2006

Noteworthy Geographic Distribution Records for the Golden Topminnow, Fundulus chrysotus (Cyprinodontiformes: Fundulidae), from Arkansas

Chris T. McAllister  
Chadron State College, cmcallister@se.edu

Henry W. Robison  
Southern Arkansas University

Thomas M. Buchanan  
University of Arkansas at Fort Smith

Follow this and additional works at: http://scholarworks.uark.edu/jaas

Part of the Zoology Commons

Recommended Citation
Available at: http://scholarworks.uark.edu/jaas/vol60/iss1/32

This article is available for use under the Creative Commons license: Attribution-NoDerivatives 4.0 International (CC BY-ND 4.0). Users are able to read, download, copy, print, distribute, search, link to the full texts of these articles, or use them for any other lawful purpose, without asking prior permission from the publisher or the author.

This General Note is brought to you for free and open access by ScholarWorks@UARK. It has been accepted for inclusion in Journal of the Arkansas Academy of Science by an authorized editor of ScholarWorks@UARK. For more information, please contact scholar@uark.edu, ccmiddle@uark.edu.
The golden topminnow, *Fundulus chrysotus* (Günther), is a small killifish that is distributed in the Coastal Plain from the Santee River drainage of South Carolina through Georgia, Florida, Alabama, Mississippi, and Louisiana, and northeasternward from the Trinity River drainage of Texas and Oklahoma through eastern Arkansas up the Mississippi River Embayment to Tennessee, Kentucky and Missouri (Shute 1980, Etier and Starnes 1993). In Arkansas, this fish is widely scattered in all major drainages of the Gulf Coastal Plain lowlands of the southern and eastern parts of the state (Robison and Buchanan 1988). It inhabits oxbows, sluggish creeks, swamps near rivers, and shallow and quiet water in or near aquatic vegetation.

During the period from 1960 to 1987, Robison and Buchanan (1988) reported 33 localities in the state for the species; however, prior to 1960, only 3 localities were known. In addition, Buchanan et al. (2003), Buchanan (2005), and Robison (2005) reported this fish from the Red River drainage (rarely), 11 of 66 Arkansas reservoirs (1,380 specimens), and the Pine Bluff Arsenal (Jefferson County, 7 specimens), respectively. Additional fieldwork in Arkansas has revealed further distributional records in 27 counties for *F. chrysotus*, and we document 98 new locales herein.

Between August 1996 and September 2005, golden topminnows were collected with standard nylon seine (6 x 1.5 m and 9 x 1.5 m of 3.2 mm mesh) or dipnets. Fishes were preserved in 10% formalin and later transferred to 45% isopropanol. Specimens were identified in the field, verified in the laboratory, and vouchers were deposited in the collections at Southern Arkansas University, Magnolia (SAU), the University of Louisiana-Monroe Museum of Natural History (NLU), the University of Arkansas-Fort Smith (UA-FS), Arkansas State University Museum of Zoology (ASUMZ), Henderson State University (HSU) and the North Carolina Museum of Natural Sciences-Raleigh (NCSM).

We document the collection of 3,619 *F. chrysotus* from 27 of 75 counties (36%) of Arkansas (Ashley, Bradley, Calhoun, Clark, Columbia, Crawford, Crittenden, Dallas, Desha, Drew, Hempstead, Hot Spring, Howard, Jackson, Jefferson, Lafayette, Lincoln, Little River, Lonoke, Miller, Ouachita, Polk, Prairie, Sebastian, Sevier, St. Francis, Union). Of those, 3,278 (90.5%) specimens were taken on 3 dates from a Red River oxbow (Fifty-one Cutoff Lake) in Hempstead County (see below). Detailed collection data on the 98 new sites are as follows: [county, specific locality (township, section, and range when available), date, collector (coauthors initials HWR and TMB), museum accession number (if known), and number of specimens in parentheses].


