

Dedicated to the Memory of Commissioner Enoch S. "Inky" Moore Jr.

PLAY

SUMMER 2004

Pennsylvania • League • of • Angling • Youth

WATERSHEDS & STREAM ORDER

Pennsylvania is blessed with lots of different waterways. Look at a state map and you will see many runs, brooks, creeks, streams and rivers. You'll also see plenty of ponds and lakes. Where do those waters start, go and end up? How does an angler keep track of them? What fish live in those waters, and how do you catch them?

It's easy to find the answers if you think like a scientist. They like to think "big picture"—in terms of watersheds and whether a waterway is moving or still. They even go so far as to place moving waters into categories called stream order.

LAKE
ERIE



Where do I start?



Knowing whether a waterway is moving or still and the order of a stream will help you make good fishing decisions. It will help you choose the right tackle. *Let's take a closer look at some of these different waterways.*

Watershed: Land area drained by a stream or river and all of its tributaries.

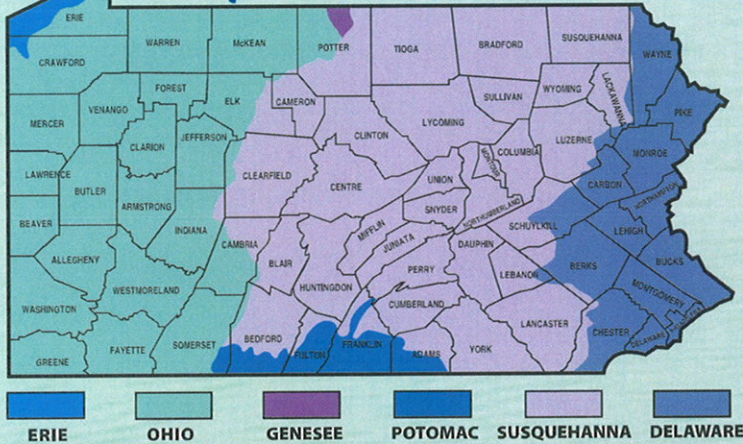
Stream order: Way of grouping streams and rivers based on size and location in the watershed.

Tributary: A small stream that flows into a larger stream or river.

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Pennsylvania Watersheds



All moving water starts from a source—a spring, pond, lake, snowmelt or rainwater. Water drains from a watershed by way of a system of streams and rivers. The small streams at the beginning have no tributaries and are called **first-order streams**. Small first-order streams flow into other streams and form **second-order streams**. Two second-order streams combine into **third-order streams**. And so it goes until the water reaches the ocean!

FIRST-ORDER STREAMS

These waterways are the smallest streams because they have no tributaries. They may originate from springs, or just many trickles of groundwater running together. Many times they are small enough to jump across! Many first-order streams are clean, clear and cold. Often they run through forested areas. First-order streams are sometimes very rocky because they are often found high on mountains or because they flow down steep slopes.



Focus on Fishing

Brook trout are the gamefish most often found in first-order streams. There they eat other fish, like daces and sculpins. Brook trout are Pennsylvania's state fish and the only trout native to inland waters. Brookies require the cold, clean water in first-order streams to thrive. Anglers fish for them with fly-fishing tackle or ultralight spinning gear. Brook trout in these waters spook easily. A flash from a rod or careless steps send them running for cover. Stay low and sneak along the stream bank when fishing these waters. Natural baits like worms, crickets, waxworms and mealworms are great for brook trout. Dry flies and small spinners work on some of the larger ones.

SECOND-ORDER STREAMS

Second-order streams form when two first-order streams join. Second-order streams are wider than first-order streams. They have more water than first-order streams. Some are still small enough to jump across. Most are bigger, but you could still easily throw a stone across them. The number of fish species increases in these small streams as they grow in size and the water warms.

