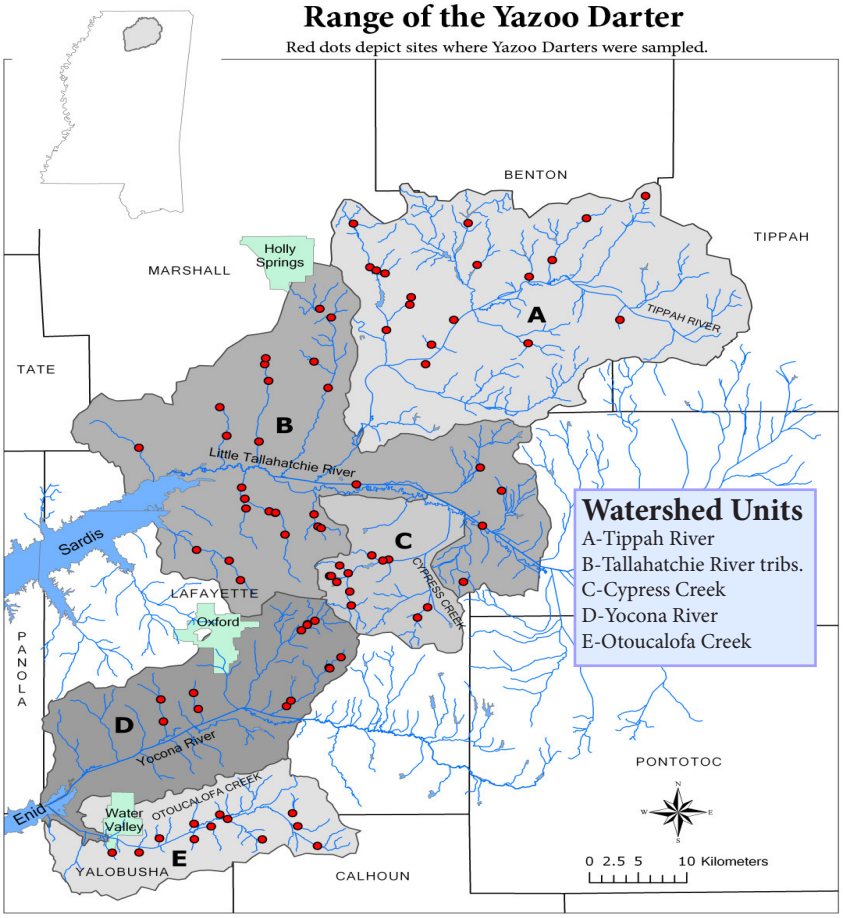
Yazoo Darter (*Etheostoma raneyi*)

The Yazoo Darter, *Etheostoma raneyi*, is a small freshwater fish in the Perch family (Percidae). Male darters are slightly larger than females and, when breeding, display a distinctive orange pigment.

A breeding male Yazoo Darter.

The species is very short-lived, generally less than 3 years. Most do not survive their first year, and very few individuals live more than 2 years.

Yazoo Darters are found only within the drainages of the Tallahatchie and Yocona Rivers of North Mississippi (see map) and inhabit small, clear streams, many of which are spring-fed and have a variety of substrate types including silt, clay, sand, and gravel.



Bay Springs Branch.

Declining populations have raised concerns over the survival of the species. Changing habitat as a result of stream channelization and growing urbanization, particularly culverts and other drainage structures found at stream road crossings, may play a major role in restricting the range of the Yazoo Darter and isolating entire populations.

The species is currently classified as vulnerable by the Southeastern Fishes Council and American Fisheries Society, as globally imperiled by the Nature Conservancy, and as sensitive by the USDA Forest Service. The Mississippi Comprehensive Wildlife Conservation Strategy lists the Yazoo Darter as a Tier 1 species of greatest conservation need in the Upper East Gulf Coast Plain Ecoregion.

USDA Forest Service, Southern Research Station
Center for Bottomland Hardwoods Research

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Male Yazoo Darters.

Research

Center for Bottomland Hardwoods Research scientists, led by Dr. Mel Warren, are involved in much of the current research on this species. A recent report for the Mississippi Museum of Natural Science (Sterling et al., 2011) included a conservation assessment as well as discussion of the genetic effects of habitat fragmentation and population isolation, severe declines in populations resulting from habitat fragmentation, recommended management practices, and on-going studies.

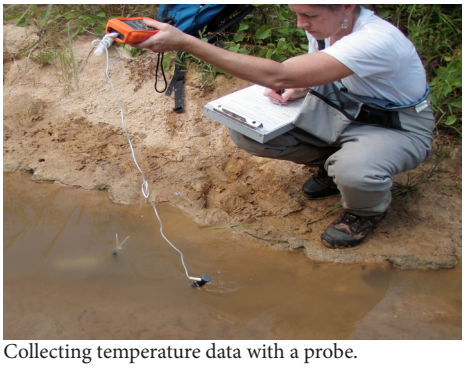
In addition to the genetic and micro-habitat studies that provided the scientific basis for this report, the authors developed another tool to aid future researchers: an interactive GIS map of all known Yazoo Darter locations as well as all known collections of other fish species occuring in the range of the Yazoo Darter.

Ongoing Studies

Center scientists continue to explore micro- and meso-habitat use (small and medium size structures) at locations with high density populations of Yazoo Darters as well as the use of in-stream wood as a spawning substrate and critical cover.

Though the Yazoo Darter distribution appears to be associated with spring-influenced areas, scientists are unsure if this is due to moderated temperatures in these areas or other reasons. Dr. Susan Adams is currently exploring the correlations between temperature and fish and crayfish distributions in streams with and without Yazoo Darters.

Wood for in-stream spawning cover before installation (above) and after placement (left).



Collecting temperature data with a probe.

Installing a thermograph.

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Reference

K. Sterling, M. L. Warren, Jr., B. P. Noonan, D. H. Reed, and L. G. Henderson. 2011. Yazoo Darter, *Etheostoma raneyi*: population and demographic status, distributional changes, and habitat use of an endemic, nongame species. Center for Bottomland Hardwoods Research and University of Mississippi, Oxford, MS Final Report submitted to Mississippi Musem of Natural Sciences, Jackson, MS.