



#### Map Legend

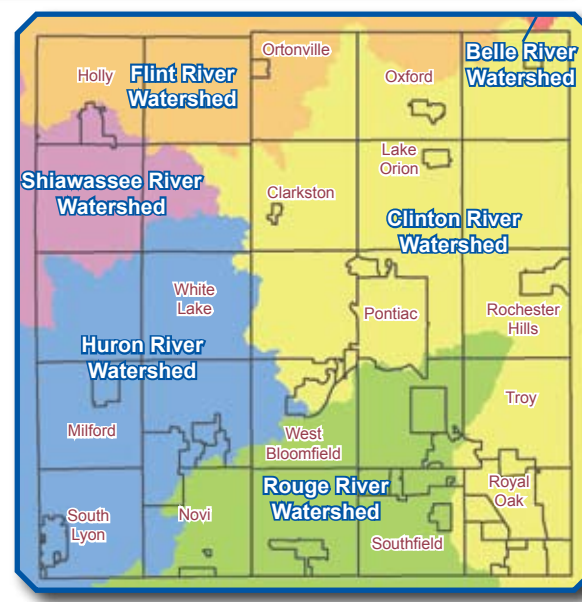
- Publicly Accessible Lake
- Publicly Accessible River
- Major Trail
- Recreation Land
- Municipal Boundary

- Lakes & Ponds
- Rivers & Streams
- Major Watershed

#### What is a Watershed?

A watershed consists of an area of land that drains into a common body of surface water such as a stream, river, or lake and also includes groundwater. A critical component of watershed management is the understanding of how water travels into, across, and off the land and other intercepting features (such as trees, houses, and parking lots) carrying with it a variety of pollutants that can impact water quality. The watershed concept allows us to understand the full impact of our behaviors on our water resources. Each watershed in the county covers multiple municipal and governmental boundaries. The surface waters within Oakland County drain into six major watersheds:

- Belle River Watershed
- Clinton River Watershed
- Huron River Watershed
- Rouge River Watershed
- Flint River Watershed
- Shiawassee River Watershed



#### 24-Hour Pollution Hotline (248) 858-0931

The Oakland County Drain Commissioner's Office has established a 24-Hour Pollution Hotline that you can call to report surface water pollution in Oakland County.

#### What Should You Report?

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

# Fishing Opportunities in Oakland County, Michigan

## A Guide to Publicly Accessible Lakes and Rivers

Oakland County boasts of having more lakes than any other county in Michigan with more than 1,400 lakes and numerous streams stemming from its six major watersheds. One of the best ways to experience the county's rich water resources is by fishing. Relax, wait to see what is living underneath the surface. There are many diverse places for anglers to toss a line into the water and try their luck. Seventy-four public access points are listed on this poster. The benefits of fishing are many including time near the water, seeing wildlife, experiencing the outdoors, and learning to appreciate Oakland County's rich natural heritage - better yet - you might catch a meal.



Bass Fishing on Crooked Lake  
Independence Township, Michigan

#### How to Use the Guide

Use this Fishing Opportunities Guide to help get you started on your next fishing adventure in Oakland County, Michigan. The information found on the reverse side of the map will help homeowners, anglers, and cooks with some of the do's and don'ts of living near water and handling fish. The fish illustrations will help identify many of the common fish species found in the inland lakes and rivers throughout the county.

Once you've located your next fishing spot, don't forget to take your son or daughter, niece or nephew, or grandchild along so no child is left indoors and pass on the fishing traditions. Also, take a camera to capture the memories of time spent fishing.