### BRADLEY COUNTY: Snake Creek at Broad (Sec. 30, T16S, R9W). 15 April 1999. HWR. SAU (1); Moro Creek at Moro Bay State Park (Sec. 21, T16S, R12W). 10 June 2005. HWR. SAU (3); L’Aigle Creek off co. rd. 2, 14.5 km. S Hermitage (Sec.18, T16S, R10W). 10 June 2005. HWR. SAU (1).

### CALHOUN COUNTY: Champagnolle Creek (Sec. 27, T15S, R14W). 6 July 2001. HWR. SAU (1); Locust Bayou at St. Hwy. 4 (Sec. 30, T13S, R15W). 7 May 2005. HWR. SAU (2); Moro Creek at St. Hwy. 160 (Sec. 9, T16S, R12W). 10 June 2005. HWR. SAU (2).

### COLUMBIA COUNTY: Dorcheat Bayou off co. rd. 15, 4.8 km. SW Philadelphia (Sec. 16, T18S, R22W). 4 September 1993. HWR. SAU (1); Cypress Creek at St. Hwy. 19, 16.1 km. SW Macedonia (Sec. 7, T20S, R21W). 6 June 2003. HWR. SAU (1); Dorcheat Bayou at St. Hwy. 160, ca. 6.4 km. E Taylor (Sec. 9, T19S, R22W). 19 May 2004. HWR. SAU (3); Horsehead Creek at U.S. 79, 9.7 km. E Magnolia (Sec. 17, T18S, R20W). 14 May 2005. HWR. SAU (1).
CLARK COUNTY: Tupelo Creek at St. Hwy. 51, 3.2 km E Arkadelphia. 13 March 1996. TMB. UA-FS (6); McNeely Creek, 6.4 km S Beirne off St. Hwy 51 (Sec. 31, T10S, R20W), 20 April 1997. R. Tumlison. HSU 2155 (4); Gurdon Lake. 17 August 2000. TMB. UA-FS (1).

CRAWFORD COUNTY: Arkansas River, 0.8 km. below Lock and Dam No. 13 at Ozark Pool (Trimble). 2 October 1998. TMB. UA-FS (1); Arkansas River backwater along access rd. to Haroldton access, just above Lock and Dam No. 13, Pool 13 (Trimble). 13 and 15 April 2005. TMB. UA-FS (2). These specimens document the first records of *F. chrysotus* from Ozark Pool and Pool 13, respectively, and, as such, represents the northwesternmost distribution in the state for this species.

CRITTENDEN COUNTY: Horseshoe Lake (Mississippi River oxbow) along St. Hwy. 147, 22.5 km. SW West Memphis. 6 August 1997. TMB. UA-FS (4).


DESHA COUNTY: Arkansas River backwater at RM 22.8 above Pendleton Bridge. 30 July 2001. TMB. UA-FS (14); Morgan Point Bendway, old Arkansas River channel below Lock and Dam No. 2. 30 July 2002. TMB. UA-FS (4).

DREW COUNTY: Cut-Off Creek at St. Hwy. 35, 11.3 km. E Collins (Sec. 31, T13S, R4W). 26 March 1998. Hutchins et al. SAU (3); Bayou Bartholomew at St. Hwy. 35, 6.4 km. E Collins (Sec. 28, T13S, R4W). 28 September 1999. HWR. SAU (1); Hazel Creek at St. Hwy. 8 (Sec. 1, T14S, R9W). 10 June 2000. HWR. SAU (1).

