

**The New England Botanical Club
Graduate Student Research Awards
2015 AWARD WINNER**

Ellen Woods

Department of Ecology and Evolutionary Biology
University of Connecticut

**Understanding evolutionary mechanisms driving the expansion of a New
England invasive, *Polygonum cespitosum***

Polygonum (s.l.) *cespitosum* (= *Persicaria longiseta*) is an annual plant that was introduced to North America in the early 1900s from its native distribution in East/Southeast Asia. Incidence of *P. cespitosum* has been predominantly limited to the moist, shaded forest understory, but in the last 15 years, it has begun colonizing a wider range of habitats and has accordingly been recognized as invasive in New England. While *P. cespitosum* has been extensively studied in its introduced range, much less is known about its ecology in the native range. Previous work has identified two evolutionary mechanisms of invasion: (1) the post-introduction evolution of functional trait plasticity and (2) the incidence of pre-adapted, high-performance genotypes. The goal of this study is to further investigate these mechanisms by comparing populations from the introduced and native ranges. More specifically, this study aims to address: (1) if functional traits and their patterns of plasticity differ between ranges, (2) if the frequencies of high-performing, pre-adapted genotypes differ between ranges, and (3) if the genetic diversity and structure of populations differ between ranges.

The New England Botanical Club offers each year up to \$3,000 total in support of botanical research to be conducted by graduate students. The awards are made to stimulate and encourage botanical research on the New England flora, and to make possible visits to the New England region by those who would not otherwise be able to do so. It is anticipated that two awards will be given, although the actual number and amount of awards will depend on the proposals received. The awards are given to the graduate student(s) submitting the best research proposal dealing with systematic botany, biosystematics, plant ecology, or plant conservation biology.