HALEY MILLER, Department of Natural Science and Mathematics, West Liberty University, West Liberty, WV, 26074 and ZACHARY LOUGHMAN, Department of Natural Science and Mathematics, West Liberty University, West Liberty, WV, 26074. Analysis of Stable Isotopes for *Cambarus carinirostris*, *Cambarus robustus*, and *Faxonius obscurus* in Kings Creek.

Crayfish, being ecosystem engineers, are essential parts of ecosystems. They are perceived as omnivorous benthic organisms and opportunistic feeders. The goal of this study is to understand the trophic position of three species of crayfish (*Cambarus carinirostris*, *Cambarus robustus*, and *Faxonius obscurus*) in Kings Creek, a stream in Northern West Virginia. Since no two species can share the same niche space in nature, we are inspired to question how these crayfish are partitioned in the stream. Community structure and interspecific trophic relegation can be analyzed using the stable isotopes, Carbon-13 and Nitrogen-15. These isotopes are necessary to construct the trophic dynamics of Kings Creek. The higher the δC13 and δN15 signatures are, the higher an organism sits trophically. This study aims to determine how the crayfish are oriented trophically within the community and intraspecifically through development. In addition to representative species for each tropic level, ten of each crayfish species were collected and frozen for at least 48 hours. All samples were prepared accordingly and sent to the University of Georgia's Stable Isotope Ecology Laboratory to be processed and analyzed. Our analyses show that *C. carinirostris*, *C. robustus*, and *F. obscurus* are independent of one another in the food web indicating diet partitioning. Out of the three species, *F. obscurus* held the highest trophic position indicating it feeds off a different food source.