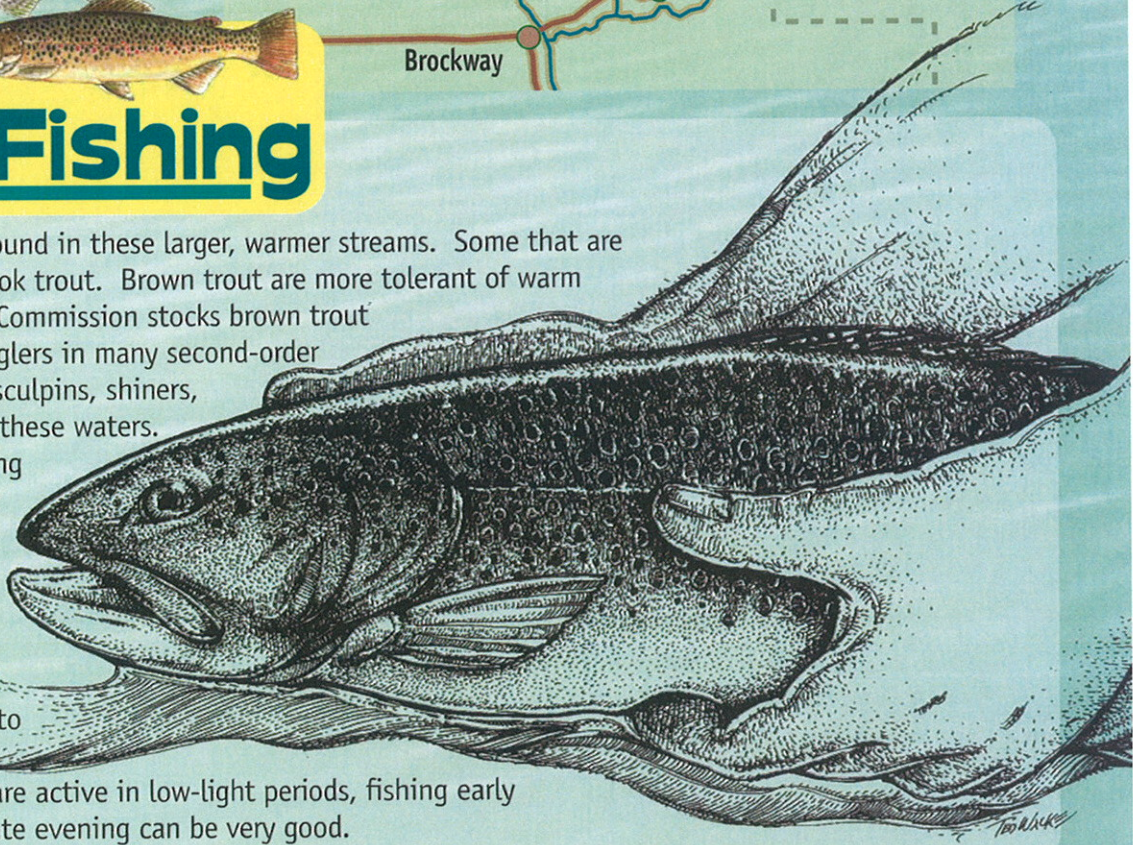


Focus on Fishing

Brown trout are often found in these larger, warmer streams. Some that are colder may also have brook trout. Brown trout are more tolerant of warm water. The Fish & Boat Commission stocks brown trout and rainbow trout for anglers in many second-order streams. Other fish like sculpins, shiners, daces and fallfish live in these waters.

