

MADLINE P. CECIL, ALISON K. WYER, JASON E. AKE II, & JEREMIAH DANN, Department of Biological Sciences, West Liberty University, West Liberty WV 26074. Influence of Environmental Factors on Population Density and Growth of an Invasive Earthworm.

The eastern United States has seen a great increase in the presence of the invasive pheretimoid earthworm, *Amyntas aggrestitis*. They are seen as a large issue due to their disruption of the environment, such as consuming leaf litter and draining usable nutrients from the soil. These worms are greatly under-researched, including knowledge gaps in their population ecology including population density, structure and even growth. Understanding the population ecology of invasive species is often the first step in designing methods to slow growth and spread or even extirpate these animals. The study took place from May-July 2024 in the West Liberty University campus woods. *Amyntas* have been observed and studied within this area for multiple years prior to this study. During the 2024 field season, *Amyntas* worm density showed a steady weekly decline, yet could not be attributed to any measured environmental factors (air and soil temperatures, soil moisture, soil pH and precipitation). Linear regression models were used to determine whether changes in these environmental variables could predict the overall density of *Amyntas* worms in our study area. A single parameter, soil pH, showed a significant negative effect on *Amyntas* density during sample week 6 ( $p < 0.01$ ). In addition to counts, worm lengths were also measured in the field. The average rate of change for *Amyntas* worms for this season was 0.232 cm/week which is lower than rates observed in previous years (0.35 cm/year in 2023).