

# Occurrence of Goldfish, *Carassius auratus* (Cypriniformes: Cyprinidae) in the Little River System of Southeastern Oklahoma

**Chris T. McAllister\***

Division of Natural Sciences, Northeast Texas Community College, 2886 FM 1735, Chapel Hill Road, Mt. Pleasant, TX 75455

**Michael R. Rodriguez**

Texas A&M University-Commerce, Commerce, TX 75428

**Henry W. Robison**

602 Big Creek Drive, Sherwood, AR 72120

---

**Abstract:** Goldfish (*Carassius auratus*) are native cyprinids in eastern Asia. In the United States, individuals have been collected from every state as well as three Canadian Provinces. In Oklahoma, there are sporadic records of *C. auratus* known from the state but none reported in the refereed literature from any southeastern watershed. Here, we document the occurrence of goldfish from a creek in the Little River watershed of McCurtain County, southeastern Oklahoma.

---

## Introduction

The goldfish, *Carassius auratus* L., 1758, is native to eastern Asia and parts of Europe, thought to have originated in rivers of China and/or Japan, and was first introduced into the USA in the late 1600's (DeKay 1842; Page and Burr 2011). The species is now established in many states as well as southern parts of Ontario, Alberta, and British Columbia, Canada (Hensley and Courtenay, 1980). Although populations can be distributed sporadically, they can also be locally common. This fish inhabits shallow, muddy pools, and backwaters of sluggish rivers, ponds, and lakes. It prefers warm still turbid waters usually with emergent vegetation and is tolerant of pollution. It is an omnivore as adults feed mostly

on phytoplankton, whereas young feed mostly on zooplankton and larval insects (Hensley and Courtenay, 1980).

In Oklahoma, there are sporadic geographic records of *C. auratus* from watersheds in Cherokee-Sequoyah, Cimarron, Craig, Marshall, Payne, and Wagoner counties (Moore and Cross 1950; Miller and Robison 2004, see their p. 88). Here, we document the first published geographic record for *C. auratus* in the Little River system of McCurtain County.

## Methods

On 8 June 2024 and again on 20 June 2024, fish were collected by backpack electrofisher from a tributary to Yashau Creek off

\*Corresponding author: [cmcallister@se.edu](mailto:cmcallister@se.edu)

Airport Road at Broken Bow (34°01'08.04"N, -94°45'24.51"W). This locality (Fig. 1) is a drainage ditch containing warm turbid water with muddy substrate and some aquatic vegetation which feeds the main creek about 91 m east. It quickly fills with rainwater during precipitous months of the year but can nearly dry up in summer months. Specimens were transferred to an aquarium with treated (chlorine-free) tap water for 24 hr and killed in a concentrated solution of tricaine methanesulfonate (TMS-222), placed in 70% (v/v) ethanol, and deposited as voucher specimens in the Sam Noble University of Oklahoma Ichthyology Collection, Norman, Oklahoma. Fish scientific names follow Page et al. (2023).



**Figure 1. Study site in McCurtain County, Oklahoma. Note the drainage culvert at top of photograph.**

## Results and Discussion

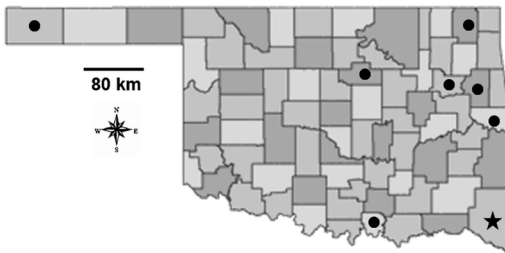
Three *C. auratus* (total length [TL] = 69, 83, and 86 mm; Fig. 2) were collected on 8 June 2024. On 20 June 2024, three additional *C. auratus* (87, 90, and 95 mm TL) were collected. As far as the fish community at this site, there were

several other species from eight families collected by CTM over the last decade, including: LEUCISCIDAE: *Campostoma spadiceum*, *Notemigonus crysoleucus*, *Semotilus atromaculatus*; CATOSTOMIDAE: *Erimyzon claviformis*; ICTALURIDAE: *Ameiurus melas*, *Ameiurus natalis*; ESOCIDAE: *Esox americanus vermiculatus*; APHREDODERIDAE: *Aphredoderus gibbosus*; FUNDULIDAE: *Fundulus olivaceus*; POECILIIDAE: *Gambusia affinis*; CENTRARCHIDAE: *Lepomis cyanellus*, *Lepomis gulosus*, *Lepomis macrochirus*, *Lepomis megalotis*, *Micropterus nigricans*; and PERCIDAE: *Etheostoma radiosum*.



**Figure 2. One of six goldfish collected from McCurtain County, Oklahoma.**

Miller and Robison (2004) reported that populations of *C. auratus* are scattered across the state of Oklahoma and specifically noted that some have possessed large numbers in the panhandle of Cimarron County (Upper South Carizzo Creek, Upper Cimarron drainage; Fig. 3). The distributional map shown by Miller and Robison (2004, see p. 88) shows shading in several other watersheds. However, there are none shaded in the southeastern part of the state. In adjacent Arkansas, Robison and Buchanan (2020) show spotty records for *C. auratus* within six counties of all the major river drainages, except the Red River. We therefore document a new geographic record for *C. auratus* in the Little River system of the Red River drainage of McCurtain County (Fig. 3).



**Figure 3. Records of goldfish collected in watersheds of various counties of Oklahoma. Dots = previous records; star = new record.**

### Acknowledgments

The Oklahoma Department of Wildlife Conservation issued Scientific Collecting Permit No. 1551646 to CTM. We thank Dr. William R. Matthews (OU, retired) for advice on goldfish from Oklahoma, and Tracy Bidwell (Museum Registrar, SNOMNH, Norman, OK) for expert curatorial assistance.

### References

- DeKay JE. 1842. Natural history of New York and zoology of New York, or the New York fauna. Vol. I. Zoology: reptiles and fishes. Pt. IV. Fishes. Albany (NY): WA White and J Visscher. 415 p.
- Hensley DA, Courtenay WA Jr. 1980. *Carassius auratus* (Linnaeus) goldfish. In: Lee DS, Gilbert CR, Hocutt CH, Jenkins RE, McAllister DE, Stauffer JR Jr, editors. Atlas of North American freshwater fishes. Raleigh (NC): North Carolina State Museum of Natural History. p. 147
- Miller RJ, Robison HW. 2004. Fishes of Oklahoma. Norman (OK): University of Oklahoma Press. 450 p.
- Moore GA, Cross FB. 1950. Additional Oklahoma fishes with validation of *Poecilichthys parvipinnis* (Gilbert and Swain). Copeia 1950:139–148.
- Page LM, Bemis KE, Dowling TE, Espinosa-Pérez HS, Findley LT, Gilbert CR, Hartel KE, Lea RN, Mandrak NE, Neighbors MA, Schmitter-Soto JJ, Walker HJ Jr. 2023. Common and scientific names of fishes from the United States, Canada, and Mexico, 8th ed. Bethesda (MD): American Fisheries Society, Special Publication 37. 447 p.
- Page LM, Burr BM. 2011. Peterson field guide to freshwater fishes of North America north of Mexico. Second Ed. Boston (MA): Houghton Mifflin Harcourt. 663 p.
- Robison HW, Buchanan TM. 2020. Fishes of Arkansas. Second Edition. Fayetteville (AR): University of Arkansas Press. 959 p.

Submitted September 26, 2024 Accepted November 3, 2024