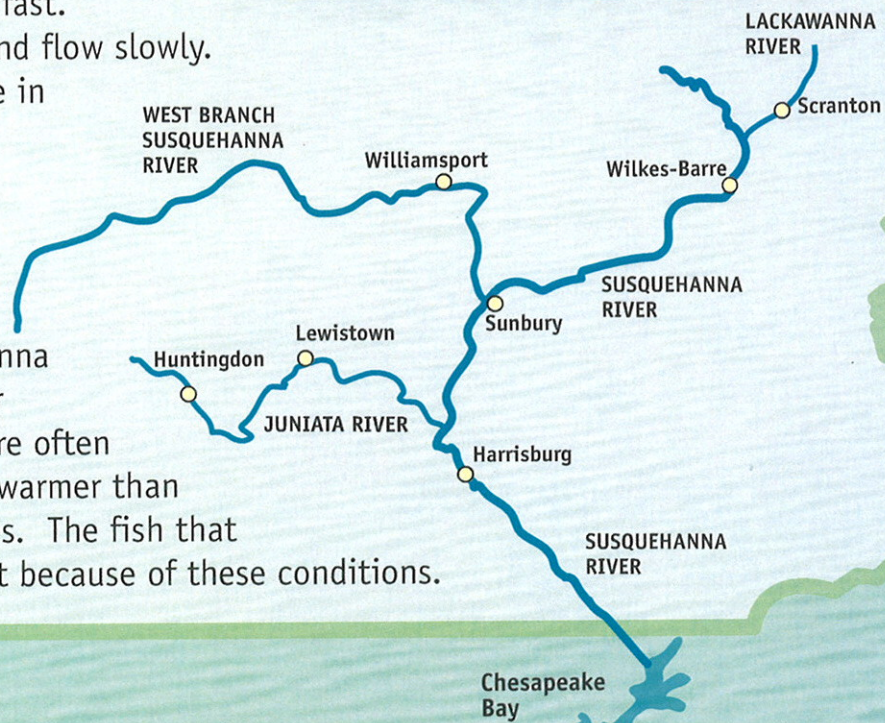
Anglers fish for trout using fly-fishing tackle or light spinning gear. These larger streams may have more insects, and fly-fishing can be a great way to catch trout.

Since brown trout are active in low-light periods, fishing early in the morning or late evening can be very good.



RIVERS

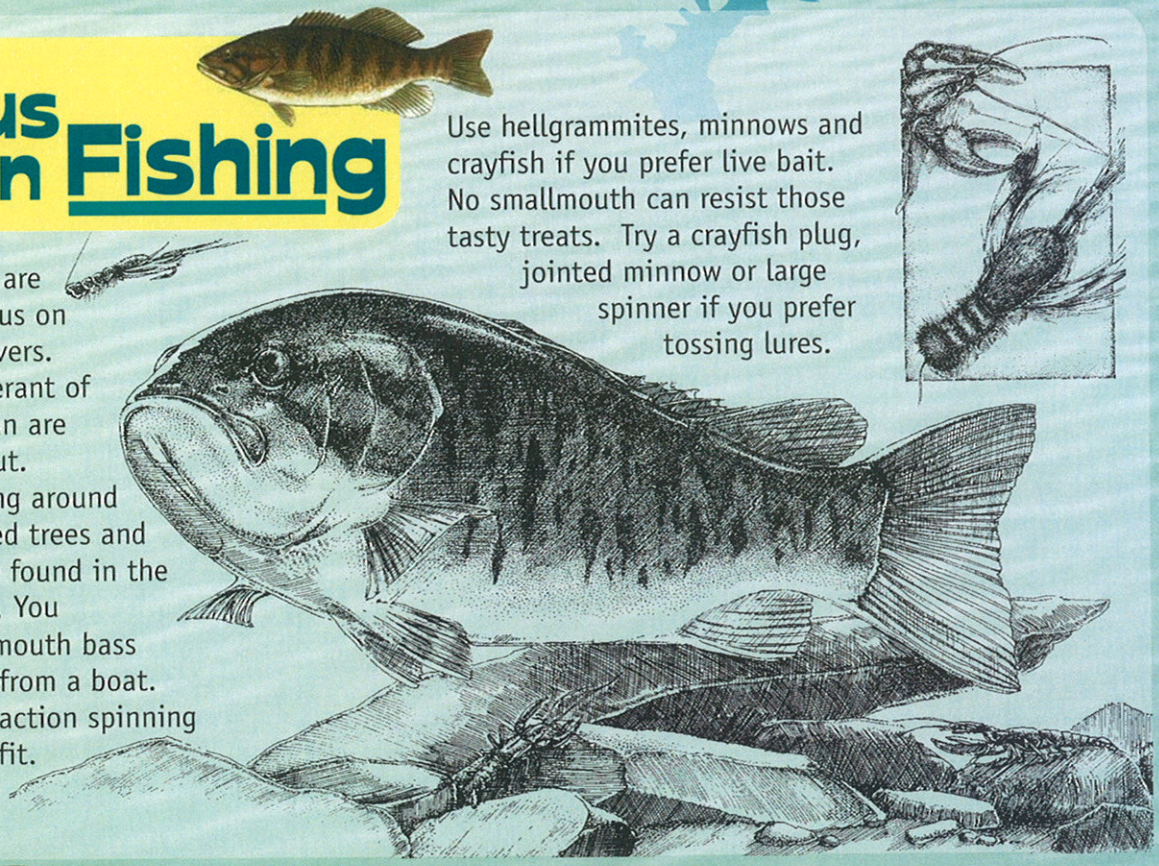
Rivers come in all shapes and sizes. Some are small and flow fast. Others are much larger and flow slowly. One thing that they have in common is that many lower-order tributaries eventually feed them. Some well-known rivers in Pennsylvania include the Allegheny, Susquehanna and Delaware. The lower reaches of these rivers are often much wider, deeper and warmer than their upstream tributaries. The fish that live in them are different because of these conditions.



