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

During the cold months in the northeastern United States, road salt is used to de-ice roads. The increase in human population and road density has led to a dramatic increase in salt application over the past 30 years. As a result, salinity levels of freshwater streams are rising at a rapid rate which has led to habitat degradation in aquatic ecosystems and a harmful effect on the health of many freshwater organisms. Crayfish responses to salinity may be indicative of how other freshwater macroinvertebrates react to increased salinity levels. This project explores the impact of increased salinity levels on the stress levels of two West Virginia natives, the Rock Crayfish (*Cambarus carinirostris)* and the Allegheny Crayfish (*Faxonius obscurus).* We measured the change in respiration through the tracking of dissolved oxygen levels through the use of a respiration chamber and varying salt solutions from common road salt deicer. All specimens were dried and ashed to record dry mass (DM) and ash-free dry mass (AFDM). We then created species level regressions to predict DM and AFDM from carapace length (CL). In 2010, Benke et al. published an order level regression for Decapoda to predict DM from CL, and a species level regression for *Cambarus bartonii* to convert between CL and AFDM. We found significant difference Benke's regressions and our regressions, indicating the possible need for species specific regression equations to estimate crayfish biomass.