The effect of invasive plant species on the biodiversity of herpetofauna at the Cincinnati Nature Center

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Abstract

Amur Honeysuckle, *Lonicera maackii*, is an Asian woody shrub that has recently spread throughout the eastern United States. Despite the existence of a documented life history of this exotic plant, no studies have been performed to determine its effect on the native herpetofauna. The Cincinnati Nature Center (CNC) has recently documented the invasion of its preserve by exotic plant species, predominantly *L. maackii*. However, its effect on much of the wildlife located at the CNC preserve, especially reptiles and amphibians, remains undocumented. We studied the biodiversity of amphibian and reptile populations at the CNC in areas dominated by *L. maackii* and in areas lacking exotics (old growth forests) to determine the effect of invasive plant species on herpetofauna abundance and distribution. Maps documenting vegetation abundance at the CNC were used to differentiate sampling plots within "highly invaded" (*L. maackii*) areas from those in "non-invaded" areas. Various collection techniques, primarily haphazard sampling, were used in measuring herpetofauna distribution and abundance. The data for each organism were taken in the field, and the organisms were released. The results suggest that the herpetofauna collectively use invaded and non-invaded habitat equally. Frogs (primarily *Rana clamitans*) were found to be larger, both in snout-vent length and body mass, in the non-invaded habitats compared with those found in the invaded habitats. Turtles (*Terrapene carolina*) were found only in non-invaded habitats, while snakes were found only in invaded habitats. It appears from this preliminary study that, if effects exist, Amur Honeysuckle may influence the distributions of amphibians and reptiles in different ways depending on the type of animal studied.