

# A TROUT STREAM TOP TO BOTTOM

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photos by the author

If you're looking to find the best spots to fish for trout, the best way to start is by exploring your local trout stream. From its headwaters to its mouth, different sections of a stream offer a variety of habitats. Each has its own separate benefits and differences that can be experienced and fished. Throughout Pennsylvania, trout streams follow similar rules of hydrology. Hydrology is the study of water on the earth's surface. If you learn how one trout stream works, you can apply the lessons learned to other nearby waters. To begin exploring your favorite trout stream, we'll start at the top in the headwaters and work downstream. Check out the "Definitions" section for questions about stream terminology.

## Headwaters

All trout streams start small. Since they contain trout, the headwaters of trout stream watersheds normally have little pollution and are more likely to be forested. These small first and second order streams are usually tight and challenging to fish. In a well-connected watershed, they may act as nurseries for young wild trout to grow up and move down to lower reaches of the watershed. The coldest water and steepest sections of the gradient are likely to be found in the headwater reaches of a trout stream. In Pennsylvania, first and second order headwater streams are the best places to find wild brook trout. These streams can serve as thermal refuges for trout in the heat of summer. One of the greatest challenges in fishing these streams can be finding large enough pools to hold trout. Look for higher gradient reaches in freestone streams to have good trout holding water. These sections can have lots of rock and boulders that help form larger pools. Limestone streams can often produce nice-sized trout in their headwaters, though vegetation can be a challenge in the summer, so fish them early in the year. Often, there are few forage fish in headwater trout streams, though sculpins may be present. Carry a thermometer to find the coldest headwater tributaries of a trout stream to find good numbers of wild trout.



*Trindle Spring in Cumberland County has a large amount of flow due to springs entering the stream from underground sources. It has a robust wild trout population.*

## Definitions

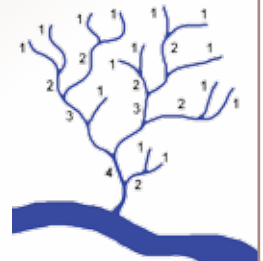
**Freestone stream:** A stream that is dependent on many sources of water, including runoff, direct rainfall and near surface groundwater. Water levels in freestone streams fluctuate seasonally because of the nature of these sources. Freestone streams are more likely to warm and have low flows in the summer months. They also flow through sandstone or other non-limestone geology. Because of the associated geology, freestone streams are generally less fertile, and have lower buffering capacity than limestone streams. Freestone streams grow in size as they are joined by tributaries.

**Gradient:** How much a stream drops vertically, over a given distance.

**Karst topography:** An area with limestone bedrock that has sinkholes, caves, springs and other limestone specific landscape features.

**Limestone stream:** A stream that flows through or originates in an area of karst topography. This usually means that the stream is very fertile and has cold water maintained by groundwater originating from springs or caves. In Pennsylvania, valleys such as the Cumberland Valley or State College area host concentrations of this type of stream.

**Stream order:** The calculation of stream order provides a rough indication of stream size and helps compare one watershed to another. A first order stream segment, or "reach" is defined as having no tributaries. A second order stream or stream segment has at least two first-order tributaries. A third order stream has at least two second-order tributaries, and so forth. Use a high quality map such as a United States Geological Survey (USGS) quadrangle or an accurate atlas and gazetteer to help you determine stream order in the watershed that you're interested in.



**Tributary:** A small stream, which flows into a larger river or stream.

**Watershed:** The area of land from which water flows into the same place such as a stream, river or lake.

## Middle reaches

The midsection of a trout stream is usually comprised of second or third order stream sections. These sections are larger, frequently more easily accessed, and can be easier to fish as well. Often, the middle reaches of a stream are near residential or agricultural development. These activities can begin to warm streams and add siltation and other pollutants. These midsections are often what are considered “classic” trout streams by many Pennsylvania anglers. They can be steep gradient sections in mountain freestone streams or slow and winding sections in limestone trout streams. Limestone trout streams in karst topography may emerge directly from the ground at the size of a third order stream due to water flowing underground from other sources. There are many both stocked and wild middle reach trout streams in Pennsylvania. These reaches often have the classic mayfly hatches that anglers travel to fish. They also host more forage for trout, including minnows like dace. Look for riffle areas in these streams to produce strong mayfly hatches. Anglers that have a favorite middle reach trout stream should consider exploring the headwaters and lower reaches of the stream for more fishing opportunities.



*This section of Meadow Run in Ohiopyle State Park is a good example of a middle reach freestone mountain trout stream. While generally too warm for wild trout, it holds trout well through the season and is the site of a popular delayed harvest fishing area.*



*This section of the Youghiogheny River in Ohiopyle State Park is a very large lower reach of a freestone mountain stream. If not for an upstream dam releasing cold water, it would be too warm for trout. Anglers searching for large trout can find them here.*

## Lower reaches

The lower ends of trout streams in Pennsylvania are where the streams begin to get too warm for trout. Often, these are third, fourth or larger order streams. If there are wild trout present, they are usually brown trout. Warmwater species including smallmouth bass may be present as well. If the water temperature exceeds 78° F at any time, trout will not survive. Trout in stocked, lower sections of trout streams will frequently move upstream to smaller, colder tributaries during the summer. Lower reaches are also more likely to have undercut banks and erosion, and they are more subject to flooding and discolored water. This makes fishing a challenge after heavy rains or snowmelt. Sections of these streams where instream habitat improvement has been completed can be very productive. Usually, the largest trout can be caught in these reaches due to the abundance of other forage species including crayfish and fallfish. A thermometer can be vital in determining if there will be trout present in these reaches in the summer. ☐