

HALEY MILLER & ZACHARY LOUGHMAN, Department of Biological Sciences, West Liberty University, West Liberty, WV, 26074. Trophic Partitioning of *Cambarus carinirostris*, *Cambarus robustus*, and *Faxonius obscurus* in Kings Creek, WV by Stable Isotope Analysis

The competitive exclusion principle states that no two species can share the same niche in nature. Partitioning among coexisting species occurs through utilization of various food sources or differences in microhabitat preference. The purpose of this study is to assess potential trophic partitioning between *Cambarus carinirostris*, *Cambarus robustus*, and *Faxonius obscurus*, three species of crayfish present in Kings Creek, Weirton, WV. Analysis and comparison of individual carbon-13 and nitrogen-15 isotope signatures were used to establish organic matter transfer pathways and trophic structures in the ecosystem. Representative trophic groups were sampled, spanning from macro-predators (e.g., smallmouth bass) to primary producers (e.g., macrophytes and algae). All samples were analyzed for carbon-13 and nitrogen-15 by the Stable Isotope Ecology Laboratory at the University of Georgia. Interspecific partitioning within the community was identified. Smallmouth bass were top predators and crayfish were the second highest group. Between the three species of crayfish, interspecific partitioning was suggested. The lowest and highest trophic levels were occupied by *C. carinirostris* and *F. obscurus*, respectively. In addition, intraspecific partitioning within each crayfish species suggested that juveniles occupy a lower trophic level than adults, potentially signifying ontogenetic dietary shifts. All analyzed data represent the summer season. Winter results are pending and once available, the two seasons will be compared for any differences in trophic structure.