



GIS Map created with assistance of Christy Steffke as well as Becky Palmer-Scott of Aspiring Games Foundation, www.aspiringgames.org.

Lakes & Ponds

Rivers & Streams

Public Access to Water Body

Recreation Land

Urban Areas

County Boundaries

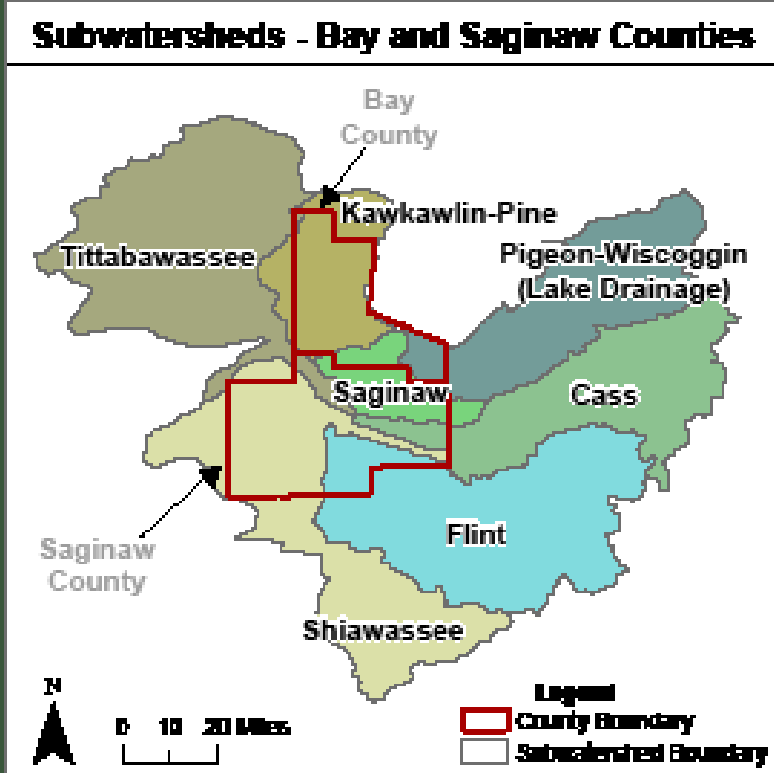
DEQ 24-Hour Pollution Hotline PEAS (1-800-292-4706)

In case of environmental emergency affecting AIR - LAND - WATER-WETLANDS-DAMS-DRINKING WATER SUPPLIES

What Should You Report?

- Suspicious dumping or discharges from pipes
- Large numbers of dead fish in waterways
- Sewage on the ground or in surface water
- Construction site soil erosion into waterways
- Failing septic systems
- Spills and contamination to lakes, rivers, and streams

Report all poaching hotline 1-800-292-7800



TAKE A KID FISHING!

SAGINAW AND BAY COUNTY: GUIDE TO PUBLIC LAKES AND RIVERS

Use this guide to help get started on your next fishing adventure in the Saginaw and Bay County Region. The map shows fishing access sites on local lakes and streams and the fish illustrations on the reverse side of the map help identify many of the common fish species found in these bodies of water. Other information includes the do's and don'ts of living or recreating near water and preparing and eating the fish you catch.

Once you've located your next fishing spot, don't forget to take your son or daughter, niece or nephew, grandchildren, or another special kid along. Don't forget to take lots of pictures to capture the precious memories of time spent fishing and enjoying our abundant natural resources.

This map and guide is dedicated to the many partners involved with youth fishing activities in and around Saginaw and Bay Counties. Many thanks go to the dedicated volunteers, family members and civic organizations providing opportunities to our future Great Lakes stewards - MSU Project F.I.S.H.

