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Abstract

A Status Report on the Bayou Darter, Etheostoma rubrum, and the Bayou Pierre System. By R.D. Suttkus and G. Clemmer, plus News Notes, 4 pp.

Keywords

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Southeastern Fishes Council
PROCEEDINGS

DEDICATED TO THE PRESERVATION OF SOUTHEASTERN FISHES

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A STATUS REPORT ON THE BAYOU DARTER, ETHEOSTOMA RUBRUM, AND THE BAYOU PIERRE SYSTEM

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The bayou darter, *Etheostoma rubrum,* (Figure 1) is endemic to the Bayou Pierre system, a tributary of the Mississippi River in southwestern Mississippi. The bayou darter is included in

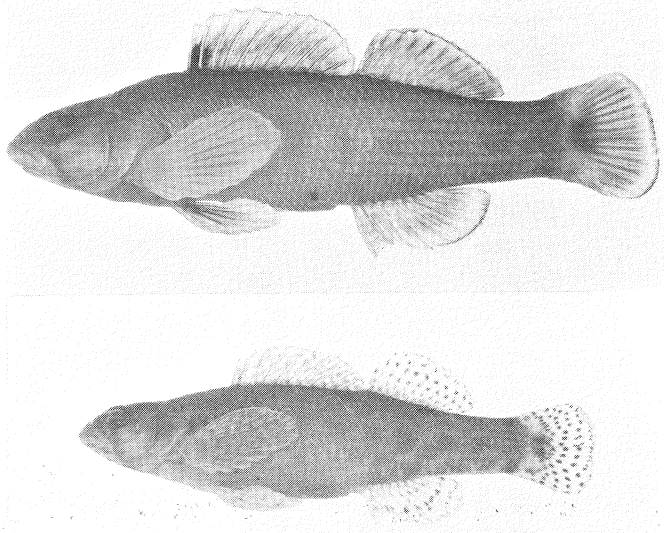

Fig. 1. *Etheostoma rubrum.* **Male 42.9 mm is standard length. Female 35.9 mm. Both specimens catalogued as TU 40368.**

the Mississippi Game and Fish Commission listing of endangered vertebrates (Clemmer, Suttkus, Ramsey, 1975) and is considered threatened under the federal provisions of the Endangered Species Act of 1973 (Federal Register, Vol. 40, No. 77, p. 17590, 21 April 1975). Described in 1966 (Raney and Suttkus) from two sites, the darter is now known to be more widespread in the system, (Teels, 1976) but is limited to approximately 60 km of the main channel and the lower segments of several of its major tributaries (Figure 2).

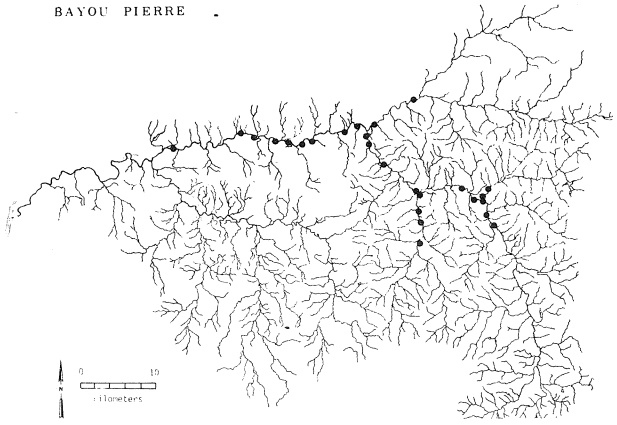

Fig. 2. Distribution of *Etheostoma rubrum.*

The Bayou Pierre watershed comprises about 2500 km^2 and has a comparatively rich fish fauna. A listing of 77 species has been compiled for the Bayou Pierre system from our studies which began in December of 1963. We have not sampled the lower part of the system, so additional species will surely be added to the list when this is done.

The type locality of the bayou darter, about midway in the drainage system is at the state highway 18 crossing 3.1 km west of Carpenter and 10.7 km east of Carlisle (Figure 3). During a two year intensive study a total of 70 species was obtained at this site.

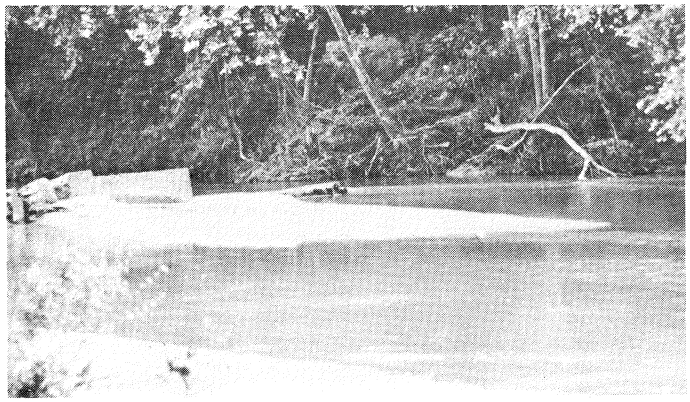

Fig. 3. Bayou Pierre at state Highway 18, Copiah Co., MS.

