



## U.S. Fish & Wildlife Service

Arlington, Texas, Ecological Services Field Office

# Texas Heelsplitter *Potamilus amphichaenus*

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 Texas heelsplitter is a rare freshwater mussel with a thin, smooth, elliptical shell and a straight hinge line. The beaks are slightly elevated above the hinge line. External shell color is tan to dark brown or black that fades to a lighter color on the beaks. Some specimens have low, poorly developed wing-like structures that extend above the hinge line; however, these are usually absent or lacking. The interior shell surface (nacre) is shiny and purple throughout or white to bluish-white, with a pink or purple tint along the hinge line. Pseudocardinal teeth (molar-like structures located near the beaks on the interior surface) are thin and compressed while the lateral teeth are long, thin and straight. Soft tissues are described as dirty-white or greyish-white. Individuals almost 7 inches (177 mm) in length have been collected in Texas.



Figure 1: Texas heelsplitter collected from the Neches River, Texas (USFWS).

### Distribution

The Texas heelsplitter is endemic to the Neches, Sabine, and Trinity River basins and has been documented or potentially occurs in 1 Louisiana parish and 44 Texas counties.

### Life History

Texas heelsplitters, like all freshwater mussels, have 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, juveniles excyst (break away) from the host and settle on the stream bottom leaving their host relatively unharmed.

Texas heelsplitter brooding season is currently unconfirmed. Both eggs and glochidia have been found in two females from the Neches River in

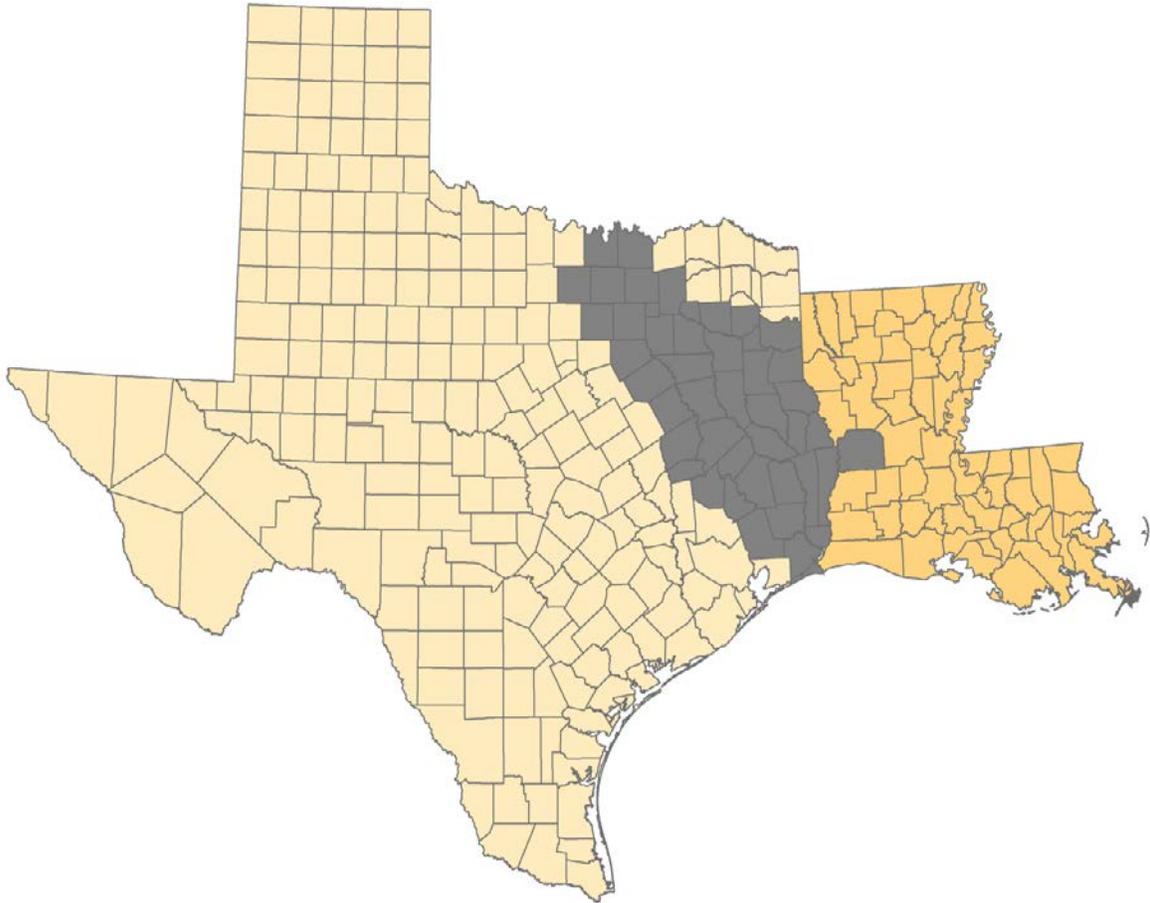
January and glochidia were observed during July in an individual collected from the Sabine River, but brooding may occur throughout much of the year. Although unconfirmed, freshwater drum (*Aplodinotus grunniens*) may serve as a host for the Texas heelsplitter.

### Habitat

The Texas heelsplitter occurs in stream and river habitats with low to moderate flow on substrates of mud, sand, and fine gravel. The species appears to be able tolerate reservoir habitats even though no naturally occurring lakes exist within its range to account for such an adaptation.

### Conservation

In 2008, the Texas heelsplitter 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 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 Texas heelsplitter in Louisiana and Texas. Counties include Anderson, Angelina, Cherokee, Collin, Cooke, Dallas, Denton, Ellis, Freestone, Grayson, Gregg, Hardin, Harrison, Henderson, Houston, Hunt, Jasper, Jefferson, Kaufman, Leon, Liberty, Madison, Nacogdoches, Navarro, Newton, Orange, Panola, Polk, Rains, Rockwall, Rusk, Sabine, San Augustine, San Jacinto, Shelby, Smith, Tarrant, Trinity, Tyler, Upshur, Van Zandt, Walker, Wise, and Wood Counties in Texas and Vernon Parish, Louisiana.**

**For Further Information**

U.S. Fish and Wildlife Service  
Arlington Ecological Services Field Office  
2005 NE Green Oaks Blvd., Suite 140  
Arlington, Texas 76006

**March 2017**