of the video was developed to address questions and misunderstandings discovered through the listening sessions. This first draft was a homemade movie in English with the intent of using it to gauge the utility of a movie and to solicit cost estimates for a Hmong version. Following the CSC community event, John Vang expressed interest in continuing to assist with getting fish consumption information to the Hmong community. He agreed to translate and narrate the video in Hmong. Fong Heu, a local Hmong film producer who had produced the first video for MDH in 1996, agreed to produce the new DVD.

Translating the script from the flannel board version included adjusting for cultural context and meaning. Both John Vang and Fong Heu provided insight into more culturally appropriate ways to express the concepts identified through the listening sessions. They spent time thinking through ways to name “mercury” in Hmong, as there is no existing name. They also revised the script to follow Hmong patterns of building support for new ideas and drawing conclusions (Appendix E). The tone of the DVD was conversational and authoritative without being threatening or condescending.

The Hmong version of the DVD will be distributed through CSC, MDH, MDNR-SEA, and SPRCDPH. It will also be posted on the MDH web site. Several venues and events where the DVD can be evaluated using the pre- and post-tests used at the CSC event have been identified. SPRCDPH contracted with a consultant for Hmong outreach for fish consumption outreach and other environmental health topics.

## **Appendices**

Appendix A - Shoreline Survey

Appendix B - Focus group questions, Women Gardener version

Appendix C - Focus group questions, Community Design Center Youth Corps/Parents version

Appendix D - Pre/Post Test for Fish and Mercury Video

Appendix E – Talk about Fish and Way of Eating Fish DVD script

Appendix A - Shoreline Survey

Interviewer(s): \_\_\_\_\_  
 Location/Lake Name: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Survey Given in Hmong: Yes/ No (circle one)

## FISH ADVISORY SURVEY

Minnesota Department of Health and the  
 Saint Paul – Ramsey County Department of Public Health

1. Do you eat fish?

- Yes *If yes, continue with question #2*
- No *If no, go to question #8.*

2. What kind of fish do you eat?      Where do you get it?      How often do you eat it?

Type of Fish (Walleye, Sunfish, etc.)	Source (check all that apply)	Frequency (insert #, mark only one)
<i>Example:</i>  <b>Walleye</b>	<input type="checkbox"/> Catch it myself <input checked="" type="checkbox"/> From a friend or family member who catches fish <input checked="" type="checkbox"/> Fish market/grocery store	___ times per week <u>  2  </u> times per month ___ times per year
<b>Do you eat any other type of fish?</b> (if yes, fill in type, source and frequency)		
	<input type="checkbox"/> Catch it myself <input type="checkbox"/> From a friend or family member who catches fish <input type="checkbox"/> Fish market/grocery store	___ times per week ___ times per month ___ times per year
<b>Do you eat any other type of fish?</b> (if yes, fill in type, source and frequency)		
	<input type="checkbox"/> Catch it myself <input type="checkbox"/> From a friend or family member who catches fish <input type="checkbox"/> Fish market/grocery store	___ times per week ___ times per month ___ times per year
<b>Do you eat any other type of fish?</b> (if yes, fill in type, source and frequency)		
	<input type="checkbox"/> Catch it myself <input type="checkbox"/> From a friend or family member who catches fish <input type="checkbox"/> Fish market/grocery store	___ times per week ___ times per month ___ times per year

3. Have you heard anything about limiting how much fish you eat?
  - Yes
  - No
  
4. Have you heard that fish may contain contaminants from the environment, like mercury?
  - Yes
  - No
  
5. Do walleye or sunfish (also called bluegill) contain more mercury? (show pictures if person doesn't know species)
  - Walleye
  - Sunfish
  - Not sure
  
6. Does the fat or the fillet of fish contain more mercury?
  - Fillet
  - Fat
  - Not sure
  
7. Do older or younger fish contain more mercury?
  - Older fish
  - Younger fish
  - Not sure
  
8. Where do you get news/important information? I have several choices – please answer “yes” or “no” for each item. (check all that apply)
  - Friends/Family
  - Community Group
  - Doctor
  - Traditional Healer
  - Clinic/WIC
  - TV
  - Radio
  - Newspaper/Magazines
  - Internet
  - Other: \_\_\_\_\_

9. What is the best way to share important health information with you? Please choose one of the following. (Read choices slowly and clearly – check only one.)

