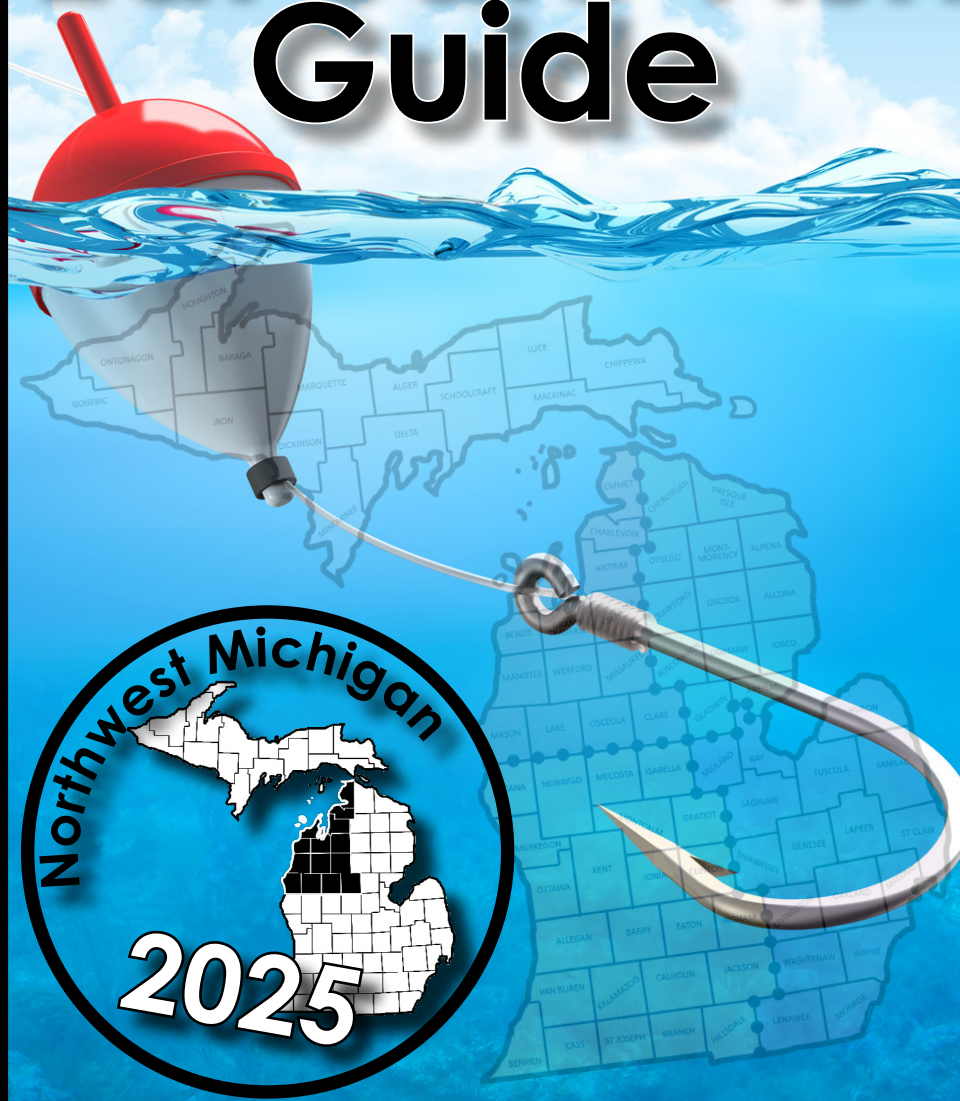


Michigan Department of Health and Human Services'

Eat Safe Fish Guide



Some fish contain chemicals that can harm your health. MDHHS tests filets of fish taken from Michigan's lakes and rivers to learn which fish are safer to eat. The *Eat Safe Fish Guide* lists the fish that have been tested and how much is safe to eat.



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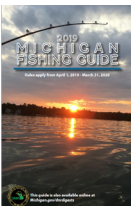
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About the Guide

The *Eat Safe Fish Guide (ESF Guide)* is provided by the Michigan Department of Health and Human Services (MDHHS).

- The fish listed under each lake or river in the *ESF Guide* have been tested for chemicals.
- Scientists from MDHHS test only the part of the fish you would eat — typically the filet — to determine the guidelines included in the *ESF Guide*.
- MDHHS uses the test results from the edible portions to find the average amount of chemicals in the fish species from that lake or river. They use this information to determine how much fish is safe to eat per month.
- The *ESF Guide* is not a rulebook. These are only guidelines to help you make safer choices for you and your family. You are not required to use it.
- The *ESF Guide* does not include rules and regulations about catching or keeping legally-sized fish.
- The *ESF Guide* provides advice for the size range of fish that are typically caught and eaten.

Michigan DNR Fishing Laws



You should get a copy of the *DNR Michigan Fishing Guide* when you purchase your fishing license. If you lost your *Fishing Guide* or have other questions about fishing legally, please call the Michigan Department of Natural Resources (DNR) at 517-284-5830 or visit Michigan.gov/Fishing.

Questions About Eating Safe Fish?

If you have questions about choosing safer fish to eat or would like the *ESF Guide* for another region, please call the Michigan Department of Health and Human Services at 800-648-6942 or visit Michigan.gov/EatSafeFish.



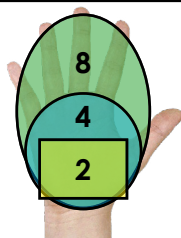
*Choosing Safer Fish

The guidelines in the *ESF Guide* are set to be safe for everyone. **This includes children, people who are pregnant or breastfeedings and people who have health problems, like cancer or diabetes.**

But the *ESF Guide* is also for healthy adults who want to avoid getting too many chemicals in their bodies. Polychlorinated biphenyls (PCBs), dioxins and perfluorooctane sulfonate (PFOS) are linked to cancer and other illnesses. Mercury can cause damage to your brain and nerves. MDHHS uses chemical limits in the *ESF Guide* that will protect everyone who eats fish.

MI Serving Size

- ☑ 8 ounces of fish = size of an adult's hand (large oval)
- ☑ 4 ounces of fish = size of the palm of an adult's hand (small circle)
- ☑ 2 ounces of fish = size of half a palm of an adult's hand (rectangle)



How much is a MI Serving?

Weight of Person	MI Serving Size
45 pounds	2 ounces
90 pounds	4 ounces
180 pounds	8 ounces

Weigh Less?

For every 20 pounds less than the weight listed in the table, subtract 1 ounce of fish.

For example, a 70 pound child's *MI Serving* size is 3 ounces of fish.
 $90 \text{ pounds} - 20 \text{ pounds} = 70 \text{ pounds}$
 $4 \text{ ounces} - 1 \text{ ounce} = \text{a } MI \text{ Serving size of } 3 \text{ ounces}$

Weigh More?

For every 20 pounds more than the weight listed in the table, add 1 ounce of fish.

For example, a 110 pound person's *MI Serving* size is 5 ounces of fish.
 $90 \text{ pounds} + 20 \text{ pounds} = 110 \text{ pounds}$
 $4 \text{ ounces} + 1 \text{ ounce} = \text{a } MI \text{ Serving size of } 5 \text{ ounces}$



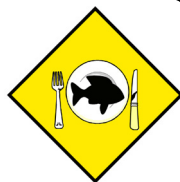
Are you pregnant?

Fish is good for you and your baby! Use your pre-pregnancy weight to find your *MI Serving* size. It is best to avoid eating fish labeled as "Limited" if you're pregnant or breastfeeding.

Special MI Serving Categories

Limited

MDHHS suggests you **avoid eating all fish listed as “Limited”** because of higher levels of chemicals if you:



- Are under the age of 15.
- OR -
- Have health problems, like cancer or diabetes.
- OR -
- Might have children in the next several years, are currently pregnant or are breastfeeding.

If **NONE** of the above apply to you, it is usually OK to eat fish listed as “Limited” **one or two times each year**.

Do Not Eat

No one should eat fish listed as Do Not Eat, regardless of age or health.