HEMPSTEAD COUNTY: Millwood Lake at Saratoga Landing, 0.8 km. W Saratoga (Sec. 6, T12S, R27W). 10 August 1990. HWR. SAU (1); Bois D’Arc Creek at U.S. 67, 11.3 km. SW Hope (Sec. 8, T13S, R25W), 15 June 1992. HWR. SAU (1); Fifty-one Cutoff Lake (Red River oxbow), 6.4 km. SE Fulton. 14 August 1996, 17 August 1998, and 4-5 August 2000. TMB. UA-FS (3,278); Grassly Lake 4.8 km. E Beard’s Lake use area (Sec. 22, T12S, R27W). 11 August 1997. TMB. UA-FS (1); Beard’s Lake below Millwood Dam. 23 July 1999. TMB. UA-FS (2); Red Lake (Red River oxbow), 1.6 km. below Millwood Dam, 12-13 July 2001. TMB. UA-FS (8). These specimens fill a distributional gap in southwestern Arkansas.


HOWARD COUNTY: Plum Creek at St. Hwy. 355, ca. 3.2 km. S Tollette (Sec. 20, T11S, R29W). 11 August 1990. HWR. SAU (1); Mine Creek off co. rd. 2, 1.6 km. W Tollette (Sec. 6, T11S, R29W). 11 August 1990. HWR. SAU (2); Saline River off co. rd. 2, 3.2 km. W Schaal (Sec. 10, T11S, R28W), 12 June 2000. HWR. SAU (1); Plum Creek, 0.8 km. above Millwood Lake. 14 July 2004. TMB. UA-FS (3). The collection of these specimens help extend the range westward from previous sites in southcentral Arkansas.

JACKSON COUNTY: Unnamed tributary, 8.0 km. NW Swifton (Sec. 15, T14N, R2W). 4 January 1994. A. Holt. ASUMZ 12918 (16). These specimens represent a northwestern extension of their range in Arkansas.


LINCOLN COUNTY: Bayou Bartholomew at Garrett Bridge (Sec. 6, T10S, R5W). 3 June 1989. HWR. SAU (2); Bayou Bartholomew, 6.4 km. N Star City (Sec. 21, T8S, R7W). 7 July 2003. HWR. SAU (2); Bayou Bartholomew at St. Hwy. 293 (Sec. 15, T9S, R6W). 7 July 2003. HWR. SAU (1).

LITTLE RIVER COUNTY: Little River relief at St. Hwy. 41, 6.6 km. SW Horatio (Sec. 10, T10S, R32W). 31 May 2003. W. Starnes et al. NCSM 37414 (2); Caney Creek at St. Hwy. 41, 4.0 km. Billingsley’s Corner (Sec. 28, T10S, R32W). 6 June 1989. HWR. SAU (1); Cypress Creek at St. Hwy. 234 in Winthrop (Sec. 7, T11S, R31W). 6 June 1989. HWR. SAU (1); Flat Creek.
This new geographic data provides a much needed update on the distribution of *F. chrysotus* in the state prior to the much-anticipated second edition of Robison and Buchanan’s, *Fishes of Arkansas*. From our numerous collections it is evident...
that this topminnow is common in many of the oxbows of southern Arkansas and its overall range in the state is greater than previously known. Interestingly, the golden topminnow is a species of “special concern” in Alabama (Boschung et al. 2004) and some other coastal states (except Florida) where it is confined to coastal streams. In addition, _F. chrysotus_ is of “special concern” in states near the northern extent of its range, Kentucky, Missouri, and Tennessee (Burr and Warren 1986, Etnier and Starnes 1993, Pflieger 1997). Results of our study indicate that Arkansas most likely has some of the most secure populations of this topminnow and the third largest geographic area of occurrence of any state in its range, after Florida and Louisiana (Douglas 1974, Burgess et al. 1977, Loftus and Kushlan 1987).

**Acknowledgments.**—We thank numerous people for assistance in the field, including those from the SAU Natural History classes and UA-Fort Smith. Special thanks to the following curators of fish collections in museums for loan of specimens or providing distributional records: Drs. N. H. Douglas (ULM), G. L. Harp (ASUMZ), W. C. Starnes (NCSM), and R. Tumlison (HSU). We also thank the Arkansas Game and Fish Commission for providing scientific collecting permits.

**Literature Cited**