Ice Fishing on Lake Sixteen  
Orion Township, Michigan


MICHIGAN STATE  
UNIVERSITY  
EXTENSION  
www.msue.msu.edu




www.michigan.gov/dnr

OAKLAND  
COUNTY PARKS  
www.oakgov.com/community/oakland-county-parks/

OAKLAND  
COUNTY MICHIGAN  
www.advantageoakland.com

Table Key		FISH SPECIES																					
Map No.	Grid No.	Size (acres or miles)	Boat Ramp	Shore Fishing	Pier	Longmouth Bass	Smallmouth Bass	Bluegill	Bullhead	Carp	Catfish	Cisco	Black Crappie	Yellow Perch	Northern Pike	Splake	Suckers	Pumpkinseed Sunfish	Redear Sunfish		Brown Trout	Rainbow Trout	Walleye
Lakes With Public Access																							
Comments																							
1	C8	Alderman Lake	14	P	x	♦		♦					♦	♦			♦	♦	♦				
2	E6	Big Lake	217	S		♦		♦	♦	♦	♦		♦	♦			♦	♦	♦			♦	
3	A3	Big Seven Lake	167	P	x	x		♦	♦	♦	♦		♦	♦	♦		♦	♦	♦			♦	
4	N3	Buhl Lake	37	P	x			♦	♦	♦	♦		♦	♦		♦		♦	♦				
5	J15	Carpenter Lake	5			U	♦	♦	♦	♦	♦		♦	♦				♦	♦				
6	I10	Cass Lake	1,180	P	x	U	♦	♦	♦	♦	♦		♦	♦	♦		♦	♦	♦			♦	
7	F9	Cedar Island Lake	167	S				♦	♦	♦	♦		♦	♦	♦			♦	♦				
8	L4	Chamberlain Lake	10	x				♦	♦	♦	♦		♦	♦	♦			♦	♦				
9	J3	Clear Lake	34				♦	♦	♦				♦	♦	♦			♦	♦				
10	F10	Cooley Lake	87					♦	♦	♦	♦		♦	♦	♦			♦	♦				
11	H9	Crescent Lake	96	S			♦		♦					♦	♦			♦	♦			♦	
12	H4	Crooked Lake	68	P	x	x	♦	♦	♦				♦	♦	♦			♦	♦				
13	C3	Croched Lake	40	P				♦	♦				♦	♦	♦			♦	♦				
14	C3	Crystal Lake (Holly)	5	P				♦	♦				♦	♦	♦			♦	♦				
15	J9	Crystal Lake (Pontiac)	94						♦					♦	♦			♦	♦				
16	D5	Davisburg Pond	11	x			♦	♦	♦					♦	♦			♦	♦				
17	G6	Deer Lake	138	F				♦				♦		♦	♦		♦	♦	♦				
18	A3	Dickinson Lake	46	P		x	♦	♦	♦				♦	♦	♦			♦	♦				
19	K8	Galloway Lake	34			x	♦	♦	♦				♦	♦	♦			♦	♦				
20	M4	Graham Lake, East	37	P		x	♦	♦	♦				♦	♦	♦			♦	♦				
21	M4	Graham Lake, West	22			♦	♦	♦	♦				♦	♦	♦			♦	♦				
22	C8	Grass Lake	33	F				♦	♦					♦	♦			♦	♦				
23	M4	Hart Lake	6					♦	♦					♦	♦			♦	♦				
24	E1	Harwig Lake	5				♦	♦	♦					♦	♦			♦	♦				
25	E3	Heron Lake	119	P	x	x	♦	♦	♦	♦		♦	♦	♦	♦			♦	♦			♦	
26	B12	Kent Lake	1,036	S	x	U	♦	♦	♦	♦		♦	♦	♦	♦			♦	♦			♦	
27	I7	Lake Oakland	312	S			♦	♦	♦	♦			♦	♦	♦			♦	♦			♦	
28	K4	Lake Orion	493	S	x		♦	♦	♦	♦			♦	♦	♦			♦	♦			♦	
29	K5	Lake Sixteen	91	P		x	♦	♦	♦	♦			♦	♦	♦			♦	♦				
30	N3	Lakeville Lake	444	S			♦	♦	♦	♦			♦	♦	♦			♦	♦				
31	C2	Little Lake	30	F				♦	♦				♦	♦	♦			♦	♦				
