

Status Assessment and Conservation of the Eastern Hellbender

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Worldwide declines of amphibian populations have garnered international attention over the past two decades. The recent Global Amphibian Assessment found that 32% of the known amphibian species are threatened with extinction or already extinct, while 42% are declining. One of these declining species is the hellbender (*Cryptobranchus alleganiensis*), the largest North American amphibian. Hellbenders are completely aquatic salamanders, living their lives in large creeks and rivers, where they take refuge under large slab rocks and feed on crayfish. While Kentucky makes up a substantial part of the range of the Eastern Hellbender, the current status and distribution of hellbenders in the state is unknown.

In 2008, we began a survey to determine where hellbenders occur in Kentucky, collect information on popu-

lations, and identify threats to hellbender populations and habitats. Our goal is to search for hellbenders in every historic location of occurrence, using records from the Natural Heritage Database and other sources. Searches consist of skin diving using a snorkel and mask while lifting large rocks. Captured hellbenders are measured and massed, and all injuries and deformities are carefully documented. Prior to release, a microchip (identical to those used to identify pets) is placed under the skin to allow us to identify previously captured individuals. As larval hellbenders are thought to reside in the interstitial spaces of gravel and adults spend their lives in cavities under large rocks, we are quantifying the substrate quality at each location using a zig-zag pebble count procedure, providing one measurement of the health of the habitat.

To date, we have captured Eastern Hellbenders at only two of 24 historical locations in the Licking and Kentucky River watersheds. Furthermore, individuals of multiple size classes (indicating recent successful reproduction) have been found in only one waterway.

These preliminary results are very similar to what is being reported elsewhere throughout the hellbender's range -- a 75-80% decline in overall abundance with declining populations comprised of old individuals. Excess siltation is degrading many hellbender habitats, caused by development and agriculture along streams, ATV use, and in-stream gravel mining. Going forward, we will be examining the remaining 38 locations of historical occurrence as well as other areas of potential hellbender habitat throughout the state. In addition, we are working with our partners to protect stream and riparian habitats where healthy hellbender populations still occur, so that this unique animal will continue to contribute to the rich biodiversity of Kentucky.

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Comprehensive Wildlife Conservation Strategy: Appendix 3.2, Class Amphibia. Priority Research Project #1 and Priority Survey Project #2.



Eastern hellbender / Ralph Pflingsten