Species: Eastern Hellbender (*Cryptobranchus a. alleganiensis*)
Global Rank: G3G4
State Rank: S3
State Wildlife Action Plan: Immediate Concern Species - Responsibility Species
Climate Change Vulnerability: Extremely Vulnerable
Confidence: Very High

Habitat:

Eastern hellbender is found in medium and large streams, with a preference for cold, shallow, moderate to fast-flowing water and areas with gravel and sandy substrate and an abundance of large flat rock slabs (Hulse et al. 2001). The range of the species extends from southern New York south to northern Georgia and west to Missouri (NatureServe 2010).

Current Threats:

Principle threats to the species are degradation of habitat and overexploitation by collection and illegal or unintentional harvest (NatureServe 2010). Hellbenders appear to be intolerant of heavy recreational use of the habitat.

Main Factors Contributing to Vulnerability Rank:

Distribution relative to natural topographic or geographic habitat barriers: Eastern hellbenders are an aquatic stream species and as such, are limited in their ability to move with changing climate conditions only within their currently occupied watersheds.

Distribution relative to anthropogenic barriers: The presence of dams on rivers where eastern hellbenders are found would make movement in response in climate change very difficult.

Predicted micro sensitivity to changes in temperature: The species is dependent on streams towards the cooler end of the temperature spectrum.

Physical habitat specificity: The species is moderately to highly specialized in its physical habitat requirements. As adults, eastern hellbenders require stream bottoms with boulders and large, flat rocks (Hulse et al. 2001).

Dietary versatility: Eastern hellbenders are not versatile in their dietary requirements. Adults eat a diet of mainly crayfish (although small fish and invertebrates may be taken opportunistically) (Hulse et al. 2001).

Measured genetic variation: There is little genetic variation across the entire range of the species (Routman 1993; Routman et al. 1994).

References:

Hulse, A.C., C.J. McCoy, and E. Censky. 2001. Amphibians and reptiles of Pennsylvania and the Northeast. Comstock Publishing Associates. Cornell University Press, Ithaca. 419 pp.

NatureServe. 2010. NatureServe Central Databases. Arlington, Virginia. USA.

Routman, E. 1993. Mitochondrial DNA variation in *Cryptobranchus alleganiensis*, a salamander with extremely low allozyme diversity. Copeia 1993:407-416.

Routman, E., R.Wu, and A.R. Templeton. 1994. Parsimony, molecular evolution, and biogeography: the case of the North American giant salamander. Evolution 48:1799-1809.