

1996

## Recent Record of the White Sucker, *Catostomus commersoni*, in the White River System, Arkansas

James C. Petersen  
*U.S. Geological Survey*

Faron D. Usrey  
*U.S. Geological Survey*

William E. Keith  
*Arkansas Department of Pollution Control and Ecology Commission*

James A. Wise  
*Arkansas Department of Pollution Control and Ecology Commission*

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

 Part of the [Terrestrial and Aquatic Ecology Commons](#)

---

### Recommended Citation

Petersen, James C.; Usrey, Faron D.; Keith, William E.; and Wise, James A. (1996) "Recent Record of the White Sucker, *Catostomus commersoni*, in the White River System, Arkansas," *Journal of the Arkansas Academy of Science*: Vol. 50 , Article 29.  
Available at: <http://scholarworks.uark.edu/jaas/vol50/iss1/29>

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](mailto:scholar@uark.edu).

## A Recent Record of the White Sucker, *Catostomus commersoni*, in the White River System, Arkansas

James C. Petersen and Faron D. Usrey  
U.S. Geological Survey  
401 Hardin Road  
Little Rock, Arkansas 72211

William E. Keith and James A. Wise  
Arkansas Department of Pollution Control and Ecology  
P.O. Box 8913  
Little Rock, Arkansas 72219

In Arkansas the white sucker, *Catostomus commersoni*, is an uncommon inhabitant of small streams and is confined to the Arkansas and White River systems near the Arkansas-Missouri border, which is on the southern edge of the white sucker's distributional range (Robison and Buchanan, 1988). In Arkansas the white sucker is most commonly collected in the Illinois River drainage, which is a part of the Arkansas River system. As recently as the summer of 1995, sampling of four sites in the Illinois River drainage, headwater reaches of Osage and Spring Creeks, conducted by the Arkansas Department of Pollution Control and Ecology (ADPCE) yielded 25 white suckers, indicating a well-established population of white suckers in these spring-fed headwaters in the Illinois River drainage.

In the White River system, the white sucker is commonly collected in southern Missouri (Pflieger, 1975) and has been very commonly collected in Taneycomo Reservoir and its tributaries and in some tributaries to Table Rock Reservoir on the White River (Tim Banek, Missouri Department of Conservation, pers. comm., 1996) about 10-20 km north of the Arkansas-Missouri border. Meek (1894) reported the presence of white suckers in the Middle Fork of White River at Fayetteville, Arkansas, and Spring River at Mammoth Spring, Arkansas. However, Robison and Buchanan (1988) report only one recent record of the white sucker from the White River system in Arkansas. This record is from a collection by the Bureau of Sport Fisheries and Wildlife in the Sugarloaf Creek area (Boone County) in 1969 (Thomas M. Buchanan, Westark Community College, pers. comm., 1996). The locality of this record is one of about 60 localities which Robison and Buchanan (1988) report sampled in the White River system upstream of the Buffalo River. Cashner (1967) reported examining a white sucker from a fisherman's creel below the dam on the White River at Batesville, Arkansas.

Recently, a single white sucker was collected within the White River system from Yocum Creek (T. 21 N., R. 22 W., sec. 30) in Carroll County southeast of the town of Oak Grove on 4 August 1994 by the U.S. Geological Survey (USGS) and ADPCE. One collection effort with an active duration of 50 minutes was made using a back-

pack electrofisher (pulsed DC). The collection was part of fish community sampling associated with a USGS study of the water quality of the Ozark Plateaus (Freiwald, 1991) and an ADPCE study of water quality in the upper White River drainage (Arkansas Department of Pollution Control and Ecology, 1995). Sampling at this location in 1985, 1993 and 1995 and at two adjacent locations on Yocum Creek in 1993 did not yield any white sucker specimens.

The collected specimen had a total length of 332 mm, standard length of 280 mm, and a live weight of 347 grams. No external parasites or other anomalies were noted. Distinguishing characteristics of the specimen were the silvery body, small scales, and papillose lips (Robison and Buchanan, 1988). Photos documenting the distinguishing characteristics were made and the specimen was released in apparent good condition into the habitat from which it was collected.