- |   |  |
|---|--|
| <input type="checkbox"/> Friends/Family     | <input type="checkbox"/> TV                  |
| <input type="checkbox"/> Community Group    | <input type="checkbox"/> Radio               |
| <input type="checkbox"/> Doctor             | <input type="checkbox"/> Newspaper/Magazines |
| <input type="checkbox"/> Traditional Healer | <input type="checkbox"/> Internet            |
| <input type="checkbox"/> Clinic/WIC         | <input type="checkbox"/> Other: _____        |

10. Comments?

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11. What is your ethnicity? (choose only one option)

- Hmong
- Vietnamese
- Hispanic
- African American
- Asian
- Caucasian
- Other \_\_\_\_\_

11. What gender do you identify with?

- Male
- Female

12. What is your age? \_\_\_\_\_

**Thank you for taking our survey!**

### Additional boxes for Question 2

<b>Type of Fish</b> (Walleye, Sunfish, etc.)	<b>Source</b> (check all that apply)	<b>Frequency</b> (insert #)
	<input type="checkbox"/> Catch it myself <input type="checkbox"/> From a friend or family member who catches fish <input type="checkbox"/> Fish market/grocery store	___ times per week ___ times per month ___ times per year
<b>Do you eat any other type of fish?</b> (if yes, fill in type, source and frequency)		
	<input type="checkbox"/> Catch it myself <input type="checkbox"/> From a friend or family member who catches fish <input type="checkbox"/> Fish market/grocery store	___ times per week ___ times per month ___ times per year
<b>Do you eat any other type of fish?</b> (if yes, fill in type, source and frequency)		
	<input type="checkbox"/> Catch it myself <input type="checkbox"/> From a friend or family member who catches fish <input type="checkbox"/> Fish market/grocery store	___ times per week ___ times per month ___ times per year
<b>Do you eat any other type of fish?</b> (if yes, fill in type, source and frequency)		
	<input type="checkbox"/> Catch it myself <input type="checkbox"/> From a friend or family member who catches fish <input type="checkbox"/> Fish market/grocery store	___ times per week ___ times per month ___ times per year
<b>Do you eat any other type of fish?</b> (if yes, fill in type, source and frequency)		
	<input type="checkbox"/> Catch it myself <input type="checkbox"/> From a friend or family member who catches fish <input type="checkbox"/> Fish market/grocery store	___ times per week ___ times per month ___ times per year

Appendix B - Focus group questions, Women Gardener version

## **Roosevelt Women Gardeners – Listening Session Questions**

### Eating Fish – Opening up a discussion

Describe the last time you had fish.

- a. Was it for a special occasion?
- b. Where did you get the fish?
- c. Where else do you typically get fish?
- d. Who prepared it?

### Cultural Meaning/Health Beliefs

What value/meaning do fish have in the Hmong culture?

What is the importance of including fish in your diet?

Do you have some ideas about fish and the relationship to your health?

### Making Choices about Fish/Behaviors

What type of fish do you eat?

Where do you buy fish?

Where do you catch fish?

Do you share the fish you catch?

With relatives, other families, friends, at potlucks, ceremonies or celebrations?

Do you freeze fish for future meals?

Who plans the meals in your family?

Who decides if fish is on the menu?

Do you eat less or more fish now than you did before? Why?

Do you notice any changes in how much fish you or your neighbors are eating?

Why do you think these changes have happened?

Economy, seasons of year, cultural adaption

### Knowledge of Fish

Are there any bad things about eating fish?

Things to be careful of...contaminants. What do you know about contaminants in fish?

In general, how/where do you learn about new things?

How do you learn about new information?

If we had information about fish, how would you like to get that information?