Included in the rich assemblage of fishes is the crystal darter, *Ammocrypta asprella,* which is in the Mississippi Game and Fish Commission listing of endangered vertebrates. The crystal darter has been taken from the main stream from near Dentville downstream nearly to Port Gibson. Also it was taken by us at one site in the lower part of Little Bayou Pierre.

In addition to providing the only natural habitat for the bayou darter and a suitable habitat for the crystal darter, we believe that the Bayou Pierre drainage system served an important role in the past as a dispersal route for a number of fishes. Bayou Pierre probably served as a pathway for dispersal of Gulf Coastal fishes westward into the Mississippi River drainage. Perhaps the upper part of the Pearl River system represents the captured headwaters of the former Bayou Pierre system. In an early Mississippi Geological report a postulation was made that the Big Black River captured the upper part of the Pearl River system, but we find little biological evidence to support this view.

The southern population of the silverjaw minnow, *Ericymba buccata,* has its westermost distribution in the Bayou Pierre system. (Wallace, 1973) This is its only representation in the lower Mississippi River system. The cherryfin shiner, *Notropis roseipinnis,* is an eastern Gulf Coastal form which also has made it into the Bayou Pierre system and several other tributaries of the lower Mississippi River (Snelson, 1972). The bluehead chub, *Nocomis leptocephalus,* another southeastern form has its western limits in the lower, eastern tributaries of the Mississippi River from Bayou Pierre southward to Thompson Creek (Lachner and Wiley, 1971). The bluehead chub may have gained access to the Mississippi drainage through the Bayou Pierre system and then spread into other tributaries.

Movements of fishes from the Mississippi River eastward via Bayou Pierre into the Pearl River may be illustrated by the bluntface shriner, *Notropis camurus,* and the northern studfish, *Fundulus catenatus.* These two species are present in the upper Pearl River and its tributaries at the same latitude as the upper part of Bayou Pierre. The transfer may have been the result of the capture of lateral tributaries of the Pearl River system by the upper Bayou Pierre system rather than the reverse capturing as presented above.

Teels (1976) reference to the association of the bayou darter and the crystal darter with the eroded portion of Bayou Pierre is somewhat misleading. However, he clearly stated the habitat relationship in the section (Results) on page 75. He noted that, "The bayou darter prefers the more stable gravel riffles with larger gravel or rock. No bayou darters have been collected in riffles composed primarily of loose gravel or sand." Our observations are essentially in agreement with those of Teels. With regards to the crystal darter, we have collected and observed the species over most of its range, and invariably it is more abundant in areas of moderate to fast clear water over a stable substrate composed of packed gravel or mixture of gravel and sand.

Thus, there are multiple reasons for maintaining the entire Bayou Pierre drainage system in an unmodified state. If implemented, proposals by the Soil Conservation Service toward modifying the streams of the Bayou Pierre watershed could jeopardize the bayou darter and alter or destroy the rich assemblage of fishes. Currently there are plans to build headwater impoundments for flood control and recreation. A public hearing held in review of the project on 21 December 1976 elicited considerable opposition from the public, and the project has not been approved for operation as yet. A final environmental impact statement has not been filed.

The current major problem with regards to deterioration of Bayou Pierre is the gravel mining operations along the main channel. Added to the mining activities are road grading, bridge construction and clearing of riparian vegetation with subsequent cultivation to the very edge of the river bank. The combined activities have accelerated the erosion during the last ten years.

During the middle 60's the type locality had considerable exposed hardcapped clay and sandstone outcropping. The surface was very rough and the pockets and depressions were filled with hard packed gravel. There was some attached riverweed, *Podostemum,* on the bedrock; however, none was observed during recent visits to the site. Most of the outcropping is now buried under a thick layer of loose gravel and sand.

We are opposed to impounding and floodwater retarding structures. These structures change the flow patterns, change chemical and physical parameters and promote long-range biological changes to the detriment of the assemblage of native species. Upstream modification will undoubtedly have an effect on the downstream areas where the bayou darter lives.

We recommend that plans be implemented to retain the top soil in its place and to retard erosion. We suggest the following:

1. That all mining of gravel be stopped within and near the main channel and in all contiguous low areas.
2. That native vegetation be restored along the main stream and all major tributaries and that an appropriate riparian buffer zone of vegetation be maintained.
3. That contour planting be practiced in the flood plains and immediate slopes.
4. That soil holding crops be encouraged for use in the flood plains and immediate slopes.
5. That better road maintenance measures be established that would reduce the erosion of embankments directly into drainage system.

