POPULATION STRUCTURE OF THE HELLBENDER (*CRYPTOBRANCHUS ALLEGANIENSIS*) IN A GREAT SMOKY MOUNTAINS STREAM

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ABSTRACT

The hellbender (*Cryptobranchus alleganiensis*) is an imperiled salamander that has experienced population declines in many parts of its range. Young hellbenders, particularly larvae, have rarely been found in the wild. In 2000, a short study in Little River in Great Smoky Mountains National Park, Tennessee, discovered a population of *C. alleganiensis* where larvae were regularly encountered and few adults were observed. However, the 2000 study was limited in scope, and additional research was needed to accurately describe the overall hellbender population structure. Three additional studies of *C. alleganiensis* in the same section of Little River occurred from 2004–2010. This paper analyzes the results of all four studies conducted between 2000–2010 to examine trends in the hellbender population structure within Little River, and to provide reference data for future monitoring efforts in the park. From 2000–2010, a total of 533 captures, including 33 recaptures, occurred with larvae representing a quarter of overall captures. Adults were more abundant than suggested by the 2000 study, but individuals representing larger size classes were still relatively rare. Although the structure of the sampled population varied among years, larvae were relatively abundant except following years of extreme stream flow events, suggesting that turbulent current may be an important influence on the population structure of Little River's hellbender population.

Key Words: hellbender, *Cryptobranchus alleganiensis*, Great Smoky Mountains, amphibian population, salamanders, population structure, size structure.

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