THANK YOU TO OUR SPONSORS

FISHING MAP: LEGEND																				
Site Number	Site Name	GPS Location	Best Access	Boat Ramp	Shore Fishing	Swimming	Boating	Ice Fishing	Winter Fishing	Species Names	Trout	Walleye	Perch	Crappie	Bluegill	Rock Bass	White Bass	Striped Bass	Smallmouth Bass	Comments
Bay County																				
1	Ad. 43.853992 - 83.923426	Pineconing Rd.	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	Fishing dock within walking distance
2	Ad. 43.846880 - 83.923919	Pineconing County Park/S. Trail	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	Handicap accessible platform
3	Ad. 43.849559 - 83.921947	Pineconing County Park/S. Trail Boardwalk	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	
4	BK. 43.802975 - 83.926444	Coggins Rd.	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	Perch, Bass, Walleye in spring and fall
5	BK. 43.738536 - 83.948037	Linwood Rd.	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	Good ice fishing location
6	BK. 43.730578 - 83.947355	Linwood Beach Marina	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	
7	Ck. 43.871341 - 83.910626	Tobacco Lagoon Bay City State Park	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	Nice visitors center for families
8	D7. 43.84051 - 83.850593	Saginaw River Mouth Park	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	
9	BK. 43.774437 - 83.937875	Kitchen Road Access	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	Access to bay 1/4 mile walk, spring Perch, Carp
10	BK. 43.796070 - 83.925031	Ericksen Rd.	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	Ice fishing, shore wading, carry down kayak/canoe
11	Ad. 43.800393 - 83.924381	Gambits Landing	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	No bank fishing allowed
12	Dk. 43.579189 - 83.902704	Bay City Middle Grounds	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	
13	Dk. 43.583381 - 83.899994	Bigelow Park/Riverwalk Pier	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	Nice family fishing area, both sides of Salsberg Rd.
14	Dk. 43.588436 - 83.900289	Bay City Fitness Park/Riverwalk Pier	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	Lots of fishing along the Bay City loop trail
15	Dk. 43.611744 - 83.873471	Golson Boat Launch	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	
16	Dk. 43.614512 - 83.871569	Independence Bridge Launch	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	Access to bay, ice fishing access
17	D7. 43.615984 - 83.845508	Smith Park - Essonville	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	Free for non-residents
18	Dk. 43.597841 - 83.848096	Veterans Memorial Park	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	
19	Dk. 43.580899 - 83.903793	Red Fox Nature Area	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	Fishing along road
20	Dk. 43.630008 - 83.975650	Kawawatin River Launch	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	
21	Dk. 43.649051 - 83.948790	Hard Shell Park - Kawawatin River	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	Perch through the ice, suckers in the spring
22	Dk. 43.826330 - 83.779514	Finn Road Launch	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	Good ice fishing or early spring
23	Dk. 43.566011 - 83.903188	Cass Avenue Boat Launch	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	
Saginaw County																				
24	Fk. 43.472478 - 83.960568	Hatfield Park	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	Shaded fishing point, family friendly
25	Hk. 43.331136 - 83.733053	Memorial Park - Cass River	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	
26	Hk. 43.329854 - 83.742173	Frankenmuth Rock Park - Cass River	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	Parking and restrooms at Zanders
27	Gk. 43.849099 - 83.865395	Cass River Trail Shawansee Refuge	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	
28	Gk. 43.365193 - 83.955223	Cass River Boat Ramp	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	
29	Gk. 43.34887 - 83.854463	Lyle Park - Cass River	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	
30	Gk. 43.382819 - 83.983079	Greenpoint Environmental Learning Center	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	Nice family learning center
31	Gk. 43.472945 - 83.954787	Cliffway Island/Post Park/Lake Linton	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	Great family location
32	Dk. 43.528885 - 83.891916	Vets Park (M13)	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	
33	Fk. 43.526171 - 83.882889	Veterans Memorial (M13) Site #1	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	
34	Fk. 43.519022 - 83.882379	Veterans Memorial (M13) Site #2	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	
35	Fk. 43.519027 - 83.883295	Veterans Memorial (M13) Site #3	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	
36	Fk. 43.496531 - 83.899704	Veterans Memorial (M13) Site #4	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	
37	Fk. 43.47852 - 83.914502	Zilwaukee Boat Launch	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	Ice fishing with good ice
38	Gk. 43.382882 - 83.963542	Wichas Park (City of Saginaw)	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	
39	Fk. 43.63335 - 84.081709	Inman Memorial Park	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	
40	Gk. 43.39474 - 84.016582	Center Road (Tittabawassee River)	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	Ice fishing with good ice
41	E3. 43.523326 - 84.123592	Freeland Memorial Park	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	Shore fishing only
42	E3. 43.513866 - 84.120476	Busch Machine Shop Launch	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	85 Launch, 82 Park and fish, buoy in spring/fall
43	E3. 43.525879 - 84.127288	Freeland Festival Park	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	Barrier free fishing platform
44	Gk. 43.401415 - 84.020047	West Michigan Park	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	
45	H3. 43.297036 - 84.142178	South Branch - Bad River	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	
46	H3. 43.296760 - 84.138446	Lumberjack Park - Bad River	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	
47	H3. 43.302904 - 84.110684	Hulen Rd. - Bad River	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	
48	H3. 43.299713 - 84.140429	Ort St. Charles Field Office - Bad River	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	
49	G4. 43.357216 - 84.072871	Miller Rd. - Marsh Creek	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	
50	J3. 43.180283 - 84.112836	Coke Park - Shawansee River	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	
51	J3. 43.177740 - 84.112841	Showboat Park - Shawansee River	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	Small boat only
52	J3. 43.144331 - 84.134785	Orin Rd. Park - Shawansee River	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	
53	Hk. 43.322393 - 84.003090	Ambrose Rd. - Flint/Shawansee River	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	Fishable along Ambrose Rd. to Curtis bridge
54	Hk. 43.251534 - 83.868028	Maresville Rd. - Flint River	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	
55	Hk. 43.235413 - 83.867131	E. Court Rd. - Flint River	Y	Y	Y	Y	Y	Y	Y	X	X	X	X	X	X	X	X	X	X	Road pull off

RAMP CODES

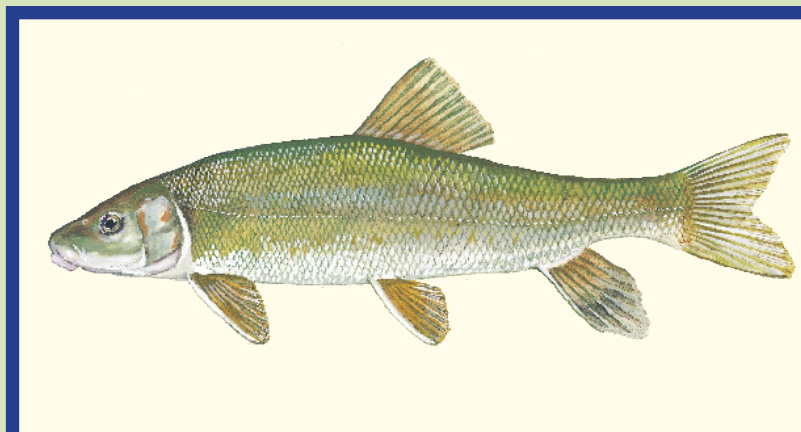
- 0 = No Ramp.
- 1 = Hard-surfaced ramp with sufficient water depth and lake size to accommodate most trailerable boats.
- 2 = Hard-surfaced ramp, in areas of limited water depth or lake size, where launching, retrieving, and use of larger boats may be difficult.
- 3 = Gravel-surfaced ramp.
- 4 = Carry-down launching area. Site does not have an improved ramp and is suitable for launching cartop boats and canoes only.

