

1974

## Ichthyofaunal Survey of the Current River Within Arkansas

Joe F. Green

*Arkansas State University*

John K. Beadles

*Arkansas State University*

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



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

---

### Recommended Citation

Green, Joe F. and Beadles, John K. (1974) "Ichthyofaunal Survey of the Current River Within Arkansas," *Journal of the Arkansas Academy of Science*: Vol. 28, Article 9.

Available at: <https://scholarworks.uark.edu/jaas/vol28/iss1/9>

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 Article 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), [uarepos@uark.edu](mailto:uarepos@uark.edu).

# Ichthyofaunal Survey of the Current River Within Arkansas

JOE F. GREEN\* and JOHN K. BEADLES  
Division of Biological Sciences, Arkansas State University,  
State University, Arkansas 72467

## ABSTRACT

Current River is a clear predominantly spring-fed stream draining the southeastern face of the Ozark escarpment. Beginning at Montauk Springs, Dent County, Missouri, it meanders southward for 180 km to the Arkansas-Missouri state line. The study area containing 14 sampling stations was that part of Current River lying within the boundaries of Arkansas to its confluence with Black River.

The collected fishes could be referred to as those common to a wide-ranging faunal group, the Ozark, and the lowland faunal group. Those of the Ozark group were restricted in their range by topography and the river's confluence with Little Black River. The lowland group was influenced by immigrating and emigrating fishes from Black River.

## INTRODUCTION

Current River is a clear predominantly spring-fed stream draining the southeast face of the Ozark escarpment (Sauer, 1920). Beginning at Montauk Springs, Dent County, Missouri, at an elevation of 305 m, it flows southward for 242 km and empties into Black River, a tributary of the White River, 6.4 km east of Pocahontas, Randolph County, Arkansas, at an elevation of 76 m (Hall, 1958).

Fish studies have been conducted on Current River in Missouri by that state's Department of Conservation and by the U. S. Forest Service (Pflieger, 1971). With the exception of a 1954 sample taken by the Arkansas Game and Fish Commission, no investigations of the fish found south of the Arkansas-Missouri line are known for Current River. Studies of a similar nature have been conducted by Funk and Campbell (1953), Martin and Campbell (1953), Meek (1894), Black (1940), Robison and Harp (1971), Beadles (1972), Jackson (1972), Fowler (1972) and Harp (1973) on various Ozark-type streams.

The following report is a preliminary list of fish fauna found in the Current River south of the Arkansas-Missouri state line. The writers are certain that more fish will be reported as future collections are made.

## DESCRIPTION OF AREA

The Current River cuts through the Salem Plateau of the Ozark Mountain physiographic province (Fenneman, 1938) and drains onto the Advance Lowland between the Ozark Uplands and Crowley's Ridge. The Salem Plateau in this region is composed of Gasconade and Potosi limestone, dolomite and sandstone of Ordovician origin (Sauer, 1920). The river in its upper part flows swiftly through narrow valleys of steep bluffs, receiving 60% of its content from springs that have a year-round temperature of  $14\text{ C} \pm 1\text{ C}$  (Hall, 1958). In the lower part, erosion has produced a wide valley suitable for agriculture (Sauer, 1920). The drainage area is 2,613 sq mi and the only named tributary within the study area is the Little Black River (White River Basin Coordinating Committee, 1968).

The study area was that part of Current River lying within the boundaries of the State of Arkansas. The river enters the state 19 km northwest of Corning, Arkansas, and flows into Black River 6.4 km east of Pocahontas. The distance from the state line to the confluence with Black River is 63 km. The river's approximate elevation as it enters the state is 85 m and where it joins Black River it has dropped 0.14 m/km to an elevation of 76 m.

\*Paragould High School, Paragould, Arkansas.

As the river enters the state, it leaves the Ozark escarpment and becomes a meandering lowland stream, maintaining its rapid clear flow. The upper part of the study area revealed some outcropping of limestone and a substrate composed of gravel. In the lower part the substrate was composed entirely of sand and mud. The river was almost continuous pools separated by a few short riffle areas. In most locations the river maintained a deep swift channel near one bank, and the bottom rose sharply up to the opposite shore. The average width was about 47 m and average depth was between 1 and 3 m. The flow was moderate to rapid. At Doniphan, Missouri, 16 km above the study area, the average flow from 1920 to 1968 was 2,962 cu ft per second, with a minimum recorded value of 1,020 cu ft per second and a maximum of 94,400 cu ft per second in 1935 (Frame, 1930; U.S. Department of Interior, 1968). In Arkansas, however, a gauging station is not maintained.

