

CHRISTOPHER VOPAL, Dept of Natural Sciences and Mathematics, West Liberty University, West Liberty, WV 26074, EMMY DELEKTA, Dept of Natural Sciences and Mathematics, West Liberty University, West Liberty, WV 26074, MATTHEW MCKINNEY, Dept of Natural Sciences and Mathematics, West Liberty University, West Liberty, WV 26074, and ZACHARY LOUGHMAN Dept of Natural Sciences and Mathematics, West Liberty University, West Liberty, WV 26074. Development of a Captive Rearing Protocol for Threatened & Endangered Appalachian Crayfish

Crayfish are the third most threatened taxa worldwide. In 2016, two Appalachian endemic species were federally listed by the United States Fish & Wildlife Service: *Cambarus callainus* (Big Sandy Crayfish) and *Cambarus veteranus* (Guyandotte River Crayfish), which are listed as threatened and endangered respectively. Both species were listed due to limited and declining ranges caused by various anthropogenic activities, especially those causing stream sedimentation. Captive propagation can be used as a tool for crayfish conservation by helping to restore the native range of a species or improving their fecundity within their current range. Over a ten week period 120 young-of-the-year (YOY) *Cambarus chasmodactylus* (New River Crayfish), a surrogate species for *C. callainus* and *C. veteranus*, were raised in individual cells to compare (1) growth and (2) survival on two different diets. They were fed every other day, with half (60) raised on trout diet pellets (TD) and the other half raised on blood worms (BW). Results showed that the YOY grew more on BW (17.3% growth) than TD (13.6% growth), and there was increased survival with BW (84.5% survival) versus TD (70.5% survival). These findings may be due in part to the fact that blood worms are easier for the crayfish to eat and may have increased nutritional value over TD. This study suggest a BW diet is more effective in captive rearing of crayfishes than TD, and future studies should explore additional dietary needs.