For more information about Michigan boating access sites go to Michigan DNR's official website: <http://www.mcgl.state.mi.us/MRBIS/>

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White Sucker
Catostomus commersonii


Identifying Characteristics: The white sucker is a long, round-bodied fish with a dark green, grey, copper, brown, or black back and sides and a light underbelly. The fish has a distinct sucker mouth on the under portion of its head. These fish are also commonly mistaken for different types of suckers like redbreast, bighorn, and black buffalo quillback carp sucker, longnose and northern hog sucker each of which has a master angler category here in Michigan.

Natural History: The white sucker is a bottom feeder as it uses its fleshy lips to suck up bottom sediments and other organisms that may be located there. It will eat almost anything it can. The white sucker usually spawns in shallow water or streams in April and May.

Adult Sizes: 12" to 20" in length and weigh up to about 6 pounds.

Bait: Any bait fished on the bottom; Doughballs, worms, crayfish, small minnows.

Habitat: White suckers are found in small streams, rivers, and lakes



Sheephead (Freshwater Drum)
Aplodinotus grunniens


Identifying Characteristics: Freshwater drum are silvery, deep-bodied fish with long dorsal (back) fins that are divided into two distinct parts. The head and body slope upward from the snout to the dorsal fin to give a distinctive humped appearance.

Natural History: They are called drum because of the grunting or croaking sound made from muscles in the swim bladder. Also, they are called freshwater drum because they are the only species of drum that live in freshwater. *Aplodinotus* is Greek for "single back," in reference to the dorsal fin and grunniens is Latin for "grunting."

Adult Sizes: 12" to 20" in length and weigh up to about 5 pounds.

Bait: Live bait fished on the bottom; worms, crayfish, small minnows are favorite baits. Occasionally they can be taken on small artificial lures

Habitat: Freshwater drum are common in Michigan and can be found in small or large rivers, and the Great Lakes.



White Bass
Morone chrysops

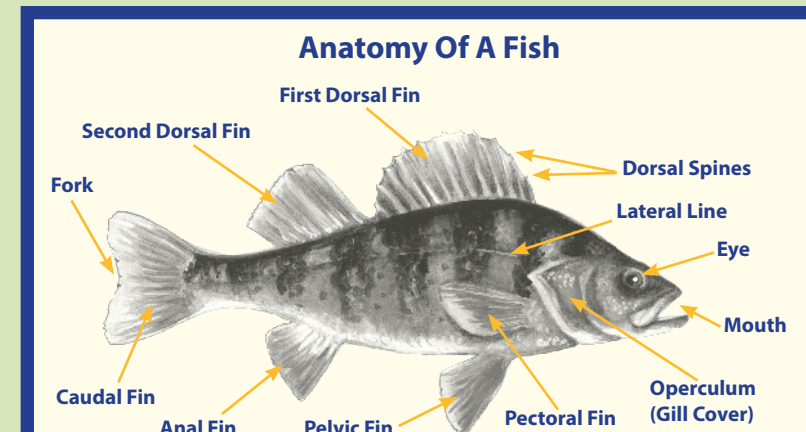
Identifying Characteristics: White Bass range in color from a silvery white to a pale green. Their backs are mostly black, while their sides and belly are pale with stripes running along them. They have large, rough scales and two dorsal fins. The one near the tail appears to have spines and is much harder than the other, which sits near the head.

Natural History: White Bass reproduce between March and May each year in waters that range from 54 to 68 degrees Fahrenheit. They prefer to lay their eggs in moving streams but will also spawn in nearshore lake currents that get swept up by winds. Female White Bass can lay as many as a half million eggs.

Adult Sizes: 10"-12" average weight 1 pound. Have been found up to 17" and 6 pounds.

Bait: Worms, crayfish, minnows, spinners, crankbaits

Habitat: White Bass inhabit mostly rivers, creeks and streams, but can be found spawning in medium and large lakes.



Anatomy Of A Fish

First Dorsal Fin, Second Dorsal Fin, Fork, Caudal Fin, Anal Fin, Pelvic Fin, Pectoral Fin, Operculum (Gill Cover), Dorsal Spines, Lateral Line, Eye, Mouth

Do I need a fishing license?

