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Fishes of the Eleven Point River Within Arkansas

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ABSTRACT

A survey of the fishes of the Eleven Point River and its tributaries was made between 31 January 1976 and 13 February 1977. Sixty-three collections, literature records and personal communications revealed 90 species distributed among 19 families. This study revealed 31 species previously not reported for this river system.

The Eleven Point River is a clear, predominantly springfed Ozark stream which is located in western Randolph County. From the Arkansas-Missouri state line, the Eleven Point River flows south for approximately 64 km before joining the Spring River. Terrain in the Arkansas portion of this river is rugged as the river meanders through the Salem Plateau of the Ozark Mountains.

INTRODUCTION

The Eleven Point River is a clear, predominantly springfed Ozark stream located in western Randolph County. The headwaters of the stream originate in Howell County, Missouri and flow approximately 177 km before reaching the Arkansas-Missouri state line. From the state boundary, the Eleven Point River flows south for approximately 64 km before joining the Spring River, a tributary of the Black River, 16 km southwest of Pocahontas, Randolph County, Arkansas.

Numerous collections have been made on the Eleven Point River in Missouri by the Missouri Department of Conservation (Pflieger, 1971; 1975). Other than several collections by the Arkansas Game and Fish Commission, no other collections have been made in the Arkansas portion. Studies of a similar nature have been made on the Black River and its tributaries by Funk et al. (1953), Beadles (1972), Harp (1973), Fowler and Harp (1974), Green and Beadles (1974), and Yeager and Beadles (1976).

DESCRIPTION OF AREA

The Arkansas portion of the Eleven Point River cuts through the Salem Plateau of the Ozark Mountains, resulting in rugged topography. Surface rocks are of the Ordovician period consisting of dolomite, limestone, and sandstone (Cronesis, 1930). As the Eleven Point River meanders through Randolph County, it passes through farm and woodland areas. The farm areas consist of pasture land with sloping banks adjacent to the river, providing livestock easy access to the water. In the woodland areas, the river flows through narrow passes bordered by high bluffs.

The study area was that portion of the Eleven Point River lying south of the Arkansas-Missouri state line. The river enters the state 1.6 km northwest of Elm Store, Arkansas, and flows into Spring River approximately 16 km southwest of Pocahontas. Approximate elevation of the river as it enters the state was 135 m. At its confluence with the Spring River, it had dropped to an elevation of 73 m. Its average gradient was 1 m/km, causing a moderate to rapid current velocity. The substrate of the upper part of the study area was composed of boulders, rubble, and gravel, with frequent limestone outcroppings. In the lower part, the substrate consisted of fine gravel, sand, and some decaying organic matter in the deeper pools. In most locations, the river maintained a steep 4-5 m bluff bank, where the river channel was deep, with shallow sandy gravel shoals often forming riffle areas on the opposite sides. Aquatic vegetation was generally sparse, with water willows on the sand bars and in the shallows, and smartweed and rushes bordering the pool areas. Within the study portion, the river had several named tributaries including Mill Creek, Dry Creek, Thompsons Creek, Cedar Creek and many unnamed tributaries. It was considered a good float fishing stream and offered excellent sport fishing with largemouth bass, smallmouth bass, spotted bass, rock bass, and walleye being the most sought-after species.

METHODS

For study purposes, the river was divided on the basis of four township sections. Sections 1, 2, 3 and 4 were located in townships 21N,

20N, 19N, and 18N, respectively. Within these sections, nine major stations and 37 supplemental stations were selected. The nine major stations were sampled more than three times between 31 January 1976 and 13 February 1977, and the 37 supplemental stations were sampled from one to three times during this period.

The majority of specimens were collected by using 15 m or 9 m x 2 m seines with .64 cm mesh and a 3.6 m x 1.2 m seine with .46 cm mesh. Several specimens were taken at night in a 30 m x 1.8 m gill net with 3.8 cm mesh.

All specimens were fixed in 10% formalin for 2 to 5 days, washed, identified, and preserved in 40% isopropanol.

