



Best Management Practices for Construction and Development Projects Ebonyshell *Fusconaia ebena*

Common name • Ebonyshell
Scientific name • *Fusconaia ebena*
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 Ebonyshell is a typical large river species and has been found in substrates ranging from fine to coarse gravel and cobble to sand and gravel in larger rivers to hard mud. It has been recorded at depths ranging from 1-5 feet in standing to moderately-flowing water to swift current. It seems well adapted to a swift current and may be found in moderately deep waters. Mussels are filter feeders that pump water through their siphons to collect food particles from the water. They gather necessary nutrients and remove unwanted toxins from the water through this process. Almost all mussel species depend on a fish host to complete their life cycle. Mature adult mussels release glochidia (the immature stage), which must attach to the gills or fins of fish to complete their development. After an average of 2-4 weeks, the newly metamorphosed juveniles drop from the fish and if they land in suitable habitat, they will burrow into the substrate and grow to repeat the cycle. Fish are an important link in the reproductive cycle of mussels and, typically, only certain species of fish are suitable hosts. The Ebonyshell uses several species as fish hosts, including the black and white crappies, green sunfish, skipjack herring and largemouth bass. The Ebonyshell spawn in May and releases glochidia into September.

Reasons for Decline

The range of the Ebonyshell historically extended up the Mississippi River from Missouri into Minnesota and into other large rivers in Illinois, Indiana and Ohio. It is now considered rare, threatened or endangered throughout this range. In the early 1900s, Ebonyshell were commercially harvested for use as buttons, and the population declined rapidly. Despite early efforts to restock mussel beds by artificial propagation, populations continued to decline. Reasons for this include increases in pollution and siltation and declines in the fish hosts populations. In addition, dam construction, channelization projects, and continued non-point source pollution from agriculture and urban areas have further reduced the quantity and quality of available habitat.

Specific Recommendations

Although the Ebonyshell prefers deep waters in large rivers, repeated dredging and channelization activities destroy mussel habitat and may kill or remove the mussels themselves. In addition, impoundment structures tend to promote siltation, which is known to smother and kill mussels.

- A survey of the waterways in the project area should be conducted by a trained biologist in order to identify occurring populations of this species.
- Dams and other impoundment structures that alter water depth and turbidity and promote siltation should be avoided in rivers that contain habitat for the Ebonyshell.
- No work should be allowed below the high bank of the stream between May 1 to September 30.
- All equipment that enters the waterway should be washed and checked for juvenile zebra mussels before entering another body of water. This will help prevent the spread of this exotic European mussel species that can negatively affect native aquatic organisms and mussel species like the Ebonyshell.
- Freshwater mussels are relatively very immobile animals. If mussels are present in the substrate within the project area or present nearby downstream, they can be negatively impacted at any time of the year by direct substrate disturbance, destabilization of the stream bank, sedimentation following substrate or bank disturbance, introduction of chemical or organic pollutants, or indirectly through impacts to the fish host; every effort practicable should be made to avoid or minimize activities that alter or destabilize stream bottoms or banks, or introduce pollutants.
- Following these recommendations does not ensure there will be no negative impacts on this species or

its habitat, because every site and project differs. However, these recommendations identify practices that will help avoid and minimize some project impacts.

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 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, Missouri 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

and others to provide guidance to those people 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. 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