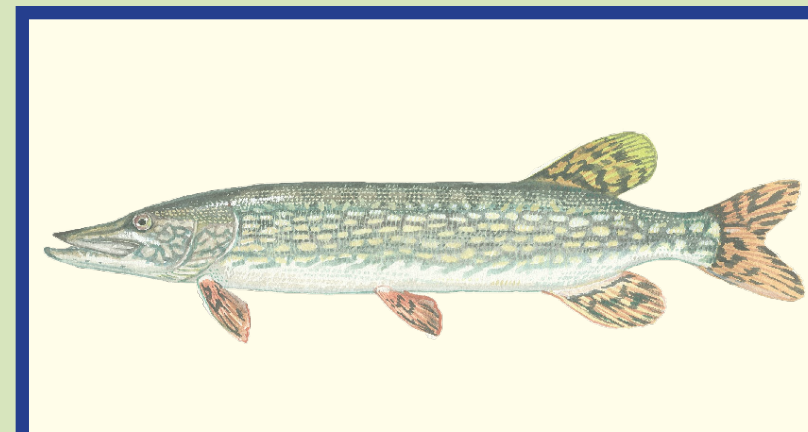
Fishing License Requirements:

- You must purchase a license if you are 17 or older. If you are under 17, you may fish without a license, but are required to observe all fishing rules and regulations.
- When fishing you must carry your license and the identification used to purchase that license and exhibit both upon demand of a Michigan Conservation Officer, Tribal Conservation Officer, or any law enforcement officer.
- Your fishing license is valid from March 1 of a given year through March 31 of the following year.

To purchase a fishing license you must have:

- A valid Michigan Driver License,
- A valid Michigan ID Card (issued by the Secretary of State) with additional proof of Michigan residency, such as a Michigan voter registration card,
- A DNR Sportcard (issued by license dealers). If the information on your DNR Sportcard from a previous year is still accurate, you may continue to use it.

Purchase your fishing license online at: www.michigan.gov/dnr



Northern Pike
Esox lucius


Identifying Characteristics: Slender fish with a single dorsal fin near the tail of the fish. Light colored, bean shaped spots cover most of the body except for the cream colored belly. Muskies (*E. masquinongy*) are closely related to northern pike and have dark markings on a light background. There are scales on the upper half of the gill cover and all of the cheek on the pike while the lower half of the cheek of the muskie is without scales.

Natural History: Northern pike and muskies are predators that hide in aquatic vegetation and ambush their prey. Pike are generally not as wary as muskies and are more common so they are easier to catch. Both fish prefer cool water so they may retreat to deeper water in the summer. While they will eat a variety of creatures, other fish make up about 90% of their diet. Muskies can grow larger than pike.

Adult Sizes: 20"-48"

Bait: Minnows, panfish, cranks, crankbaits, spoons, spinners, bucktails

Habitat: Vegetation, logs, large rocks, other cover.



Walleye
Stizostedion vitreum

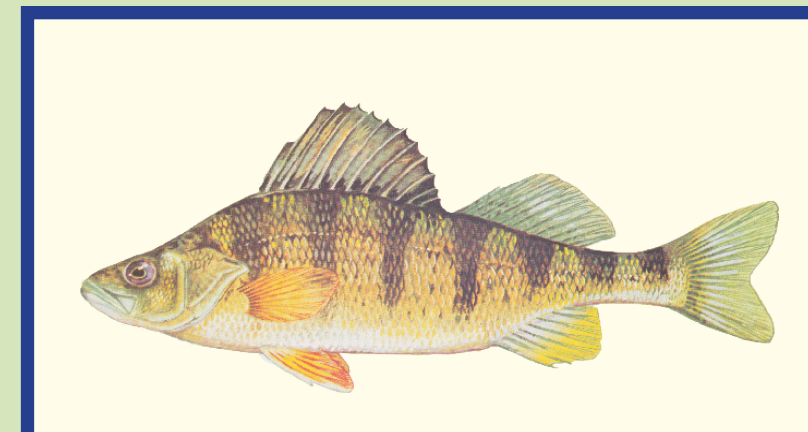
Identifying Characteristics: This largest member of the perch family has two dorsal fins separated into spiny (front) and soft-rayed (back) portions with a dark spot at the rear base of their spiny fin. They have large, milky eyes, a white tip on the lower lobe of their tail or caudal fin but lack the prominent vertical bars found on yellow perch.

Natural History: These fish grow large, are exciting to catch, and are delicious to eat. They can be caught throughout the year. Usually they prefer rocky habitat but can be found in weed beds in lakes. In rivers they will be concentrated in the slow pools below riffles. They tend to be light shy and are easier to catch on cloudy days and other low light periods. They are cool water fish preferring temperatures to be in the 60s and 70s.

Adult Sizes: 15"-28"

Bait: Night crawlers, minnows, crayfish, jigs, crank baits, and soft plastic baits.

Habitat: Slow flowing river water and lakes with moderate depth and firm bottoms. Rocks/logs.



Yellow Perch
Perca flavescens

Identifying Characteristics: These members of the perch family have two dorsal fins separated into spiny (front) and soft-rayed (rear) portions. They have yellowish to light green sides and six to nine vertical blackish bars on their sides. Its lower fins are amber to orange in color.

Natural History: Yellow perch are very popular Michigan game fish. They are known for being very tasty on the table. They tend to travel in schools and are usually found in relatively shallow waters up to 20 feet. They may move deeper in the heat of the summer as they prefer water temperatures in the 60s and 70s.

Adult Sizes: 8"-12"

Bait: Small Minnows, Small crayfish, worms, waxworms, wigglers, soft plastic baits.

Habitat: Lake shallows and shoals with firm bottom and vegetation.

ON THE LAND

Join 4-H Today!