32	F10	Long Lake (Commerce)	169	S			♦	♦	♦	♦			♦	♦	♦			♦	♦			♦	
33	K3	Long Lake (Oxford)	35				♦	♦	♦				♦	♦	♦			♦	♦				
34	I7	Loon Lake	210	S	x		♦	♦	♦				♦	♦	♦			♦	♦				
35	G7	Lotus Lake	194				♦	♦	♦				♦	♦	♦			♦	♦		♦	♦	
36	C9	Lower Pettibone Lake	103	P		x	♦	♦	♦				♦	♦	♦			♦	♦				
37	L5	Lower Trout Lake	64	P	x	x	♦	♦	♦				♦	♦	♦			♦	♦				
38	G7	Maceday Lake	221	S			♦	♦	♦			♦	♦	♦	♦			♦	♦		♦	♦	
39	J3	Mickelson Lake	42				♦	♦	♦				♦	♦	♦			♦	♦				
40	G11	Middle Straits Lake	183	F			♦	♦	♦	♦			♦	♦	♦			♦	♦				
41	C10	Milford Millpond	68		x			♦	♦				♦	♦	♦			♦	♦				
42	I7	Mohawk Lake	32					♦	♦				♦	♦	♦			♦	♦				
43	C10	Moore Lake	86	P			♦	♦	♦				♦	♦	♦			♦	♦				
44	D11	Moss Lake	13					♦	♦				♦	♦	♦			♦	♦				
45	H11	Orchard Lake	865	S			♦	♦	♦				♦	♦	♦			♦	♦				
46	I9	Otter Lake	198				♦	♦	♦				♦	♦	♦			♦	♦				
47	B9	Pickert Lake	8	P			♦	♦	♦				♦	♦	♦			♦	♦				
48	F8	Pontiac Lake	633	F	P	x	U	♦	♦	♦	♦		♦	♦	♦			♦	♦			♦	
49	M4	Prince Lake	32	P			♦	♦	♦				♦	♦	♦			♦	♦				
50	D11	Proud Lake, Lower	49	P			♦	♦	♦				♦	♦	♦			♦	♦				
51	E11	Proud Lake, Upper	55	P	x		♦	♦	♦				♦	♦	♦			♦	♦				
52	I7	Schoolhouse Lake	41					♦	♦				♦	♦	♦			♦	♦				
53	I8	Silver Lake	100				♦	♦	♦			♦	♦	♦	♦			♦	♦		♦	♦	
54	J8	Silver Lake, Upper	37	F		x	♦	♦	♦	♦			♦	♦	♦			♦	♦				
55	B3	Spring Lake	10					♦	♦				♦	♦	♦			♦	♦				
56	J3	Squaw Lake	32	S		x	♦	♦	♦				♦	♦	♦			♦	♦				
57	D3	Stewart Lake	31	P	x		♦	♦	♦				♦	♦	♦			♦	♦				
58	O6	Stony Creek Lake	498	P		x		♦	♦	♦	♦	♦	♦	♦	♦			♦	♦			♦	
59	I10	Sylvan Lake	402	F			♦	♦	♦				♦	♦	♦			♦	♦				
60	K3	Tan Lake	61				♦	♦	♦				♦	♦	♦			♦	♦				
61	D9	Teepie Lake	49	P	x		♦	♦	♦				♦	♦	♦			♦	♦				
62	A6	Tipisico Lake	254	S		x	♦	♦	♦				♦	♦	♦			♦	♦				
63	G10	Union Lake	474	S			♦	♦	♦			♦	♦	♦	♦			♦	♦			♦	
64	E3	Valley Lake	38	P		x	♦	♦	♦	♦			♦	♦	♦			♦	♦				
65	D8	White Lake	576	S			♦	♦	♦	♦			♦	♦	♦			♦	♦			♦	
66	E3	Wildwood Lake	52				♦	♦	♦	♦			♦	♦	♦			♦	♦				
67	E12	Wolverine Lake	287	F			♦	♦	♦	♦			♦	♦	♦			♦	♦			♦	
68	H7	Woodhull Lake	146				♦	♦	♦				♦	♦	♦			♦	♦				
69	I7	Wormer Lake	34					♦	♦				♦	♦	♦			♦	♦				
Rivers With Public Access																							
A	M8	Clinton River (above Yates Dam)	12 mi		x												♦			♦	♦		
B	D11	Huron River	6 mi		x														♦	♦			
C	G1	Kearsley Creek	2 mi																♦	♦			
D	M6	Paint Creek	15 mi		x														♦	♦			
E	K13	Rouge River	11 mi		x			♦															





