Sicklefin redhorse

Moxostoma sp.

Description

The sicklefin redhorse, a freshwater fish, can grow up to 25 inches long. It has a sickle-shaped back fin that is olive-colored, sometimes partly red. Its body is also olive, with a coppery or brassy sheen; its lower fins are primarily dusky to dark, often tinted yellow or orange and pale edged; the tail fin is mostly red. It's relatively long lived, with males living up to at least 20 years and females up to at least 22 years.

Habitat and life history

It lives in cool to warm, moderate-gradient creeks and rivers and, during at least parts of its early life, large reservoirs. In streams, adults are typically found in areas with moderate to fast currents, though young show a preference for slow currents and large rocks providing cover. Adults feed and reproduce over gravel, cobble, boulder, and bedrock stream bottoms with no, or very little, silt.

Adults live year-round in rivers and large creeks while young are largely found in lower stream reaches of creeks and rivers and appear to have even adapted to near-shore portions of certain reservoirs. It's likely that after hatching from their eggs, young fish are carried downstream to the mouths of streams or into reservoirs where they stay until they mature.

The fish are believed to mature at around five to eight-years-old and migrate from reservoirs to spawn. During the course of a year, adults will migrate along a river - upstream to spawn, then downstream to forage, and finally to deeper water for winter, returning to the same spawning and wintering sites year after year.

Range

Collection records indicate that the sicklefin redhorse once inhabited the majority, if not all, of the rivers and large creeks in the Blue Ridge portion of the Hiwassee and Little Tennessee River systems. Today, the sicklefin redhorse is known from portions of these two river systems:

North Carolina biologist TR Russ holds a sicklefin redhorse, credit USFWS/Mark Cantrell.

Hiwassee River system

- Hiwassee River and its tributaries Brasstown Creek, and Hanging Dog Creek
- Valley River
- Nottely River
- Young have been found in Hiwassee Reservoir

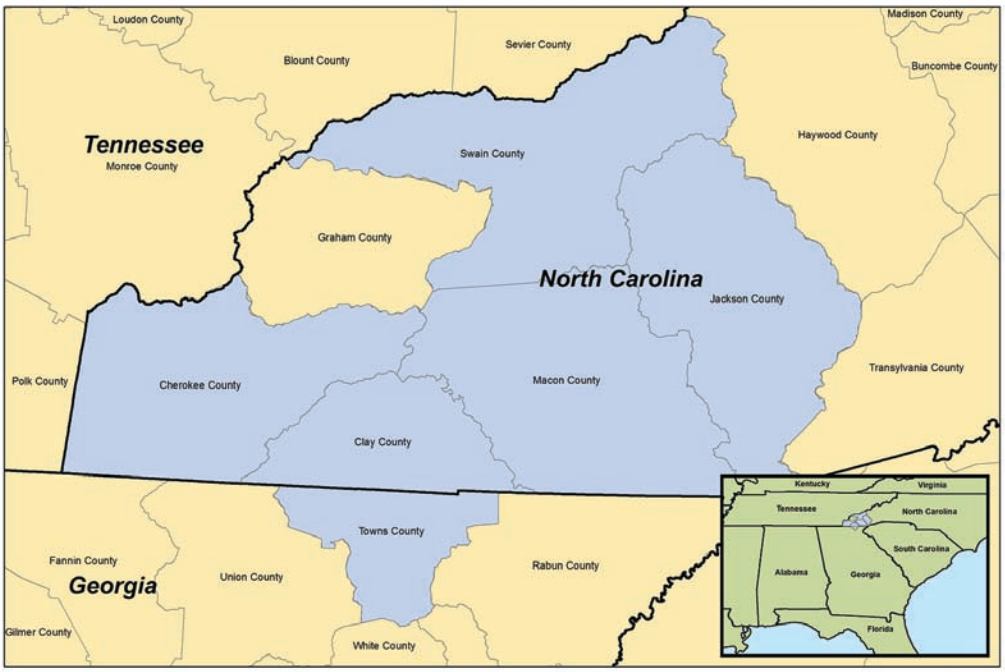
Little Tennessee River system

- Little Tennessee River, including tributaries Burningtown Creek and Iotla Creek
- Tuckasegee River, including tributaries Forney Creek, Deep Creek, Oconaluftee River
- Young have been found in Fontana Reservoir

