

# KENTUCKY'S THREATENED AND ENDANGERED FISHES: RELICT DARTER (*ETHEOSTOMA CHIENENSE*)



**Michael A. Floyd, PhD**

Kentucky Ecological Services Field Office, USFWS

In this issue of *American Currents*, I present another article on Kentucky's federally-listed fishes (Table 1). Our second featured species is the Relict Darter (*Etheostoma chienense*), a small darter that is endemic to the Bayou du Chien drainage in the Jackson Purchase region of western Kentucky. It was first discovered in the Bayou du Chien system in 1975 but was not formally recognized as a distinct species until 1992. The species was federally listed as Endangered in December 1993.

The Relict Darter (Figures 1 and 2) is a small member of the darter family (Percidae) that reaches a maximum length of about three inches. It is distinguished from similar darters by having small, white "lollypop-like" knobs on the second dorsal fin of breeding males. The body color of females and nonbreeding males is light tan with brown mottling, occasionally producing 9-13 small blotches or vertical streaks along the sides.

The Relict Darter is known only from the Bayou du Chien drainage (Figure 3) in Fulton, Graves, and Hickman counties in far western Kentucky. Much of the Bayou du Chien mainstem and some of its tributaries have been channelized, so most of these reaches are comprised of long, straight channels with relatively uniform depth, velocity, and substrates. Some of the species' best remaining habitats are located in Jackson Creek, a tributary of Bayou du Chien and probably the least-modified stream in the watershed. Relict Darters tend to occupy



Figure 1. Male Relict Darter, breeding coloration. (Photo by Brent Harrel, USFWS)

gently flowing pools, usually over gravel and sand substrates, and are typically observed near some type of cover, such as fallen tree branches, undercut banks, or overhanging vegetation.

The Relict Darter's food habits are unknown, but it is assumed the species preys on aquatic insects and small crustaceans. Spawning occurs from mid-March to early June, during which time males establish nests under sticks, logs, or any other available firm structure in the stream channel (even objects like discarded tires!). Females attach a single layer of eggs to the undersides of these structures, which are then guarded by the male until the eggs hatch. Relict Darters can live up to three years.

The primary threats to the species are (1) channelization of the Bayou du Chien mainstem and its tributaries, (2) removal and lack of shade-producing riparian vegetation, (3) increased siltation associated with poor land-use practices, (4) deforestation and drainage of riparian wetlands, and (5) pollutants originating from municipi-

Disclaimer: The findings and conclusions in this article are those of the author and do not necessarily represent the views of the US Fish and Wildlife Service.

Dr. Michael A. Floyd works for the US Fish and Wildlife Service in Kentucky where he works on the recovery of endangered plants and animals.

**Table 1. Kentucky's Federally Threatened and Endangered Fishes**

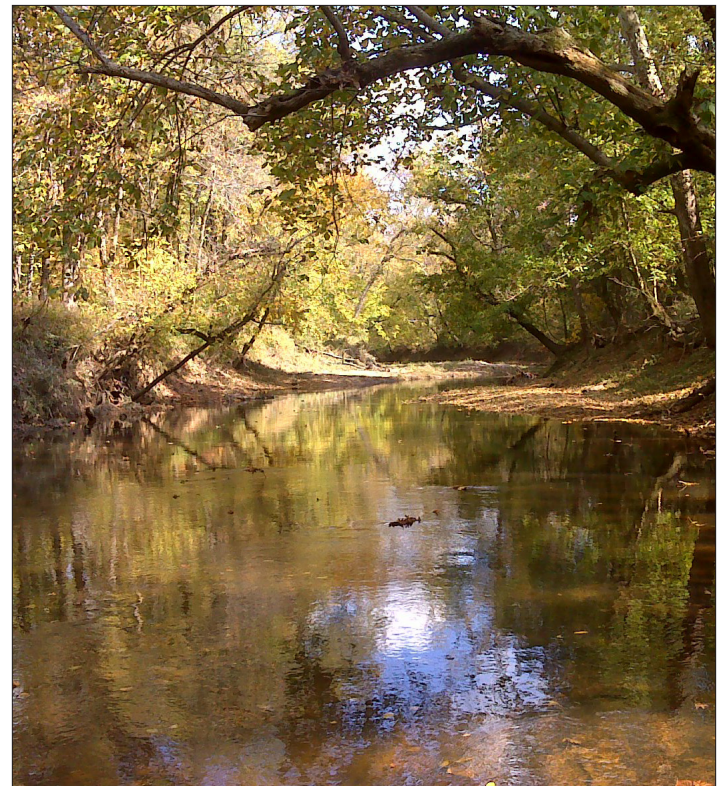
Common Name	Species	Listing Date
Blackside Dace	<i>Chrosomus cumberlandensis</i>	1987
Relict Darter	<i>Etheostoma chienense</i>	1993
Tuxedo Darter	<i>Etheostoma lemniscatum</i>	1993
Kentucky Arrow Darter	<i>Etheostoma spilotum</i>	2016
Cumberland Darter	<i>Etheostoma susanae</i>	2011
Palezone Shiner	<i>Notropis albizonatus</i>	1993
Pallid Sturgeon	<i>Scaphirhynchus albus</i>	1990

pal wastewater plants or agricultural livestock operations. All of these threats cause chemical and physical degradation of habitats used by the species for feeding, sheltering, spawning, and resting. The species' limited range also makes it vulnerable to stochastic events, such as chemical spills and droughts, which could lead to extirpations in portions of the watershed.

The threats identified above continue to impact the Relict Darter, but the species is considered stable within the Bayou du Chien system. Based on recent surveys (2010-2012) conducted by the Kentucky Department of Fish and Wildlife Resources, Kentucky State Nature Preserves Commission, and the U.S. Fish and Wildlife Service (Kentucky Ecological Services Field Office), the species continues to be present at all historical sites and its current population levels are similar to previous estimates made in the 1990s. Recent estimates of mean population size were 1,526 individuals in Jackson Creek and 13,108 individuals in the Bayou du Chien mainstem. The U.S. Fish and Wildlife Service continues to implement stream and riparian habitat protection and restoration projects for the species throughout the upper Bayou du Chien system. A revised five-year status review of the species is scheduled for 2018.



**Figure 2. Male Relict Darter, non-breeding coloration. (Photo by Dr. Matthew Thomas, KDFWR)**



**Figure 3. Scenic Bayou du Chien in Hickman County, Kentucky (USFWS photo, Michael Floyd)**