Bay County 4-H Program
515 Center Ave. St. Ste. G-102
Bay City, Michigan 48708
989-895-4026
<http://msue.anr.msu.edu/county/info/bay>

Saginaw County 4-H Youth Program
1 Tuscola St. #100A
Saginaw, Michigan 48707
989-758-2500
<http://msue.anr.msu.edu/county/info/saginaw>

*Youth Fishing Camps & Programs
*School/Community Rainbarrel Projects
*Stormwater/Environmental Education
*Rain Gardening Projects

Michigan 4-H is growing current and future leaders. The largest youth development organization in Michigan, 4-H provides more than 200,000 young people with experiential learning opportunities that enable them to explore new interests and discover their passion. They're also empowering young people with skills to lead for a lifetime by growing confidence, civic engagement, leadership, responsibility and more.



Riparian Landowner Tips

An area of land located between local waterways and upland areas is called a **Riparian Buffer**. These vegetated land areas provide streamside and aquatic habitat, erosion protection and serve as a natural filter for stormwater runoff.

WHAT ARE THE BENEFITS OF A BUFFER?

- Reduces polluted runoff
- Stabilizes banks and reduces erosion
- Decreases flood severity
- Provides important habitat areas

HOW DO I CREATE A BUFFER?

- Plant native trees, shrubs, grasses and wildflowers
- Quit mowing up to the edge, let existing vegetation grow in
- Maintain your buffer a minimum of 15 feet* from the edge

*Be sure to check local ordinances for width requirements and plant restrictions.



Source: Coastal Wiccomaw Stormwater Education Consortium

ON THE WATER

Boater Safety Tips

- Check the weather forecast for the area and time frame during which you will be boating.
- Make sure you have the required number of personal flotation devices (PFDs), and check that they are in good condition.
- Leave a float plan with a reliable friend or relative.
- Do not allow anyone who is under the influence of alcohol or drugs to operate a boat.
- Remove all visible aquatic plants and animals from your boat, motor, trailer, and accessory equipment before leaving the access area.
- Dispose of live bait in the trash.
- To prevent collisions on the water, every operator should follow the three basic rules of navigation:
 - Practice good seamanship.
 - Keep a sharp lookout.
 - Maintain a safe speed and distance.

Rules On The Water:

- BOATS KEEP OUT! Marks waterfalls, swim areas, rapids and other restricted areas.
- BOATS KEEP OUT

STOP AQUATIC HITCHHIKERS!™

Prevent the transport of nuisance species. Clean all recreational equipment. www.ProtectYourWaters.net

When you leave a body of water:

- Remove any visible mud, plants, fish or animals before transporting equipment.
- Eliminate water from equipment before transporting.
- Clean and dry anything that comes into contact with water (boats, trailers, equipment, clothing, dogs, etc.).
- Never release plants, fish or animals into a body of water unless they came out of that body of water.

Additional Information

- MI Department of Natural Resources: www.michigan.gov/dnr Click on-"Camping and Recreation" then "Boating"
- MI Recreational Boating Information System: www.mcpi.state.mi.us/MBIS
- MI Boating Handbook: www.boat-ed.com/michigan/handbook/index.html
- Clean Boats Clean Waters Program: www.mymisa.org/cbcw



ON YOUR PLATE

1 CHOOSE

This quiz will help you find the best way for you to choose your fish. Read each sentence and mark "T" for true or "F" for false.

T	F
T	F
T	F
T	F
T	F

If **ALL** are **TRUE** for you:
You're at lower risk from chemicals in fish. The S.A.F.E. tips will help you choose fish that are safer to eat on a regular basis.

If **ONE or MORE** are **FALSE**:
You might be at higher risk. The *Eat Safe Fish Guide* will lead you to fish that are safer to eat on a regular basis.

2 CLEAN

Some chemicals, like PCBs and dioxins, collect in the fat of the fish.

- When cleaning the fish, trim away any of the fat you can see. Remove and throw away the organs, too.

Careful cleaning can remove a lot of the chemicals from the fish. See below to learn how to quickly and easily filet a fish!

3 COOK

Even after trimming away the fat that you can see on the fish, some fat will still be hidden inside the fish filets.

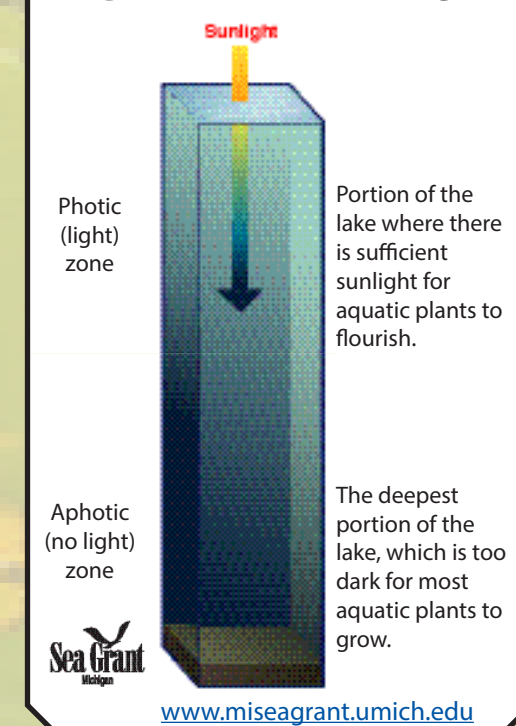
- Poke holes in the skin or remove it completely so that fat can drip away from the fish filets as it cooks.
- Cook your fish on a grill or on a broiler pan in the oven. Any fat left can now drip away from the fish through the grates.

If you cook your fish like this, you can get rid of even more of the chemicals that can be in the filets...except mercury.