**Black Crappie**  
*Pomoxis nigromaculatus*


**Identifying Characteristics:** (Native Fish) Silvery-green to yellowish with large dorsal and anal fins. Sides and fins marked with rows of dark spots which become more intense toward the back. Arched back and large mouth with upper jaw extending under the eye.

**Natural History:** The Black Crappie is one of the largest and most popular panfish. Black Crappies thrive in clear, natural lakes and reservoirs with moderate vegetation. They are also found in large slow-moving less turbid rivers, provided the water is not too murky. Crappies prefer water 70-75 degrees but will tolerate water over 80 degrees. They are gregarious and often travel in schools. In the spring and fall they come into shallow water and tend to stay in mid-depth to deeper water during the summer. They are one of the most common fish caught through the ice.

**Adult Sizes:** 8" - 12"

**Bait:** Minnows, Hard Baits, Soft Baits

**Habitat:** Lake Shallows, Lake-Deep Water, Wood



**Rainbow Trout**  
*Oncorhynchus mykiss*


**Identifying Characteristics:** (Non-Native Fish) Two dorsal fins including one adipose fin, mouth and gums are light, small spots along rays on entire tail, 10-12 rays in anal fin. Steelhead is a name given to rainbow trout that live in the Great Lakes. Rainbow trout are native to the Pacific Ocean along North America and to rivers and other fresh waters of North America west of the Rocky Mountains. They are a popular game fish, and for this reason have been introduced all over the United States.

**Natural History:** Great Lakes Steelhead are usually found in waters less than 35 feet deep at temperatures of 58-62 degrees F. They are often found near stream outlets, especially in spring and early summer. Although they feed primarily in mid-depths, they do take surface insects, including fly fishermen's flies. Larger rainbows will eat other small fish if available.

**Adult Sizes:** 10" - 16"

**Bait:** Worms/Waxworms, Spinners, Doughballs/Corn

**Habitat:** Flowing Water, Lake-Deep Water, Rocky, Wood



**Brown Trout**  
*Salmo trutta*

**Identifying Characteristics:** (Non-Native Fish) Two dorsal fins including one adipose fin, broad square tongue with 11-12 large teeth, light pectoral fins, squire tail, 9-10 rays in the anal fin. Generally a golden-brown in color with large brown or black spots surrounded by faint halos of a lighter color on its sides, back and dorsal fin.

**Natural History:** Brown trout are a close relative of the Atlantic Salmon, and were also brought to North American waters as exotics. These natives of Europe and western Asia were introduced into New York and Michigan waters in 1883. Brown Trout have thrived in their new home, and have become firmly established in all of the upper Great Lakes waters. They are generally found only in streams within Oakland County.

**Adult Sizes:** 8" - 16"

**Bait:** Worms/Waxworms, Spinners, Minnows

**Habitat:** Flowing Water, Rocky, Wood

**Anatomy Of A Fish**



**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](http://www.michigan.gov/dnr)**



**Northern Pike**  
*Esox lucius*


**Identifying Characteristics:** (Native Fish) Single dorsal fin, light colored spots on darker body, upper half of gill cover and entire cheek has scales.