When these fish were tested, MDHHS found very high levels of chemicals. Eating even one meal of these fish could possibly lead to health problems in the future, regardless of age or health.



Finding a Balance

Sometimes a child might eat more than 2 ounces of fish or a 180 pound adult might eat more than 8 ounces of fish in one sitting. It's OK; count the number of *MI Servings* you eat in that meal.

For example, let's say the 180 pound adult ate 16 ounces of fish during one meal. That is two *MI Servings* of fish for a person of that size. If the fish is listed as two, four or twelve *MI Servings* in the *ESF Guide*, they're still within their recommended range. If the fish is listed as one *MI Serving* per month or “Limited”, they might want to avoid eating other meals of fish for a while to give their body time to process the chemicals.

No one should eat any amount of fish listed as Do Not Eat in the *ESF Guide*.



Get to know the 3Cs



Choose

If you eat fish often, you can use the *ESF Guide* to choose the safest fish to eat from any Michigan lake or river.



Clean

To help cut out some of the chemicals in your fish, clean away the fat, skin and organs of the fish. Some chemicals, like PCBs and dioxins, are stored in the fat and organs. Note, you can't remove mercury or PFOS from your fish by trimming. Mercury and PFOS are stored in the filet.



Cook

Not only is grilling or broiling your fish healthier than frying, it also helps to get rid of more chemical-carrying fat. Cooking your fish on a grate lets the fat can drip away as it cooks. This removes even more chemicals.

If you follow the 3Cs carefully, you can remove up to half of the chemicals in your fish.

If you see the ^{2x} symbol, that means you can double the number of *MI Servings* per month, if:

- Mercury or PFOS are **not listed** in the “**Chemical of Concern**” column.
- The *MI Serving* is not listed as “**Limited**”.

For example:

Type of Fish	Chemical of Concern	Size of Fish (length in inches)	MI Servings per Month*	Can you double?
Brown Trout	Dioxins	Any Size	Limited [▲]	No, it is “Limited.”
Burbot	PCBs	Any Size	12 ^{2x}	Yes! 24 meals are OK, if you follow the 3Cs.
Carp	Mercury	Any Size	4	No, mercury is listed as a chemical in the fish.

 Fish with eight *MI Servings* or more are considered the best choice to eat.

Use the Statewide Safe Fish Guidelines **ONLY** if:



- Your lake or river is not listed in the regional *Eat Safe Fish Guide*.

OR

- Your lake or river is listed in the *Eat Safe Fish Guide*, but the fish species is not listed.

Statewide Safe Fish Guidelines

Type of Fish	Chemical of Concern	Size of Fish (length in inches)	MI Servings per Month*
Black Crappie	Mercury	Any Size	4
 Bluegill	Mercury	Any Size	8
Brown Trout	Mercury	Any Size	4
Bullhead	Mercury	Any Size	4
Carp	PCBs	Any Size	2 ^{2x}
Catfish	Mercury, PCBs	Any Size	4
Largemouth Bass	Mercury	Under 18"	2
		Over 18"	1
Muskellunge	Mercury	Any Size	1
Northern Pike	Mercury	Under 30"	2
		Over 30"	1
Rock Bass	Mercury	Any Size	4
Smallmouth Bass	Mercury	Under 18"	2
		Over 18"	1
 Suckers	Mercury	Any Size	8
 Sunfish	Mercury	Any Size	8
Walleye	Mercury	Under 20"	2
		Over 20"	1
White Crappie	Mercury	Any Size	4
Yellow Perch	Mercury	Any Size	4

These guidelines are based on the typical amount of chemicals found in fish filets tested from around the state. Some fish may be higher or lower. If any of these fish are listed in the guidelines for the lake or river you are fishing in, use **those** guidelines instead of statewide guidelines. The *MI Servings* recommendation will be more exact for that lake or river because those filets have been tested.

FAQs

How often is the Eat Safe Fish Guide (ESF Guide) updated?

The *ESF Guide* is updated regularly, but due to time and funding, not all fish from all bodies of water listed in the *ESF Guide* are tested every year. If there are special problems in the area, fish may be tested more often or sooner than planned.

PCBs, dioxins, mercury, PFOS and other chemicals that can be found in fish stay in our environment for a very long time. The amount of chemicals found in the fish is not expected to change a lot from year to year.



What part of the fish is tested for the ESF Guide?

While the entire headless, gutted smelt is tested for chemicals, for all other fish it is only the filets of the fish that are tested for chemicals. The skin is left on or taken off depending on common practice when cooking the fish. The organs and head are not tested for the *ESF Guide*. Internal organs (liver, fish eggs, etc.) typically have higher levels of chemicals than the filet and shouldn't be eaten.

Can I review the data myself?

Yes. All of the data, procedures and scientific reports used to create the *ESF Guide* are available online under Reports & Science at Michigan.gov/EatSafeFish. If you do not have internet access, call MDHHS at 800-648-6942 and we will provide you with the information.

Will I be able to tell if the fish are safe to eat by looking at them?

No. You will not be able to see any of the chemicals, even mercury or PFOS, in the fish. You also can't taste or smell the chemicals listed in the *ESF Guide*.

To find the chemicals, MDHHS tests the fish in a laboratory. MDHHS only tests the part of the fish that most people eat — typically the filets — for chemicals.

You can't see these chemicals in the water, either. Some very clear lakes or rivers can still have fish with higher levels of chemicals. If you eat a lot of Michigan fish, you can check the *ESF Guide* to find the safest options from the lake or river that you're fishing.



Is it safe to touch a fish that has chemicals in it?

Yes. You do not need to wear gloves or worry about getting the chemicals on you. They will not absorb into your skin from the fish.

Catch and release is almost always safe in Michigan regardless of where you're fishing. However, sometimes your local health department may issue a temporary warning against touching the water - including the fish that live in the water - because of problems like sewage overflow or harmful algae blooms.

You can contact your local health department or visit EGLE.state.mi.us/beach/ for local warnings about water quality.

Why should I use the Eat Safe Fish Guide?

If you eat fish, you might also be eating chemicals — like mercury, PCBs, PFOS or dioxins. These chemicals can stay in your body for a long time.

The *ESF Guide* is designed to protect everybody — men, women and children — who eats fish on a regular basis.

Using the *ESF Guide* and following the MI Serving suggestions will keep you from getting too many chemicals in your body at once. Scientists set the limits in the *ESF Guide* so that you are protected from possible health problems from the chemicals, no matter how long they stay in your body.

The *ESF Guide* is designed to protect any person who eats fish on a regular basis. If you are a healthy adult who is not pregnant and only eats Michigan fish once or twice a year from waters that are not posted with MDHHS signs, then you don't *need* to use the *ESF Guide*.

The 3Cs in the MDHHS *Eat Safe Fish in Michigan* brochure will help the occasional Michigan fish eater avoid eating too many chemicals. Call 800-648-6942 to get a free copy of the brochure.

You may choose to eat more fish than the *ESF Guide* recommends. These guidelines are not rules; it is your choice. Not everyone will get sick from eating too many of these chemicals. The chemicals in the fish won't make you sick right away, either. Some people will be fine after years of eating fish with these chemicals in them. Others can have health problems. It is difficult to know who might get sick from the chemicals in fish and who won't.

I don't see a fish species/fishing spot listed in the ESF Guide. What does this mean?

Michigan is lucky to have over 11,000 lakes, rivers and streams. Because of that huge number, it is not possible to test every fish species from every body of water in the state.

If you don't see the fish species you're planning to eat listed in the *ESF Guide* for your lake or river OR you don't see the lake or river listed at all, see page 9 for the **Statewide Safe Fish Guidelines**.

Common Michigan Fish

The fish listed here can be found in lakes and rivers around Michigan. Once you ID your fish, you can use the guidelines in this booklet to see how often the fish is safe to eat.



Black Crappie



Black Buffalo



Bluegill



Brook Trout



Brown Trout



Burbot



Carp



Channel Catfish



Chinook Salmon
(aka King Salmon)



Coho Salmon



Creek Chub



Gizzard Shad



Lake Herring



Lake Trout



Largemouth Bass
(aka Green Bass)

Fish are not to scale.

