RILEY AULICK*[1], ZACHARY LOUGHMAN[1], EMMY DELEKTA[1], GREG MEYERS[1], BROWNWYN WILLIAMS[2], T. R. RUSS[3]. [1]Department of Natural Science and Mathematics, West Liberty University: West Liberty, WV, 26074; [2] North Carolina Museum of Natural Sciences, Non-Molluscan Unit, Raleigh, NC, 27601; [3]North Carolina Wildlife Resources Commission, Raleigh, NC, 27699. Range wide conservation assessment and analysis of land use impact on *Cambarus spicatus* (Broad River Spiny Crayfish)

The Broad River Spiny crayfish, *Cambarus spicatus*, is a rare species found in disjunct drainages in the Broad River watershed in North Carolina and South Carolina. In recent years, land around streams with apparently suitable habitat has been disturbed by urban and agricultural development. In the summers of 2017 and 2018, the West Liberty University Crayfish Conservation Laboratory (WLUCCL) surveyed 147 sites in the following watersheds in South Carolina: Broad, Catawba, Enoree, Pacolet, Saluda, and Tyger. ArcMap and the National Land Cover Database 2011 were utilized to obtain land use types from three hundred diameter buffer zones centered on each of the sites sampled. Of 147 sites, *C. spicatus* was present at five and absent at 142. A Zero-inflated negative binomial regression (ZINB) was the first statistical analysis chosen because of a large amount of negative data in the dataset. Secondly, a nonmetric multidimensional scale (NMDS) model was created to better observe presence and absence relationships *C. spicatus* had with each land cover type. ZINB results were insignificant and showed that land use alone did not predict the presence or absence of a rare crayfish. The NMDS model showed that the presence of *C. spicatus* was associated with three major groups of land cover types. At most sites where *C. spicatus* was present, “Forest” land cover type was present within the buffer zone. However, a large portion of captures occurred in the land cover types, “Crop” and “Pasture”. Future research, including a life history study, is needed to understand more about *C. spicatus* and what habitat and environmental conditions the species needs to thrive.