Other – types/kinds of fish, relative perceived value

Appendix C - Focus group questions, Community Design Center Youth Corps/Parents version

**Community Design Center Youth Corps – Listening Session Questions**  
Eating Fish – Opening up a discussion

Describe the last time you had fish.

- a. Was it for a special occasion?
- b. Where did you get the fish?
- c. Where else do you typically get fish?
- d. Who prepared it?

Cultural Meaning/Health Beliefs

What value/meaning do fish have in the Hmong culture?

What is the importance of including fish in your diet?

Where do you get your information about your health? Or how?

Is there a connection between fish and your health?

Making Choices about Fish/Behaviors

What type of fish do you eat?

How often do you eat fish?

*(Adults only)* Where do you buy fish?

Where do you catch fish?

Do you share the fish you catch?

With relatives, other families, friends, at potlucks, ceremonies or celebrations?

*(Adults only)* Do you freeze/save fish for future meals?

*(Adults only)* Who plans the meals in your family? Who decides if fish is on the menu?

Knowledge of Fish

Are there any bad things about eating fish?

Things to be careful of contaminants. What do you know about contaminants in fish?

In general, how/where do you learn about new things?

How do you learn about new information?

If we had information about fish, how would you like to get that information?

Other – types/kinds of fish, relative perceived value

Appendix D - Pre/Post Test for Fish and Mercury Video

Fish Story I



1. Do fish from city lakes have more mercury than fish from country lakes?

Yes

No

2. Which fish has more mercury?



Largemouth bass



Sunfish

3. Which fish has more mercury?

14 inch walleye



[-----14-----]

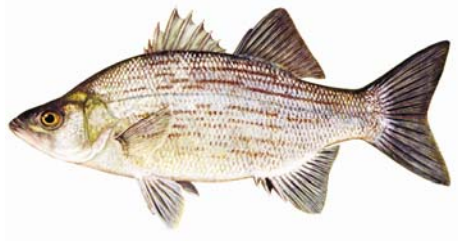
21 inch walleye



[-----21-----]

**4. We can safely eat some fish more often than other fish.**

**Which fish is safer to eat more often?**



White bass



Crappie

**5. Some people need to be more careful than other people about**

- the kinds of fish they eat, and
- how often they eat fish.

**Who needs to be more careful?**

Pregnant women and kids

Men

**6. Eating fish can be good for your health.**

True

False

Fish Story II



1. Do fish from city lakes have more mercury than fish from country lakes?

Yes

No

2. Which fish has more mercury?



Largemouth bass



Sunfish

3. Which fish has more mercury?

14 inch walleye



[-----14-----]

21 inch walleye



[-----21-----]

4. We can safely eat some fish more often than other fish.

Which fish is safer to eat more often?



White bass



Crappie

5. Some people need to be more careful than other people about

- the kinds of fish they eat, and
- how often they eat fish.

Who needs to be more careful?

Pregnant women and kids

Men

6. Eating fish can be good for your health.

True

False

7. What was the most important thing you learned today?

8. Please write down other questions you would like us to answer.

Appendix E – Talk about Fish and Way of Eating Fish DVD script

Title: Talk about Fish and Way of Eating Fish

***Tham txog ntses thiab kev noj ntses***

In Minnesota we can catch fish to eat from many rivers and lakes. We also can buy fish to eat from the market.

***Nyob MN peb muaj dej ntws, pas dej thiab ntses ntau hom. Peb kuj mus yuav ntses tau tom tej kiab khw thiab.***

Fish are fun to catch. Most fish are healthy to eat. They have good fat for our bodies and are especially good for growing babies. It helps their brains and eyes grow strong.

***Nuv ntses kuj lom zem. Ntses feem ntau noj kuj zoo rau koj lub cev. Lawv muaj cov roj zoo rau peb lub cev thiab zoo rau me nyuam mos kev loj hlob. Nws pab lawv tej paj hlwb thiab qhov muag loj hlob muaj zog.***

You may have heard that have chemicals. This is true.