Focus on Fishing

Smallmouth bass are a great fish to focus on when fishing in rivers. They are more tolerant of warmer waters than are other fish like trout. They also like living around large rocks, downed trees and debris that can be found in the river environment. You can fish for smallmouth bass from the shore or from a boat. You'll want a fast-action spinning or baitcasting outfit.

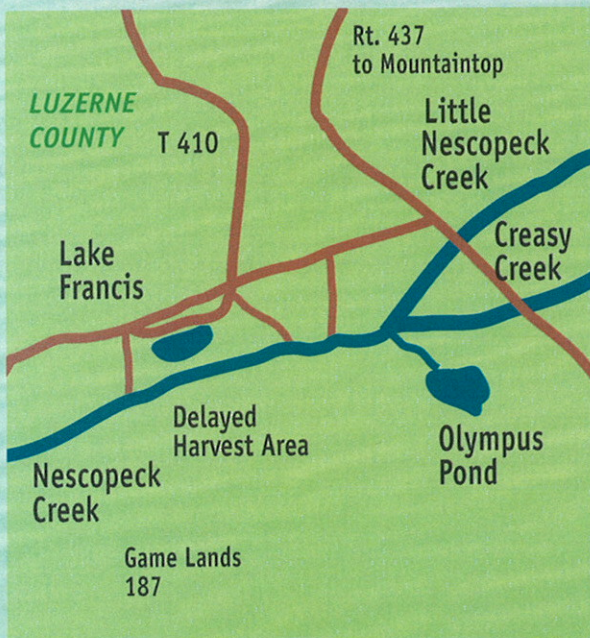
Use hellgrammites, minnows and crayfish if you prefer live bait. No smallmouth can resist those tasty treats. Try a crayfish plug, jointed minnow or large spinner if you prefer tossing lures.



PONDS

Focus on Fishing

Ponds are small, shallow waters, with mud or silt bottoms. Some are small, not much bigger than a basketball court. Some are larger, about the size of your school grounds. No matter how big they may be, they are shallow, less than 12 feet deep. You can find ponds all over Pennsylvania. Most were made by humans to provide water for livestock or crops, or to supply water for putting out fires. A few in the northeast part of the state were left tens of thousands of years ago by melting glaciers.