Have Questions or need a *Guide*? Call MDCH at 1-800-648-6942 or visit www.michigan.gov/eatsafefish.



LIGHT PENETRATION



Portion of the lake where there is sufficient sunlight for aquatic plants to flourish.

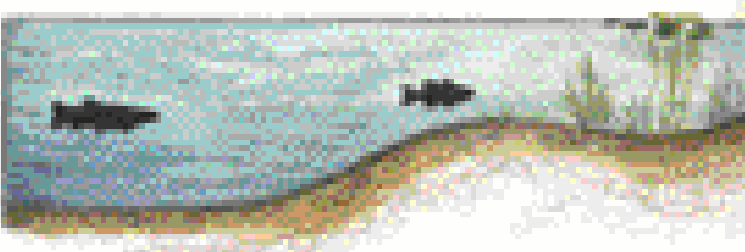
The deepest portion of the lake, which is too dark for most aquatic plants to grow.

www.misagrants.umich.edu

Image: Courtesy of Michigan Sea Grant. Life of the Lakes publication series.

Lake & River Bottoms

Lake and river bottoms provide the foundation for aquatic food chains. When plants and animals in the food web die, many of them come to rest at the bottom of the lake or river - often referred to as the "benthic zone." Here, organisms such as bacteria or fungi that live in the lake bottom recycle the dead organisms back into nutrients that can be used again by plants and fish in the waters above. Because a food web is composed of a series of connections, it is sensitive to change. In deep lakes where waters are not well mixed, a lack of oxygen within the benthic zone may impede nutrients from being released. These nutrients will be unavailable to grow more algae and plants until the waters mix again. In river systems, extra sediment loading from upland erosion can change the composition of riverbed substrates and alter natural rates of nutrient cycling and release.



Wetlands & Floodplains

Wetlands and floodplains are located at the interface of dry upland and open water. They are unique and varied ecosystems that provide important ecological functions including: stormwater management & flood control, sediment and pollution control, nutrient filtration, aquifer recharge, and base water supply to streams and ponds. Wetlands also provide critical habitat to wildlife and may be used for recreational activities such as fishing, bird watching, and hunting. These delicate ecosystems harbor a diversity of plant and animal resources and serve as the front-line defense that streams and ponds have against human-induced upland disturbances. The use and modification of these unique systems are closely regulated at the local, state, and federal levels.

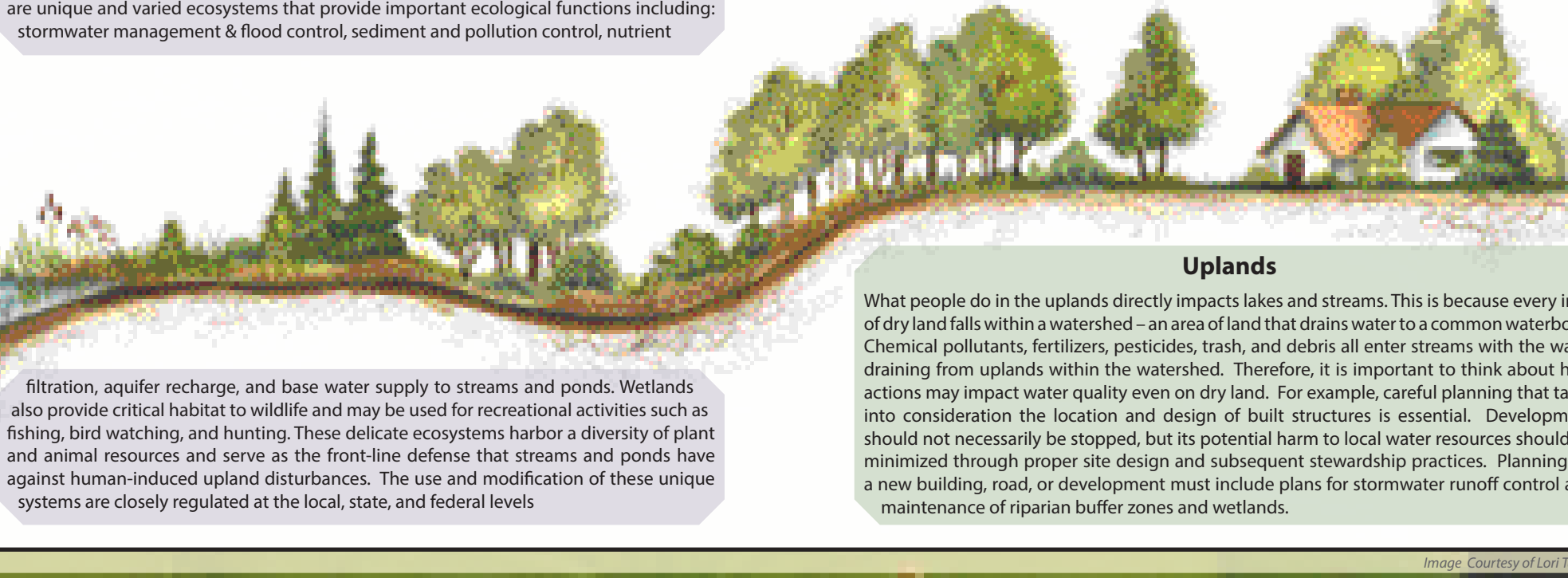



Image: Courtesy of Lori Taylor

ON THE LANDSCAPE

What people do in the uplands directly impacts lakes and streams. This is because every inch of dry land falls within a watershed - an area of land that drains water to a common water body. Chemical pollutants, fertilizers, pesticides, trash, and debris all enter streams with the water draining from uplands within the watershed. Therefore, it is important to think about how actions may impact water quality even on dry land. For example, careful planning that takes into consideration the location and design of built structures is essential. Development should not necessarily be stopped, but its potential harm to local water resources should be minimized through proper site design and subsequent stewardship practices. Planning for a new building, road, or development must include plans for stormwater runoff control and maintenance of riparian buffer zones and wetlands.



