



Ozark Hellbender

Cryptobranchus alleganiensis bishopi

The Ozark hellbender is as an endangered species. Endangered species are animals and plants that are in danger of becoming extinct. Threatened species are those that are likely to become endangered in the foreseeable future. Identifying, protecting, and restoring endangered and threatened species are primary objectives of the U.S. Fish and Wildlife Service's endangered species program.

What are Ozark Hellbenders?

Appearance: Ozark hellbenders are large, strictly aquatic salamanders found in southern Missouri and northern Arkansas. Adults may grow up to 2 feet long. Their flattened body shape enables them to move in fast flowing waters. Numerous fleshy folds along the sides of their bodies provide surface area for respiration. Hellbenders also have large, keeled tails and tiny eyes.

Reproduction: Ozark hellbenders are long-lived, becoming sexually mature at 5 to 8 years of age and surviving up to 30 years in the wild. They generally breed between September and November. Mating is by external fertilization, and males guard the fertilized eggs from predators and other hellbenders. Clutches vary in size with 140 to 450 eggs that hatch after 80 days.

Feeding Habits: Adults are nocturnal, remaining beneath cover (usually large, flat rocks) during the day and emerging to forage at night. They feed almost entirely on crayfish, but will also eat small fish, invertebrates, and other hellbenders.



Photo by USFWS, Jill Utrup

Ozark hellbenders are a subspecies of hellbender found only in Arkansas and Missouri.

They also scavenge for anything that smells good, which is why they are occasionally caught on fishing lines.

Habitat: These salamanders need cool, clear streams and rivers with many large rocks. Cool, clear water is important because hellbenders breathe entirely through their skin. They have lungs, but rely on thousands of capillaries found in the fleshy folds of their skin to get oxygen from the water. Larvae and small hellbenders hide beneath large rocks and also small stones in gravel beds. Adults spend most of their life under large, flat rocks that shelter them.

Range: The White River watershed in Arkansas and Missouri is home to Ozark hellbenders. Within this watershed, they are found primarily in the North Fork of the White River, Bryant Creek, Spring River, Eleven Point River, and the Current River. Ozark hellbenders have declined

throughout their range and no populations are stable.

Why are Ozark hellbender populations declining?

Impoundments, ore and gravel mining, sedimentation, and nutrient and toxic runoff have degraded hellbender habitat. Hellbenders are habitat specialists that depend on constant levels of dissolved oxygen, temperature, and water flow. Even minor alterations to stream habitat can be detrimental.

Cover and Nest Disruption: Compounding habitat degradation is the fact that rocks used by hellbenders for cover and nesting are disturbed by people using the rivers for recreation and by people specifically trying to capture hellbenders.

Disease: Recently, a highly infectious disease has been found in

the Missouri populations. The “chytrid fungus” is proving fatal to an ever-increasing number of amphibians throughout the world and has been found in all remaining Ozark hellbender populations in Missouri.

Abnormalities: Abnormalities (*e.g.*, lesions, digit and appendage loss, epidermal sloughing) in Ozark hellbenders are becoming increasingly more severe, often to a level that individuals are near death. Although these abnormalities have not been linked conclusively with the presence of chytrid, the disease may make hellbenders more susceptible to bacterial or fungal infections thought to be responsible for these abnormalities.

What is being done to conserve and restore hellbenders?

Listing: In September, 2011, the U.S. Fish and Wildlife Service listed the Ozark hellbender as an endangered species under the Endangered Species Act (ESA). The ESA prohibits killing or harming listed species, requires recovery planning and prioritizing conservation actions, and provides opportunities for funding research and conservation.

International Trade: Collection within the United States and international trade of hellbenders is of growing concern, particularly as they become rarer and, consequently, more valuable. To curb unauthorized international trade, in 2012 the Service will list all hellbenders in Appendix III of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

Ozark Hellbender Working Group: This group formed shortly after the species was made a candidate in 2001. It is a professional association that collaborates on field work, initiates research projects, and works to uncover primary threats to the hellbender’s survival. The Working Group prepared a comprehensive conservation strategy that includes a captive propagation protocol, an outreach strategy, and a watershed protection plan.

Research: Several ongoing research projects are directed at learning how to decrease threats and increase survival of hellbenders in the wild and in captivity. University of Missouri-Rolla researchers are evaluating overall health conditions,

reproductive hormones, and contaminants present in adults and juveniles. Survival and movements of resident adult and released captive-reared Ozark and eastern hellbenders have been studied by researchers from the University of Missouri (Columbia) and Missouri Department of Conservation. The St. Louis Zoo and Missouri Department of Conservation are developing a propagation plan.

Outreach: Outreach has been considerable in Missouri and Arkansas to protect hellbenders from recreationists. There are now signs throughout the range of the hellbender alerting recreationists to their presence and informing them that hellbenders are harmless and should be left alone or released unharmed if they are caught by anglers.

What can you do?

If you catch a hellbender while fishing, simply cut the line near the head and release it back into the river. The hook will rust away in a matter of weeks.

Protect hellbenders from disturbance. They depend on large flat rocks for shelter; those rocks need to be left in place.

Help keep local rivers and streams clean and natural. Join a local Stream Team, a volunteer organization that brings people together to clean, care for, and monitor rivers.

If you canoe or fish, keep your rivers and lakes clean by leaving no waste behind.

Keep pollutants out of watersheds by minimizing use of pesticides and properly disposing of household toxic waste. Avoid hosing spills, dirt, and debris down storm drains.

<http://www.fws.gov/midwest/endangered>
September 2011



Photo by Missouri DDC, Jeff Briggler