**Natural History:** As predators, Northern Pike can have significant impact on their prey species. As with muskies, pike lurk in the cover of vegetation in the lake's clear, shallow, warm waters near shore, although they retreat somewhat deeper in midsummer. Pike consume large numbers of smaller fish, about 90 percent of their diet. They seem willing to supplement their diet with anything their huge jaws can surround, including frogs, crayfish, waterfowl, rodents, and other small mammals. Their preferred food size is approximately one third to one half the size of the pike itself.

**Adult Sizes:** 20" - 36"

**Bait:** Minnows, Hard Baits, Spinners

**Habitat:** Lake Shallows, Vegetation, Rocky, Wood



**Walleye**  
*Sander vitreus*


**Identifying Characteristics:** (Native Fish) Two dorsal fins separated into a spiny and a soft-rayed portion, cloudy eye, white tips on anal and lower caudal fins, canine teeth. Walleyes are the largest member of the perch family. They lack the distinctive vertical bar markings of the yellow perch and have fan-like canine teeth.

**Natural History:** These battling fish are exciting to catch, delicious to eat and because they feed actively all winter, they provide a fine year-round sport fishery. In spring and fall walleyes congregate in shallow bay waters of the Great Lakes, where they seek out rocky areas and submerged bars. During the bright part of the day they retreat in schools to the shade of deep waters or submerged objects. In the summer, Walleyes range into cooler, deeper waters. They prefer a water temperature of 55 to 68 degrees F and are seldom found in waters deeper than 50 feet.

**Adult Sizes:** 15" - 24"

**Bait:** Worms/Waxworms, Minnows, Hard Baits, Soft Baits

**Habitat:** Flowing Water, Lake-Deep Water, Rocky, Vegetation



**Yellow Perch**  
*Perca flavescens*

**Identifying Characteristics:** (Native Fish) Two dorsal fins separated into a spiny and soft-rayed portion, yellow sides, seven blackish bars on the sides, no canine teeth. The Yellow Perch and Walleye, members of the Percidae or perch family, are characterized by a dorsal fin, which is completely divided into a spiny and a separate soft-rayed portion. Both are important game fish in the Great Lakes area.

**Natural History:** Yellow Perch have the distinction of being the most frequently caught game fish in Michigan. In addition their reputation as a tasty treat makes them a doubly valuable Great Lakes product. The gregarious perch travel in schools, generally preferring relatively shallow waters near shore. They are rarely taken from waters more than 30 feet deep, although in spring and fall they inhabit shallower areas than they do in the heat of the summer.

**Adult Sizes:** 8" - 12"

**Bait:** Worms/Waxworms, Minnows, Soft Baits

**Habitat:** Lake Shallows, Vegetation

### On the Land

#### Seven Simple Steps to Clean Water

Our Water. Our Future.



Our Water. Our Future. Ours to Protect.  
Find out more at [www.semcoq.org](http://www.semcoq.org).

#### Waterfront Homeowner Tips

- Don't mow to the edge! Maintain a buffer of deep-rooted plants, trees, or shrubs adjacent to wetlands and open water.
- Repair areas of erosion to prevent sediments from washing into the water.
- Reduce or eliminate the use of lawn fertilizers and garden pesticides.
- Use fertilizers containing no phosphorus to minimize nutrients entering the water resource.
- Construct new septic systems as far away from the shoreline as possible and have the septic tank pumped every 3-5 years.
- Keep compost piles, leaves, and grass clippings as far from the shoreline as possible.
- Don't feed wildlife near the shoreline. Waste produced by wildlife can add a significant source of nutrients to the water.
- Use plants that are native to Michigan in your landscaping. They will help filter water runoff.

#### Additional Information

- Clinton River Watershed Council: [www.crvwc.org](http://www.crvwc.org)
- Friends of the Rouge River: [www.therouge.org](http://www.therouge.org)
- Flint River Watershed Coalition: [www.flintriver.org](http://www.flintriver.org)
- Huron River Watershed Council: [www.hrwc.org](http://www.hrwc.org)
- Friends of the Shiawassee River: [www.shiawasseeiver.org](http://www.shiawasseeiver.org)
- SEMCOG: [www.semcoq.org](http://www.semcoq.org)

### 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**

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



**DIVER DOWN**

DIVER DOWN FLAG Do not approach, divers are below. Stay at least 200 feet away from diving operations. This flag may be flown from a vessel or float.

