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Chris T. McAllister

*Chadron State College, [cmcallister@csc.edu](mailto:cmcallister@csc.edu)*

Henry W. Robison

*Southern Arkansas University*

Thomas M. Buchanan

*University of Arkansas at Fort Smith*

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

CHRIS T. McALLISTER<sup>1,4</sup>, HENRY W. ROBISON<sup>2</sup>, AND THOMAS M. BUCHANAN<sup>3</sup>

<sup>1</sup>*Department of Physical and Life Sciences, Chadron State College, Chadron, NE 69337*

<sup>2</sup>*Department of Biology, Southern Arkansas University, Magnolia, AR 71754*

<sup>3</sup>*Department of Biology, University of Arkansas-Fort Smith, Fort Smith, AR 72913*

<sup>4</sup>Correspondence: [cmcallister@csc.edu](mailto:cmcallister@csc.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 northeastward from the Trinity River drainage of Texas and Oklahoma through eastern Arkansas up the Mississippi River Embayment to Tennessee, Kentucky and Missouri (Shute 1980, Etnier 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 seines (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 State 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, Poinsett, 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].

**ASHLEY COUNTY:** Hank's Creek at St. Hwy. 52, 1.3 km. W jct. U.S. 82. 26 March 1988. Hutchins et al. SAU (1); Hank's Creek, 0.8 km. W St. Hwy. 81 on U.S. 82. 8 May 1991. J. Pennington and J. McLead. NLU 65400 (1); Hank's Creek, 0.4 km. W St. Hwy. 81 on U.S. 82. 9 May 1991. J. Pennington and J. McLead. NLU 65385 (1); Lucas Lake, Crossett (Sec. 30, T18S, R8W). June 1995. R. Tumblison. HSU 1116 (30); Ouachita River, 10.5 km. W Crossett on U.S. 82 (Sec. 14, T18S, R10W). 11 April 1997. J. Thompson. HSU 2003 (5); Wilson Brake Lake (Bayou Bartholomew oxbow). 22 July 1998. TMB. UA-FS (3).

**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); McNeeley Creek, 6.4 km. S Beirne off St. Hwy 51 (Sec. 31, T10S, R20W). 20 April 1997. R. Tumilson. 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)

**DALLAS COUNTY:** Moro Creek (specific locality not known). 21 April 2005. L. Self. HSU 3080 (1).

**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); Grassy 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.

**HOT SPRING COUNTY:** Saline Bayou, 4.0 km. S Friendship (Sec. 23 T6S R19W). 14 February 1997. R. Tumilson. HSU 2721 (2).

**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 northwestward extension of their range in Arkansas.

**JEFFERSON COUNTY:** Bayou Meto off St. Hwy. 114, confluence with Arkansas River. 27 September 2002. TMB. UA-FS (2).

**LAFAYETTE COUNTY:** Bodcau Creek, 6.4 km. N Lewisville, AR (Sec. 14, T15S, R24W). 5 July 1992. HWR. SAU (2); Mays Old River Lake (Red River oxbow), 7.2 km. N U.S. 82. 16 August 1997. TMB. UA-FS (3); Wallace Lake (Red River oxbow), 3.2 km. N U.S. 82. 20 August 1998. TMB. UA-FS (7); Unnamed Red River oxbow (Sec. 6, T19S, R26W). 13 July 2001. TMB. UA-FS (7); Lake Erling at St. Hwy. 160 (Sec. 31, T19S, R23W). 14 June 2002. HWR. SAU (1); Swan Lake (Red River oxbow) (Sec. 22, T17S, R25W). 9 July 2002. TMB. UA-FS (14); Jones Lake (Red River oxbow) (Sec. 34, T19S, R26W). 10 July 2003. TMB. UA-FS (11); Bodcau Creek at St. Hwy. 360 (Sec. 1, T16S, R24W). 15 July 2004 and 11 July 2005. TMB. UA-FS (4).

**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

at St. Hwy. 234, 3.2 km. E Winthrop (Sec. 21, T11S, R31W). 10 July 1990. HWR. SAU (1); spring-fed backwater of Red River, 2.4 km. below St. Hwy. 41. 25 July 1995. TMB. UA-FS (7); Allen Creek on Richmond Road, 4.0 km. SW Ashdown. 13 August 1996. TMB. UA-FS (2); Choctaw Lake (Red River oxbow), 3.2 km W St. Hwy. 41. 19 August 1998. TMB. UA-FS (2); Grassy Lake (Red River oxbow) (Sec. 29, T13S, R29W). 11 July 2001. TMB. UA-FS (50); Little River backwater at U.S. Hwy. 71, 3.2 km. N Wilton (Sec. 24, T11S, R29W). 5 October 2001. HWR. SAU (4); Red River, 3.2 km. S St. Hwy. 108 near Oklahoma state line. 7 July 2003. TMB. UA-FS (1); Beard's Lake below Millwood Dam at U.S. 71 access. 8 July 2003. TMB. UA-FS (2). These 72 specimens provide additional records for the species in far southwestern Arkansas. Interestingly, one county westward in adjacent Oklahoma, *F. chrysotus* is restricted to Little River and Red River tributaries of McCurtain County (Miller and Robison 2004).