According to the Soil Conservation Service (1971), the soils of the area are of the Dundee-Amagon association, found predominantly on the west side of the river, and of the Bosket-Beulah association on the east.

The shore consisted of banks 4.3-4.9 m high which were lined with *Betula* sp. (birch), *Carya* spp. (hickories), *Fraxinus* spp. (ashes), *Liquidambar* sp. (sweet gum), *Nyssa* sp. (black gum), *Platanus* sp. (Sycamore), *Populus* sp. (cottonwood), *Quercus* spp. (oaks), *Salix* spp. (willows), *Taxodium* sp. (bald cypress) and *Ulmus* sp. (elms).

## METHODS

Fish samples were collected from 11 stations along the river where access was available between 6 June 1972 and 16 June 1973. One collection was made from an oxbow lake, one from a borrow pit and one from an evaporation pool left by the spring flood.

Most samples were taken with three minnow seines, a 9 x 2 m, a 20 x 2 m and a 3 x 2 m, each having a 0.5-cm square mesh. Electrofishing was conducted at night from the Arkansas-Missouri state line south for 1,500 m by use of a work boat and a gasoline generator.

Collected fish were fixed in 10% formalin for four days, washed in water and stored in 40% isopropyl alcohol.

Scientific names of fishes follow those of Bailey et al. (1970) except where noted.

## ACKNOWLEDGEMENTS

Dr. George A. Moore, Professor Emeritus, Oklahoma State University, kindly made verifications.

Ichthyofaunal Survey of the Current River Within Arkansas

tion of certain darters and cyprinids. Randy Boyd and John Cloud (Arkansas Game and Fish Commission) provided assistance in electrofishing. Appreciation is expressed to several graduate students of Arkansas State University and several high school biology students of Paragould for aid in the collection of the fishes.

ANNOTATED LIST OF FISHES OF THE CURRENT RIVER WITHIN ARKANSAS

Petromyzontidae (Lampreys)

Although no specimens of Petromyzontidae were collected during this study, *Ichthyomyzon castaneus* Girard (chestnut lamprey) has been reported by Baker (1954), and Pflieger (1971) reported *Lampetra aepyptera* (Abbott) (least brook lamprey) and *Lampetra lamottei* (Lesueur) (American brook lamprey) in the Missouri part of Current River.

Acipenseridae (Sturgeons)

*Scaphirhynchus platyrhynchus* (Rafinesque). Shovelnose sturgeon.

This is an inhabitant of open channels and was collected in strong current over a firm gravel bottom. Previously unreported from Current River; uncommon.

Polyodontidae (Paddlefish)

*Polyodon spathula* (Walbaum). Paddlefish.

This species was collected in the lower parts of the system. Probably migrates in and out of Black River (Baker, 1954).

Lepisosteidae (Gars)

*Lepisosteus osseus* (Linnaeus). Longnose gar.

Most common inhabitant of both upland and lowland habitats in the system.

*Lepisosteus oculatus* (Winchell). Spotted gar.

This less abundant gar was collected in backup water along the lowland ditches and borrow pits; previously unreported in Current River.

*Lepisosteus platostomus* Rafinesque. Shortnose gar.

The shortnose gar is an inhabitant of quiet pools, backwaters and oxbow lakes; reported by Baker (1954).

*Lepisosteus spatula* Lacepede. Alligator gar.

Though not represented in the writers' collection this gar is reported by commercial fishermen and by Baker (1954).

Amiidae (Bowfin)

*Amia calva* Linnaeus. Bowfin.

Lowland species, collected from overflow ditches and borrow pits.

Anguillidae (Eels)

*Anguilla rostrata* (Lesueur). American eel.

This species was not collected in the writers' study though it was collected by Baker (1954).

Clupeidae (Herrings)

*Dorosoma cepedianum* (Lesueur). Gizzard shad.

Abundant and widespread.

Hiodontidae (Mooneyes)

*Hiodon tergisus* Lesueur. Mooneye.

Common inhabitant of clear large pools.

Esocidae (Pikes)

*Esox americanus vermiculatus* Lesueur. Grass pickerel.

Relatively uncommon, taken from still shallow water in or near vegetation.

*Esox niger* Lesueur. Chain pickerel.

Uncommon, found in deeper water than the grass pickerel; occupant of quiet pools with submergent vegetation.

Cyprinidae (Minnows)

*Cyprinus carpio* Linnaeus. Carp.

