

Description of a Protocol for Monitoring the Population Status of the Tumbling Creek Cavesnail (Hydrobiidaie: Antrobia culveri)

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The Tumbling Creek Cavesnail was described in 1971 based on specimens recovered from Tumbling Creek Cave (in Taney County, Missouri). It appears the number of *Antrobia culveri* in Tumbling Creek Cave has decreased substantially in the last 20 years but no quantitative data support this impression. A stratified sampling scheme was developed to monitor the population of this snail, which is endemic to Tumbling Creek Cave. Permanent markers divide an accessible stretch of Tumbling Creek Cave into seven variable-length sections of alternating "favorable" and "marginal" habitat. Favorable habitat is characterized as riffle habitat with gravel to large rocks and medium to fast stream flow. Marginal habitat is characterized as large pool (deeper than 0.6 meter) and minimal flow, or riffle habitat with a solid rock bottom. A PVC frame (0.09 meter square) is used as a sampling square. Rocks within a square are examined and the number of snails observed is recorded. The number of plots in each section constitutes approximately 3% or 1% of substrate area (for favorable and marginal habitats, respectively) within that section. Comparisons (between habitats, seasons, or years) can be made.