**LONOKE COUNTY:** Bayou Meto at St. Hwy. 13 bridge. 2 October 2002. TMB. UA-FS (1).

**MILLER COUNTY:** Kelly Bayou, 6.4 km. SW Doddridge (Sec. 9, T20S, R27W). 3 September 1990. HWR. SAU (1); West Fork Kelly Bayou, 1.6 km. S Brightstar (Sec. 28, T18S, R28W). 3 September 1990. HWR. SAU (1); Turkey Creek at St. Hwy. 237, 6.4 km. N Brightstar (Sec. 28, T18S, R28W). 14 November 1993. HWR. SAU (1); Sulphur River, 4.8 km. above mouth in spring-fed backwater. 12 August 1996. TMB. UA-FS (4); Second Old River Lake (Red River oxbow) (Secs. 1-2, T15S, R26W). 20 July 1999. TMB. UA-FS (2); Red River backwater, 12.8 km. N Fulton (Sec. 22, T14S, R26W). 12 August 1996 and 17 August 1998. TMB. UA-FS (4); Adams Cutoff Lake (Red River oxbow), 3.2 km. SW Fulton. 19 August 1997. TMB. UA-FS (32); Kuykendall Lake (Red River oxbow), 4.8 km. SW Fulton. 9 July 2001. TMB. UA-FS (15); Borrow pit near Red River levee (Sec. 13, T15S, R26W). 10 July 2001. TMB. UA-FS (2); Cypress City Lake (Red River oxbow) (Secs. 6-8, T16S, R25W). 9 July 2002. TMB. UA-FS (15); Caswell Lake (Red River oxbow) (Secs. 27-28, T18S, R26W). 11 July 2002. TMB. UA-FS (4); unnamed slough off Palmer Lake (Sec. 6, T20S, R26W). 12 July 2002. TMB. UA-FS (1); Palmer Lake (Red River oxbow) (Sec. 6, T20S, R26W). 12 July 2002. TMB. UA-FS (7); Willow Bend Lake (Red River oxbow) (Sec. 7, T14S, R26W). 16 July 2004. TMB. UA-FS (7).

**MONROE COUNTY:** Caney Slash, tributary of Bayou DeView at RR right-of-way, 3.2 km. W Brinkley. 4 June 1988. TMB. UA-FS (1); Boat Gunwale Slash at St. Hwy. 17, 6.4 km. S Holly Grove. 10 November 1989. TMB. UA-FS (3).

**OUACHITA COUNTY:** En Core Fabre Bayou, ca. 1.6 km. N Camden (Sec. 10, T13S, R17W). 22 August 1994. HWR. SAU (2); Bragg Lake 2.1 km. SE Bragg City, on St. Hwy. 24 (Sec. 33 T12S R18W). 12 April 1997. J. Thompson. HSU 2050 (1); Ben Davis Lake at Snow Hill (Sec. 28, T15S, R15W). 20 October 2004. HWR. SAU (1).

**POINSETT COUNTY :** L'Anguille River, 6 km. NW Harrisburg (Sec. 4, T11N, R3E). 15 November 1987. J. McLean. ASUMZ 11913 (1); L'Anguille River, 8 km. SW Harrisburg off St. Hwy. 214 (Sec. 20, T10N, R3E). 15 November 1987. J. McLean. ASUMZ 11889 (1). These specimens represent a northwestward extension of the range of this topminnow from previous sites in northeastern Arkansas.

**PRAIRIE COUNTY:** White River at DeValls Bluff boat ramp, DeValls Bluff (Sec. 17, T2N, R4W). 11 April 1998. N. H. Douglas and J. J. Hoover. SAU (2).

**SEVIER COUNTY:** Rolling Fork River at St. Hwy. 24, 4.8 km. W Horatio (Sec. 28, T9S, R32W). 8 October 1989. HWR. SAU (1); Millwood Lake at Paraloma Landing at end of St. Hwy. 234 (Sec. 29, T11S, R28W). 18 June 2002. HWR. SAU (1); Little River at end of St. Hwy. 317, 4.8 km. S Brownstown (Sec. 25, T11S, R29W). 19 June 2002. HWR. SAU (2); Cossatot River, 2.4 km. above confluence of Millwood Lake. 13 July 2004. TMB. UA-FS (3). These specimens extend the range of *F. chrysotus* to the north from previous records in southwestern Arkansas.

**ST. FRANCIS COUNTY:** L'Anguille River off St. Hwy. 261, 4.0 km. W Caldwell (Sec. 3, T5N, R2E). 21 February 1988. J. McLean. ASUMZ 11691 (2).

**UNION COUNTY:** Grand Marais boat ramp on Ouachita River (Sec. 37, T19S, R10W). 30 January 1999. A. Rainwater. HSU 2253 (2); Cornie Bayou at U.S. 167, 1.6 km. N Junction City (Sec. 36, T19S, R16W). 10 March 2000. HWR. SAU (1); Lapoile Creek at U.S. 82, 16.1 km. NE Strong (Sec. 18, T18S, R10W). 18 May 2001. HWR. SAU (1); LaPere Creek at St. Hwy. 129, 3.2 km. SW of Huttig (Sec. 35, T19S, R11W). 11 June 2002. HWR. SAU (1); Calion Lake at Calion (Sec. 22, T16S, R14W). 17 May 2003. HWR. SAU (3); Big Cornie Creek at St. Hwy. 15 (Sec. 35, T19S, R18W). 6 October 2003. HWR. SAU (2).

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).

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