

Rainbow Trout

Oncorhynchus mykiss

The rainbow trout's acrobatic displays and spectacular fighting abilities are legendary among fishermen. Once hooked, the rainbow trout may leap a half dozen times before succumbing to the fisherman's net. The challenge of capturing a wild or stocked rainbow trout in one of our mountain streams or lakes makes it an integral part of North Carolina's sport fishery.

There are over a hundred varieties of rainbow trout but only three recognized subspecies: the common rainbow, coastal rainbow, or steelhead, and Kamloops rainbow. Only the common rainbow is found in North Carolina.

History and Status

The native territories of the rainbow trout include the large, cold rivers of the Pacific Coast. Original stocks of rainbow trout were shipped east via railcar from the McCloud River of California, and they have since been propagated and widely distributed to streams containing suitable temperature and habitat. Rainbow trout were introduced into North Carolina as early as the 1880s. Currently, wild, naturally reproducing populations of rainbow trout from these original stockings occur in many of North Carolina's mountain streams above 1,500 feet in elevation.

Description

Rainbow trout are characterized by a dark olive-green back blending into bluish or silvery sides and a white belly. The term "rainbow" comes from a broad

pink or bright red lateral band extending along the sides from the gill cover to the tail. Small black spots covering the back, sides and fins give the fish a peppered appearance. Rainbow trout, along with brook trout and brown trout, have a small adipose fin located between the dorsal fin and the tail.

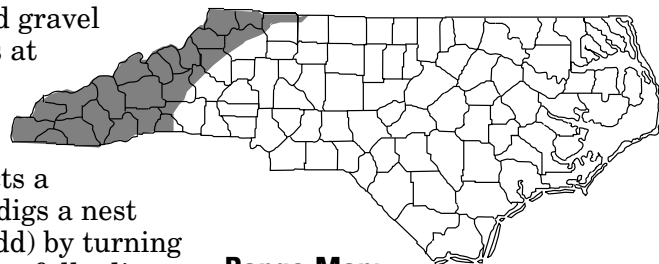
Habitat and Habits

Rainbow trout prefer cool, clear streams and lakes with gravel and cobble bottoms that are relatively silt free. Occasionally, rainbow trout can survive in warm-water lakes containing cool, oxygenated water in the depths. Water temperatures approaching 75 F can be tolerated by rainbow trout, but they prefer water temperatures between 55 F and 60 F.

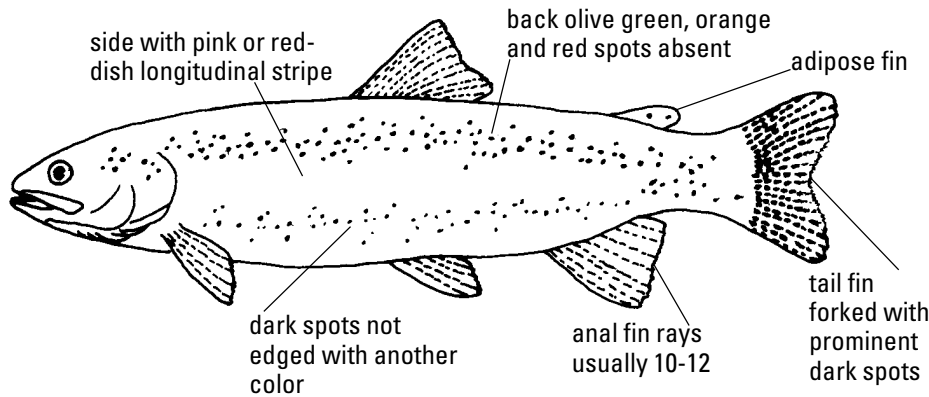
In contrast with brook and brown trout, which spawn in the fall, rainbow trout spawn in late winter. Spawning usually occurs between January and March in the coarse sand and gravel of small tributaries at water temperatures between 50 F and 60 F. The female rainbow trout selects a spawning site and digs a nest (referred to as a redd) by turning on her side and forcefully dislodging gravel with repeated

movements of the tail. Redd size varies in depth from several inches to over a foot, depending primarily on the female's size. As the female prepares the redd, she is attended by one or more males. Usually a dominant male will be directly downstream of the nest, with smaller males farther behind or off to the sides. Once the nest is prepared, the male and female settle into the depression and deposit eggs and milt simultaneously.

Immediately after fertilization, the female covers the eggs with a protective barrier of gravel by moving upstream of the redd and manipulating additional material on the stream bottom with her tail. The female may dig several nests as she proceeds upstream, depositing eggs in each one until she is spent. Depending on the size of the female, rainbow trout can lay from 200 to over 9,000 eggs; a 1-pound



Range Map:
Occupied range



rainbow trout usually contains fewer than 1,000 eggs.

Unlike more advanced fish species such as largemouth bass or bluegill, rainbow trout do not guard their nests. Because egg survival is dependent upon a steady flow of oxygenated water through the redd, this life history stage is particularly vulnerable to siltation. Anything that disturbs land near the stream, such as development projects, livestock watering and streambank erosion, can dramatically increase siltation. If the redd is covered with silt, the eggs will suffocate.

The eggs hatch in three to 10 weeks depending upon water temperature. After hatching, the young trout, or alevins, remain in the redd until their yolk sacs are absorbed. The alevins then work their way up through their gravel ceiling and school for a short time near the hatching site. Eventually, the young fry become solitary and gradually disperse throughout the stream, feeding principally on aquatic insects and other small aquatic animals.

Range and Distribution

Rainbow trout are native to the Pacific Coast drainages inland to the Rocky Mountains and north to the Kuskokwim River in southwestern Alaska. In North Carolina, rainbow trout are confined to the cool, clear waters of the mountain counties at elevations above 1,500 feet. Wild stocks of rainbow trout are usually found

in waters too warm or too silt laden for native brook trout.

People Interactions

Rainbow trout are an important component of North Carolina's trout management program. Along with protecting and enhancing wild rainbow trout populations, the N.C. Wildlife Resources Commission stocks many streams with rainbow trout (as well as brook trout and brown trout) to increase angling opportunities across the mountain region. The sensational fighting antics of this colorful species coupled with the aesthetically pleasing environment of a cool mountain stream make the rainbow trout one of our most sought-after game fish.

References

Fish, F. F. *Some North Carolina Fresh-water Fishes* (Raleigh: N.C. Wildlife Resources Commission, 1967).

Trout Fishing Information for North Carolina (Raleigh: N.C. Wildlife Resources Commission, 1994).

Credits

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WILD Facts

RAINBOW TROUT

Classification

Class: Osteichthyes
Order: Salmoniformes
Family: Salmonidae

Average Size

Wild adults in North Carolina streams are usually smaller than 10 in. However, 12-in. fish are common, with larger specimens captured occasionally. Rainbow trout stocked in reservoirs can attain larger sizes. The North Carolina record is 16 lb., 5 oz.

Food

Aquatic and terrestrial insects, crayfish, fish eggs and small fish.

Breeding

Occurs in late winter when water temperatures approach 50 F. The female rainbow may build several redds in gravelly areas located in shallow water. Once the eggs are deposited and fertilized the female abandons the redd. Most rainbow trout mature between the ages of 2 and 4 years.

Young

After absorption of the yolk sac, the fry push their way up through the gravel and feed principally on small aquatic insects. As the young grow, they disperse throughout the stream.

Life Expectancy

Wild rainbow trout seldom live longer than four years in North Carolina. In northern and western states rainbow trout may live up to 11 years.