SUNFISH

Lepomis spp.

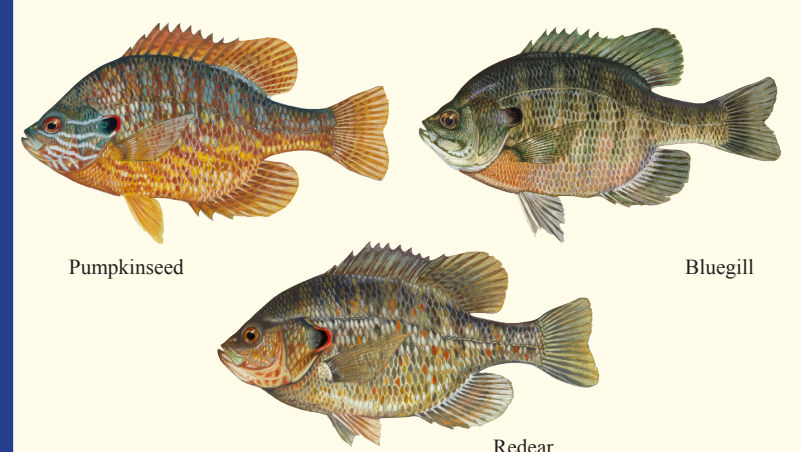
Identifying Characteristics: The bluegill (*L. macrochirus*) has five vertical bars on its side, a faint dark area on the back, soft rayed part of its dorsal fin and a fairly large, dark lobe on the back of its gill cover. Pumpkinseeds (*L. gibbosus*) usually are more colorful with reds and yellows and the lower part of their lobe is red. Redear sunfish (*L. microlophus*), as you might expect, have a larger margin of red on their gill cover lobe that extends almost all the way around.

Natural History: These fish prefer cool to moderately warm water ranging from the mid 60s to 80 degrees. They will be found in relatively shallow water with plenty of vegetation and other cover. Hot summer weather may send them to deeper water, especially the larger fish. They are very popular fish in the summer and through the ice in the winter.

Adult Sizes: 6"-10"

Bait: Worms, insect nymphs, crickets, small jigs.

Habitat: Shallow areas of clear lakes with plenty of vegetation.



Rock Bass

Ambloplites rupestris


Identifying Characteristics: This member of the sunfish family is more elongated than the bluegill and pumpkinseed and has a much larger mouth. It is greenish olive and somewhat mottled with many small dark spots in rows. Green sunfish (*Lepomis cyanellus*) and warmouth (*L. gulosus*) are similar to the rock bass in that they have large mouths and slightly elongated bodies. Green sunfish are smaller and their spots are not prominent. Warmouth have a spot on each scale and only three spines on their anal fin.

Natural History: True to their name, rock bass love to reside in the nooks and crannies formed by large rocks. Both rock bass and green sunfish like rivers and lakes with hard bottoms while warmouth prefer weedy lakes with silty substrates. While all three feed on insects and other invertebrates they take advantage of their larger mouths to prey on other fish.

Adult Size: Rock Bass: 8"-12", Green Sunfish: 5"-7", Warmouth: 6"-10"

Bait: Minnows, crayfish, insect nymphs, jigs, spinners, small crankbaits

Habitat: Rivers and lakes, shallow with cover; wood, vegetation, rocks



Crappie

Pomoxis nigromaculatus (Black) & P. annularis (White)

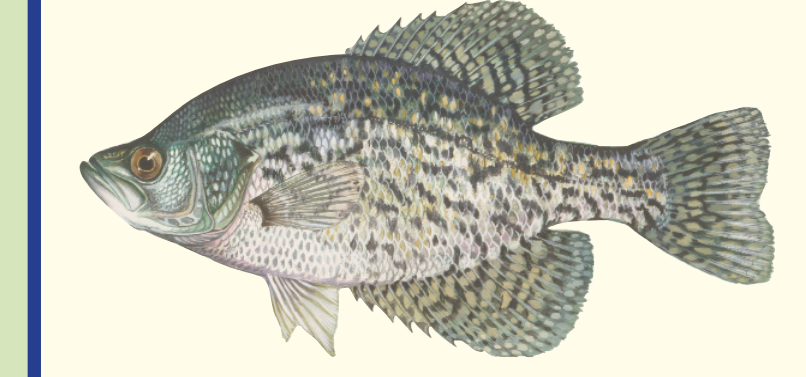
Identifying Characteristics: Silvery-green to yellowish with large fins and a narrow body from side to side. They have many spots and much mottling and a relatively large mouth. Black crappies are much more common and have 7 to 9 spines on their dorsal fin while the white crappie has 6 or less.

Natural History: These fish have a larger average size than most panfish. They prefer water temperatures in the 70s but will tolerate 80 degrees and above. They eat more small fish than other panfish. Weed beds with openings and areas of dead trees in impoundments provide ideal habitat. They bite well in the winter, continue to feed after dark, and are often caught through the ice.