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

ANNOTATED LIST OF FISH OF THE ELEVEN POINT RIVER WITHIN ARKANSAS

Petromyzontidae (Lampreys)

Ichthyomyzon castaneum Girard. Chestnut lamprey.

No specimens were collected by the authors but was reported from the watershed by Bounds et al. (1977).

Lampetra aepyptera (Abbott). Least brook lamprey.

Collected in debris along the edge of a shallow riffle in the extreme lower part of the river.

Lepisosteidae (Gars)

Lepisosteus oculatus (Winchell). Spotted gar.

Not collected by the authors but was reported from the watershed (Baker, 1953).

Lepisosteus osseus (Linnaeus). Longnose gar.

Collected once while seining at night in a quiet pool in the upper part of the river.

Amiidae (Bowfins)

Amia calva Linnaeus. Bowfin.

Not collected by the authors but was reported from this system (L. England, 1977, personal communication).

Anguillidae (Freshwater eels)

Anguilla rostrata (Lesueur). American eel.

Not collected by the authors but was reported from this system (L. England, 1977, personal communication).

Clupeidae (Herrings)

Alosa chrysochloris (Rafinesque). Skipjack herrings.

Collected once in the middle part of the river when the river was higher than a normal. This collection by the authors and another report by Bounds, et al. (1977) were the first known records of this species for the Black River system in Arkansas.

Dorosoma cepedianum (Lesueur). Gizzard shad.

Abundant throughout the entire watershed.

Salmonidae (Trouts)

Salmo gairdneri Richardson. Rainbow trout.

Not collected by the authors but was reported from the watershed by L. England (personal communication).

Esocidae (Pikes)

Esox americanus vermiculatus Lesueur. Grass pickerel.

Collected on several occasions in small quiet pools and small tributaries of the lower part of the river.

Esox niger Lesueur. Chain pickerel.

Taken once in a larger tributary in the upper part of the river.

Cyprinidae (Minnows)

Campostoma anomalum (Rafinesque). Central stoneroller.

Abundant and wide-ranging throughout the entire system, except in Section 1.

Campostoma oligolepis Hubbs and Greene. Largescale stoneroller.

A commonly distributed wide-ranging fish collected in the tributaries and main river of all sections of the study area.

Cyprinus carpio Linnaeus. Carp.

A common inhabitant collected in Sections 2 and 4 only. However, with further collection this fish will likely be found to be more wide-ranging.

Dionda nubilata (Forbes). Ozark minnow.

A common wide-ranging inhabitant collected in the tributaries and main river of all sections of the study area.

Hybopsis amblops (Rafinesque). Bigeye chub.

An abundant widespread inhabitant taken in the tributaries and main river of all sections. It was the most common species of this genus.

Hybopsis dissimilis (Kirtland). Streamline chub.

An uncommon inhabitant of the system. A few specimens were collected in pools near riffle areas in the main river of Sections 1, 3, and 4.

Hybopsis x-punctata Hubbs and Crowe. Gravel chub.

A rare inhabitant taken in fairly swift riffle areas over gravel bottoms of the main river in Section 4.

Nocomis biguttatus (Kirtland). Hornyhead chub.

A relatively abundant inhabitant collected in slow riffles over gravel bottoms in the larger tributaries and main river of all sections of the study area.

Notemigonus crysoleucas (Mitchill). Golden shiner.

An uncommon inhabitant collected in the isolated pools of the main river throughout all but Section 1 of the watershed.

Notropis atherinoides Rafinesque. Emerald shiner.

A fairly common fish taken in slow flowing riffle areas of tributaries and the main river of all sections of the study area.

Notropis boops Gilbert. Bigeye shiner.

An uncommon inhabitant distributed throughout all sections of the watershed. A few specimens were collected in quiet pools and small tributaries.

Notropis cornutus chrysocephalus (Rafinesque). Striped shiner.

