



Best Management Practices for Construction and Development Projects

Ozark Hellbender

Cryptobranchus alleganiensis bishopi

Eastern Hellbender

Cryptobranchus alleganiensis alleganiensis

Common name • Ozark Hellbender

Scientific name • *Cryptobranchus alleganiensis bishopi*

Federal status • Endangered

State status • Endangered

Common name • Eastern Hellbender

Scientific name • *Cryptobranchus alleganiensis alleganiensis*

Federal status • None

State status • Endangered

Purpose and Use

The information in this document is to be used to help avoid and minimize species impacts due to construction practices. It is not intended to be used as a guide to manage habitat for a given species. If that is the goal, please contact the Department of Conservation for habitat management information. Because every project and location differs, following the recommendations within this document does not ensure that impacts will not occur to the species and additional information might be required in certain instances. Following the recommendations within this document does not complete Endangered Species Act consultation that may be necessary for species listed under the federal Endangered Species Act; please contact the U.S. Fish and Wildlife Service for more information.

Ecology

The Eastern and Ozark Hellbenders are two subspecies of salamander found in Missouri. The Eastern Hellbenders' range stretches from southern New York south to northern Georgia and west into Missouri. Ozark hellbenders are found only in southern Missouri and Arkansas. Both are permanently aquatic and restricted to cool, fast-flowing rivers of the Ozark Highland region of Missouri. These salamanders are mostly nocturnal and make their homes under flat rocks in large, permanent streams and rivers. They have a broad, flat head with very small, lidless eyes, and color varies from reddish-brown to a greenish-gray with or without blotches. The sides of their body and limbs have soft, large folds of skin, and the tail is flattened and rudder-like.

Male hellbenders create nests under submerged rocks or within bedrock crevices. Females lay 200 to 700 eggs in the nest from September to early-November depending on the subspecies. Eggs are fertilized

externally and males guard the developing eggs. Larvae hatch after four to six weeks and lose their gills within one to two years. Adult hellbenders may live longer than 30 years reaching lengths of 11 to 22 inches. Hellbenders feed mainly on crayfish and other aquatic animals.

Reasons for Decline

Eastern and Ozark Hellbenders are listed as endangered or considered a species of special concern in many states throughout their ranges. Population declines are mainly linked to habitat degradation and alteration (e.g., stream impoundments, ore and gravel mining, sediment runoff, etc.), water quality (e.g., pollutions from agriculture and livestock runoff; malfunctioning septic tanks, chemical spills, etc.), illegal collecting and human disturbance, predation and diseases. In addition, many hellbenders are killed because individuals mistakenly believe they are poisonous or dangerous.

Specific Recommendations

Hellbenders remain active by moving among rocks and within bedrock throughout the year and maintain their home territories year-round. For this reason, activities should be avoided that change physical characteristics of rivers and streams and alter the flow of water for long periods of time.

- Dams and other impoundment structures should not be constructed in those streams and rivers where these salamanders occur.
- Channel alterations that limit or eliminate shallow waters and remove cover rocks should be avoided.
- Avoid crossing of streams; where crossing is unavoidable, temporary crossing that does not restrict flow or impact habitat (large rocks) is recommended.
- Erosion and sediment controls should be strictly implemented, monitored and maintained for the duration of the project.
- Avoid removing or altering the riparian corridor near streams.
- Avoid in-stream gravel mining in streams and river systems where hellbenders occur.
- Avoid any other activities that may impact stream dynamics and result in streambed scour.
- During construction or development projects, staging areas for crew, equipment, and materials should be established well away from streams and rivers or highly erodible soils.

General Recommendations

Refer to Management Recommendations for Construction Projects Affecting Missouri Streams and Rivers.

If your project involves the use of Federal Highway Administration transportation funds, these recommendations may not fulfill all contract requirements. Please contact the Missouri Department of Transportation at 573-526-4778 or www.modot.mo.gov/ehp/index.htm for additional information on recommendations.

Information Contacts

For further information regarding regulations for development near streams and rivers, contact:
For species information:

[Missouri Department of Conservation](#)

Resource Science Division
P.O. Box 180
2901 W. Truman Blvd
Jefferson City, MO 65102-0180
Telephone: 573/751-4115

For species information and Endangered Species Act Coordination:

[U.S. Fish and Wildlife Service](#)

Ecological Services
101 Park Deville Drive, Suite A
Columbia, MO 65203-0007
Telephone: 573/234-2132

For Clean Water Act Coordination:

[Missouri Department of Natural Resources](#)

Water Protection Program
P.O. Box 176
Jefferson City, MO 65102-0176
Telephone: 573/751-1300, 800/361-4827

[U.S. Army Corps of Engineers](#)

Regulatory Branch
700 Federal Building
Kansas City, MO 64106-2896
Telephone: 816/983-3990

[U.S. Environmental Protection Agency](#)

Water, Wetlands, and Pesticides Division
901 North 5th Street
Kansas City, KS 66101
Telephone: 913/551-7307

Compliance with these Best Management Practices is not required by the Missouri wildlife and forestry law nor by any regulation of the Missouri Conservation Commission. Other federal laws such as the Clean Water Act and the Endangered Species Act, and state or local laws need to be considered for construction and development projects, and require permits and/or consultation with the appropriate agency. Following the recommendations provided in this document will help reduce and avoid project impacts to the species, but impacts may still occur. Please contact the appropriate agency for further coordination and to complete compliance requirements.

Disclaimer

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