Common Michigan Fish

(continued)



Northern Pike



Muskellunge
(aka Muskie)



Pumpkinseed
(aka Sunfish)



Rainbow Trout



Rock Bass



Siscowet



Sheepshead
(aka Freshwater Drum)



Smallmouth Bass



Smelt



Sucker



Walleye



White Bass
(aka Silver Bass)



White Crappie



Whitefish



Yellow Perch

If you need more help finding out what kind of fish you caught, please visit Michigan.gov/FishID or call your local DNR Operations Center.

Fish are not to scale.

Fish Eating Guidelines by County

The fish species listed on the following pages have been tested for chemicals by the Michigan Department of Health and Human Services (MDHHS).

The guidelines issued by MDHHS are based only on the amount of chemicals in the filet of the fish — the part that you would eat.

All fish listed here are not tested every year. Because the chemicals found in fish don't break down quickly, the amount of chemicals in the fish will not change that much from year to year and neither will the guidelines.

If you would like to review the data collected to support these guidelines, they are available at Michigan.gov/EatSafeFish. If you do not have access to the internet or have additional questions, we are available at 800-648-6942, Monday-Friday, 8 a.m. to 5 p.m.



Michigan.gov/EatSafeFish



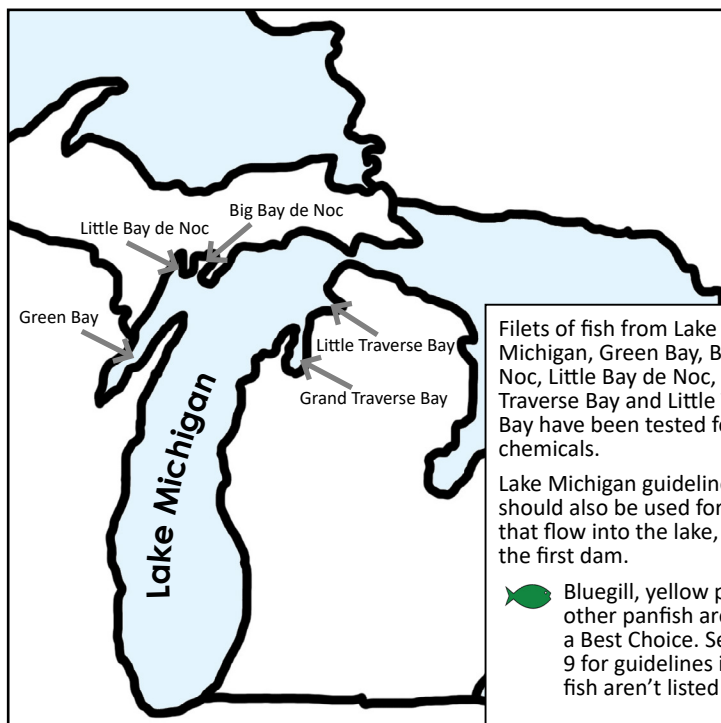
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See page 52 for an alphabetical list of all lakes and rivers included in this booklet.

Special thanks to the Michigan Department of Environment, Great Lakes, and Energy and the Michigan Department of Natural Resources for providing technical support for the development of the ***Eat Safe Fish Guides***.

Lake Michigan



Filets of fish from Lake Michigan, Green Bay, Big Bay de Noc, Little Bay de Noc, Grand Traverse Bay and Little Traverse Bay have been tested for chemicals.

Lake Michigan guidelines should also be used for rivers that flow into the lake, up to the first dam.



Bluegill, yellow perch and other panfish are often a Best Choice. See page 9 for guidelines if these fish aren't listed below.

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Brown Trout	PCBs	Any	Limited [▲]
Burbot	PCBs	Any	1 ^{2x}
Carp	PCBs	Any	Do Not Eat [▲]
Chinook Salmon	PCBs	Any	6 Per Year ^{2x}
Coho Salmon	PCBs	Any	1 ^{2x}
Lake Herring	PCBs, PFOS	Any	2
Lake Trout	Dioxins	Under 24" Over 24"	6 Per Year ^{2x} Limited [▲]
Lake Whitefish	Dioxins, PCBs	Any	6 Per Year ^{2x}
Largemouth Bass	Mercury, PCBs Mercury	Under 18" Over 18"	2 1
Rainbow Trout	PCBs	Any	1 ^{2x}

(Continued on the next page.)



Lake Michigan (continued)

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Smallmouth Bass	Mercury, PCBs	Under 18"	2
	Mercury	Over 18"	1
Smelt	PFOS	Any	1
Steelhead	PCBs	Any	1 ^{2x}
Suckers	PCBs	Any	6 Per Year ^{2x}
Walleye	Mercury, PCBs, PFOS	Under 18"	2
	PCBs	18" to 22"	6 Per Year ^{2x}
		Over 22"	Limited [▲]
Yellow Perch	PCBs	Under 10"	4 ^{2x}
	Mercury, PCBs	Over 10"	4

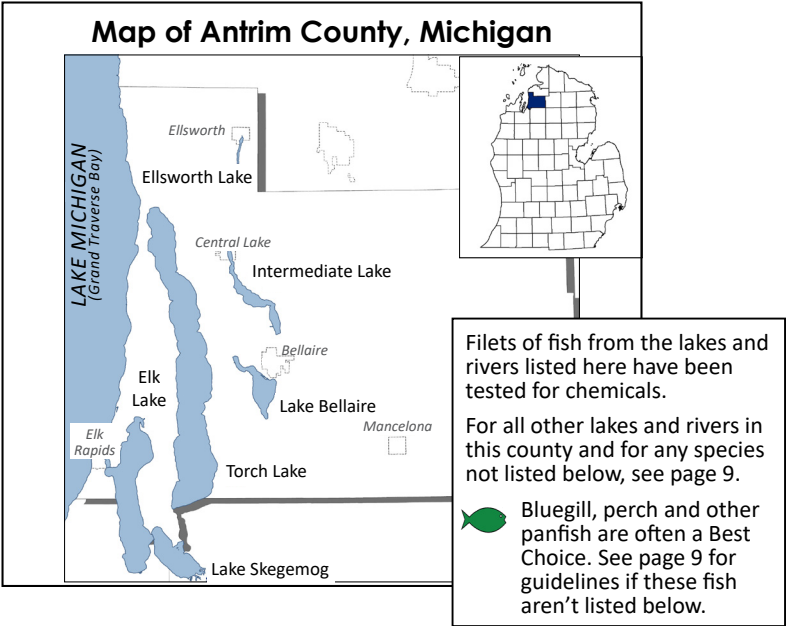
Green Bay, Big Bay de Noc and Little Bay de Noc

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Carp	PCBs	Any	Do Not Eat [▲]
Largemouth Bass	Mercury, PCBs	Under 18"	2
		Over 18"	1
Northern Pike	Mercury	Any	1
Rock Bass	Mercury	Any	8
Smallmouth Bass	Mercury, PCBs	Under 18"	2
		Over 18"	1
Suckers	PCBs	Any	6 Per Year ^{2x}

Use the Lake Michigan guidelines for any fish species not listed above.



Antrim County



Elk Lake

Type of Fish	Chemical of Concern	Size of Fish (length in inches)	MI Servings per Month*
Lake Trout	Mercury, PCBs	Under 30"	2
	PCBs	Over 30"	1 ^{2x}
Northern Pike	Mercury	Under 27"	2
		Over 27"	1
Walleye	Mercury	Under 24"	1
		Over 24"	6 Per Year

Use the Lake Michigan guidelines for any fish species not listed above.

Ellsworth Lake

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Largemouth Bass	Mercury	Under 18"	2
		Over 18"	1

(Continued on the next page.)