An abundant fish found in the tributaries and main river throughout all sections of the system. This fish was taken in pools and riffle habitats over gravel bottoms. The authors follow Miller (1968) in considering *N. chrysocephalus* a subspecies of *N. cornutus* (Mitchill).

Notropis fumeus Evermann. Ribbon shiner.

A rare inhabitant collected only once from a pool in the main river of Section 4.

Notropis galacturus (Cope). Whitetail shiner.

A rather common fish well established in the tributaries and main river system of all sections of the study area.

Notropis greenei Hubbs and Ortenburger. Wedgespot shiner.

A rare inhabitant taken in few numbers from the pools of the main river only in Sections 3 and 4.

Notropis ozarcanus Meek. Ozark shiner.

A rarely collected fish found in quiet pools of the main river in Sections 2 and 3.

Notropis rubellus (Agassiz). Rosyface shiner.

An abundant wide-ranging inhabitant collected in the tributaries and main river throughout all sections of the watershed.

Notropis spilopterus (Cope). Spottfin shiner.

First reported in Arkansas by Beadles (1974). The tooth count was (4-4) differing from those previously reported from the Strawberry River. An uncommon fish collected only once in Section 4, but representing the second collection of this species from the Black River system.

Notropis telescopus (Cope). Telescope shiner.

One of the most common cyprinids, and a wide-ranging inhabitant collected in the tributaries and main river of the study area.

Notropis umbratilis (Girard). Redfin shiner.

A common wide-ranging inhabitant of this system. Taken from quiet pools of the main river and tributaries of all but Section 1.

Notropis venustus (Girard). Blacktail shiner.

A well established population of this species was found inhabiting the pools of the main river in Sections 3 and 4.

Notropis whipplei (Girard). Steelcolor shiner.

A rare inhabitant of this system. Collected from the pools of the main river in Sections 3 and 4.

Notropis zonatus (Putnam). Bleeding shiner.

The most abundant and wide-ranging fish collected during the survey. Taken in the tributaries and main river channel of all sections.

Phoxinus erythrogaster (Rafinesque). Southern redbelly dace.

A common species collected in small tributaries of Sections 2 and 3.

Pimephales notatus (Rafinesque). Bluntnose minnow.

An abundant species taken from the main river in all sections of the system.

Pimephales vigilax (Baird and Girard). Bullhead minnow.

A rare inhabitant collected in the main river only in Section 4.

Semotilus atromaculatus (Mitchill). Creek chub.

Commonly collected in riffle areas of small tributaries in all but Section 4.

Catostomidae (Suckers)

Carpiodes cyprinus (Lesueur). Quillback.

A rarely collected inhabitant of riffles in the main river of Section 4.

Catostomus commersoni (Lacepede). White sucker.

Collected once along the edge of a swift riffle area in the main river of Section 1.

Erimyzon oblongus (Mitchill). Creek chubsucker.

One of the most abundant catostomids. Taken in the tributaries and main river of all sections of the system.

Hypentelium nigricans (Lesueur). Northern hog sucker.

A common inhabitant of swift gravel riffle areas in the tributaries and main river of all but Section 1.

Ictiobus bubalus (Rafinesque). Smallmouth buffalo.

A rare inhabitant of this system, collected from a pool in the main river only in Section 4.

Ictiobus niger (Rafinesque). Black buffalo.

A rare inhabitant collected from a pool of the main river in Section 3.

Minytrema melanops (Rafinesque). Spotted sucker.

Collected from a pool in the main river of Section 3.

Moxostoma anisurum (Rafinesque). Silver redbhorse.

Taken from a shallow gravel shoal in the main river of Section 2. This represented the first definite collection of this fish from the Black River system in Arkansas.

Moxostoma duquesnei (Lesueur). Black redbhorse.

The most common catostomid collected. Found to inhabit pools of the main river throughout all sections of the system.

Moxostoma erythrurum (Rafinesque). Golden redbhorse.

One of the most abundant catostomids of the system, but only taken from the tributaries of Section 3.