Written by: Carl Richardson, Laurel Garlicki, Keith Edwards, Dennis Tubbs, Walt Dietz, Alice Stitt and Carl Haensel

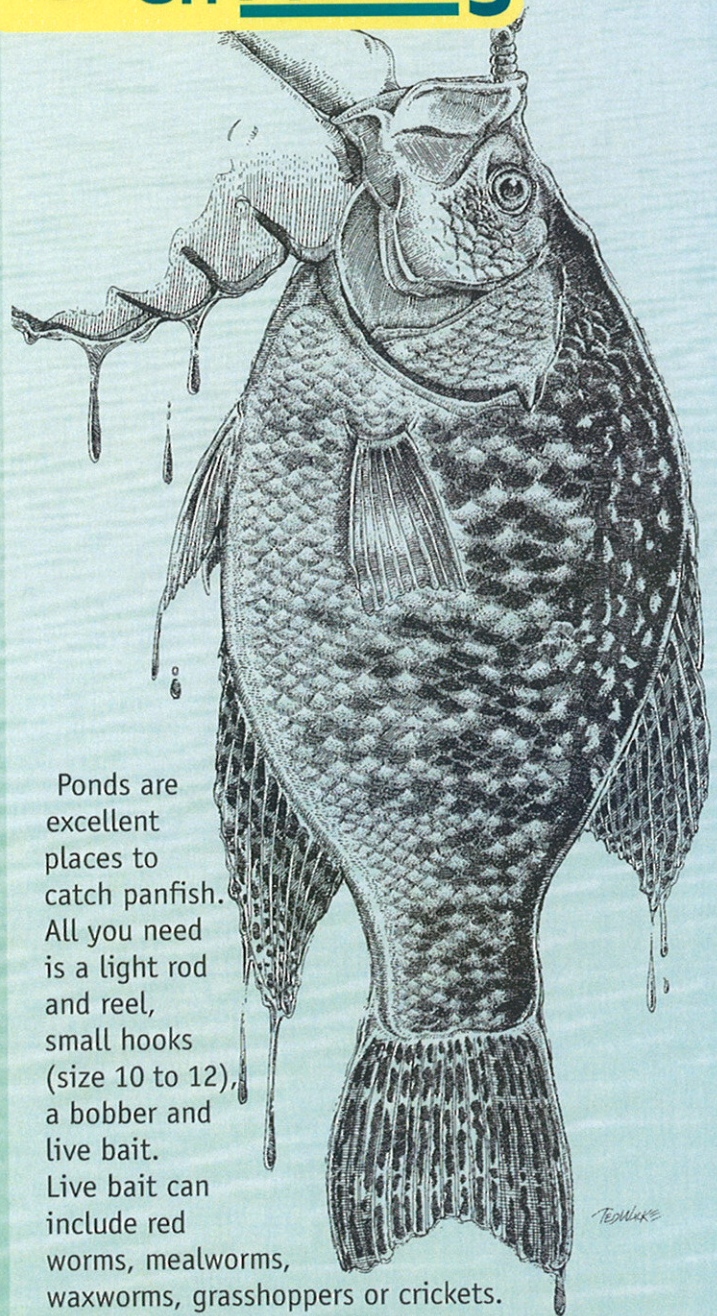
Edited by: Art Michaels

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Ponds are excellent places to catch panfish. All you need is a light rod and reel, small hooks (size 10 to 12), a bobber and live bait. Live bait can include red worms, mealworms, waxworms, grasshoppers or crickets. Place your bobber 2 to 3 feet above the hook, bait your hook, and cast out around the lily pads or other nearby structure. Hang on to your rod! Panfish love the shade under lily pads, but take care not to hook them when you cast. Hooking lily pads may result in your losing your bait, and it will spook the other fish. Casting fly-rod poppers in these spots can also be fun, especially on summer evenings.



LAKES

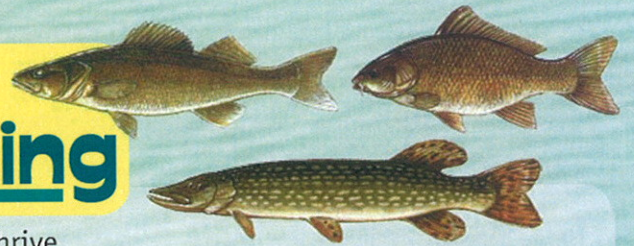
Lakes are bigger and deeper than ponds, some as deep as 50 to 100 feet! They range from the size of a big parking lot to the size of a small town. Many lakes were made by humans to hold back flood waters or to provide drinking water. A few lakes are natural, formed when glaciers covered most of Pennsylvania. Pennsylvania has over 2,500 inland lakes totaling well over 200,000 acres.