Conservation story

- Although the sicklefin redhorse is now known to have been collected in 1937, it was not recognized as a potentially distinct species until 1992, when Robert Jenkins examined two specimens collected from the Little Tennessee River. Detailed physical, behavioral, and genetic studies concluded that the sicklefin redhorse is, in fact, a distinct species.
- In May 2005, the Service declared the sicklefin redhorse a candidate for the federal endangered species list, meaning it warranted being on the list, but going through the process to place it on the list was superseded by higher-priority listing work.
- In February 2010, the Dillsboro Dam, on the Tuckasegee River, was removed, enabling the sicklefin redhorse to expand its range in the river upstream.
- In April 2010, the Center for Biological Diversity asked the Service to place the sicklefin redhorse on the federal endangered species list.

- The Service is working with Conservation Fisheries, Inc., the North Carolina Wildlife Resources Commission, and the Eastern Band of Cherokee Indians to propagate and reintroduce the sicklefin redhorse into currently unoccupied habitat within its historic range.
- The Service has been working with biologists with the Tennessee Valley Authority; the states of North Carolina and Georgia; personnel with Roanoke College and North Carolina State University; and other partners to monitor the surviving populations and to identify specific threats and other potential recovery measures for the sicklefin redhorse.
- The Service has included the sicklefin redhorse's listing determination as part of its 2015 workload, and by the end of the year will either determine that the fish does not need to be on the endangered species list, or begin the process for placing it on the list.



Counties with sicklefin redhorse

N 0 4 8 16 24 32 Miles

Threats

The sicklefin redhorse is threatened by factors that commonly imperil river animals in the southern Appalachians:

- Hydroelectric operations which fragment habitat and isolate surviving populations;
- Erosion from poorly-managed land disturbance activities, leading to silt-covered stream bottoms;
- Pollution run-off and discharge from industrial, municipal, agricultural, and other sources;
- Stream changes from straightening streams, dredging, and in-stream mining;
- Predation and habitat impacts by non-native animals.

What does it means for an animal to be on the endangered species list?

When an animal is placed on the federal endangered species list, it makes it illegal to kill, shoot, trap, harass, harm, pursue, wound, capture or collect it without a permit from the Fish and Wildlife Service. Typically permits are only given to individuals for efforts that ultimately benefit the species.

Additionally, projects that are federally-funded or authorized are reviewed for impacts to the animals, as these projects typically can't jeopardize the existence of a species. Efforts are made to minimize, or hopefully eliminate, impacts.

Outlook

Assuring the long-term survival of the sicklefin redhorse requires:

- Protecting the existing water and habitat quality of the stream reaches where the species is still surviving; and
- Improving degraded portions of habitat and removing barriers so existing populations can expand and vanished populations can be reestablished.

This calls for compliance with existing state and federal regulations, assistance from the public, tribes, and local governments and industries in implementing conservation measures; and, development of agreements with power companies and other partners to provide a means of allowing the species to expand into historic habitat currently blocked by dams and hydropower operations.

John Fridell and Byron Hamstead measure a sicklefin redhorse, credit USFWS/Gary Peeples.

What you can do

- Plant native trees and shrubs along streams and allow these areas to grow naturally. The root systems help hold stream bank soil in place and a lush diversity of plants serves as a filter, catching polluted runoff before it can enter the stream.
- Look for ways to move rainwater off paved surfaces and allow it to soak into the ground. When channeled off paved surfaces and into streams, rainwater carries pollution (like oil) picked up while flowing over pavement and erodes stream banks and bottom not shaped to handle the excess water. Helpful techniques include using pervious pavement, rainbarrels, and installing rain gardens – gardens where rainwater is channeled and allowed to soak into the ground.
- Look for opportunities to restore degraded, eroding streams. Local soil and water conservation district offices may be able to offer assistance. The Service has a program that can provide technical and occasionally financial assistance to landowners who want to improve stream conditions on their land. For more information, call 828/258 3939.