Adult Sizes: 8"-14"

Bait: Minnows, night crawlers, jigs, soft plastics, small crankbaits

Habitat: Clear water, moderate depth, vegetation and wood



Smallmouth Bass

Micropterus dolomieu


Identifying Characteristics: The soft and spiny ray parts of the dorsal fin are separated by a shallow notch and the jaw extends only to the eye. They are olive green to bronze in color and often have many vertical bars on their sides. The gill covers will have three or four bars extending from the cheek to the edge of the cover.

Natural History: Smallmouth prefer clear water with a firm, rocky bottom. They like water temperatures in the 60s and low 70s, much cooler than their largemouth cousin. Logs, boulders, and rock or clay ledges provide cover for these fish. Rivers often provide ideal habitat for smallmouth and they abound there.

Adult Sizes: 14"-18"

Bait: Minnows, night crawlers, crayfish, jigs and soft baits, spinners, crankbaits.

Habitat: River and streams with moderate current, rocky lake shallows



Largemouth Bass

Micropterus salmoides

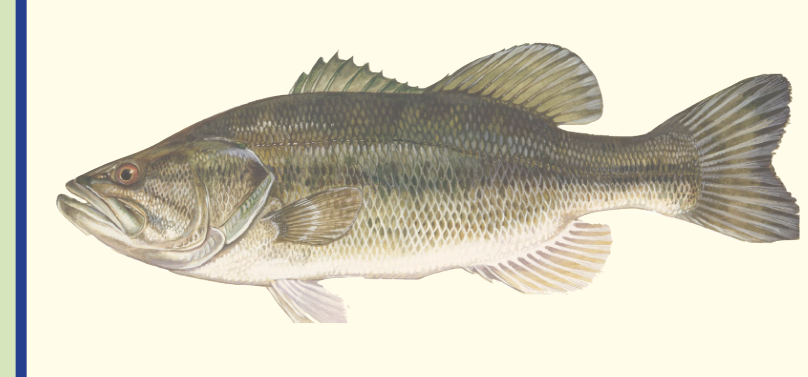
Identifying Characteristics: The dorsal fin of this fish is deeply notched, separating the front spiny ray part from the rear soft ray section. Unlike others in the sunfish family, their body is longer than deep and the upper jaw extends back beyond its eye. They are greenish in color and usually have a dark, horizontal bar.

Natural History: These very popular game fish spend most of their time in shallow water near vegetation. They prefer water temperatures in the upper 70s and tolerate temperatures in the low 80s well. They will ambush prey from cover and also feed on the surface.

Adult Sizes: 14"-22"

Bait: Soft baits, spinner baits, crankbaits, minnows, frogs.

Habitat: Lake shallows, vegetation, boat docks



Common Carp

Cyprinus carpio

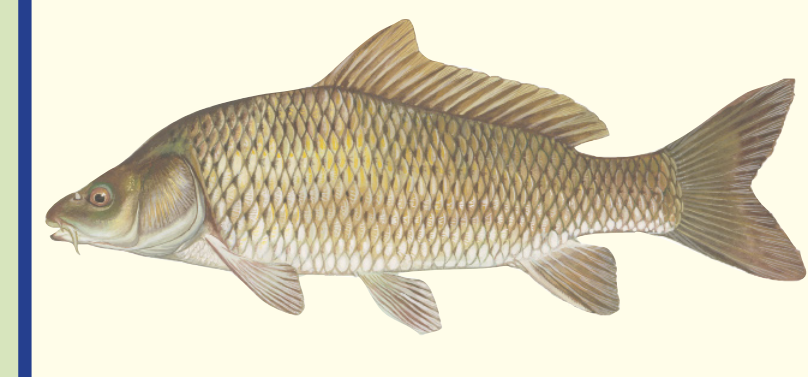
Identifying Characteristics: These introduced fish have very large scales and a dome-turned mouth with barbels. Carp have serrated dorsal and anal fins with spines. They are a heavy bodied fish that grows rapidly to a large size. A brownish back transitions to a yellow or cream colored belly.

Natural History: Carp are omnivorous fish and do well in lakes and slow moving rivers. They sort through fine bottom sediments searching for invertebrates and in the process muddy the water and upland plants. Even with this habitat degrading habit, they are gaining status as a game fish, especially among fly anglers.

Adult Sizes: 16"-32"

Bait: Worm, dough balls, insect nymphs, corn, crayfish.

Habitat: Lake shallows, sluggish rivers, sandy/silty bottom with vegetation



Channel Catfish

Ictalurus punctatus

Identifying Characteristics: A flat, broad head, a forked tail, and small spots distinguish this member of the catfish family. It shares our waters with four other species of catfish. All are characterized by a lack of scales, a small dorsal fin with a sharp spine, barbels near mouth, and a small adipose fin near the tail. Flathead catfish (*Pylodictis olivaris*) are yellowish brown and mottled with a square tail.

Natural History: Channel catfish are long lived and prefer firm substrates in rivers and lakes. Flathead catfish prefer slow water in rivers and frequently seek woody cover and undercut. Channel catfish eat live fish and invertebrates as well as scavenge for dead critters while flathead catfish focus on live fish.

Adult Size: Channel Catfish: 12"-26", Flathead Catfish: 14"-36"

Bait: Minnows, worms, crayfish, wigglers, stink baits, spinners and crankbaits.

Habitat: Rivers and lakes, shallow with cover, vegetation

