



U.S. Fish & Wildlife Service

Arlington, Texas, Ecological Services Field Office

Louisiana Pigtoe *Pleurobema riddellii*

North America is home to approximately 300 species of freshwater mussels. Over 50 of these species occur in Texas waters. Freshwater mussels play an important role in aquatic ecosystems. They provide a food source for many organisms and, as filter feeders, help clean the waters in which they reside by collecting organic particulate, bacteria, and algae, as well as accumulating contaminants in their soft tissues. Because they have limited mobility and are typically long-lived, freshwater mussels are sensitive to changes in their environment and can serve as bioindicators of water quality. Unfortunately, severe declines in freshwater mussel populations have been recently documented.

Description

The Louisiana pigtoe is a rare freshwater mussel with a thick, inflated, triangular to sub-quadrant shell. The beaks are elevated well above the hinge line but are sometimes eroded. The external shell is without sculpturing and reddish-brown, dark brown, or black in color. The interior shell surface (nacre) is typically white, rarely peach tinted, and iridescent posteriorly. Pseudocardinal teeth (molar-like structures located near the beaks on the interior surface) are heavy to massive, triangular and rough with the anterior tooth in the left valve compressed and parallel to the margin. The lateral teeth, two in the left valve and one with a basal flange in the right, are short and straight or slightly curved. Soft tissues are described as white to off-white. Individuals approaching 5 inches (127 mm) in length have been collected in Texas.



Figure 1: Louisiana pigtoes collected from the Neches River, Texas (USFWS)

Distribution

The Louisiana pigtoe is endemic to the San Jacinto, Trinity, Neches-Angelina, Sabine, Big Cypress and Sulphur River basins in Texas. The species has been documented or potentially occurs in 5 Arkansas counties, 5 Louisiana parishes, 1 Oklahoma county, and 51 Texas counties.

Life History

The Louisiana pigtoe, like all freshwater mussels, has an interesting life history. Males release sperm into the water column, which is taken in by the female fertilizing her eggs. The developing larvae are held by the female until they mature and are ready for release. The mature larvae, called glochidia, are released in proximity to a fish host and attach to the host's gills or fins. Glochidia that fail to attach to a suitable host or attach to the wrong location will die. Attached glochidia encyst or implant into the host and develop into juvenile mussels over a period of weeks or months. Once fully developed, the juveniles excyst (break away) from the host and settle on the stream bottom

leaving their host relatively unharmed.

Louisiana pigtoe brooding season is currently unknown. Two potential fish hosts have been reported: red shiner (*Cyprinella lutrensis*) and bullhead minnow (*Pimephales vigilax*).

Habitat

The Louisiana pigtoe occurs in only stream and river habitats with low to moderate flow on substrates of sand, silty sand, sand and gravel, and sand and clay.

Conservation

In 2007, the Louisiana pigtoe was petitioned for listing under the Endangered Species Act. A 90-day finding in 2009 found that the petition presented substantial scientific information indicating that listing the species as threatened or endangered may be warranted. Currently, the species is not protected under federal law. In November 2009, the species was added to the State Threatened List by Texas Parks and Wildlife Department. Research and surveys are underway in Texas.

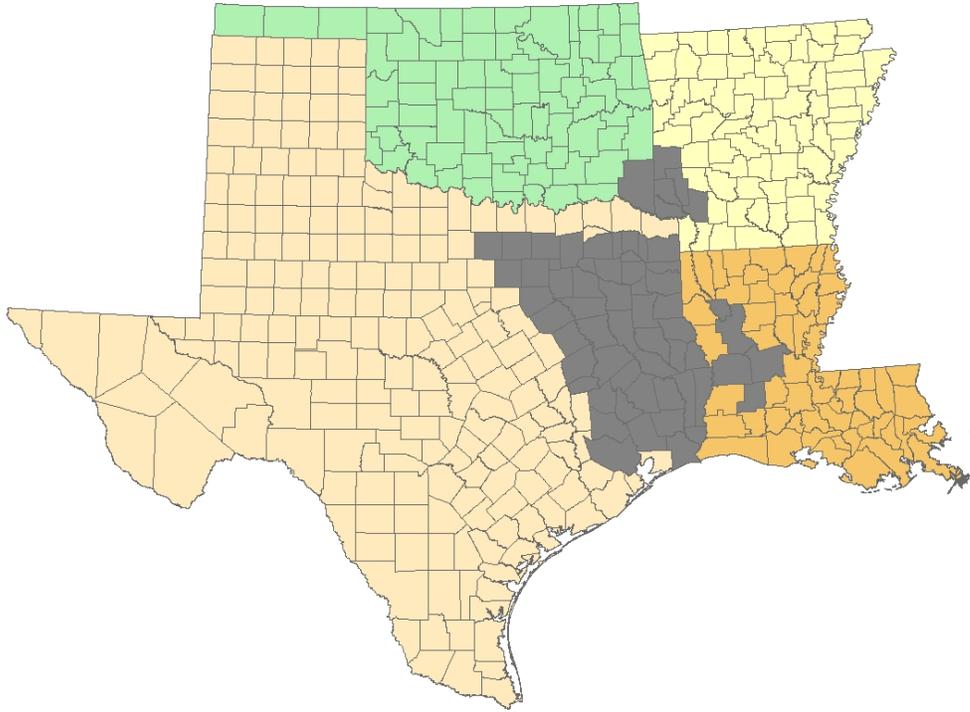


Figure 2: Gray areas represent counties of documented or potential occurrence for the Louisiana pigtoe in Arkansas, Louisiana, Oklahoma, and Texas. Counties include Hempstead, Howard, Little River, Polk, and Sevier Counties in Arkansas; Allen, Natchitoches, Rapides, Red River, and Vernon Parishes in Louisiana; McCurtain County in Oklahoma; and Anderson, Angelina, Camp, Cass, Cherokee, Collin, Dallas, Denton, Ellis, Franklin, Freestone, Gregg, Hardin, Harris, Harrison, Henderson, Hopkins, Houston, Hunt, Jasper, Jefferson, Kaufman, Leon, Liberty, Madison, Marion, Montgomery, Morris, Nacogdoches, Navarro, Newton, Orange, Panola, Polk, Rains, Rockwall, Rusk, Sabine, San Augustine, San Jacinto, Shelby, Smith, Tarrant, Titus, Trinity, Tyler, Upshur, Van Zandt, Walker, Wise, and Wood Counties, Texas.

For Further Information

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