

HANNAH HOLBERT, ZACKARY GRAHAM, & ZACHARY LOUGHMAN, Department of Biological Sciences, West Liberty University, West Liberty, WV 26074. Life History and Corresponding Maternal Behavior of the Little Brown Mudbug (*Lacunicambarus thomai*).

The Little Brown Mudbug (*Lacunicambarus thomai*) and other primary burrowing crayfish species are often less researched due to difficulty of data collection and observation. Literature suggests that less than 39% of crayfish descriptions cover functional life history information that is necessary for future conservation planning, causing an unintentional conservation bias on present day efforts. To build upon lacking areas of literature such as growth patterns and maternal behavior and tolerances, 24 ovigerous *L. thomai* were brought into the propagation lab spaces. Daily observations of instar stage change and behavior were taken until instar four, also known as juvenile independence. We then separated juveniles from their mother and kept them in groups (hereafter referred to as cohorts) to collect standard weekly growth data after independence, as well as maternal tolerance after periods of separation. Average growth across the 98-day study was 0.11 mm/day, while the maximum growth rate for any cohort was more than double at 0.25 mm/day. Maternal females were highly tolerant to their offspring even after 30 days of separation. Understanding the standard rate of early life stage development, long term growth, and maternal interaction provides beneficial knowledge on how to implement varying care techniques into ex-situ propagation, such as separating cohorts into smaller groups or individual containers to decrease mortality, and when to expect offspring to reach an independent life stage. Developing a deeper life history understanding can lead to headstarting or propagation of primary burrowing species of concern as restoration actions become more necessary.