INVERTEBRATE BIODIVERSITY AND DISTRIBUTION ON THE INVASIVE PLANT GARLIC MUSTARD (*ALLIARIA PETIOLATA*) AND NATIVE PLANTS IN VERMONT CAMPGROUNDS.

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Abstract:

The population dynamics and spread of invasive plants into new areas likely depend upon their community ecology, including relationships with competing native plants and the associated suite of invertebrate pollinators, antagonists, and predators. Vermont campgrounds containing populations of invasive plant garlic mustard *(Alliaria petiolata*), and native plants sweet cicely (*Osmorhiza sp.*) and orange jewelweed (*Impatiens capensis*) were surveyed for invertebrates in summers of 2011-2012. *A. petiolata* was compared with *I. capensis* in weekly surveys and with *Osmorhiza sp*. in bi-weekly surveys. Four randomly-selected $1m^2$ plots of each species within large ($>15m^2$) and small ($<10m^2$) patches were swept using 10 sweeps from an insect net and specimens were identified. Invertebrate abundance, species richness, and Shannon-Weaver species diversity were compared between plant species and patch size across collection dates using ANOVA. Total invertebrate abundance was significantly higher on *A. petiolata* over *Osmorhiza sp.* at Mt. Ascutney State Park. At Lake Carmi State Park, total invertebrate abundance, species richness, and species diversity were all significantly higher on *I. capensis* over *A. petiolata*. Study results suggest that the ability of *A. petiolata* to successfully outcompete native plants for space may be influenced by their relative associations with beneficial and antagonistic invertebrates.