Common inhabitant of both shallow and deep pools with moderate current.

*Carassius auratus* (Linnaeus). Goldfish.

An uncommon immigrant found in the lower parts of the river. Reported by Baker (1954) and presently by commercial fishermen.

*Notemigonus crysoleucas* (Mitchill) Golden shiner.

Common bait minnow inhabiting borrow pits, ditches and quiet backwaters.

*Opsopoeodus emiliae* (Hay). Pugnose minnow.

Rare lowland species occupying sluggish turbid water.

*Hybopsis amblops* (Rafinesque). Bigeye chub.

Found to be common to the areas above and below riffles.

*Hybopsis dissimilis* (Kirtland). Streamline chub.

Occupies the same habitat as the bigeye chub but is less abundant.

*Hybopsis x-punctata* Hubbs and Crowe. Gravel chub.

The most abundant chub, found in moderate current below riffles and in quiet pools.

*Notropis atherinoides* Rafinesque. Emerald shiner.

The emerald shiner was found to be common in open water with moderate to slow current.

*Notropis rubellus* (Agassiz). Rosyface shiner.

Common in riffle areas of moderate flow with a rocky bottom.

*Notropis umbratilis* (Girard). Redfin shiner.

Uncommon inhabitant of quiet backwaters and overflow pools.

*Notropis fumeus* Evermann. Ribbon shiner.

Uncommon; a single collection of 18 specimens was taken over a sandy bottom in moderate current.

*Notropis zonatus* (Putnam). Bleeding shiner.

The bleeding shiner was abundant in moderate to swift current over clean gravel bottoms.

*Notropis chrysocephalus* (Rafinesque). Striped shiner.

Uncommon resident of rocky pools with little current.

*Notropis texanus* (Girard). Weed shiner.

The weed shiner is a lowland species and was collected only from the lower river over a sandy bottom with a moderate current.

*Notropis greeni* Hubbs and Ortenburger. Wedgespot shiner.

Abundant resident of the area above and below riffles, where the bottom is mostly sand or fine gravel.

*Notropis boops* Gilbert. Bigeye shiner.

The bigeye shiner occupied the same habitat as the wedgespot shiner, though it was nowhere as abundant.

*Notropis whipplei* (Girard). Steelcolor shiner.

Only a single specimen of this species was collected. It last was reported in the Current River in Missouri prior to 1945 (Pflieger, 1971).

*Notropis venustus* (Girard). Blacktail shiner.  
The most common member of the genus *Notropis* collected.

*Notropis galacturus* (Cope). Whitetail shiner.  
Common shiner residing in upland habitats.

*Notropis maculatus* (Hay). Taillight shiner.  
The taillight shiner is rare throughout the state of Arkansas and is previously unreported in the Black River system.

*Notropis ozarcanus* Meek. Ozark shiner.  
The Ozark shiner was found to be uncommon, though it was collected in both upland and lowland habitats.

*Notropis volucellus* (Cope). Mimic shiner.  
This previously unreported species was found nowhere in abundance, but occupied both upper and lower reaches of the study area.

*Hypognathus nuchalis* Agassiz. Silvery minnow.  
Very abundant cyprinid occupying clear backwater areas and oxbows.

*Pimephales vigilax* (Baird and Girard). Bullhead minnow.  
This species was previously unreported for the Current River, but was reported for the Black River system of Missouri (Pflieger, 1971).

*Pimephales notatus* (Rafinesque). Bluntnose minnow.  
Common throughout the study area, but was never collected in abundance.

*Camptostoma anomalum* (Rafinesque). Stoneroller.  
Abundant cyprinid inhabiting rocky pools and riffles.

#### Castostomidae (Suckers)

*Carpiodes* sp. Carpsuckers.  
Reported by commercial fishermen and Baker (1954), though not taken in the writers' collection. These records are probably *Carpiodes velifer* (Rafinesque), the highfin carpsucker.

*Cycleptus elongatus* (Lesueur). Blue sucker.  
Rare inhabitant of deep channels, reported in Missouri (Pflieger, 1971). Was not collected.

*Ictiobus cyprinellus* (Valenciennes). Bigmouth buffalo.  
Inhabitant of large pools; young were collected from ditches and borrow pits.

*Ictiobus niger* (Rafinesque). Black buffalo.  
Least common of the buffalofishes; collected from large pools by electrofishing and young taken from borrow pits by seining.

*Ictiobus bubalus* (Rafinesque). Smallmouth buffalo.  
Resident of large pools, being found in faster, clearer water than *I. cyprinellus*.

