BAILEY O'BRIAN & ZACHARY LOUGHMAN, Dept of Biology, West Liberty University, West Liberty, WV 26074. Occupancy modeling of the Tumbling Creek Cavesnail and water quality analyses of Tumbling Creek Cave.

Freshwater gastropods have the highest percentage of at-risk species in the United States, yet remain understudied, especially troglophile species. The Tumbling Creek Cavesnail (*Antrobia culveri*), endemic to a single cave in Protem, Taney County, Missouri, exemplifies this issue. In 1974, the population was estimated at 15,000, but by 2002, when A. culveri was listed as federally endangered, the estimate had dropped to 150 individuals. Previous propagation attempts have been unsuccessful, and little is known about the species' life history. Current population surveys cover only 2% of the available habitat, likely underestimating true population size. This study aims to (1) develop an occupancy model for A. culveri by surveying the entire accessible cave stream; (2) analyze 30 years of water quality and population data to assess population responses to physiochemical parameters; and (3) collect life history information from both new and historical surveys. Results from this research are expected to guide more effective propagation efforts and address key criteria in the U.S. Fish and Wildlife Service's Tumbling Creek Cavesnail Recovery Plan, including stabilizing or increasing the population, monitoring contaminants, and collecting biological and ecological data.