



## Yellowcheek Darter (*Etheostoma moorei*)

### Background Information:

The Yellowcheek Darter is found only in the four headwater streams of the Little Red River above Greers Ferry Lake in Arkansas (Middle, South, Archey, and Turkey Forks). Construction of the Greers Ferry Dam and subsequent creation of Greers Ferry Lake (1964) destroyed much of the stream habitat of the Yellowcheek Darter and has led to isolated populations with little or no interaction between the four populations.

### Life History:

Yellowcheek Darters prefer high gradient riffles, with boulder/cobble/gravel substrates, and clear water with high oxygen content and are rarely found in pools or slow moving water. Spawning occurs late May through June in cobble or gravel riffles. During spawning, female Yellowcheeks bury themselves in fine gravel/sand substrates (often behind large cobble or boulders) with only their heads and caudal fin exposed. A male Yellowcheek will then position himself above the buried female and fertilize her eggs as she releases them into the substrate in a vibrating motion. Clutch size and nest defense behavior is unknown.

Typical Yellowcheek Darter life span is four to five years, and they obtain a maximum body length of approximately 3 inches. Yellowcheek Darters prefer black fly larvae as their main dietary item but also consume mayflies, stoneflies, and other aquatic insect species.

### Population Status and Threats:

Yellowcheek populations have declined drastically over the last twenty years (from 60,000 to less than 10,000 total individuals) and continued survival of the Yellowcheek is of great concern. Reduced stream flows are one likely cause of the decline of the Yellowcheek and have resulted in a downstream range constriction of Yellowcheek populations on all four streams inhabited by the Darter. However, human activities within streams and on lands bordering streams have cumulative negative effects on Yellowcheek populations. Threats include improper timber harvest (especially within stream riparian areas), unregulated gravel mining, unrestricted cattle access into streams, water withdrawal for agricultural or other purposes, and both point and non-point source pollution arising from a broad array of human activities.

### Future Conservation Efforts:

Conservation measures such as timber harvest through best management practices (BMP's), responsible gravel mining, cattle access restriction to streams and regulated



*Photo: JR Shute, Conservation Fisheries, INC*

water withdrawal would greatly enhance the chance of recovery for the Yellowcheek Darter. This small fish requires sediment free riffles with cobble/gravel substrate and clean, flowing water. Proper timber harvest can reduce sedimentation and maintain healthy riparian habitats along stream reaches. Gravel mining adhering to state regulations can greatly reduce or eliminate negative impacts to aquatic species. Restricting cattle access to streams through fencing and providing alternate water sources greatly reduces stream bank erosion and other associated detrimental effects. Stream bank stabilization can be an effective tool in reducing sedimentation impacts and restoring functional riparian habitats in areas where stream banks are already badly eroding. Responsible water withdrawal can alleviate stress to aquatic species by reducing or eliminating the need for water removal during spawning seasons and during times of extreme low flow.

Conservation and recovery of the species will require human intervention for the foreseeable future. It is known that human activities, population numbers, and associated adverse effects will change within drainage watersheds, particularly with natural gas development. Therefore, it is essential to characterize and monitor aquatic habitats on a watershed scale, and respond to changing conditions rapidly, whether through negotiation and partnerships to alleviate threats, or through husbandry and augmentation and/or reintroduction of populations in appropriate areas. This approach will require monitoring extant populations of the yellowcheek darter, and characterizing current habitat conditions in each watershed, along with routine periodic monitoring of populations and habitat conditions.

### Species' Status:

The Yellowcheek Darter was listed as an endangered species in August 2011 (76 FR 48722). The U.S. Fish and Wildlife Service assigned the Yellowcheek Darter a recovery priority number of 2C. A total of 102 river miles on four streams (Middle, South, Archey and Devil's forks of the Little Red River) was designated as critical habitat in October 2012 (77 FR 63603).