Yocum Creek is a 4th-order stream flowing generally northward through the Springfield Plateau into Table Rock Lake. Yocum Creek flows into Table Rock Lake about 8 km downstream of the collection site. At the collection site, Yocum Creek has a drainage area of 13,675 ha. Yocum Creek is a perennial stream (Hunrichs, 1983); although data are few, the average discharge at the site is estimated to be about 1.5 to 2.0 m<sup>3</sup>/s. Several springs flow into Yocum Creek and its tributaries (Joseph and Green, 1994). The largest of these springs, with a discharge of about 0.2 m<sup>3</sup>/s flows into Spring Creek which flows into Yocum Creek 0.7 km downstream of the collection reach. The reach where the white sucker was collected contains a series of riffles, runs, and small pools. A stream habitat assessment of the reach was performed on 13 July 1993. The 260-meter reach had a mean width of 13 m and a mean depth of 45 cm. The mean channel gradient is 3.7 m per km. Measured velocities on that date ranged from 0.24 to 0.98 meter per second with a mean velocity of 0.45 meter per second. Cobble was the most common substrate; gravel was almost as common. Water willow (*Justicia americana*) was present, but no other emergent or submerged macrophytes were observed within the reach.

Approximately 75 percent of the watershed within the Yocum Creek drainage basin upstream from the collec-

tion reach is used for agricultural purposes, mostly production of poultry and cattle. Additional information on land use within the basin can be found in Joseph and Green (1994). Most of the land adjoining one bank of the reach is pasture; consequently, much of that bank has few trees.

Water-quality data have been collected by the USGS since April 1993 at a site approximately 100 meters downstream of the reach. Yocum Creek is a well-buffered stream with alkalinities ranging from about 120 to 150 mg/L. Nutrient concentrations in Yocum Creek are higher than in many Ozark Plateaus streams. Median concentrations of dissolved nitrite plus nitrate (as nitrogen) and total phosphorus were 2.6 and 0.04 mg/L, respectively, in samples collected between April 1993 and September 1995.

The fish community sample collected on 4 August 1994 indicates that stonerollers (*Camptostoma anomalum* and *C. oligolepis*) and dusky stripe shiners (*Luxilus pilsbryi*) are the numerically dominant species. Northern hog suckers (*Hypentelium nigricans*) and golden redbreast (*Moxostoma erythrurum*) were collected, but comprised less than 2 percent of the sample. Pflieger (1975) notes that habitats where white suckers are abundant usually are largely devoid of other suckers.

The white sucker apparently is quite rare in Arkansas, particularly in the White River system. The explanation for the relatively common occurrence in reservoirs and south-flowing tributaries of the White River in Missouri and the rare occurrence in the nearby north-flowing tributaries to the White River in Arkansas is unclear to us. However, slight differences in one or more critical factors may have substantial effects upon a species near the edge of its distributional range. Additional fish community sampling of Yocum Creek during the next several years is planned by the U.S. Geological Survey. These sampling efforts may produce additional information on the existence of the white sucker within the White River system of Arkansas.

#### Literature Cited

- Arkansas Department of Pollution Control and Ecology.** 1995. Water quality, macroinvertebrate, and fish community survey of the upper White River watershed, northwest Arkansas. Arkansas Department of Pollution Control and Ecology, Little Rock, Arkansas. 85 pp.
- Cashner, R. C.** 1967. A survey of the cold tailwaters of the White River in northwestern Arkansas, and a comparison of the White River with selected warm-water streams. Unpublished M. S. thesis. University of Arkansas, Fayetteville, 143 pp.
- Freiwald, D. A.** 1991. National Water-Quality Assessment Program-Ozark Plateaus. U.S. Geological Survey Open-File Report 91-162. Little Rock, Arkansas. 2 pp.
- Hunrichs, R. A.** 1983. Identification and classification of perennial streams of Arkansas. U.S. Geological Survey Water-Resources Investigations Report 83-4063. Little Rock, Arkansas. 1 sheet.
- Joseph, R.L. and W. R. Green.** 1994. Water-quality reconnaissance and streamflow gain and loss of Yocum Creek basin, Carroll County, Arkansas. U.S. Geological Survey Open-File Report 94-537. Little Rock, Arkansas. 14 pp.
- Meek, S.E.** 1894. A catalog of the fishes of Arkansas. Ann. Report Arkansas Geological Survey for 1891, 2:216-276.
- Pflieger, W.L.** 1975. The fishes of Missouri. Missouri Department of Conservation, Jefferson City, Missouri. 343 pp.
- Robison, H. W. and T. M. Buchanan.** 1988. Fishes of Arkansas. The University of Arkansas Press, Fayetteville, Arkansas. 536 pp.