Ellsworth Lake

(continued from page 18)

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Northern Pike	Mercury	Under 30"	1
		Over 30"	6 Per Year
Smallmouth Bass	Mercury	Under 18"	2
		Over 18"	1
Suckers	Mercury	Any	8



Intermediate Lake

Type of Fish	Chemical of Concern	Size of Fish (length in inches)	MI Servings per Month*
Rock Bass	Mercury	Under 9"	4
		Over 9"	2
Walleye	Mercury	Under 20"	2
		Over 20"	1

Lake Bellaire

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Splake	Mercury	Any	2
Walleye	Mercury	Under 22"	2
		Over 22"	1

Lake Skegemog

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Lake Trout	Mercury, PCBs	Under 30"	2
	PCBs	Over 30"	1 ^{2x}

(Continued on the next page.)

Lake Skegemog

(continued from page 19)

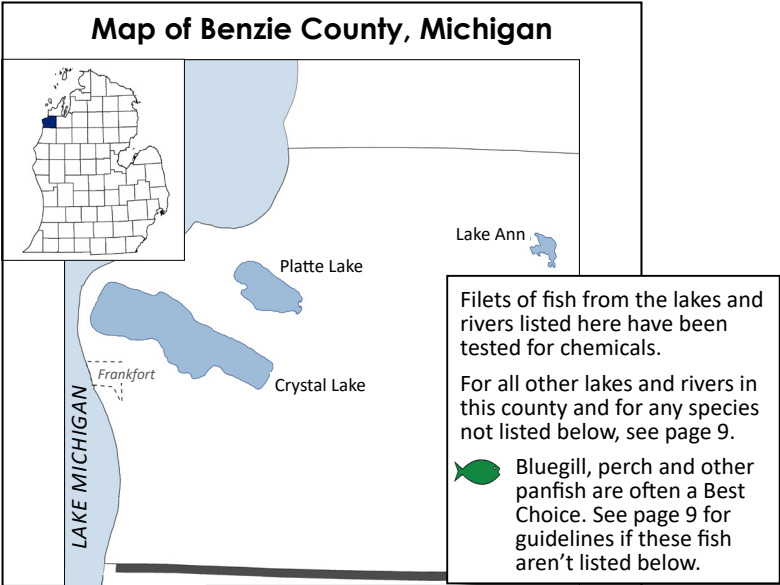
Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Northern Pike	Mercury	Under 27"	2
		Over 27"	1
Walleye	Mercury	Under 24"	1
		Over 24"	6 Per Year

Torch Lake

Type of Fish	Chemical of Concern	Size of Fish (length in inches)	MI Servings per Month*
Brown Trout	PCBs, Toxaphene	Under 20"	2 ^{2x}
	PCBs	Over 20"	1 ^{2x}
Lake Trout	Dioxins	Under 28"	Limited [▲]
		Over 28"	Do Not Eat [▲]
Lake Whitefish	Dioxins, PCBs	Any	1 ^{2x}
Largemouth Bass	Mercury	Under 18"	1
		Over 18"	6 Per Year
Smallmouth Bass	Mercury	Under 18"	1
		Over 18"	6 Per Year
Yellow Perch	Mercury	Under 9"	4
		Over 9"	2

See which fish are safe to eat from Lake Michigan on Page 16.

Benzie County



Crystal Lake

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Lake Trout	Dioxins	Under 24"	1 ^{2x}
		24" to 30"	6 Per Year ^{2x}
		Over 30"	Limited [▲]
Suckers	PCBs	Any	2 ^{2x}
Yellow Perch	Mercury	Any	4

Lake Ann

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Largemouth Bass	Mercury	Under 18"	2
		Over 18"	1
Northern Pike	Mercury	Any	1
Smallmouth Bass	Mercury	Under 18"	2
		Over 18"	1

(Continued on the next page.)

Platte Lake



Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Largemouth Bass	Mercury	Under 18"	2
		Over 18"	1
Rock Bass	Mercury	Under 9"	8
		Over 9"	2
Smallmouth Bass	Mercury	Under 18"	2
		Over 18"	1
Walleye	Mercury	Any	2

See which fish are safe to eat from Lake Michigan on Page 16.

Charlevoix County

Map of Charlevoix County, Michigan



Filets of fish from the lakes and rivers listed here have been tested for chemicals.

For all other lakes and rivers in this county and for any species not listed below, see page 9.



Bluegill, perch and other panfish are often a Best Choice. See page 9 for guidelines if these fish aren't listed below.

Bear River



Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Bullhead	Mercury	Any	8
Largemouth Bass	Mercury	Under 18"	2
		Over 18"	1
Northern Pike	Mercury	Under 30"	2
		Over 30"	1
Rainbow Trout	Mercury, PCBs	Any	4
Rock Bass	Mercury	Any	4

When fishing the river near Lake Michigan (page 16), please check the lake guidelines too.

(Continued on the next page.)

Charlevoix County (continued)

Bear River

(continued from page 23)

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Smallmouth Bass	Mercury	Under 18"	2
		Over 18"	1
Suckers	Mercury	Any	4
Walleye	Mercury	Under 22"	2
		Over 22"	1
Yellow Perch	Mercury	Any	4

When fishing the river near Lake Michigan (page 16), please check the lake guidelines too.

Boyne River

(upstream of the Hydroelectric Dam, including the impoundment above the Hydroelectric Dam, the north branch and the south branch up to the Boyne Falls Dam)



Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Brown Trout	Mercury	Any	12

Deer Lake

Type of Fish	Chemical of Concern	Size of Fish (length in inches)	MI Servings per Month*
Largemouth Bass	Mercury	Under 18"	1
		Over 18"	6 Per Year
Northern Pike	Mercury	Under 30"	1
		Over 30"	6 Per Year
Smallmouth Bass	Mercury	Under 18"	1
		Over 18"	6 Per Year

(Continued on the next page.)

Charlevoix County (continued)

Lake Charlevoix

(including Round Lake in Charlevoix)

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Brown Trout	PCBs	Any	Limited [▲]
Lake Herring	PFOS	Any	2
Lake Trout	PCBs	Any	Limited [▲]
Suckers	Mercury, PCBs	Any	4
Walleye	Mercury	Under 20"	4
		Over 20"	2

Lake Geneserath

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Walleye	Mercury	Under 20"	2
		Over 20"	1

Six Mile Lake

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Northern Pike	Mercury	Under 30"	1
		Over 30"	6 Per Year

Thumb Lake

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Largemouth Bass	Mercury	Under 18"	2
		Over 18"	1
Smallmouth Bass	Mercury	Under 18"	2
		Over 18"	1

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Charlevoix County (continued)

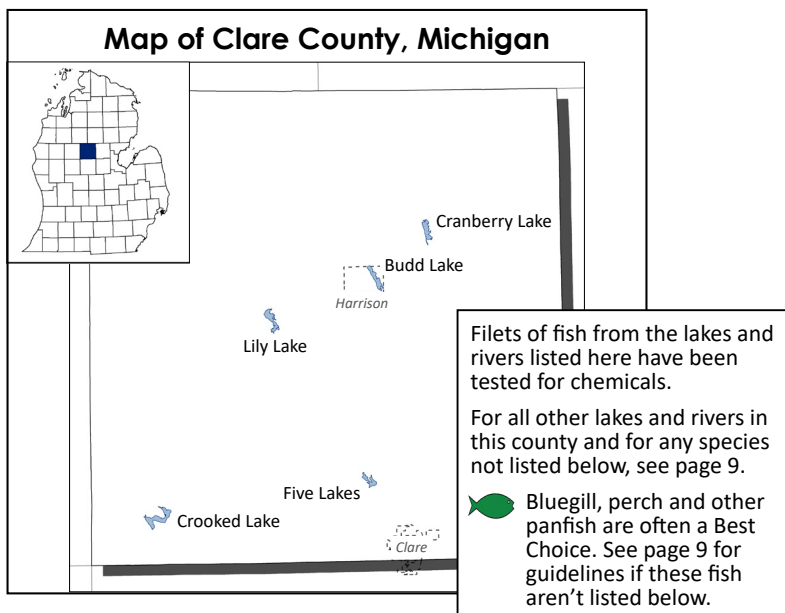
Walloon Lake



Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Bullhead	Mercury	Any	8
Largemouth Bass	Mercury	Under 18"	2
		Over 18"	1
Northern Pike	Mercury	Under 30"	2
		Over 30"	1
Rainbow Trout	Mercury, PCBs	Any	4
Rock Bass	Mercury	Any	4
Smallmouth Bass	Mercury	Under 18"	2
		Over 18"	1
Suckers	Mercury	Any	4
Walleye	Mercury	Under 22"	2
		Over 22"	1
Yellow Perch	Mercury	Any	4

See which fish are safe to eat from Lake Michigan on Page 16.