Moxostoma macrolepidotum (Lesueur). Shorthead redbhorse.

Not collected by the authors, but a single specimen was collected by R. Boyd in 1975 from Section 2.

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Ictaluridae (Catfish)

Ictalurus melas (Rafinesque). Black bullhead.

Collected on one occasion from an isolated pool off the main river in Section 4.

Ictalurus natalis (Lesueur). Yellow bullhead.

A rarely collected inhabitant of quiet pools in the tributaries of all but Section 1.

Ictalurus punctatus (Rafinesque). Channel catfish.

Not collected by the authors, but reported from this system by Bounds et al. (1977).

Noturus albatel Taylor. Ozark madtom.

The most abundant ictalurid species collected. It was found to be an inhabitant of swift gravel riffles in the main river of all sections of the study area.

Noturus miurus Jordan. Brindled madtom.

A rarely collected inhabitant found only in shallow gravel riffles of the main river in Section 4.

Noturus nocturnus Jordan and Gilbert. Freckled madtom.

Taken on several occasions from shallow riffle areas of the main river in Section 4.

Pygodictis olivaris (Rafinesque). Flathead catfish.

Not collected by the authors, but reported from this river system by Baker (1953).

Aphredoderidae (Pirate perches)

Aphredoderus sayanus (Gilliams). Pirate perch.

A rare inhabitant collected from a small tributary in Section 4 when the river was high and turbid.

Cyprinodontidae (Killifishes)

Fundulus catenatus (Storer). Northern studfish.

A well established wide-ranging species inhabiting pools and small tributaries. Collected in all sections of the system.

Fundulus olivaceus (Storer). Blackspotted topminnow.

The most abundant cyprinodontid of the study area. Collected in pools of the main river and tributaries of all sections of the river.

Poeciliidae (Livebearers)

Gambusia affinis (Baird and Girard). Mosquitofish.

A common fish inhabiting quiet pools, chutes, and overflow pools in all but Section 1.

Atherinidae (Silversides)

Labidesthes sicculus (Cope). Brook silverside.

A common inhabitant of the pools of the main river of all sections of the river.

Percichthyidae (Temperate basses)

Morone chrysops (Rafinesque). White bass.

A rare inhabitant collected only from a pool of the main river in Section 3 of the study area.

Centrarchidae (Sunfishes)

Ambloplites rupestris (Rafinesque). Rock bass.

A common inhabitant of deep pools of the main river in all sections of the watershed.

Chaenobryttus gulosus (Cuvier). Warmouth.

Found inhabiting quiet pools of the larger tributaries and main river system in all but Section 1. The authors follow Miller and Robison (1973), in retaining the genus *Chaenobryttus*.

Lepomis cyanellus Rafinesque. Green sunfish.

The most abundant centrarchid. Collected from the tributaries and main river of all sections.

Lepomis macrochirus Rafinesque. Bluegill.

Found to be relatively abundant and well distributed in the tributaries and main river of all sections of the study area.

Lepomis megalotis (Rafinesque). Longear sunfish.

Commonly collected in the tributaries of all sections of the system.

Lepomis microlophus (Gunther). Redear sunfish.

Collected on several occasions from isolated pools separated from the main river system in Sections 1, 2, and 4.

Lepomis punctatus (Valenciennes). Spotted sunfish.

Collected from Sections 1 and 2 from overflow pools of the main river.

Micropterus dolomieu Lacepede. Smallmouth bass.

A relatively common inhabitant of the main river in all but Section 4.

Micropterus punctulatus (Rafinesque). Spotted bass.

A relatively common inhabitant of deep pools of the main river in section 2 and 3.

Micropterus salmoides (Lacepede). Largemouth bass.

The most abundant of the basses. The dominant bass of Section 4, but commonly collected in the main river of all sections.

Pomoxis annularis (Rafinesque). White crappie.

Collected only from an overflow pond off the main river in Section 2.

Percidae (Perches)

Ammocrypta vivax Hay. Scaly sand darter.