#### Additional Information

- MI Department of Natural Resources: [www.michigan.gov/dnr](http://www.michigan.gov/dnr)
- Click on "Recreation, Camping, & Boating" then "Boating" MI Recreational
- MI Recreational Boating Information System: [www.mcgl.state.mi.us/MRIBS](http://www.mcgl.state.mi.us/MRIBS)
- MI Boating Handbook: [www.boat-ed.com/](http://www.boat-ed.com/)
- Clean Boats Clean Waters Program: [www.michiganseagrant.org/topics/boating-harbors-and-marinas/](http://www.michiganseagrant.org/topics/boating-harbors-and-marinas/)

#### STOP AQUATIC HITCHHIKERS!

Prevent the transport of nuisance species. Clean all recreational equipment. [www.ProtectYourWaters.net](http://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.

### In the Kitchen

#### Fish Eating Tips

- Trim away fatty areas
- Remove or puncture the fish's skin before cooking. This allows fat to drain off and helps remove fat from under the skin.
- Cook the fish so the fat drips away by baking, broiling, or grilling on a rack. Throw away the liquid fat and drippings.
- Do not eat the organs, head, skin or dark fatty tissues.
- Do not re-use oils used to deep or pan fry fish.
- Space out your meals of fish.
- Eat many different types of fish from a variety of sources.
- Limit your meals of predatory fish species (fish that eat other fish).
- Eat smaller, younger fish.
- Most chemicals (except mercury) collect in fat. Avoid fatty fish like carp and catfish from contaminated waters.
- Mercury cannot be trimmed or cooked away from fish. Choose species that are low in mercury.

#### Michigan Mercury Fish Consumption Advisory

The statewide advisory applies to all inland lakes, reservoirs, and impoundments. The Statewide Mercury Advisory does not apply to the Great Lakes or rivers in Michigan.

- No one should eat more than one meal a week of Rock Bass, Yellow Perch, or Crappie more than nine inches in length from inland lakes, reservoirs, or impoundments.
- No one should eat more than one meal a week of Largemouth Bass, Smallmouth Bass, Walleye, Northern Pike or Muskellunge of any size from inland lakes, reservoirs, or impoundments.
- Women of childbearing age and children under 15 years old should eat no more than one meal per month of:
  - Rock Bass, Yellow Perch or Crappie more than nine inches in length from inland lakes, reservoirs, or impoundments.
  - Largemouth Bass, Smallmouth Bass, Walleye, Northern Pike or Muskellunge of any size from inland lakes, reservoirs, or impoundments.

#### How To Clean A Fish



#### Who is at risk from eating contaminated fish?

- Unborn babies
- Breast-fed babies
- Children under the age of 15
- Individuals with certain chronic health problems

#### Additional Information

For more information check out the *Michigan Family Fish Consumption Guide*, available at: <http://www.michigan.gov/eatsafefish> or call 1-800-MI-TOXIC

### On the Landscape

#### Light Penetration



www.miseagrant.umich.edu

#### 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.

#### Uplands

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 waterbody. 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.

### In the Wild

#### Natural Indicators

The glacial history of Oakland County has created some special habitats that support unique wildlife. The animals pictured here need clean water to survive. They can be found in or near the water. All of these animals are rare or becoming rare. The two reptiles pictured here are protected in Michigan by law - they are "Species of Special Concern". Their populations are declining. The Eastern Massasauga Rattlesnake is Michigan's only venomous snake. It inhabits fens and wet meadows. The Blanding's Turtle lives in clean water with lots of vegetation. The strange appearance of the mudpuppy can scare you, but this harmless creature is affected by pollution. Seeing these animals indicates the water quality is good. Please leave them alone.