Lake Erie, our largest lake, has over 735 square miles of water. Lake bottoms vary, with some very sandy to some with lots of rocks.

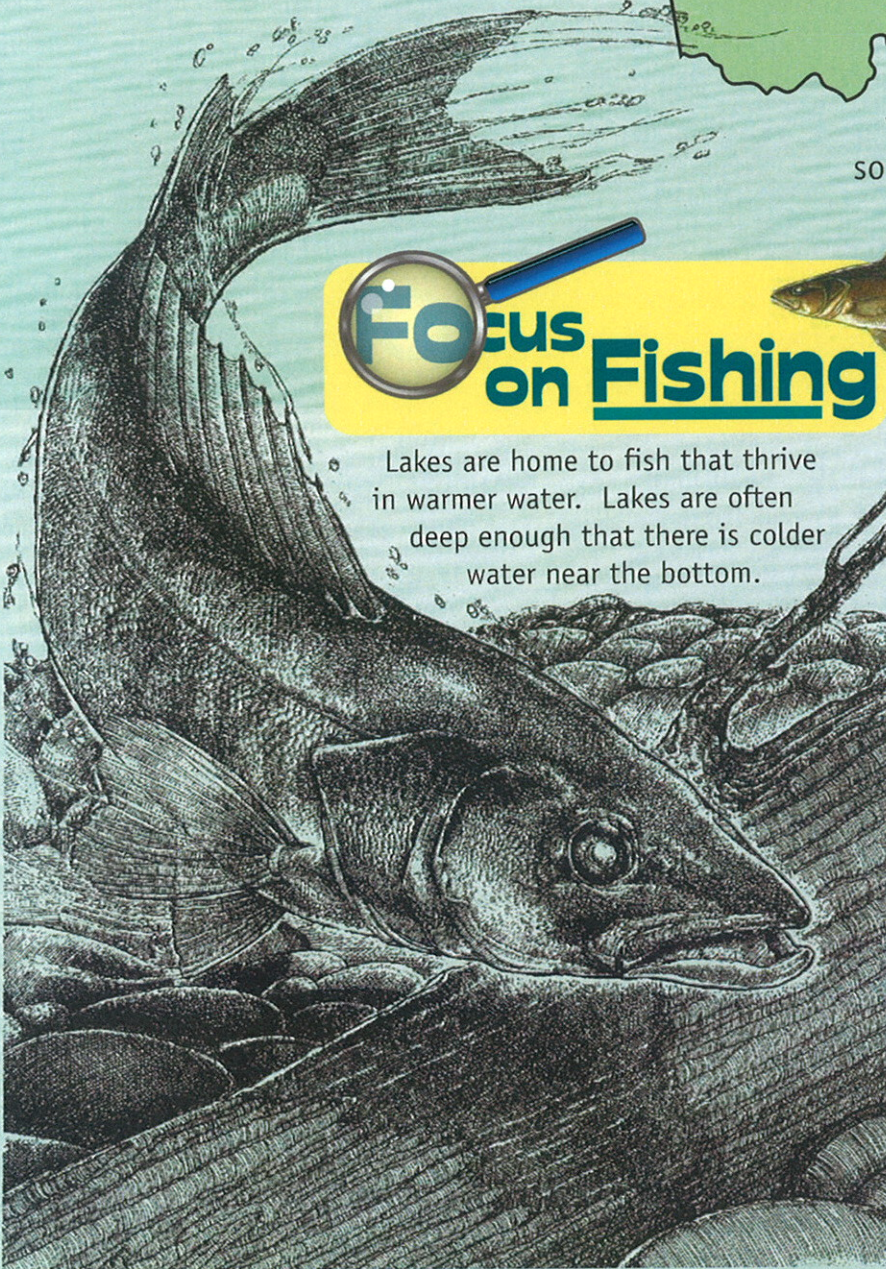
Focus on Fishing

Lakes are home to fish that thrive in warmer water. Lakes are often deep enough that there is colder water near the bottom.



