



EVALUATING AWARENESS AND ATTITUDES OF HUMANS TOWARD THE EASTERN HELLBENDERS IN THE BLUE RIVER WATERSHED



Research associate Nathan Mullendore records data after an in-person interview at an access site on the Blue River. Photo credit: Megan Benage

Current Status

First year of two-year project

Funding Sources and/or Partners

Purdue University, State Wildlife Grant (T07R11), DNR Nongame Fund, Missouri Department of Conservation, The Nature Conservancy

Project Personnel

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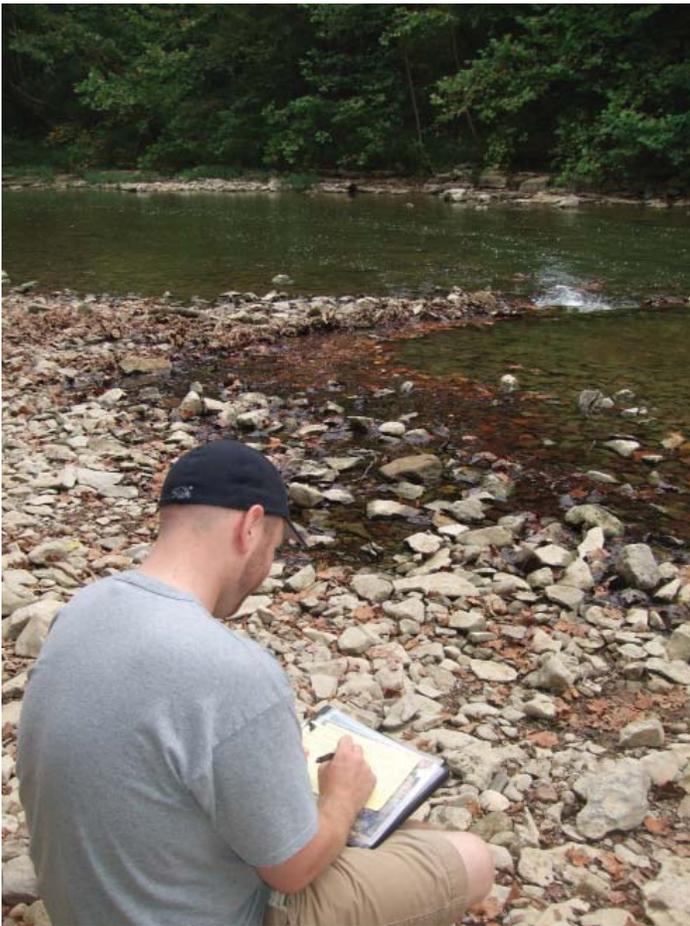
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Background

The hellbender is a state-endangered aquatic salamander inhabiting only the Blue River watershed. The Blue River's hellbender population has declined significantly in recent years due to habitat loss, water quality degradation, and human persecution. Anecdotal reports from area residents suggest that hellbenders are much less common now than in the recent past. Community members also report widespread persecution of the animal, resulting most frequently from accidental by-catch while fishing with live bait. In other states where hellbenders are present, extensive removal for the pet trade has contributed to major population declines.

Even with substantial conservation effort, hellbenders



Research associate Nathan Mullendore records data after an in-person interview at an access site on the Blue River. Photo credit: Megan Benage



Research associate Nathan Mullendore with a hellbender salamander caught during sampling. Photo credit: Bart Kraus

face a serious threat of extinction. The Ozark hellbender, a distinct subspecies that lives primarily in the White River drainage near the Missouri-Arkansas border, was recently listed as a federally endangered species. In the same month, the entire Eastern hellbender species was banned from international sale through the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). These legal rulings provide extensive protection for the animals but also serve as official recognition of the immediate threats to their survival.

The success of ongoing efforts to stabilize hellbender populations throughout their native range depends upon the support of local citizens. In order to build this support, extensive education and outreach campaigns must be strategically designed and conducted to have maximal effect. It is also important to establish baseline conditions for local awareness and perceptions of the animal in order to measure change over time.

Hellbenders are habitat specialists and are thus widely recognized as “canaries in the coal mine”—indicator species that predict extensive ecological problems. Because of their endangered status and physiological distinctness, they also serve as important teaching tools for biodiversity. Natural resource agencies in North Carolina and in Missouri have conducted a variety of education cam-

paigns that integrate information about the hellbender into larger conversations about ecology and the environment. Indiana’s Department of Natural Resources, along with partners from Purdue University and The Nature Conservancy, hope to build on these models to bolster hellbender conservation efforts in Indiana.

Objectives

This study will use a combination of in-person and mail surveys to empirically measure local citizens’ knowledge, perceptions and actions regarding the hellbender salamander in both southern Indiana and south-central Missouri. Recreational users, riparian landowners, and general population members will be asked about their opinions toward the animal and what they would do if they encountered one. This study will also quantify local residents’ experiences with the hellbender, helping to fill gaps in the historical population record. Surveys conducted in Missouri will shed light on that state’s education campaign, providing a point of reference and valuable feedback for similar efforts across the hellbender’s geographic range. Together, these data will provide a baseline of current conditions through which effective outreach efforts can be developed and evaluated.

Collection Methods

In-person surveys of 242 recreational users on the Blue River were conducted in late summer 2011. The in-person surveys were conducted at multiple public access sites along the lower section of the Blue River (from Milltown downstream). Each survey took about five minutes to administer and included questions regarding recreational habits, personal experience with hellbenders, and expected action if a hellbender was encountered.

Mail surveys were distributed to 1,378 residents of five Indiana counties starting in July 2011. Of these recipients, 281 were landowners along the Blue River. This survey included many of the same questions as the in-person survey in regards to the hellbender, but also asked questions about wildlife in general, water quality, and attitudes toward a similarly threatened animal (Eastern box turtle). A total of 541 surveys were completed, resulting in a response rate of 41 percent.

Progress to Date

The initial data collection period for Indiana has ended. Following data analysis, the results will be used by the project partners to strategically plan Indiana’s hellbender outreach strategy. The effectiveness of this work will be tested with a follow-up survey at a later date. The Missouri Ozark Hellbender survey will be distributed at the end of 2011.

Analysis of the Indiana surveys suggests that less than half (45 percent) of the residents and riparian landowners in the Blue River Area have heard of the hellbender. Just over one-quarter (26 percent) of area residents claim to have seen one in the wild, though this percentage is likely inflated due to confusion with the mudpuppy, another large aquatic salamander that lives in the same area. Most importantly, just over 5 percent declared intentions that could harm hellbenders, including throwing them on the bank, killing them, or taking them home. While this number may seem small, recent population declines underscore the importance of protecting each individual in the Blue River hellbender population. Outreach efforts will focus on correcting misconceptions about the hellbender’s defense mechanisms, emphasizing their importance to the ecosystem, and promoting live release should they be caught or captured.

Cost: \$215,829 (including Purdue match)



Liz Monell (left) and Zhifen Pan (right) prepare mail surveys for distribution. Photo credit: Nathan Mullendore



This animal is a Hellbender.

Please answer the following questions **while thinking about the animal in the pictures above**. We are interested in your “gut reaction” to this animal, so please respond even if you have never seen one before.

a. Have you heard of this animal before?

No Yes (Please specify where) _____

b. Have you seen this animal before? (Please check all that apply)

No

Yes, in the wild (Please specify where and when) _____

Yes, in captivity (Please specify where and when) _____

Yes, in a picture (Please specify where and when) _____

More than 500 residents in the Blue River area completed a survey about the hellbender and other local wildlife.