For more information check out: Michigan Natural Features Inventory [web4.mnfi.msu.edu/mnfi](http://web4.mnfi.msu.edu/mnfi)

#### Eastern Massasauga Rattlesnake

*Sistrurus catenatus catenatus*

Massasauga have thick bodies and are medium size snakes (2'-3'). Look for three vertical dark stripes on the head and dark blotches along the back and sides with background colors of gray to brown. Young Massasauga look like the adults, but smaller. The hallmark of the snake is the rattle on the tip of its tail - if not present the tail is blunt, not tapered.

#### Blanding's Turtle


*Emys blandingii*

Blanding's turtles are a medium-sized turtle with a dome-shaped carapace, or top shell, which is smooth and black dotted with yellowish flecks. It is hard to miss the bright yellow neck of these turtles. The yellowish plastron, or bottom shell, has dark blotches along the edge and a flexible hinge across it. Blanding's turtles take 15-20 years to reach reproductive age.

#### Mudpuppy

*Necturus maculosus*

The reddish gills behind the head of the Mudpuppy are very obvious - showing the exchange of oxygen with the blood vessels in the gills. This large brown to gray salamander may have spots and can grow from 8" - 19" long. These permanently aquatic salamanders spend most of the time crawling on the bottom of lakes and rivers and hide under objects.



**Pumpkinseed Sunfish**  
*Lepomis gibbosus*

**Identifying Characteristics:** (Native Fish) Oval and laterally compressed, with colorful speckles on an olive back, yellow sides, and a yellow to orange belly. Very similar to bluegills - the two are best distinguished by the opercle ("ear") flap. It is black in both species, but the pumpkinseed has a crimson spot on the rear edge.

**Natural History:** Pumpkinseeds prefer shallow, cool to moderately warm water with some weed cover. They are often typical of ponds and small lakes. Pumpkinseeds are more tolerant of low oxygen levels than bluegills are, but less tolerant of warm water. Groups of young fish school close to shore, but adults tend to travel in groups in slightly deeper, yet still covered, waters. They are active during the day and rest near the bottom at night.

**Adult Sizes:** 6" - 8"

**Bait:** Worms/Waxworms, Spinners

**Habitat:** Lake Shallows, Vegetation



**Bluegill**  
*Lepomis macrochirus*

**Identifying Characteristics:** (Native Fish) Two dorsal fins with spinous and soft-rayed portions united, small mouth, long pointed pectoral fins, faint black spot on soft-rayed part of dorsal fin separates the bluegill from other sunfish, which lack this dorsal coloration. Hybridizes with other sunfish.

**Natural History:** The Bluegill is a native to eastern and central North America, including the lower Great Lakes. This fish enjoys a well-deserved popularity with anglers. Many a young angler boasts the delicious bluegill as a first catch, while seasoned anglers using light tackle find it a valiant fighter. Bluegills favor warm waters (64-70 degrees F) with plenty of cover such as weed beds, submerged logs, or drop-offs. They usually stay in relatively shallow water, but as temperatures rise in the summer, large bluegills will head for deeper water. This fish also provides good winter sport.

**Adult Sizes:** 6" - 10"

**Bait:** Worms/Waxworms, Spinners

**Habitat:** Lake Shallows, Vegetation



**Largemouth Bass**  
*Micropterus salmoides*

**Identifying Characteristics:** (Native Fish) Two dorsal fins with a deep notch between spinous and soft-rayed portions, body longer than deep, upper jaw extends beyond rear of eye, dark horizontal, lateral streak.

**Natural History:** Another popular game fish, the Largemouth Bass lives in shallow water habitats, among reeds, water lilies and other vegetation. It shares these habitats with Muskies, Northern Pike, Yellow Perch and Bullheads. Largemouth bass are adapted to warm waters of 80-82 degree F, and are seldom found deeper than 20 feet.

