Best Management Practices for Construction and Development Projects Ozark Hellbender and Eastern Hellbender

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 • Endangered
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 as a guide to manage habitat for a given species. Please contact the Department of Conservation if habitat management information is needed. Because every project and location differ, following the recommendations in this document does not guarantee impacts will not occur to the species and additional information may be required in certain instances. Following the recommendations in 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

Eastern and Ozark hellbenders are two subspecies of salamander found in Missouri. Eastern hellbenders occur 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 400 eggs in the nest from September to early-November depending on the subspecies. Eggs are fertilized externally and males guard the developing eggs and hatchlings through the winter months. 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, as well as small fish and a variety of aquatic insects.

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 that change physical characteristics of rivers and streams or alter the flow of water for long periods of time should be avoided.

- Dams and other impoundment structures should not be constructed in those streams and rivers where hellbenders 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 crossings that do 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.

- Stationary fuel and oil storage containers should remain within a staging area or another confined area to avoid accidental spills into stream systems.

General Recommendations

Refer to Refer to *Best Management Practices for Construction and Development Projects Affecting Missouri Rivers and Streams.*

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 the Missouri Department of Transportation Environmental Studies webpage for additional information on recommendations.

Information Contacts

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

For species information:

Missouri Department of Conservation
Science Branch
P.O. Box 180
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: 816-389-3990

U.S. Environmental Protection Agency
EPA Region 7 Water Division
11201 Renner Boulevard
Lenexa, KS 66219
Telephone: 913-551-7977

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 who wish to voluntarily act to protect wildlife and habitat. 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. 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.