Specimen photographs are by Jeanne Suttkus. Mona Suttkus provided the photograph of the type locality.

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News Notes . . . .

Pond Creek Shiner Lives

The Pond Creek shiner, an undescribed species of *Notropis* thought to be extinct, has been rediscovered by Royal Suttkus. Populations have been found at several sites in lower Pond Creek, a tributary of Blackwater Bay in Florida. On his most recent trip to the area (June 9) Suttkus seined up several additional specimens from the Shoal River.

More Watercress Darters

A happy foot note to the status of the watercress darter has been added by Mike Howell and Anne Black. A population of *Etheostoma nuchale* was discovered approximately 40 air-miles northeast of Glenn Springs in Roebuck Springs, a tributary of Village Creek, near the Alabama State Bay Industrial School in Jefferson County.

Endangered and Threatened Plants and Animals of Alabama

The title above, published as Number 2, Bulletin Alabama Museum of Natural History is an excellent compilation of studies on the troubled biota of Alabama. The section on freshwater fishes by John Ramsey and the overall effort edited by Herbert Boschung are valuable references and will no doubt impose standards for similar regional reviews published in the future. The Bulletin is available from the Alabama Museum of Natural History, The University of Alabama, Box 5897, University, AL 35486. The price is $5.00.

Snail Darter Case Moves to Supreme Court

TVA has petitioned the Supreme Court to review the ruling of the Sixth Circuit Court of Appeals which halted additional work on the Tellico Dam on the Little Tennessee River. The Appeals Court on 31 January issued a permanent injunction "halting all activities incident to the Tellico Project which may destroy or modify the critical habitat of the snail darter. This injunction shall remain in effect until Congress, by appropriate legislation, exempts Tellico from compliance with the Act, or the snail darter has been deleted from the list of endangered species or its critical habitat materially redefined."

As a result of the decision two House bills have been introduced by Tennessee legislators that would amend the Endangered Species Act. Representative Duncan's bill, H.R. 4557, would exempt the Tellico project from the 1973 Act. A similar bill introduced by Rep. Gore, H.R. 5879, would exempt the proposed Columbia Dam on the Duck River from provisions of the Act.

Congressional hearings on the Endangered Species Act are presently scheduled for mid July. Meanwhile the Endangered Species Office is processing data on several other species of fishes from the southeast. Critical habitat and listing for *Percina pantherina, Etheostoma boschungi, Speoplatyrhinus poulsoni, Noturus flavipinnis, Hybopsis cahni,* and *Hybopsis monacha* should be completed in the near future.

Southeastern Fishes Council
PROCEEDINGS
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DEDICATED TO THE PRESERVATION OF SOUTHEASTERN FISHES

"We must now protect against the cumulative effects of reducing our total wetlands acreage." We must identify as quickly as possible the best remaining candidates for inclusion in the Wild and Scenic Rivers System before they are dammed, channelized, or damaged by unwise development along their banks." The quotes may sound like Leopold, Odum, or maybe an emotional Sierra Club member, but they are taken from the environmental message of the President, Jimmy Carter. In his message to Congress on May 23 President Carter again reiterated his strong support for preserving our wilderness, wildlife, and natural resources. Of particular interest to members of SFC is the proposal to designate several river segments for study as potential additions to the National Wild and Scenic Rivers system: Illinois River, Arkansas; Shenandoah River, Virginia and West Virginia; Cacapan River, West Virginia; Guadalupe River, Texas; Loxahatchee River, Florida; Tangipahoa River, Louisiana and Mississippi; Ogeechee River, Georgia. President Carter also recommended deauthorization for the Cross-Florida Barge Canal and legislation for including the Oklawaha as a Wild and Scenic River.

In response to the Carter review of water development projects, the Executive Committee presented the following statement at a public hearing held in Columbus, MS on 29 March 1977.

The upper Tombigbee River has one of the richest assemblages of native freshwater fishes in all of North America. Approximately 115 species inhabit this river system.

The construction of the proposed Tennessee-Tombigbee Waterway with its series of locks and dams will impound the river proper, inundate sections of the tributaries, artificially manipulate the hydrological cycles, and lower the water table in the northern portion of the project area. These extensive modifications will jeopardize the integrity of this rich natural diversity and will certainly exterminate several riverine species.

Additional degradation can be expected to result from the mixing of the Tennessee River fauna and the Tombigbee River fauna. Of particular concern is the potential introduction of the shortnose gar and parasitic Ohio lamprey into the Tombigbee system where they do not now occur.

The Southeastern Fishes Council, therefore, strongly opposed the construction of the Tennessee-Tombigbee Waterway and urges that all funding be deleted for the project.

R.D. Suttkus
Chairman

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