***Tej zaum nej yuav tau hnov lawm tiam ntses nyob MN muaj kua tshuaj. Qhov nov, muaj tseeb.***

Therefore, we are going to talk about the chemical in fish that is of most concern for health in our state. This chemical is mercury

***Yog li, peb yuav tham txog yam kua tshuaj (chemical) nyob hauv ntses uas yog yam txhawj xeeb heev rau kev noj qab haus huv hauv peb lub xeev. Yam kua tshuaj (chemical) no yog kua hlau (Mercury).***

We cannot see, taste or smell mercury whether it is in air, water or in fish.

***Peb yeej tsis muaj peev xwm pom tau. saj tau los yog nhyiav tau cov Kua Hlau Mercury no txawm nws yuav nyob nrog huab cua, nyob hauv dej los nyob rau hauv ntses.***

Mercury is especially harmful to young children and the baby growing inside its mother. So women who are pregnant or planning to have a baby should be careful about the fish they eat. A lot of mercury can even be dangerous for adults.

***Kua Hlau (Mercury) mauj peev xwm ua mob rau me nyuam yau thiab me nyuam mos uas tseem loj hlob nyob hauv leej niam lub nrog cev. Yog li, cov poj niam***

**uas xeeb tub los sis tseem npaj yuav muaj me nyuam, yuav tau xyuam xim, txog rau tej ntses lawv noj. Cov Kua Hlau Mercury no thaum muaj ntau kuj muaj cuab kav ua teeb meem rau cov neeg laus.**

But fish are nutritious to eat, so how can we get the good health benefits from fish for ourselves and our family without getting too much mercury?

**Tab sis, ntses kuj yog ib yam zoo noj, yog li yuav ua li cas, peb thiaj li yuav tau txoj kev noj qab haus huv los ntawm kev noj ntses, rau peb tus kheej thiab peb tsev neej, thiab cais kom txhob tau cov Kua Hlau Mercury no ntau ntau?**

Many people make the mistake by thinking that fish from clear lakes and rivers are good and safe to eat. But mercury does not follow or obey that rule. Mercury resides in all lakes and rivers whether or not they are clear or murky and in the city or rural.

**Muaj ntau leej yuav xav yuam kev tias ntses nyob hauv tej dej ntshiab yuav huv thiab zoo noj, tsi muaj teeb meem. Tab sis, Kua Hlua Mercury tsis mloog los ua raws li txoj cai no. Kua hlau (Mercury) yeej muaj nyob rau txhua lub pas dej thaib cov dej ntws tsis hais cov dej yuav ntshiab los nrov los sis yuav nyob hauv nroog los nyob sab nraum.**

This is because mercury comes with the wind and air. Mercury gets into the air from power plants that burn coal to make electricity and burning trash that contains mercury. Mercury can travel long distances in the air. Most of the mercury in the air in Minnesota are blown in from other places.

**Qhov no vim yog Kua Hlua Mercury yas los nrog huab nrog cua. Nws nyob rau saum tej huab cua, vim yog los ntawm tej chaw zom ua hluav taws xob uas hlawv pob zeb thee thiab khoom sws uas muaj Kua Hlau (Mercury). Mercury muaj peev xwm yas mus tau deb, nrog huab cuab. Feem ntau ntawm cov KuaHlau (Mercury) nyob saum huab cua hauv MN no, yog tshuab lwm qhov los.**

It is not a problem to our body's health when we breathe the air but it is a problem when the mercury falls into lakes and rivers.

**Nws tsis muaj teeb meem rau peb lub cev thaum peb ua pa, tab sis nws muaj teeb meem thaum cov Kua Hlau Mercury no poob rau pas dej thiab tej dej ntws.**

It gets into the food fish eat. Fish can't get the mercury out of their bodies.

**Nws poob mus rau ntses tej zaub noj. Ntses tsis muaj peev xwm tshem tau cov Kua Hlau Mercury no tawm ntawm lawv cev nqaij daim tawv mus.**

When bigger fish eat the smaller fish, they will get the mercury from the smaller fish. The more small fish they eat, the more mercury builds up in their bodies. The longer they live, the more fish they eat and the more mercury they have in their bodies.

