

ADDIE SHANOR, ZACHARY LOUGHMAN, and JAMES WOOD, West Liberty University, Department of Natural Sciences and Mathematics, West Liberty, West Virginia, 26074 USA. Dry and Ash Free Dry Mass to Length Relationships and Salinity Stress Response of Rock Crayfish (*Cambarus carinirostris*) and Allegheny Crayfish (*Faxonius obscurus*)

Increasing population size and road density has led to a dramatic increase in salt application during the cold months over the last few decades in the northeastern United States. As a result, salinity levels of freshwater streams are rising at a rapid rate. This increase in salinity has led to habitat degradation in aquatic ecosystems and a harmful effect on the health of freshwater organisms. The purpose of this project is to explore the impact of increased salinity levels on the stress levels of two common native crayfish species, the Rock Crayfish (*C. carinirostris*) and the Allegheny Crayfish (*Faxonius obscurus*), by measuring the change in respiration through the tracking of dissolved oxygen levels. This will be accomplished through the use of a respiration chamber containing various concentrations of salt solutions made from common road salt deicer. Respiration rate will be corrected for crayfish ash free dry mass and regressed against salinity. Crayfish responses to salinity may be indicative of how other freshwater macroinvertebrates react to increased salinity levels. The specimens will be dried, and their dry masses will be collected. They will be ashed to create regression equations to convert between various morphometric measurements, dry mass, and ash free dry mass. The morphometric measurements that produce the most accurate regression equation will be determined.