

Ozark Cavefish

Amblyopsis rosae

Guidelines for Landowners Using Conservation Practices

Missouri Department of
Conservation

Common name ▪ Ozark Cavefish
Scientific name ▪ *Amblyopsis rosae*
State status ▪ Endangered
Federal status ▪ Threatened

Ecology

The range of the Ozark cavefish includes just a small portion of the Ozarks in Missouri, Arkansas, and Oklahoma. In Missouri, they are found in the Springfield Plateau Region in the southwestern part of the state. Ozark cavefish live in small cave streams and springs with clear, cold water and chert or rubble bottoms, or occasionally they may be found in pools with silt or sand bottoms. They feed on small crustaceans, plankton, isopods, amphipods, copepods, crayfish, and salamander larvae. Bat guano and detritus brought in from outside the cave system provide a food source for many of the invertebrates on which cavefish feed. Ozark cavefish spawn from February to April, when water levels are high. Perhaps only 20 percent of mature females spawn each year. Adult Ozark cavefish reach a maximum length of 2.2 inches.

Reasons for Decline

Cave streams are affected by the activities on the surface of the ground.

Cave species like the Ozark cavefish are vulnerable to pollution from cropfields, pastures, septic tanks, sewage lagoons, chemical spills, urban runoff, toxic metal from mines, and livestock and poultry waste. Ozark cavefish also may be affected by direct human disturbance through collection or by disturbance to the cave ecosystem through recreational caving. Any activity that reduces water quality affects cavefish.

Recommendations

Species like the Ozark cavefish are indicators of clean, healthy aquatic systems. Their decline suggests that an underground water supply may not be safe to drink. Following these recommendations will avoid or minimize impacts to cave systems and the Ozark cavefish.



Photo Credit: <http://ifw2es.fws.gov/Oklahoma/cavefish.htm>

Contain all construction debris to prevent its accidental introduction into caves, sinkholes, or springs as a result of clean-up activities, run-off, flooding, wind, or other natural forces. Dispose of chemicals, toxic wastes, garbage, and wash water from trucks in areas designated for such wastes. These

sites should be away from caves and sinkholes. Protect natural hydrology to avoid lowering of the water table. If temporary roadways must be built, ensure that roadways are of low gradient with sufficient roadbed and storm water runoff drains and outlets. Minimize sedimentation and chemical or nutrient-laden runoff into streams, sinkholes, caves, and abandoned wells by implementing and monitoring erosion and sediment controls for the duration of the project. Establish and maintain forested buffers at least 100 feet wide along streams and around cave and sinkhole entrances. Minimize erosion by revegetating disturbed areas as soon as possible.

Beneficial Practices

- Livestock exclusion from sinkholes, springs, and karst areas.
- Filter strips and riparian corridors around sinkholes and springs.
- Nutrient and pest management on adjacent agricultural fields that results in reduced opportunities for runoff.
- Practices that control erosion and prevent the delivery of sediment to the aquatic system will prove beneficial to this species.

Adverse Practices

- Sealing or altering cave entrances or sinkholes as cavefish depend on the outside environment for food and nutrients.
- Re-routing runoff from one sinkhole entrance to another.
- Entering caves resulting in a disturbance to bats that provide nutrients for cave fauna.

- Discharging spillways from lakes or ponds into sinkholes.
- Disposing of chemicals, toxic waste, garbage, and wash water from trucks in areas not designated for such waste. Designated sites should be away from caves and sinkholes.
- Overlooking erosion and ignoring sediment control.
- Application of pesticides, herbicides, insecticides, and inorganic fertilizers that alter aquatic vegetation and/or micro- or macroinvertebrates.

Information Contacts

For further information regarding regulations for development in rivers, streams, wetlands, and karst habitat, please contact:

Missouri Department of Conservation
Policy Coordination Section
P.O. Box 180
2901 W. Truman Blvd
Jefferson City, MO 65102-0180
Telephone: 573-751-4115

<http://www.mdc.mo.gov/nathis/angered/>

Missouri Department of Natural Resources
Division of Environmental Quality
P.O. Box 176
Jefferson City, MO 65102-0176
Telephone: 800-361-4827 / 573-751-1300
<http://www.dnr.mo.gov/env/index.html>

U.S. Army Corps of Engineers
Regulatory Branch
700 Federal Building
601 E. 12th Street
Kansas City, MO 64106-2896
Telephone: 816-389-3990
<http://www.nwk.usace.army.mil/>

U.S. Environmental Protection Agency
Water, Wetlands, and Pesticides Division
901 North 5th Street
Kansas City, KS 66101

Telephone: 913-551-7003 / 800-223-0425
<http://www.epa.gov/region7/>

U.S. Fish and Wildlife Service
Ecological Services Field Office
101 Park DeVille Dr., Suite A
Columbia, MO 65203
Telephone: 573-234-2132

<http://www.fws.gov/midwest/partners/missouri.html>

Legal

These Best Management Practices were prepared by the Missouri Department of Conservation with assistance from other state agencies, contractors, and others to provide guidance to those people who wish to voluntarily act to protect wildlife and habitat.

Compliance with Best Management Practices is not required by the Missouri wildlife and forestry law or by any regulation of the Missouri Conservation Commission. Other federal, state or local laws may affect construction practices.

“State Endangered Status” is determined by the Missouri Conservation Commission under constitutional authority, and specific requirements for impacts to such species are expressed in the Missouri Wildlife Code, rule 3 CSR 10-4.111.

Species listed under the Federal Endangered Species Act must be considered in projects receiving federal funds or requiring permits under the Clean Water Act, with compliance issues resolved in consultation with the U.S. Fish and Wildlife Service.