Taken on one occasion from a pool of the main river in Section 4 over a substrate of debris, fine gravel, and sand.

Etheostoma asprigene (Forbes). Mud darter.

A rare inhabitant of Section 4. This fish was collected on two consecutive weekends along the main river bank where dense root masses protruded into the water. Bounds and Beadles (1976) reported this fish from the Black River system. This then represents the second collection for this system.

Etheostoma blennioides Rafinesque. Greenside darter.

A relatively common darter found inhabiting the tributaries and main river of all but Section 4.

Etheostoma caeruleum Storer. Rainbow darter.

One of the most abundant percids. Found inhabiting riffles of small tributaries in all sections of the study area.

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

A common inhabitant of swift riffles of the main river system in all but Section 1.

Etheostoma flabellare Rafinesque. Fantail darter.

One of the most common inhabitants of small tributaries in all sections of the river.

Etheostoma nigrum Rafinesque. Johnny darter.

An inhabitant of quiet pools of tributaries in all sections of the river.

Etheostoma spectabile (Agassiz). Orangethroat darter.

The most abundant percid. An inhabitant of riffle areas of the tributaries and main river system in all sections.

Etheostoma stigmaeum (Jordan). Speckled darter.

A rare inhabitant collected on several occasions from pools of the main river only from Section 4.

Etheostoma zonale (Cope). Banded darter.

Distributed throughout all sections of the system, but few specimens were taken from swift gravel riffles of the main river.

Percina caprodes (Rafinesque). Logperch.

A rare inhabitant collected on one occasion from a riffle area of the main river in Section 2.

Percina uranidea (Jordan and Gilbert). Stargazing darter.

A rare inhabitant collected on several occasions from shallow slow-flowing gravel riffles of the main river in Section 4.

Stizostedion canadense (Smith). Sauger.

Not collected by the authors, but reported from the study area (H.L. Barton, 1977, personal communication).

Stizostedion vitreum vitreum (Mitchill). Walleye.

Collected from a pool of the main river in Section 3. However, reports from fishermen confirm that this fish occurred in all sections.

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Sciaenidae (Drums)

Aplodinotus grunniens Rafinesque. Freshwater drum.

A rare inhabitant collected only from a pool of the main river in Section 3.

Cottidae (Sculpins)

Cottus bairdi Girard. Mottled sculpin.

The most abundant cottid. Numerous in swift riffles of the main river throughout all sections of the watershed.

Cottus caroliniae (Gill). Banded sculpin.

Common in riffle areas of the main river in all but Section 4.

DISCUSSION

The Arkansas portion of the Eleven Point River has a diverse ichthyofauna which was indicative of the richness of Ozark streams. As a result of this study, the known fish fauna for the study area was represented by 90 species distributed among 19 families. Pflieger (1975) reported 61 species from the Missouri portion of the Eleven Point River. Six of those species reported by Pflieger (1975) were not collected by the authors from the Arkansas portion of the Eleven Point River. These were *Hiodon tergisus* Lesueur, *Moxostoma carinatum* (Cope), *Noturus flavater* Taylor, *Typhlichthys subterraneus* Girard, *Percina evides* (Jordan and Copeland), and *Etheostoma punctulatum* (Agassiz). However, of those 90 species reported from the Arkansas part, 31 had not been reported for the Missouri part of the Eleven Point River.

Two previous collections from the study area, Baker (1953) and Boyd (1975), of the Arkansas Game and Fish Commission, reported 25 species taken from the Arkansas part of the system. Of these 25 species, four species were not collected during this study: *Anguilla rostrata*, *Lepisosteus oculatus*, *Moxostoma macrolepidotum*, and *Pylodictis olivaris*. Thus this survey yielded 65 species which were not previously reported from the study area.

As a result of this survey, range extensions were established for two species: *Alosa chrysochloris* and *Notropis spilopterus*. In addition to these range extensions, the collection of *Moxostoma anisurum* represented the first definite record of this species from the Arkansas portion of the Black River system.

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