*Hypentelium nigricans* (Lesueur). Northern hog sucker.  
Very common and abundant, occupying riffle areas or pools with noticeable current.

*Moxostoma duquesnei* (Lesueur). Black redbhorse.  
Common resident of deep pools.

*Moxostoma erythrurum* (Rafinesque). Golden redbhorse.  
Most common of the redborses; found in large pools and deep channels.

*Moxostoma anisurum* (Rafinesque). Silver redbhorse.  
The silver redbhorse is an inhabitant of large deep pools. It was not taken in the writers' study, but is reported to have been collected from Current River at the Arkansas-Missouri state line (Pflieger, 1971).

*Moxostoma macrolepidotum* (Lesueur). Shorthead redbhorse.  
This redbhorse was a resident of deep pools and swift chutes.

*Minytrema melanops* (Rafinesque). Spotted sucker.  
Uncommon resident of the lowland habitats.

*Erimyzon oblongus* (Mitchill). Creek chubsucker.  
Uncommon; collected only from an overflow ditch and an oxbow.

#### Ictaluridae (Catfishes)

*Ictalurus melas* (Rafinesque). Black bullhead.  
Uncommon; taken only from overflow waters.

*Ictalurus punctatus* (Rafinesque). Channel catfish.  
This catfish was collected only by electrofishing, but reports of local fishermen judge it to be abundant.

*Ictalurus furcatus* (Lesueur). Blue catfish.  
The blue catfish was not collected during the writers' study, but local fishermen report it to be common in the lower river where it is an immigrant from Black River.

*Ictalurus natalis* (Lesueur). Yellow bullhead.  
This species was reported by commercial fishermen and by Baker (1954).

*Noturus exilis* Nelson. Slender madtom.  
Rare inhabitant of shallow riffles.

*Noturus nocturnus* Jordan and Gilbert. Freckled madtom.  
Rare ictalurid; a single individual was taken from a shallow riffle area.

*Noturus miurus* Jordan. Brindled madtom.  
A rare inhabitant of shallow riffles.

*Noturus albater* Taylor. Ozark madtom.  
The most abundant of the madtoms collected; taken from riffles and shallow pools.

*Noturus eleutherus* Jordan. Mountain madtom.  
The mountain madtom has been reported only recently in northern Arkansas (Beadles, 1972). This previously unreported species for the Current River aids in filling the discontinuous distribution of this species from southwestern Arkansas and southeastern Oklahoma to Illinois.

*Pylodictis olivaris* (Rafinesque). Flathead catfish.  
Not collected, but was reported by commercial fishermen and Baker (1954).

#### Aphredoderidae (Pirate Perch)

*Aphredoderus sayanus* (Gilliams). Pirate perch.  
Inhabitant of ditches and borrow pits of the lower river.

#### Cyprinodontidae (Killifishes)

*Fundulus catenatus* (Storer). Northern studfish.  
Common species residing in moderate current over a silt-free gravel and sand bottom.

*Fundulus olivaceus* (Storer). Blackspotted topminnow.  
Common resident of the pools and ditches.

#### Atherinidae (Silversides)

*Labidesthes sicculus* (Cope). Brook silverside.  
This species was widespread throughout the study area, though never taken in large numbers.

#### Poeciliidae (Livebearers)

*Gambusia affinis* (Baird and Girard). Mosquitofish.  
Found to be abundant wherever there was still water and vegetation.

#### Percichthyidae (Temperate Basses)

*Morone chrysops* (Rafinesque). White bass.  
Though not taken in the writers' collection the white bass was reported by local fishermen.

