ERIC TIDMORE, Department of Natural Sciences and Mathematics, West Liberty University, West Liberty, WV, 26074 and ZACHARY LOUGHMAN, Department of Natural Sciences and Mathematics, West Liberty University, West Liberty, WV, 26074. Defining broad scale habitat associates for an imperiled crayfish, *Cambarus veteranus*

The Guyandotte River Crayfish (*Cambarus veteranus*) is a federally protected species of crayfish known from two streams within the Upper Guyandotte river basin in West Virginia. The entire known range of *C. veteranus* is represented by two disjunct populations and as such an assessment of broad and fine-scale habitat associates is warranted. The goal of this study was to utilize maximum entropy modelling (Maxent) to predict broad scale habitat associates for *C. veteranus* and to create a map of detection probability for every stream reach within the basin. Occurrence records from a 2015 survey of the Upper Guyandotte were used to create the models. Environmental variables used in the models included stream order, elevation, landcover, and presence of mining activities. The mean area under the receiver operating characteristic curve (AUC) was 0.975 showing the model had high predictive accuracy. Stream order had the highest variable contribution and permutation importance. The model predicted that *C. veteranus* prefers 4^{th} and 5^{th} order streams. Ground validation will be completed to further test the accuracy of the models.