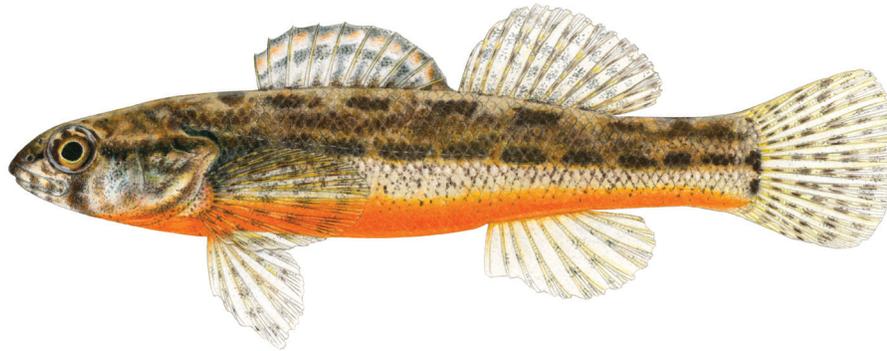


Arkansas Darter



ASSESSING HABITAT QUALITY FOR PRIORITY WILDLIFE SPECIES IN COLORADO WETLANDS



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Species Distribution

Range

Arkansas darters occur only in parts of Arkansas, Colorado, Kansas, Missouri, and Oklahoma. In Colorado, they are known from eight drainages within the Arkansas River Basin: Upper Arkansas, Fountain, Chico, Upper Arkansas-Lake Meredith, Horse, Upper Arkansas-John Martin, Big Sandy, and Rush.

Arkansas Darters (*Etheostoma cragini*, Family Percidae) are small native fish of the Colorado plains. They inhabit pools and channels within small streams.

Species Description

Identification

Arkansas darters are 2½- to 3-inch fish belonging to the perch family. During April and May, the belly of breeding males changes from white to bright orange.

Preferred Habitats

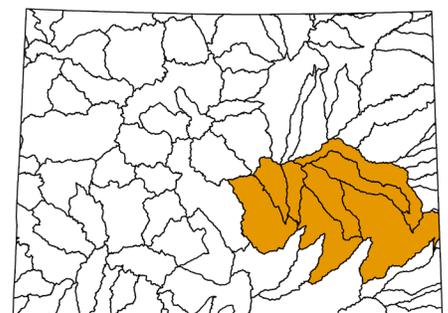
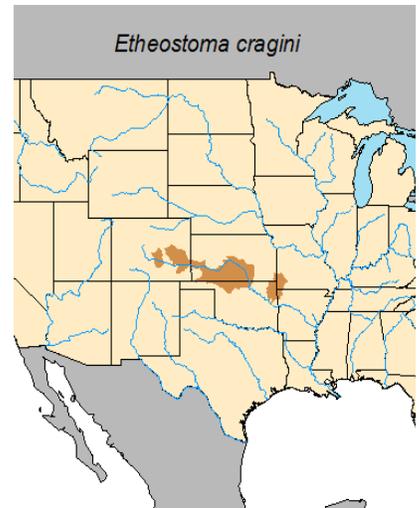
Arkansas darters inhabit spring-fed streams, stream channels, and pools near shorelines, often with undercut banks.

Diet

A large portion of the Arkansas darter's diet consists of snails, but they consume many other aquatic animals, including insects, crustaceans, other invertebrates, and fish eggs.

Conservation Status

Arkansas darters appear on several lists of concern: Federal candidate species (U.S. Fish and Wildlife Service), sensitive (Bureau of Land Management), threatened and Tier 1 Species of Greatest Conservation Need (CPW 2015), and near threatened (International Union for Conservation of Nature). Flows on a landscape or segment scale are needed for the fish to move between or among pools and to disperse. Large-scale withdrawals of ground water and dewatering streams are thought to have caused extirpations.



Known occurrence

North America map used from U.S. Geologic Survey (<http://nas.er.usgs.gov>). Colorado map by HIB 8 watershed based on Woodling (1985), NDIS (2014), and Paul Foutz (pers. comm., CPW).

Preferred Habitat Conditions

Dominant vegetation	floating, broad-leafed vegetation, especially water-cress (<i>Nasturtium officinale</i>)
Landscape context	heavy grazing unsuitable
Stream order	first and second but may use larger streams for dispersal
Stream width	varies considerably through range; in Colorado 1.5–22 yards
Substrate	sand, silt, gravel
Sunlight	high exposure to sunlight
Water depth (predominant)	varies through range; in Colorado 4–20 inches
Water origin	spring fed
Water quality	clear, pH between 7–8.5
Water temperature	varies across seasons; in Colorado 55–86°F

Management Recommendations

This fact sheet contains easy-to-use guidelines for understanding habitat needs of Colorado Parks and Wildlife priority wetland-dependent wildlife. A number of practical steps can be taken to improve habitat for Arkansas darters.