Clare County



Budd Lake

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Largemouth Bass	Mercury	Under 18"	4
		Over 18"	2
Smallmouth Bass	Mercury	Under 18"	4
		Over 18"	2

Cranberry Lake

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Largemouth Bass	Mercury	Under 18"	1
		Over 18"	6 Per Year
Smallmouth Bass	Mercury	Under 18"	1
		Over 18"	6 Per Year

(Continued on the next page.)

Crooked Lake

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Largemouth Bass	Mercury	Under 18"	2
		Over 18"	1
Smallmouth Bass	Mercury	Under 18"	2
		Over 18"	1

Five Lakes

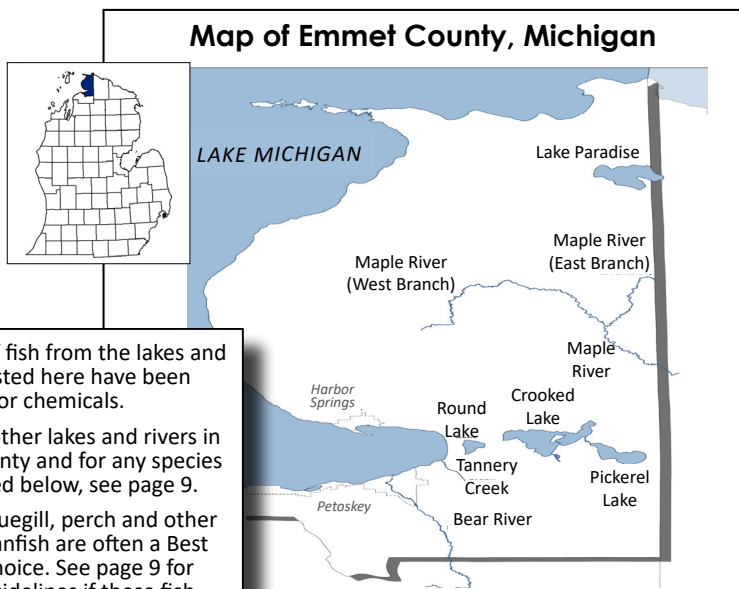
Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Largemouth Bass	Mercury	Under 18"	2
		Over 18"	1
Northern Pike	Mercury	Under 30"	2
		Over 30"	1
Smallmouth Bass	Mercury	Under 18"	2
		Over 18"	1

Lily Lake

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Northern Pike	Mercury	Under 30"	1
		Over 30"	6 Per Year




Emmet County



Filets of fish from the lakes and rivers listed here have been tested for chemicals.

For all other lakes and rivers in this county and for any species not listed below, see page 9.

 Bluegill, perch and other panfish are often a Best Choice. See page 9 for guidelines if these fish aren't listed below.

Bear River



Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Bullhead	Mercury	Any	8
Largemouth Bass	Mercury	Under 18"	2
		Over 18"	1
Northern Pike	Mercury	Under 30"	2
		Over 30"	1
Rainbow Trout	Mercury, PCBs	Any	4
Rock Bass	Mercury	Any	4
Smallmouth Bass	Mercury	Under 18"	2
		Over 18"	1

When fishing the river near Lake Michigan (page 16), please check the lake guidelines too.

(Continued on the next page.)

Emmet County (continued)

Bear River

(continued from page 29)

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Suckers	Mercury	Any	4
Walleye	Mercury	Under 22"	2
		Over 22"	1
Yellow Perch	Mercury	Any	4

When fishing the river near Lake Michigan (page 16), please check the lake guidelines too.

Crooked Lake

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Largemouth Bass	Mercury	Under 18"	1
		Over 18"	6 Per Year
Smallmouth Bass	Mercury	Under 18"	1
		Over 18"	6 Per Year
Walleye	Mercury	Under 20"	1
		Over 20"	6 Per Year

Lake Paradise

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Largemouth Bass	Mercury	Under 18"	2
		Over 18"	1
Smallmouth Bass	Mercury	Under 18"	2
		Over 18"	1
Suckers	Mercury	Any	12

(Continued on the next page.)



Maple River

(including West and East Branches)

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Brook Trout	PFOS	Any	2

Pickrel Lake

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Largemouth Bass	Mercury	Under 18"	2
		Over 18"	1
Smallmouth Bass	Mercury	Under 18"	2
		Over 18"	1
Walleye	Mercury	Under 20"	1
		Over 20"	6 Per Year

Round Lake

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Yellow Perch	PFOS	Any	1

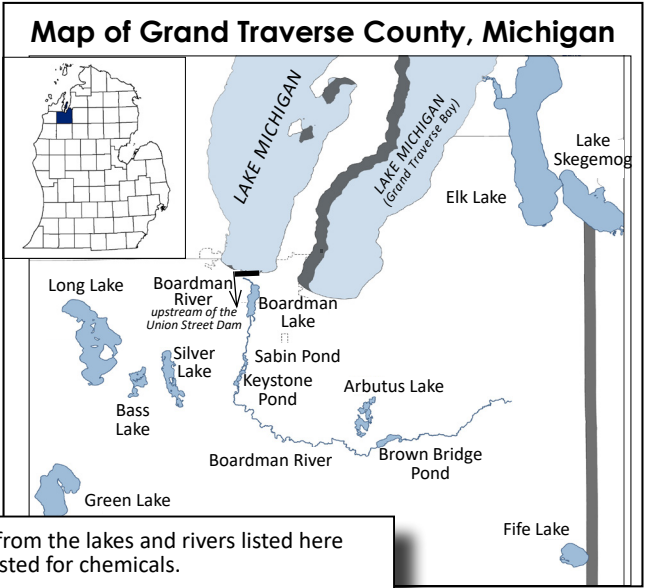
Tannery Creek

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Brook Trout	Mercury	Any	4

When fishing the creek near Lake Michigan (page 16), please check the lake guidelines too.


See which fish are safe to eat from Lake Michigan on Page 16.

Grand Traverse County



Filets of fish from the lakes and rivers listed here have been tested for chemicals.


For all other lakes and rivers in this county and for any species not listed below, see page 9.

 Bluegill, perch and other panfish are often a Best Choice. See page 9 for guidelines if these fish aren't listed below.

Arbutus Lake

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Northern Pike	Mercury	Under 28"	1
		Over 28"	6 Per Year

Bass Lake



Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Bluegill	Mercury	Under 9"	8
		Over 9"	4
Northern Pike	Mercury	Under 30"	1
		Over 30"	6 Per Year

(Continued on the next page.)

Grand Traverse County (continued)

Bass Lake

(continued from page 32)



Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Sunfish	Mercury	Under 9"	8
		Over 9"	4

Boardman River

(upstream of the Union Street Dam - includes Brown Bridge Pond, Boardman Lake, Sabin Pond and Keystone Pond)

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Northern Pike	Mercury	Under 30"	2
		Over 30"	1
Suckers	Mercury	Any	2
Walleye	Mercury	Under 20"	1
		Over 20"	6 Per Year
Yellow Perch	PFOS	Any	1

When fishing the river near Lake Michigan (page 16), please check the lake guidelines too.

Elk Lake

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Lake Trout	Mercury, PCBs	Under 30"	2
	PCBs	Over 30"	1 ^{2x}
Northern Pike	Mercury	Under 27"	2
		Over 27"	1
Walleye	Mercury	Under 24"	1
		Over 24"	6 Per Year

Use the Lake Michigan guidelines for any fish species not listed above.

(Continued on the next page.)