***Yog thaum tus ntses loj noj tus ntses mes lawv yuav tau cov Kua Hlau Mercury no los ntawm tus ntses mes. Thaum lawv yim noj cov ntses mes, lawv yim huab tau cov Kua Hlau Mercury no ntau ntxiv rau hauv lawv lub cev. Lawv yim nyob ntev, lawv yim noj cov ntses mes ntau ntxiv, thiab yim muaj cov Kua Hlau Mercury nyob hauv lawv lub nrog cev lawm ntau.***

On the other hand, fish that only eat bugs and plants have less mercury than fish that eat other fish.

***Tab sis, cov ntses uas tsuas noj kab thiab zaub nkaus xwb, lawv muaj cov Kua Hlau Mercury no tsawg dua cov ntses uas noj lwm cov ntses.***

Bigger fish and older fish have the most mercury.

***Tus ntses loj dua thiab laus dua, muaj Kua Hlau Mercury ntau dua.***

So, to get the good health benefits that come from eating fish with little mercury, choose fish that are smaller and younger. Choose fish that don't eat other fish.

***Yog li, yuav kom tau txoj kev noj qab haus huv los ntawm kev noj ntses uas muaj Kua Hlau Mercury tsawg, Xaiv tej ntses uas mes zog thiab mos. Xaiv tej ntses uas tsis noj lwm cov ntses.***

Though our body has the ability to get rid of mercury naturally, it will take a some time to get rid of the mercury from our body.

***Txawm peb lub cev muaj cuab kav tshem tau cov Kua Hlau Mercury no ntawm hauv peb lub cev tawm, nws yuav siv sij hawm ntev heev rau peb lub cev, ua rau cov Kua Hlau Mercury no yaj kom tas tawm hauv peb lub cev.***

So, after choosing the right kind and the smaller size of fish to eat, we must wait for some time before eating another meal with fish.

While we wait, our bodies will slowly get rid of the mercury.

***Yog li, tom qab xaiv tau hom ntses uas yog thiab hom ntses mes, los noj, peb yuav tsum tau tos kom ntev me ntsis ua ntej peb rov qab noj duas ib pluag ntses. Lub sib hawm peb tseem tos, peb lub cev yuav muab cov Kua Hlau Mercury no mab mam zom tawm mus.***

That way, the mercury will not hurt us or our children, and we will get the good health benefits that come from fish.

***Thaum ua raws li no, Mercury thiaj yuav tsis ua rau pab los tej me nyuam muaj mob, thiab pab thiaj li tau txoj kev noj qab haus huv los ntawm kev noj ntses.***

Minnesota Department of Health health scientists have developed advice that will help us to know the benefits of eating fish like all the good nutrition as well as to avoid contaminants like mercury as much as possible.

***MN lub Koom Haum Saib Kev Noj Qab Haus Huv Hauv Xeev MN nov, pab cov neeg tshuaj ntsuam tau los tsim kev cob qhia uas pab nej kom paub zoo txog rau ntawm kev noj ntses xws li txhua yam kuj yog zoo zaub thaib zam cov Kua Hlau mercury kom ntau li ntau tau.***

This advice is for two groups of people. The kinds of advice are different for these two different groups. The first group is women who won't become pregnant and men. This group can eat as much bluegill sunfish, crappie, and perch as they want. The advice for this group regarding fish that eat other fish which is largemouth, smallmouth, walleye and northern pike is permitted one meal per week. For group number 2, the advice is different.

***Qhov lus qhia no yog rau ob pab neeg. Cov lus qhia no nyias muaj txawv nyias tsis zoo ib yam rau cov neeg no. Thawj pab yog rau cov poj niam uas lawv tsis xeeb tub thiab cov txiv neej. Pab no nej noj cov ntses bluegill sunfish, crappie thiab perch ntau npaum lis nej xav noj los kuj tau. Cov lus hais qhia rau pab neeg no txog kev noj ntses xws li yog ntses largemouth, smallmouth, walleye thiab ntses nothern pike yog cia nej noj tau ib vas thiv ib pluag xwb. Rau pab ob, cov lus hais qhia kuj txawv.***

Group number 2 includes women who are pregnant or who might become pregnant and children, the advice lets them eat bluegill sunfish, crappie, and perch one meal per week. Bluegill and crappie are fish that don't eat other fish and have less mercury in their body.

