



# The Eastern Brook Trout

**By Robert Michelson**

New York's official state fish, the eastern brook trout, is the smallest, and to many people, the most attractive trout occurring in the state. It has a dark green background with wavy light-colored markings, and a smattering of red dots, surrounded by blue halos along its sides. Its lower fins are red with bright white edging and a distinct black line.

Also called speckled trout, "brookies" require cool, clean water. Adult fish spend their lives in cold, small- to moderate-

sized streams, ponds and lakes. In New York, they are popular game fish and can weigh six pounds, although most average less than two pounds.

In 2009, I was fortunate enough to witness and photograph spawning brook trout. I laid in the 42°F stream for about four hours, capturing image after image. While my body protested the cold, forcing me to periodically get out of the water to warm up, the result was well worth the effort.

During the spawning season, male brook trout (left) develop an upward hook on the lower jaw (called a kype). Males use this kype to get the attention of females (right) and to intimidate competing males. Spawning male brookies are especially colorful with bright red on the bottom half of their bodies. Female brook trout have thinner, cucumber-shaped bodies and are generally less colorful than males.



Brook trout spawn in the fall (generally mid-October through early December). Females dig shallow nests (called redds) on gravel beds in spring-fed streams. Using their tails, they fan the gravel to create a shallow depression in the streambed, and then lay their eggs in the newly created nests. Nearby adult males quickly fertilize the eggs. The females continue to expand the original redds, or create new ones slightly upstream. The loosened gravel moves downstream and covers the fertilized eggs. When spawning is complete, the adult fish move on, leaving the eggs and young to develop on their own.



A pair of spawning brookies.



Approximately the size of a small pencil eraser, and slightly yellow in color, newly fertilized brook trout eggs develop safely just below the surface of the gravel where they are buried. To survive, they need cool, fast-moving, oxygen-rich water. Eggs hatch in 1 to 4 ½ months, depending on the water temperature. The colder the water, the longer it takes for the eggs to hatch.

As the eggs mature, the eyes and spine of the developing brook trout can be seen through the clear shell. This stage of the fish is called a sac fry. In this photo you can see a newly hatched sac fry with its attached yoke-sac, and an “eyed-out” egg ready to hatch below this fish. These eyed eggs hatch into sac fry or alevin in another 45-60 days, depending on water temperatures. The sac fry develop and grow for an additional 6 to 8 weeks in the redds, drawing nutrients from their yolk sacs.



In early to mid spring, as stream temperatures rise, sac fry hatch and emerge as fry from the redd. Growing fry develop dark vertical bars on their sides called parr marks, which provide camouflage for the young trout. This stage of development is called the parr stage.



(brown trout parr on left, brook trout parr on right)

Brook trout may feed up to three years before they become mature adults and are able to spawn. Brook trout parr are similar in appearance to brown trout, but can be told apart from their cousin by the white markings on the front edge of

each fin of the brook trout. In addition, brook trout have vertical black parr marks, as well as wavy, worm-like markings on their backs. Brown trout have brown spots along their sides, and lack the parr markings.



To learn more about brook trout, visit DEC's website.

**Robert Michelson** has been a professional photographer/videographer for more than 30 years. A certified SCUBA diver, he specializes in underwater photography and videography. Visit his website at [www.pbmphoto.com](http://www.pbmphoto.com).