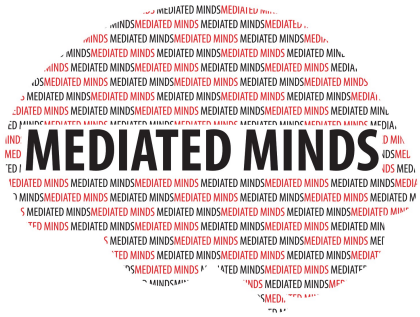


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# Survey and identification of native and invasive earthworms under cover objects in the Cincinnati region

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***Abstract — In this presentation, we will demonstrate the findings of our summer research involving native and invasive earthworms that were collected on the University of Cincinnati Blue Ash Campus and explain what our data means. We will also discuss what the emergence of invasive earthworms could result in through a discussion of the statistics of our data collections and genetic identification findings.***

***Keywords—Earthworms, invasive species***

## I. Introduction

Invasive earthworms were more common that native/naturalized earthworms in upland areas, while native/naturalized earthworms were more common than invasive earthworms in riparian areas. A subset of these earthworms were preserved for later detailed morphological and genetic identifications. Invasive worms represented at least two of the species of the co-invasive complex, while native/naturalized earthworms included a variety of nine different lumbricid species.

## II. Findings

Invasive Asian earthworms, particularly a complex of three cryptic species (Amynthas agrestis, A. tokioensis, and Metaphire hilgendorfi), are expanding their range across the eastern and central United States. Relative to native or naturalized earthworms, these invasive species have many negative effects on ecosystems such as destruction of leaf litter and disruption of soil nutrient cycling. Our goal was to document the occurrence of these invasive species relative to native/naturalized species utilizing the same habitats.

## References

1. Chang, C.-H., Johnston, M. R., Görres, J. H., Dávalos, A., McHugh, D., and Szlavecz, K. 2017. Co-invasion of three invasive earthworms, *Metaphire hilgendorfi*, *Amynthasagrestis*, and *Amynthas tokioensis* in the USA. Biological Invasionshttps://doi.org/10.1007/s10530-017-1607-x.

2, Chang, C.-H., Snyder, B. A., and Szlavecz. 2016. Asian pheretimid earthworms in North America north of Mexico: an illustrated key to the genera *Amynthas*, *Metaphire*,*Pithemera*, and *Polypheretima* (Clitella: Megascolecidae). Zootaxa 4179:495-529.

3. Gorsuch, J. P. and P. C. Owen. 2014. Potential edaphic and aquatic predators of a nonindigenous Asian earthworm (*Amynthas agrestis*) in the eastern United States. Northeastern Naturalist 21:652-661.

4. Olson, H. W. 1928. The earthworms of Ohio, with a study of their distribution in relation to hydrogen-ion concentration, moisture and organic content of the soil. Ohio Biological Survey, Vol. IV, No. 2. Bull. No. 17.

5. Ziemba, J. L., Hickerson, C. M., and Anthony, C. D. 2016. Invasive Asian earthworms negatively impact keystone terrestrial salam