**Adult Sizes:** 14" - 20"

**Bait:** Worms/Waxworms, Soft Baits, Minnows, Hard Baits

**Habitat:** Wood, Lake Shallows, Vegetation



**Smallmouth Bass**  
*Micropterus dolomieu*

**Identifying Characteristics:** (Native Fish) Look for the large scales and a downturned extendable mouth with barbels (whisker-like sensory organ). Common Carp have a serrated dorsal fin and an anal fin with spines. Carp are bronze, brassy, or yellow in color, usually darker above with lighter yellow bellies. These heavy bodied fish can grow large quickly.

**Natural History:** The Smallmouth Bass derives its name from the fact that the rear end of the lower jaw does not extend past the eye, while that of a largemouth does. Smallmouth Bass reside in Great Lakes bays and inland waters where waters are cool and clear, and the bottom is rock or gravel. Ideal smallmouth habitat contains protective cover such as shoal rocks, talus slopes, and submerged logs. Their preferred water temperature is 68-70 degrees F, cooler than that of the largemouth bass.

**Adult Sizes:** 14" - 18"

**Bait:** Minnows, Hard Baits, Soft Baits, Spinners

**Habitat:** Flowing Water, Lake Shallows, Rocky, Lake-Deep Water



**Common Carp**  
*Cyprinus carpio*

**Identifying Characteristics:** (Non-Native Fish) Look for the large scales and a downturned extendable mouth with barbels (whisker-like sensory organ). Common Carp have a serrated dorsal fin and an anal fin with spines. Carp are bronze, brassy, or yellow in color, usually darker above with lighter yellow bellies. These heavy bodied fish can grow large quickly.

**Natural History:** Native to Asia, the Common Carp was widely introduced into Michigan and throughout North America in the late 1800s. These large, omnivorous fish are considered invasive and degrade the water resources due to their habits. They browse on invertebrates in bottom sediments - uprooting plants, muddying the waters, and destroying nests, foods and cover needed by other fish. Carp, however, are considered a game fish by some.

**Adult Sizes:** 20" - 30"

**Bait:** Worms/Waxworms, Soft Baits, Doughballs/Corn

**Habitat:** Flowing Water, Lake Shallows, Rocky, Vegetation



**Bullhead**  
*Ameiurus spp.*

**Identifying Characteristics:** (Native Fish) Oakland County lakes contain Yellow, Black and Brown Bullheads. The three species are difficult to tell apart. All three species lack scales, have two dorsal fins including one adipose fin, tail only slightly notched, and barbels around mouth.

**Natural History:** Bullheads, like channel catfish, also spawn in the late spring or early summer, in nests prepared in mud, sand, or among aquatic vegetation. These nests are usually located near a log or some other form of protection. One or both parents care for the eggs, since they must be diligently fanned and stirred. In a week or so, the eggs hatch and young emerge, looking very much like tadpoles. Their parents accompany them until they reach about two inches in length.

**Adult Sizes:** 10" - 12"

**Bait:** Worms/Waxworms, Stinkbaits

**Habitat:** Flowing Water, Lake Shallows, Rocky, Vegetation



**Channel Catfish**  
*Ictalurus punctatus*

**Identifying Characteristics:** (Native Fish) Two dorsal fins including one adipose fin, forked tail, barbels (whisker-like sensory organ) around the mouth, slender body with speckled sides. The channel catfish and bullhead are members of the Ictaluridae, or catfish family. These fish are readily distinguished by their scaleless bodies, broad flat heads, sharp heavy pectoral and dorsal spines, and long whisker-like barbels about the mouth. They are also mostly nocturnal, and use their barbels to locate food in the dark recesses of deep water.

**Natural History:** One of the most fascinating Great Lakes inhabitants is the Channel Catfish. This species of fish appears to have lived in North America for at least 2000 years. They are presently found in all the Great Lakes except Lake Superior and have been stocked in many inland lakes.

**Adult Sizes:** 14" - 24"

**Bait:** Worms/Waxworms, Stinkbaits

**Habitat:** Flowing Water, Lake Shallows, Rocky, Vegetation

Fish Illustrations Courtesy of Lori Taylor