

Laura Hill Bermingham, Ph.D.

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EDUCATION

08/2003 - 12/2008 **Ph.D. Biology, emphasis Plant Ecology and Evolution**
University of Vermont (UVM); Burlington, Vermont 05405

08/1998 - 05/2001 **B.S. Environmental Biology, emphasis Humanities**
Unity College; Unity, Maine 04988

POST-DOCTORAL RESEARCH

06/2008 - present Effects of forest management activities on the population persistence of rare plant Appalachian Jacob's ladder (*Polemonium vanbruntiae*) in the Green Mountain National Forest. A Challenge Cost-Share Agreement (No. 08-CS-1109-2000-015) between the USDA Forest Service, Green Mountain and Finger Lakes National Forests and the University of Vermont Biology Department.

PUBLICATIONS

Peer-reviewed

Hill Bermingham, L. (**In review**). Habitat type and deer herbivory influence long-term population dynamics of a rare wetland plant. *Plant Ecology*.

Hill Bermingham L. and Brody, A.K. (**In review**) Pollen source affects female reproductive success and early offspring traits in the rare endemic plant *Polemonium vanbruntiae* (Polemoniaceae). *International Journal of Ecology*.

Hill, L.M., Brody, A.K., Tedesco, C.L. 2008. Mating strategies & pollen limitation in globally threatened perennial *Polemonium vanbruntiae*. *Acta Oecologica*, 33, 314-323.

Publications for the lay public

Hill, L.M. 2006. Helping Vermont's Eastern Jacob's ladder. *Natural Heritage Harmonies*, a publication of the Vermont Department of Fish & Wildlife. pp. 6-8.

Governmental Reports

Hill Bermingham, L. 2009. The influence of forest management activities on the population viability of Appalachian Jacob's ladder Challenge Cost Share Agreement Annual Report. Submitted to the USDA Forest Service, Green Mountain National Forest extension.

Hill Bermingham, L. 2008. Special report addendum to inform conservation management policy for threatened plant, *Polemonium vanbruntiae*. Submitted to the Vermont Nongame and Natural Heritage Program, U.S. Fish and Wildlife Department.

Hill Bermingham, L. 2008. Special Report: Population reintroduction status report for threatened plant *Polemonium vanbruntiae*. Submitted to the USDA Forest Service, Green Mountain National Forest extension and the Vermont Nongame and Natural Heritage Program, U.S. Fish and Wildlife Department.

RESEARCH FUNDING

2008 – present	USDA Cooperative Challenge Cost Share Agreement, \$23,700
2006 – 2008	NSF Interdisciplinary Training in Mathematics & Biology mentor, \$3000
2007	Explorer’s Club Explorer’s Fund Award, \$1200
2007	Graduate College Mini-Grant Travel Support, \$300
2005	Vermont NSF-EPSCoR facilities mini-grant, \$925
2004 – 2006	Vermont NSF-EPSCoR Graduate Research Fellowship, \$50,000
2001	Unity College Travel Grant, \$1000

TEACHING APPOINTMENTS

2009-2010	Full-time Lecturer, Exploring Biology, Plant Biology Department, UVM
2009	Adjunct faculty, Lecturer, Principles of Biology, Plant Biology Department, UVM
2004, 2007, 2008	Graduate Teaching Fellow (GTF), Exploring Biology, Biology Department, UVM
2006, 2007	GTF, Ecology and Evolution, Biology Department, UVM
2006	GTF, The Human Body (online course), Biology Department, UVM
2002, 2003	GTF, Environmental Biology, Biology Department, UVM

MENTORING ACTIVITIES

2001 – present	High school graduates in science careers & college programs, McNicholas H.S.
2006 – 2008	NSF Interdisciplinary Training in Mathematics & Biology Program
2005 – 2008	Undergraduate Research Apprenticeships
2005 – 2008	Federal workstudy program