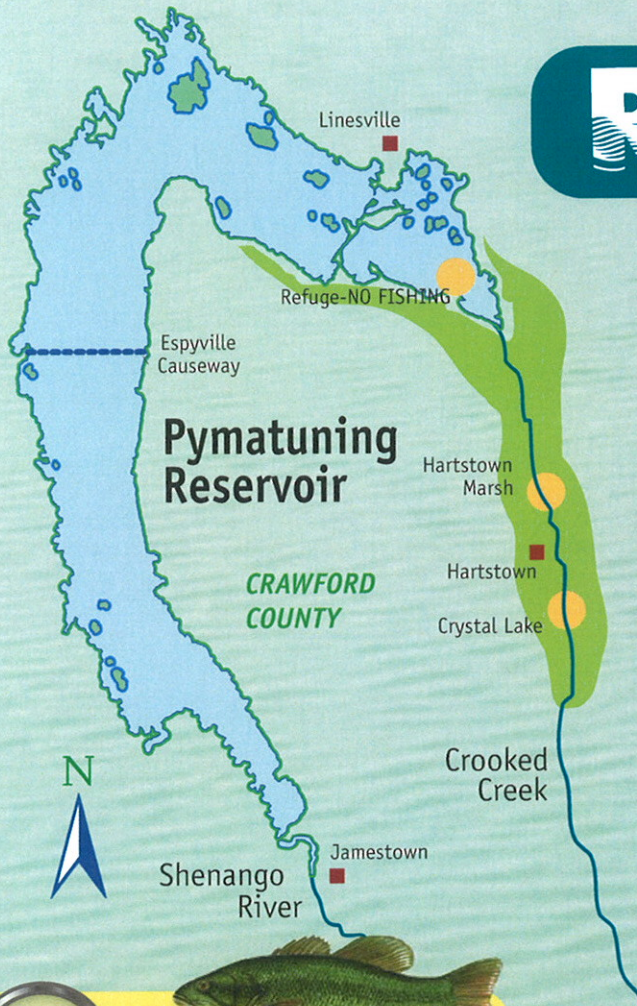
Bass, carp, catfish, panfish, walleyes and northern pike live in our lakes—not necessarily all together and in every lake.

Walleyes are a popular sport fish in some lakes. You can fish for walleyes from shore in many places. You can also troll for them from a boat, moving slowly through the water dragging the bait behind you. You can also jig for them while drifting or while anchored. Try some of the many walleye lures available at tackle stores. Experiment with different colors until you find the color they are biting on that day. Adding a nightcrawler or minnow to the lure's hook makes it even more attractive to a hungry walleye.



RESERVOIRS

Reservoirs can be much bigger than lakes, and sometimes deeper. They can be many miles long, and a mile or more wide. They are made by blocking rivers. Some rivers were dammed to provide water to make electricity. Most were built to control flood waters. Flood-control reservoirs were made by damming large rivers and flooding the valley behind the dam to control the flow of water into the river. Flooding these valleys created great habitats for fish and all kinds of animals.



Focus on Fishing



A reservoir's deep, flooded valleys often create perfect largemouth bass habitat. **Largemouth bass** also like the shallow flats and standing timber that are found in many reservoirs in Pennsylvania. These flat areas have warmer, calmer water that is ideal for largemouth bass.

Remember that largemouth bass are a warmwater species, so look for warmwater spots in the reservoir. A medium to heavy action rod loaded with a minimum of 8-pound-test line is an ideal largemouth bass rod. Medium to large shiners are the best bait, but crankbaits, spinnerbaits and plastic worms can also lure the big ones. Cast around the shallow areas early in the morning, and then switch to deeper edges as the day gets warmer and the sun rises higher. Fan-casting is the technique used by the most successful largemouth anglers. Fan-casting is the way to cover lots of water from the same spot, casting repeatedly until an area has been covered.

