

Colorado River cutthroat trout

Oncorhynchus clarki pleuriticus

Cutthroat Trout in the Roaring Fork Valley

There are many varieties of fish in the Roaring Fork, Fryingpan, and Crystal rivers, including whitefish, sculpin, and perhaps the most popular, trout. Of the four species of trout that live in the Roaring Fork Watershed, brown trout, rainbow trout, brook trout, and Colorado River cutthroat trout, only the cutthroat trout is native to Colorado. The cutthroat trout is named for the bright red coloring behind its head and the red slash under its jaw. This red color gives the appearance that the fish has had its throat cut and distinguishes the fish from other trout species.

Colorado has four species of native cutthroat trout. Yellowfin cutthroat trout, which was once found in the twin lakes area east of the Continental Divide, is the only species of cutthroat trout in Colorado that is extinct. The Greenback cutthroat trout occurs in the Platte River drainage and is our state fish. The Rio Grande cutthroat trout is also found in Colorado, in the Rio Grande river drainage in south-central Colorado. The fourth species of cutthroat trout, the Colorado River cutthroat trout, is native to the Colorado River basin.

Natural History

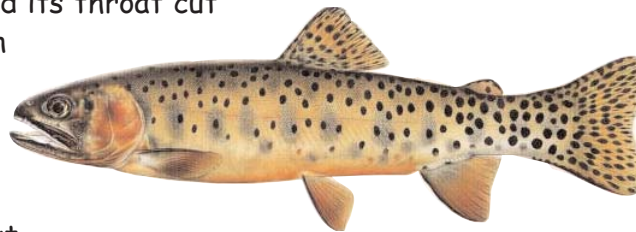
Cutthroat trout evolved from rainbow trout, which, in turn, evolved from the Pacific salmon. As mountain ranges rose and inland seas became isolated over geologic time, different populations of rainbow trout also became isolated. Over time, one population of rainbow trout evolved into the cutthroat trout and, in particular a cutthroat sub-species

eventually evolved and adapted within the upper Colorado River basin of Colorado, Wyoming, Utah, and New Mexico. Today, Colorado River cutthroat trout occupy only a small fraction of their original distribution. These include small headwater streams isolated enough from non-native trout, which tend to out compete the native.

Anatomy and Adaptations

All trout are specially adapted to life in rivers. Their sense of smell is highly functional and instead of having fingers to touch and feel, they have lateral lines. Lateral lines are a series of pores along the side of the fish that allows it to feel any vibration on the surface of the water. Like all fish, cutthroat trout breathe using gills. A bony plate called the operculum covers the gills for protection.

The cutthroat trout has five fins and a tail, or caudal fin. The fin on the fish's back, behind its head, is the dorsal fin. Opposite the dorsal fin, on the fish's stomach, is the pelvic fin which is used for steering and also for anchoring on the bottom of the river when the trout is not swimming. The fin between the pelvic fin and the tail is the anal fin which serves to steer and propel the fish. Female cutthroats use the anal fin to measure the depth of the redd, a depression in the gravel where the eggs are laid. The pectoral fin is located just behind the fish's mouth and gill opening. This fin helps the trout move through water as it sculls and propels. The adipose fin is characteristic of all cutthroat trout. This small fin, located between the tail and the



The Colorado River cutthroat trout

dorsal fin, is actually a fat reserve and is not used for movement.

Most Colorado River cutthroat trout grow to be about eight inches in length. These smaller trout occupy small, headwater streams. When found in larger rivers and lakes the fish can grow to a maximum of about 20 inches.

Spawning

At the age of two or three years, cutthroat trout become sexually mature and begin to spawn. During spawning, a female will lay her eggs in a redd, or nest, along the river bottom. The male will simultaneously deposit his milt, or sperm, over the eggs. The female will then cover the fertilized eggs with gravel.

Cutthroat trout spawn in the spring, when water levels are rising in most rivers and daylight hours are increasing. Gravel beds and adequate water circulation, whether in streams or lakes, are necessary for successful spawning. In order for reproduction to occur, there must be enough dissolved oxygen in the water surrounding the developing eggs. When the eggs hatch, the dissolved oxygen level ideally should be between six to eight parts per million.

Eggs will hatch four to five weeks after fertilization. A survival rate of 50% or more of hatched trout is an indication of good water quality. High levels of sediment in the water from bank erosion will lower the amount of dissolved oxygen and therefore decrease the survival rate of the hatched trout.

Conservation

The Colorado Division of Wildlife has identified Colorado River cutthroat trout as a species of special concern. Although it is not extinct like the Yellowfin cutthroat or threatened like the Greenback cutthroat, the

Colorado River cutthroat still faces population pressures. Whirling disease, increased human development along rivers and streams, and competition from non-native fish species all have led to the decline in cutthroat populations and the classification as sensitive. Whirling disease is a parasitic infection that can infect all trout, including cutthroat trout. As development continues in the Roaring Fork Valley and other areas where the Colorado River cutthroat trout is found, decreased water quality and quantity can jeopardize cutthroat trout habitat.

Non-native fish, such as the rainbow, brown and brook trout can out-compete the native cutthroat trout, for food. Rainbow trout will hybridize with cutthroat trout leading to a decline of pure strains of cutthroat. This hybridization occurs because both of these species of trout spawn in the spring. However, many small populations of Colorado River cutthroat have adapted to highly unstable and fluctuating environments and have therefore been able to resist replacement by nonnative trout.

Currently there are 100 pure-strain populations of Colorado River cutthroat trout. Most of these populations exist in small, isolated streams that are only one to two miles in length; keeping the populations small. There is one location on the Little Snake River in Wyoming where Colorado River cutthroat trout occur in 36 miles of continuous stream!

The Roaring Fork Watershed is home to these magnificent trout. Since we also reside in the Watershed, it is our job to ensure the health of our rivers and streams in order to protect habitat for a true Colorado native: the Colorado River cutthroat trout.

By Lindsay Hoffmann , January 2003



Roaring Fork Conservancy
P.O. Box 3349, Basalt, CO 81621
(970) 927-1290
www.roaringfork.org

