

**The New England Botanical Club  
Graduate Student Research Awards  
2008 AWARD WINNERS**

**Kelsey Glennon**

Department of Biological Sciences  
George Washington University, Washington, DC

**Systematic clarification of the rare New England group of *Houstonia longifolia* using AFLP with implications for conservation**

Determining the relationships between species within a plant genus is crucial for understanding speciation patterns and making conservation decisions. Understanding species relationships can aid in conservation efforts by correctly identifying lineages in need of protection. The unresolved nature of the genetic structure of the northern group of *Houstonia longifolia*, commonly known as the long-leaved bluet, has significant consequences for conservation. While *H. longifolia* is widespread in the Southeast U.S., it is uncommon to rare in the Northeast, particularly in New England. As part of my dissertation, this study will determine the relationship of the northeastern and southeastern *H. longifolia* using amplified fragment length polymorphisms (AFLP). Previous molecular evidence suggests these lineages are two distinct entities, though larger sampling is needed to verify these results. If the northeastern plants are genetically distinct, elevating their status to species could aid local and regional authorities in setting conservation and management goals for these plants. The results of this work will provide data necessary to understand potential speciation occurring within the genus, as well as provide evidence that will form the basis for taxonomic decisions regarding the New England *H. longifolia*.

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**Sydne Record**

Plant Biology Graduate Program  
University of Massachusetts, Amherst, MA

**Conservation While Under Invasion: Insights from a Rare Hemiparasitic Plant, Swamp Lousewort (*Pedicularis lanceolata* Michx.)**

It is commonly held that invasive, exotic species threaten rare, native plants, but we lack quantitative evidence of actual impacts. In Massachusetts, an Endangered generalist hemiparasitic plant, Swamp Lousewort (*Pedicularis lanceolata*), grows with several invasive species. The degree of threat posed by invasive plants growing near *P. lanceolata* in Massachusetts is ambiguous because at least one known invasive host plant, Reed Canarygrass (*Phalaris arundinacea*), grows with this rare species. For my dissertation, I am examining the effects of invasive versus native species on *P. lanceolata*. The goal of this research is to understand how relationships with different host plants influence the persistence of populations of *P. lanceolata*. Greenhouse and field removal experiments will tease apart the effects of competitive versus facilitative interactions between *P. lanceolata* and different hosts. A demographic study of tagged *P. lanceolata* individuals will provide data for constructing a population viability analysis of the species that considers the influence of different management scenarios, as tested by the field removal experiment, on the possible fates of populations. This work will provide a better understanding of the threat posed to rare hemiparasites by invasive species. Further, this study addresses critical research needs that have been identified in the management plan for this regionally rare species.