Grand Traverse County (continued)

Fife Lake

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Largemouth Bass	Mercury	Under 18"	2
		Over 18"	1
Smallmouth Bass	Mercury	Under 18"	2
		Over 18"	1

Green Lake

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Lake Trout	Dioxins	Under 28"	1 ^{2x}
		Over 28"	6 Per Year ^{2x}
Northern Pike	Mercury	Under 30"	1
		Over 30"	6 Per Year
Smelt	Mercury	Any	8
Suckers	Mercury	Any	4



Long Lake

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Walleye	Mercury	Under 20"	2
		Over 20"	1

(Continued on the next page.)



Grand Traverse County (continued)

Lake Skegemog

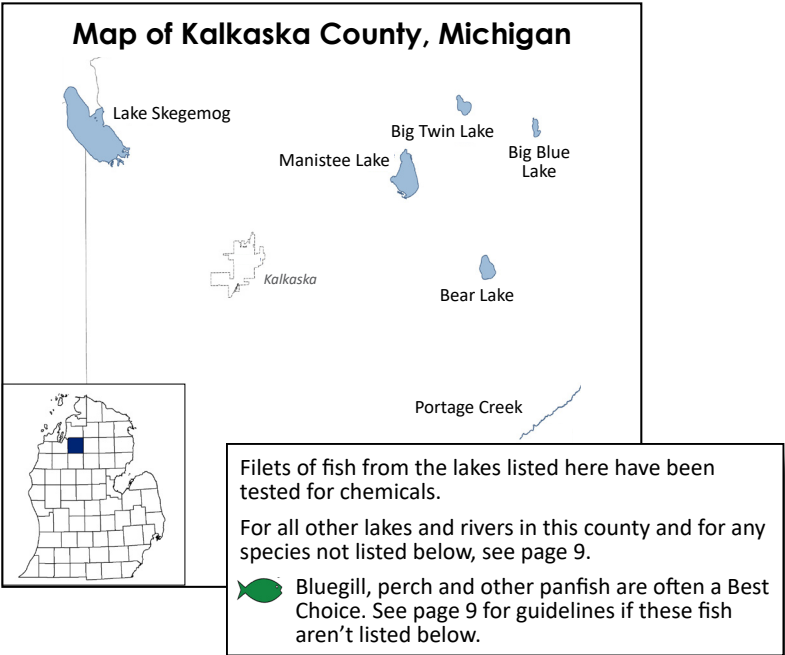
Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Lake Trout	Mercury, PCBs	Under 30"	2
	PCBs	Over 30"	1 ^{2x}
Northern Pike	Mercury	Under 27"	2
		Over 27"	1
Walleye	Mercury	Under 24"	1
		Over 24"	6 Per Year

Silver Lake

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Walleye	Mercury	Under 18"	2
		Over 18"	1

See which fish are safe to eat from Lake Michigan on Page 16.

Kalkaska County



Bear Lake

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Largemouth Bass	Mercury	Under 18"	2
		Over 18"	1
Smallmouth Bass	Mercury	Under 18"	2
		Over 18"	1

Big Blue Lake

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Northern Pike	Mercury	Under 40"	1
		Over 40"	6 Per Year

(Continued on the next page.)

Kalkaska County (continued)

Big Twin Lake

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Lake Herring	Mercury	Any	2
Smelt	PFOS	Any	2

Lake Skegemog



Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Lake Trout	Mercury, PCBs	Under 30"	2
	PCBs	Over 30"	1 ^{2x}
Northern Pike	Mercury	Under 27"	2
		Over 27"	1
Walleye	Mercury	Under 24"	1
		Over 24"	6 Per Year

Manistee Lake

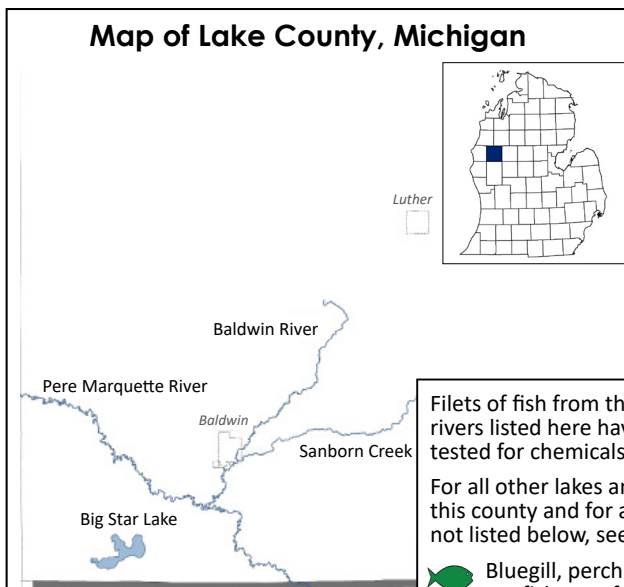
Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Walleye	Mercury	Under 17"	2
		Over 17"	1

Portage Creek

(upstream of Manistee River confluence)


Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
 Bluegill	Mercury	Any	8
 Rock Bass	Mercury	Under 8"	2
		Over 8"	1
Sunfish	Mercury	Any	8

Lake County



Filets of fish from the lakes and rivers listed here have been tested for chemicals.

For all other lakes and rivers in this county and for any species not listed below, see page 9.

 Bluegill, perch and other panfish are often a Best Choice. See page 9 for guidelines if these fish aren't listed below.

Big Star Lake

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Largemouth Bass	Mercury	Under 18"	2
		Over 18"	1
Smallmouth Bass	Mercury	Under 18"	2
		Over 18"	1

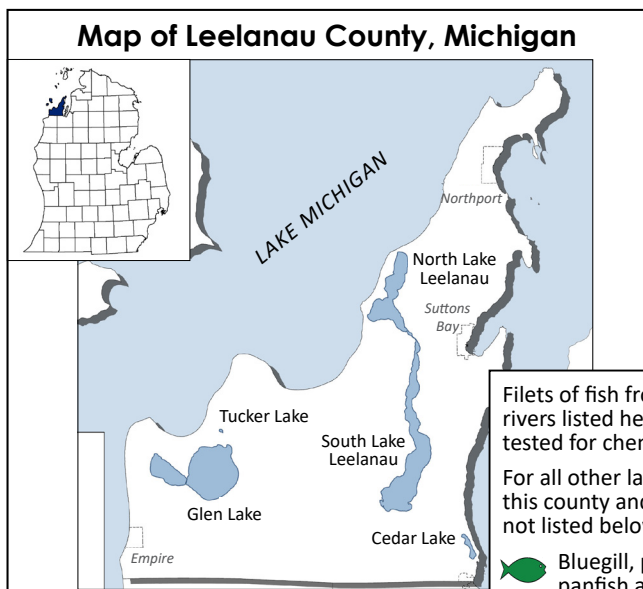
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Pere Marquette River

(including Sanborn Creek and Baldwin River)


Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Brown Trout	PCBs	Any	1 ^{2x}
Bluegill	PFOS	Any	Do Not Eat [▲]
Northern Pike	Mercury, PCBs	Under 30"	2
	PCBs	Over 30"	6 Per Year ^{2x}
Rock Bass	PFOS	Any	Do Not Eat [▲]
Suckers	Mercury, PCBs	Under 18"	4
	PCBs	Over 18"	6 Per Year ^{2x}
Sunfish	PFOS	Any	Do Not Eat [▲]
Yellow Perch	PFOS	Any	Do Not Eat [▲]

Leelanau County



Filets of fish from the lakes and rivers listed here have been tested for chemicals.

For all other lakes and rivers in this county and for any species not listed below, see page 9.

 Bluegill, perch and other panfish are often a Best Choice. See page 9 for guidelines if these fish aren't listed below.

Cedar Lake



Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Smelt	Mercury, PFOS	Any	8

Glen Lake

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Lake Trout	Dioxins, PCBs, Toxaphene	Under 32"	6 Per Year ^{2x}
	Dioxins, Mercury, PCBs, Toxaphene	Over 32"	6 Per Year
Largemouth Bass	Mercury	Under 18"	2
		Over 18"	1

(Continued on the next page.)