## Ichthyofaunal Survey of the Current River Within Arkansas

## Centrarchidae (Sunfishes)

- Micropterus punctulatus* (Rafinesque). Spotted bass.  
The most common of the basses, occupying both upland and lowland habitats.
- Micropterus dolomieu* Lacepede. Smallmouth bass.  
The smallmouth bass was common above and below large riffles.
- Micropterus salmoides* (Lacepede). Largemouth bass.  
Uncommon; taken only in the upper part of the study area by electrofishing.
- Chuenobryttus gulosus* (Cuvier). Warmouth.  
Collected only by electrofishing, but is reported to be abundant throughout the river by local fishermen.
- Lepomis cyanellus* Rafinesque. Green sunfish.  
Common resident of the pools; collected in abundance.
- Lepomis humilis* (Girard). Orangespotted sunfish.  
The orangespotted sunfish was previously unreported for the Current River, though known to be in the Black River drainage (Black, 1940).
- Lepomis megalotis* (Rafinesque). Longear sunfish.  
Abundant centrarchid, found to inhabit the larger pools and overflow waters.
- Lepomis macrochirus* Rafinesque. Bluegill.  
Most abundant sunfish, collected from pools, backwaters, ditches and oxbows throughout the study area.
- Ambloplites rupestris* (Rafinesque). Rock bass.  
The rock bass was common along gravel bars with moderate current.
- Pomoxis nigromaculatus* (Lesueur). Black crappie.  
Occasional resident of clear ditches and oxbows.
- Pomoxis annularis* Rafinesque. White crappie.  
The white crappie was found to be common in backwaters and oxbows.
- Centrarchus macropterus* (Lacepede). Flier.  
An uncommon inhabitant of the lowland ditches and borrow pits.

## Percidae (Perches)

- Stizostedion canadense* (Smith). Sauger.  
Rare, occasionally reported by fishermen; not collected during the writers' study.
- Stizostedion vitreum vitreum* (Mitchill). Walleye.  
Uncommon. Reported by local fishermen and by Baker (1954).
- Percina sciera* (Swain). Dusky darter.  
This lowland darter was taken from riffle areas having reduced flow, often in association with vegetation.
- Percina caprodes* (Rafinesque). Logperch.  
Most common member of the genus *Percina* collected, existing in both upland and lowland habitats.
- Percina evides* (Jordan and Copeland). Gilt darter.  
Common darter of the larger riffle areas; collected over gravel and rubble bottoms.
- Percina uranidea* (Jordan and Gilbert). Stargazing darter.  
A common resident of the riffles; collected in moderate abundance.
- Ammocrypta vivax* Hay. Scaly sand darter.  
This previously unreported species for the Current River was collected in shallow water over silt-free sand bottoms.
- Etheostoma chlorosomum* (Hay). Bluntnose darter.  
The bluntnose darter was previously unreported for Current River. It inhabits the lower sluggish waters; the only specimens were taken from an oxbow.
- Etheostoma stigmaeum* (Jordan). Speckled darter.  
An uncommon inhabitant of quiet pools and backwaters; collected over silt-free bottoms.

*Etheostoma euzonum* (Hubbs and Black). Arkansas saddled darter.

This darter was a common inhabitant of riffle areas in the upper part of the study area.

*Etheostoma zonale* (Cope). Banded darter.

Common to the swifter riffle areas, though a juvenile was collected from a lowland barrow pit.

*Etheostoma blennioides* Rafinesque. Greenside darter.

The greenside darter was an abundant resident of the swift riffle areas.

*Etheostoma caeruleum* Storer. Rainbow darter.

This species was found to be common in swift riffle areas with a coarse gravel or rubble bottom.

*Etheostoma proeliare* (Hay). Cypress darter.

A single specimen of this lowland darter was taken from shallow water with rooted vegetation.

## Sciaenidae (Drums)

*Aplodinotus grunniens* Rafinesque. Freshwater drum.

The freshwater drum was a common resident of deeper pools throughout the river.

## Cottidae (Sculpins)

*Cottus bairdi* Girard. Mottled sculpin.

The mottled sculpin was taken from swift-flowing riffle areas.

*Cottus caroliniae* (Gill). Banded sculpin.

The banded sculpin occupies the same habitat as the mottled sculpin, though they were not collected together.

## LITERATURE CITED

- BAILEY, R.M., JOHN E. FITCH, EARL S. HERALD, ERNEST A. LACHNER, C.C. LINDSEY, C. RICHARD ROBINS and W.B. SCOTT. 1970. A list of the common and scientific names of fishes from the United States and Canada. Am. Fish. Soc. Spec. Publ. 6. 150 p.
- BAKER, ROBERT. 1954. Stream survey. Work Plan 1, Job 1-B (form 3). Arkansas Game and Fish Commission, Little Rock, Arkansas. 2 p.
- BEADLES, J.K. 1972. Fishes. In Environmental inventory of the Strawberry basin, Fulton, Izard, Lawrence and Sharp Counties, Arkansas. U.S. Army Corps of Engineers, Little Rock District, Little Rock, Arkansas. p. 63-67, appendix C.
- BLACK, J.D. 1940. The distribution of the fishes of Arkansas. Ph.D dissertation, Univ. Michigan. 243 p., 69 maps.
- EDDY, S. 1969. How to know the freshwater fishes. Wm. C. Brown Co., Dubuque, Iowa. 286 p.
- FENNEMAN, N.M. 1938. Physiography of the eastern United States. McGraw-Hill Book Co., New York. 714 p.
- FOWLER, CHERYL LYNN. 1972. Ichthyofaunal diversification and distribution in the Jane's Creek watershed, Randolph County, Arkansas. M.S. thesis, Arkansas State Univ. 42 p.
- FRAME, W.S. 1930. Stream gaging in Arkansas from 1857 to 1928. Ark. Geological Survey, Little Rock, Arkansas. 141 p.