Hydrology

- Protect springs and connecting streams.
- Maintain refugia on landscape scale.
- Maintain corridors by allowing natural disturbances.
- Protect individual pools.
- Maximize water conservation.
- Protect natural function.
- Promote natural flow regimes.
- Restore and/or enhance connections for migration and dispersal.

Vegetation

- Implement tamarisk control, with an emphasis on long term management for native vegetation.

Contamination

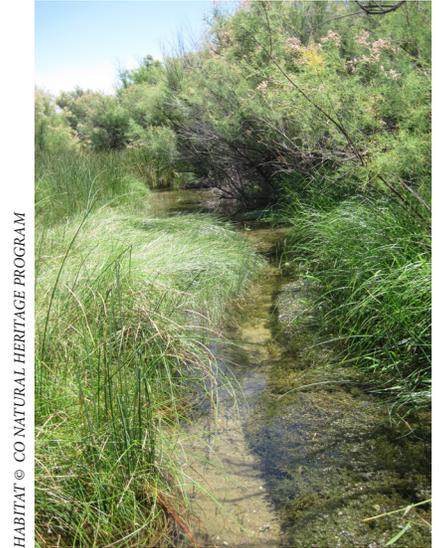
- Eradicate predatory and non-native fish.
- Avoid pesticide and herbicide use near small streams.

Land Use / Other

- Reduce impact from livestock grazing.

Conservation

- Translocate to establish new populations.
- Identify suitable habitat for potential translocations.



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Acknowledgements

Paul Foutz (Colorado Parks and Wildlife) reviewed an earlier version and provided input on preferred habitat conditions.

Suggested Reading and Citations

- CPW (Colorado Parks and Wildlife). 2015. State Wildlife Action Plan: A Strategy for Conserving Wildlife in Colorado. Denver, Colorado.
- Fuller, P. 2014. *Etheostoma cragini*. USGS Nonindigenous Aquatic Species Database, Gainesville, Florida.
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- Layher, B. 2002. Recovery plan for the Arkansas Darter, *Etheostoma cragini* Gilbert, in Kansas. Prepared for Kansas Department of Wildlife and Parks.
- Miller, D. L. 1984. Distribution, abundance, and habitat of the Arkansas darter *Etheostoma cragini* (Percidae) in Colorado. *Southwestern Naturalist* 29: 496–499.
- NDIS (Natural Diversity Information Source). 2014. On-line mapping tool formerly available through Natural Resource Ecology Laboratory, Colorado State University, Fort Collins, Colorado.
- Taber, C. A., B. A. Taber, and M. S. Topping. 1986. Population structure, growth and reproduction of the Arkansas darter, *Etheostoma cragini* (Percidae). *Southwestern Naturalist* 31: 207–214.
- USFWS (United States Fish and Wildlife Service). 2010. Species Profile for Arkansas darter (*Etheostoma cragini*).
- Woodling, J. 1985. Colorado's little fish: a guide to the minnows and other lesser known fishes in the state of Colorado. Colorado Division of Wildlife, Denver, Colorado.

Habitat Scorecard for Arkansas Darters (v. Jan 2016)

Assessment of habitat before and after restoration or management actions

Project Name: _____ Date(s) of Assessment: _____

Instructions: Enter one value that best describes early to mid-summer conditions of each habitat variable, using the numbers in the value column. Habitat variables are in shaded boxes; ranges of condition are directly below each variable. If condition is outside range or is not described, enter a zero.

Key habitat variable and conditions	Value	Before	After
Morphology of stream			
Permanent pools with connectivity to other waters	10.8		
Substrate			
Sand must be a component	10.8		
Dominant vegetation			
Aquatic floating (e.g. watercress) and aquatic submerged or robust, e.g., cattail, bulrush, reedgrass	10.8		
Water quality			
No visual evidence of turbidity or other pollutants	10.2		
Some turbidity or presence of other pollutants, but limited to small and localized areas within the wetland. Water may be slightly cloudy	6.8		
Water is cloudy or has unnatural oil sheen, but the bottom is still visible. Note: If the sheen breaks apart when you run your finger through it, it is a natural bacterial process and not water pollution	3.4		
Water origin			
Spring fed	9.7		
Stream order			
1 – 2	9.2		
Sunlight			
Full sun to 10% shade	9.2		
Water depth			
>4 – 20 inches	8.5		
>20 – 40 inches	5.7		
0 – 4 inches or >40 inches	2.8		
Stream width at bankfull			
3.3 – 5.5 yards	8.5		
>5.5 – 22 yards	5.7		
>22 – 44 yards	2.8		
Water temperature			
59 – 63°F	8.1		
>63 – 77°F	5.4		
>77 – 95°F	2.7		
Landscape context			
Ungrazed	4.2		
Grazed moderately	2.8		
Grazed heavily	1.4		
Total (of 100 possible): add all numbers in before or after columns			