Leelanau County (continued)

Glen Lake

(continued from page 40)

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Rainbow Trout	Mercury, PCBs	Under 22"	4
	Mercury	Over 22"	2
Smallmouth Bass	Mercury	Under 18"	2
		Over 18"	1

North Lake Leelanau

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Lake Trout	Dioxins, PCBs	Under 26"	1 ^{2x}
		26 to 32"	6 Per Year ^{2x}
		Over 32"	Limited [▲]
Suckers	PCBs	Any	2 ^{2x}

South Lake Leelanau

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Walleye	Mercury	Under 16"	2
		Over 16"	1

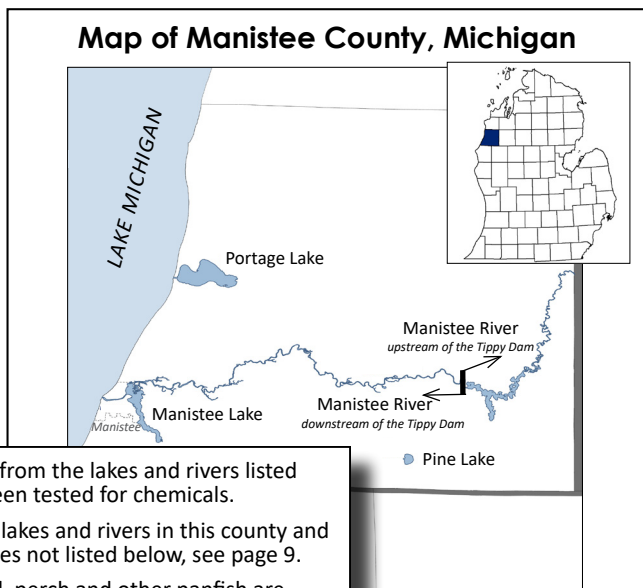
Tucker Lake

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Bullhead	Mercury	Any	16




See which fish are safe to eat from Lake Michigan on Page 16.

Manistee County



Filets of fish from the lakes and rivers listed here have been tested for chemicals.

For all other lakes and rivers in this county and for any species not listed below, see page 9.

 Bluegill, perch and other panfish are often a Best Choice. See page 9 for guidelines if these fish aren't listed below.

Manistee Lake

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Black Crappie	PFOS	Any	1
Bluegill	PCBs	Any	2 ^{2x}
Largemouth Bass	PCBs	Any	1 ^{2x}
Rock Bass	Mercury	Any	2
Smallmouth Bass	PCBs	Any	1 ^{2x}
Sunfish	PCBs	Any	2 ^{2x}
White Crappie	PFOS	Any	1

(Continued on the next page.)

Manistee County (continued)

Manistee River

(upstream of Tippy Dam)

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Northern Pike	Mercury	Under 30"	1
		Over 30"	6 Per Year
Rock Bass	PFOS	Any	1

Manistee River

(downstream of Tippy Dam, including Manistee Lake)

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Black Crappie	PFOS	Any	1
Bluegill	PCBs	Any	2 ^{2x}
Largemouth Bass	PCBs	Any	1 ^{2x}
Rock Bass	Mercury	Any	2
Smallmouth Bass	PCBs	Any	1 ^{2x}
Sunfish	PCBs	Any	2 ^{2x}
White Crappie	PFOS	Any	1

Pine Lake

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Rock Bass	Mercury	Under 9"	2
		Over 9"	1

(Continued on the next page.)

Manistee County (continued)

Portage Lake

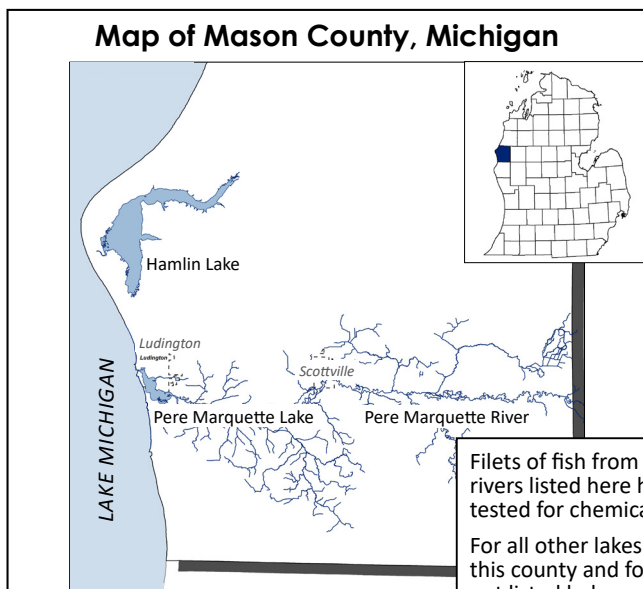
Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Carp	Mercury, PCBs	Under 24"	4
	PCBs	Over 24"	1 ^{2x}
Lake Herring	PCBs, PFOS	Any	2
Largemouth Bass	Mercury	Under 18"	2
		Over 18"	1
Northern Pike	Mercury & PCBs	Under 30"	4
	Mercury	Over 30"	2
Smallmouth Bass	Mercury	Under 18"	2
		Over 18"	1

Use the Lake Michigan guidelines on page 16 for any fish species not listed above.

See which fish are safe to eat from Lake Michigan on Page 16.




Mason County





Filets of fish from the lakes and rivers listed here have been tested for chemicals.

For all other lakes and rivers in this county and for any species not listed below, see page 9.

 Bluegill, perch and other panfish are often a Best Choice. See page 9 for guidelines if these fish aren't listed below.

Hamlin Lake

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
 Black Crappie	Mercury	Any	8
Largemouth Bass	Mercury	Under 18" Over 18"	1 6 Per Year
Northern Pike	Mercury	Under 30" Over 30"	1 6 Per Year
Smallmouth Bass	Mercury	Under 18" Over 18"	1 6 Per Year
Walleye	Mercury	Under 18" Over 18"	2 1
 White Crappie	Mercury	Any	8

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Pere Marquette Lake and River

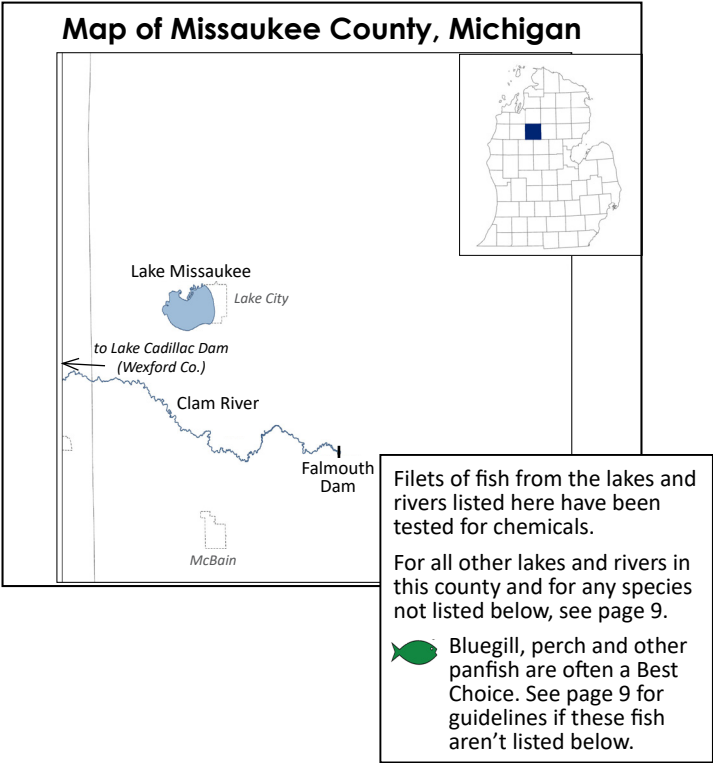
Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Brown Trout	PCBs	Any	1 ^{2x}
Bluegill	PFOS	Any	Do Not Eat [▲]
Northern Pike	Mercury, PCBs	Under 30"	2
	PCBs	Over 30"	6 Per Year ^{2x}
Rock Bass	PFOS	Any	Do Not Eat [▲]
Suckers	Mercury, PCBs	Under 18"	4
	PCBs	Over 18"	6 Per Year ^{2x}
Sunfish	PFOS	Any	Do Not Eat [▲]
Yellow Perch	PFOS	Any	Do Not Eat [▲]

When fishing the river or lake near Lake Michigan (page 16), please check the lake guidelines too.