***Pab thib ob yog rau cov poj niam uas lawv yeej xeeb tub lawm los sis yog tej zaum lawv kuj tseem yuav xeeb tub thiab cov me nyuam yaus, cov lus qhias no yog cia rau nej noj cov ntses bluegill sunfish, crappie, thiab perch ib vas thiv ib pluag. Cov ntses bluegill sunfish thiab crappie lawv yog cov ntses uas tsis noj lwm cov ntses thiaj li muaj kua hlau (mercury) tsawg dua nyob hauv lawv lub cev.***

For fish that eat other fish, the advice is more restricted because they accumulate more mercury in their body. So, for smallmouth bass, largemouth bass, walleye and northern pike, the advice only allow one meal per month.

***Yog rau cov ntses uas noj lwm cov ntses qhov lus qhia no yuav ib nyuag nruj zog vim cov ntses no nws muaj kua hlau (mercury) ntau duas nyob rau lawv lub cev. Yog li, rau cov ntses npev qhov ncauj me (smallmouth bass) thiab cov ntses npev qhov ncauj loj (large mouth bass), Walleye thiab Northern Pike, qhov lus qhia no tsuas pub noj ib hli ib pluag xwb. Ntses npev dawb (white bass) los kuj ib yam li thiab.***

When a walleye gets to be bigger than 20 inches or a northern gets to be bigger than 30 inches, that means they've lived longer and eaten a lot more smaller fish so people in group number 2 should not eat walleye and northern that exceed that size.

***Yog thaum tus ntses walleye ntev tshaj li 20 inches lawm los yog tus ntses northern ntev tshaj li 30 inches, nov qhia tau hais tias, lawv nyob ntev los lawm thiab tau noj ntau tus ntses mes dhau los lawm, yog li txhob noj tus ntses walleye los yog tus ntses northern uas ntev tshaj li hais los ntawm no.***

The advice for how often we can safely eat white bass is the same for all people. Men, women and children can safely eat white bass one time each month. This advice may change as we update our information for white bass.

***Cov lus qhia no hais tias peb noj ntses npev dawb (white bass) ntau npaum li cas puas thiaj li yuav nyab xeeb tag nrho rau peb txhua leej txhua tus txog kev noj ntses yuav yog txiv neej, poj niam thiab tej me nyuam yaus yeej noj tau ntses npev dawb (white bass) ib hli ib pluag uas yeej tsis muaj yuav txhawj xeeb dab tsi***

**li. Cov lus hais qhias nov yog muaj kev hloov thiab txawv li cas txog rau cov ntses npev dawb (white bass) no peb mam li ho qhias rau nej paub ntxiv.**

MDH has advice for eating fish caught from specific lakes and rivers and advice for eating fish from the market on their web site.

**MDH muaj lus qhias txog kev noj ntses ua nuv tau los ntawm tej pas dej thiab tej dej ntws thiab lus qhia txog kev yuav ntses tom kiab khws nyob rau lawv qhov web site.**

Fish are great tasting food (meat) and good food for our bodies.

**Ntses yog ib yam nqaij qab thiab zoo zaub rau peb lub cev.**

By knowing the right size and kind of fish we choose for our meal and how long we wait until we can eat fish again, we can keep on enjoying the benefits of eating fish.

**Yog peb paub hais tias cov ntses zoo noj yog cov ntses luaj li cas thiab yog hom twg, thiab yuav tos ntev npaum li cas mam rov noj dua ib pluag ntxiv, peb thiaj li yuav tau txoj kev kaj siab tsim nuj muaj nqi los ntawm kev noj ntses.**