- FUNK, J.L. and R.S. CAMPBELL. 1953. The population of larger fishes in Black River, Missouri. p. 69-82 *in* The Black River Studies. J.L. Funk et al. Univ. Missouri Studies 26(2):1-136.
- HALL, LEONARD. 1958. Stars upstream. University of Missouri Press. 252 p.
- HARP, GEORGE L. 1973. Fishes. *In* Preliminary environmental inventory of the Myatt Creek basin, Fulton Co., Arkansas, Howell and Oregon Co., Missouri. U.S. Army Corps of Engineers, Little Rock District, Little Rock, Arkansas. p. 14-15, appendix C.
- HARP, GEORGE L. 1973. Fishes. *In* Preliminary environmental inventory of the Wild Horse basin, Fulton Co., Arkansas and Howell Co., Missouri. U.S. Army Corps of Engineers, Little Rock District, Little Rock, Arkansas. p. 13-15, appendix C.
- HICKMON, A.J. 1941. Climate of Arkansas. *In* Climate and Man. Yearbook of Agriculture. U.S. Dept. of Agriculture. p. 773-782.
- HUBBS, C.L., and K.F. LAGLER. 1958. Fishes of the Great Lakes region. Univ. Michigan, Ann Arbor. 113 p.
- JACKSON, WILLIAM D. 1972. Ichthyofaunal diversification and distribution in a cool-water stream in northcentral Arkansas. M.S. thesis, Arkansas State Univ. 39 p.
- LARIMORE, R.W. 1961. Fish population and electrofishing success in a warm-water stream. *J. Wildlife Management* 25(1):1-12.
- MARTIN, R.G., and R.S. CAMPBELL. 1953. The small fishes of Black River and Clearwater Lake, Missouri. p. 45-66 *In* Black River Studies. John L. Funk et al. Univ. Missouri Studies 26(2):1-36.
- MEEK, S.E. 1894. Report of investigations respecting the fishes of Arkansas conducted during 1891, 1892, and 1893, with a synopsis of previous explorations in the same state. *Bull. U.S. Fish Comm.* 14:67-94.
- MOORE, G.A. 1968. Fishes. *In* Vertebrates of the United States. McGraw-Hill Book Co., New York. p. 22-165.
- PFLIEGER, W.L. 1968. Checklist of the fishes of Missouri, with keys for identification. Mo. Dept. Cons. Div. Fish, D-J Series No. 3, Sept. 1967. 64 p.
- PFLIEGER, W.L. 1971. A distributional study of Missouri fishes. *Mus. Nat. Hist., Univ. Kansas, Publ.* 20(3):225-570.
- ROBISON, H.W., and G.L. HARP. 1971. A preimpoundment limnological study of the Strawberry River in northeastern Arkansas. *Proc. Ark. Acad. Sci.* 25:70-78.
- SAUER, C.O. 1920. The geography of the Ozark Highland of Missouri. University of Chicago Press. 245 p.
- SOIL CONSERVATION SERVICE. 1971. General soil map, Clay County, Arkansas. U.S. Dept. of Agriculture, Piggott, Arkansas.
- SOIL CONSERVATION SERVICE. 1971. General soil map, Randolph County, Arkansas. U.S. Dept. of Agriculture, Pocahontas, Arkansas.
- TAYLOR, W.R. 1969. Revision of the catfish genus *Noturus* Rafinesque, with an analysis of the higher groups in the Ictaluridae. *U.S. Natl. Mus. Bull.* 282:315 p.
- TRAUTMAN, M.B. 1957. The fishes of Ohio. The Ohio State University Press, Columbus. 683 p.
- U.S. DEPT. OF INTERIOR. 1968. Surface water supply of the U.S. 1961-69. Part 7, Vol. I.
- WHITE RIVER BASIN COORDINATING COMMITTEE. 1968. Comprehensive basin study, White River Basin, Arkansas and Missouri. Vol. I-VI.