See which fish are safe to eat from Lake Michigan on Page 16.



Missaukee County



Clam River

(Falmouth Dam to Lake Cadillac Dam in Wexford Co.)

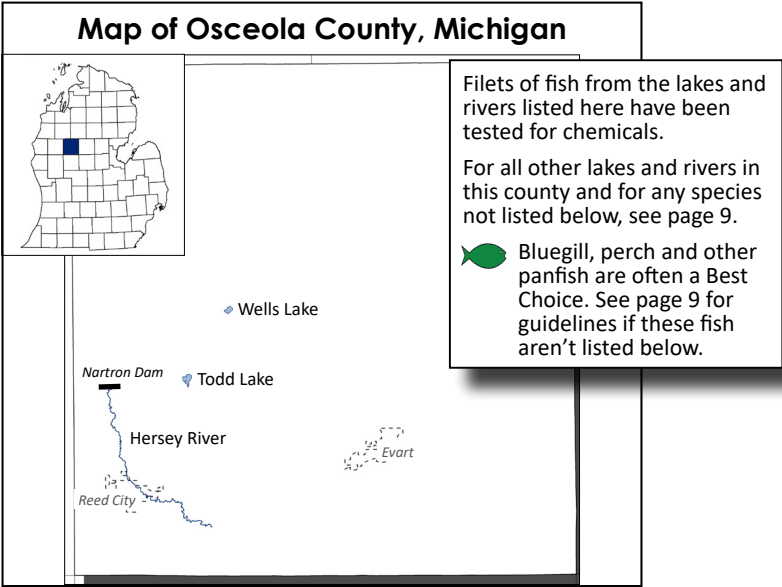


Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Brook Trout	PFOS	Any	2
Suckers	Mercury	Any	8

Lake Missaukee

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Northern Pike	Mercury	Under 30"	1
	Mercury	Over 30"	6 Per Year

Osceola County



Hersey River

(downstream of Nartron Dam)

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Brown Trout	Mercury	Any	2
Suckers	Mercury	Any	4

Todd Lake

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Largemouth Bass	Mercury	Under 18" Over 18"	1 6 Per Year
Northern Pike	Mercury	Any	6 Per Year
Smallmouth Bass	Mercury	Under 18" Over 18"	1 6 Per Year

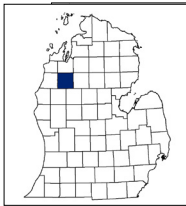
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Wells Lake

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Northern Pike	Mercury	Under 20"	4
		Over 20"	2


Wexford County

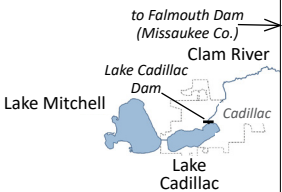
Map of Wexford County, Michigan



Filets of fish from the lakes and rivers listed here have been tested for chemicals.

For all other lakes and rivers in this county and for any species not listed below, see page 9.

 Bluegill, perch and other panfish are often a Best Choice. See page 9 for guidelines if these fish aren't listed below.



Clam River

(Falmouth Dam in Missaukee Co. to Lake Cadillac Dam)



Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Brook Trout	PFOS	Any	2
Suckers	Mercury	Any	8

Lake Cadillac



Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Bluegill	PFOS	Any	8
Largemouth Bass	Mercury	Under 18"	2
		Over 18"	1
Northern Pike	Mercury	Under 30"	4
		Over 30"	2

(Continued on the next page.)

Wexford County (continued)

Lake Cadillac

(continued from page 50)



Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Smallmouth Bass	Mercury	Under 18"	2
		Over 18"	1
Sunfish	PFOS	Any	8
Walleye	Mercury	Any	1

Lake Mitchell



Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Bluegill	PFOS	Any	8
Largemouth Bass	Mercury	Under 18"	2
		Over 18"	1
Northern Pike	Mercury	Under 30"	4
		Over 30"	2
Smallmouth Bass	Mercury	Under 18"	2
		Over 18"	1
Sunfish	PFOS	Any	8
Walleye	Mercury	Any	1



Northwest Michigan Lakes & Rivers

Don't see a certain lake or river listed?

For the guidelines to all other lakes and rivers in Northwest Michigan, please see page 9. To get an *ESF Guide* for another region, visit Michigan.gov/EatSafeFish or call 800-648-6942.

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What Are the Chemicals of Concern?

The chemicals that cause Michigan’s Eat Safe Fish guidelines are DDT, dioxins, mercury, PCBs, PFOS, selenium and toxaphene. Many of these chemicals were put into the environment - by accident or on purpose - before we knew the long-term health and environmental problems they can cause.

These chemicals can travel through the air, and they can be carried by rain run-off and storm drains into our lakes, rivers and wetlands. Once in the water, the chemicals sink to the bottom and become a part of the fish food chain. Some of these chemicals can stay in the environment, in the fish, and in the human body for a long time.

Efforts to reduce pollution under the U.S. Clean Water Act and U.S. Clean Air Act have cut the levels of these chemicals in the environment. In fact, the amount of DDT, dioxins, PCBs and toxaphene in our fish are slowly going down. However, mercury continues to be a worldwide problem and contaminants of emerging concern, like PFOS, are being monitored in fish.

Chemical of Concern	What is it?	Potential Health Problems
DDT (dichlorodiphenyl-trichloroethane)	<ul style="list-style-type: none">• was one of the first modern insecticides• was banned in 1972	<ul style="list-style-type: none">• linked to the development of cancer• linked to the development of diabetes
Dioxins	<ul style="list-style-type: none">• are not made on purpose• are created when chlorine chemicals are made or used• can be released when things that have chlorine in them - like paper or plastic - are burned• also can be released from old or poorly contained waste sites or intentional dumping	<ul style="list-style-type: none">• linked to the development of cancer• fertility can be harmed• thyroid function can be harmed

(continued on the next page)

Chemicals of Concern (continued from page 55)

Chemical of Concern	What is it?	Potential Health Problems
Mercury	<ul style="list-style-type: none"> is a natural element can be released from smokestacks of coal-fired power plants and other industry 	<ul style="list-style-type: none"> brain development can be harmed in fetuses and children heart function can be harmed in older adults immune system can be harmed
PCBs (polychlorinated biphenyls)	<ul style="list-style-type: none"> were used in electrical equipment - like transformers were found in hydraulic oils 	<ul style="list-style-type: none"> brain development can be harmed in fetuses and children linked to the development of cancer linked to the development of diabetes immune system can be harmed
PFOS (perfluorooctane sulfonate)	<ul style="list-style-type: none"> is used for waterproofing clothes, in fire-fighting foams, papers and packaging, cleaning products and pesticides is now rarely used in the United States 	<ul style="list-style-type: none"> fertility can be harmed immune system can be harmed linked to high cholesterol linked to low birth weight linked to pre-eclampsia in pregnant people liver function can be harmed thyroid function can be harmed
Selenium	<ul style="list-style-type: none"> is a natural element is needed for your body to function, but too much is harmful through mining activities, selenium-rich rock and water got into lakes and rivers 	<ul style="list-style-type: none"> hair loss loss of fingernails fatigue irritability mild nerve damage

(continued on the next page)

Chemicals of Concern (continued from page 56)

Chemical of Concern	What is it?	Potential Health Problems
Toxaphene	<ul style="list-style-type: none"> • was an insecticide for cotton and vegetables and on livestock and poultry • was sometimes added to lakes to kill unwanted fish • was banned in 1990 	<ul style="list-style-type: none"> • immune system can be harmed

NOTES

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Other Regional Eat Safe Fish Guides

Call 800-648-6942 or visit
Michigan.gov/EatSafeFish
to get a free copy of the
Eat Safe Fish Guides
for other regions in Michigan.