AWARDS, HONORS, FELLOWSHIPS AND SCHOLARSHIPS

2009	Roberto Fabri Fialho Scholarship
2008	Graduate Teaching Assistant of the Year nominee, University of Vermont
2003 – 2008	Graduate Teaching Assistant Fellowship
2004 – 2006	Vermont NSF-EPSCoR Graduate Research Fellowship
2004	Graduate College Summer Research Fellowship
2001	Unity College, Humanities Award
2001	Unity College Dean’s Award - Highest Honors
1999 – 2001	Unity College Merit I and Presidential Scholarship

ACADEMIC & COMMUNITY SERVICE

2008 – present	Clerk, Huntington Conservation Commission, Huntington, Vermont
2008	Office volunteer, The Nature Conservancy, Montpelier, Vermont
2008	Green Up Day volunteer, Huntington, Vermont
2006 – 2007	Public Relations Committee, Graduate Student Senate, UVM
2006	Ronald McDonald House volunteer, Burlington, Vermont
2006	Co-Chair, Graduate Research Day Committee, UVM
2005 – 2006	Grad student representative, Transportation & Parking Services, UVM
2004 – 2005	Grad student representative, Financial & Physical Planning Committee, UVM

RESEARCH ACTIVITIES

- 06/2008 – present **Population viability of rare plants under current forest management**
USDA Forest Service, University of Vermont
I use a combination of field research and ecological modeling to predict future population growth trends of a threatened plant species, Eastern Jacob's ladder (*Polemonium vanbruntiae*) in the Green Mountain National Forest under various forest management scenarios, including invasive species, white-tailed deer herbivory, canopy-opening, and forest road maintenance.
- 05/2007 – present **Population reintroduction of a globally threatened wetland plant species**
USDA Forest Service, State of VT Fish & Wildlife, VT Nature Conservancy
In collaboration with the University of Vermont, Vermont Nongame and Natural Heritage Program, USDA Forest Service, and the Vermont Nature Conservancy, I reintroduced a population of a globally threatened plant species in the Green Mountain National Forest in Vermont. I utilized a natural wet meadow where we sowed 1700 seeds and planted 40 juvenile and adult plants that were reared in the greenhouse. I collect annual data on plant survival, growth and fitness to estimate long-term reintroduction success.
- 06/2007 – present **Effects of invasive species, canopy-cover, and nutrient enhancement on a rare wetland plant**
University of Vermont, Interdisciplinary Program in Mathematics & Biology
I collaborated on 2 research projects at UVM's Horticultural Research Station. Here, we used a common-garden approach to determine how competition with invasive reed canarygrass (*Phalaris arundinacea*) affects the growth and fitness of a rare, native plant. We also used experiments to test how canopy-cover and nutrient addition interact with invasive plant competition.
- 08/2003 – 12/2008 **Ecological and evolutionary factors affecting rare plant population viability**
University of Vermont Biology Department
For my doctoral dissertation, I examined various ecological and evolutionary factors influencing native populations of a globally threatened wetland plant species, including pollinators, mating system evolution, white-tailed deer herbivory, and canopy-closure. I have disseminated my research findings as scientific journal articles, governmental reports, and reports for the lay public (see **Publications**).
- 08/2000 – 05/2001 **Sediment toxicity in Maine estuaries**
Unity College in Maine
For my senior thesis, I designed and implemented a research project to compare the sediment toxicity of 3 Maine estuaries spanning a range from midcoast Maine south to Portland. I was awarded a grant to travel to the Colorado School of Mines in Golden, CO to analyze my samples in the ecotoxicology lab at the college. I found that sediments in Portland were the most contaminated most likely due to industrial and other forms of run-off into the bay adjacent to Maine's largest city.

RESEARCH PRESENTATIONS

- 2009 Hill Bermingham, L. Ecological and anthropogenic factors affecting persistence of rare plant populations in the Green Mountain National Forest. Biology Department Seminar, University of Vermont, Burlington, VT.
- 2008 Hill Bermingham, L. Ecological and evolutionary factors affecting population persistence of a globally threatened wetland plant, *Polemonium vanbruntiae* (Polemoniaceae). Doctoral Dissertation final presentation, University of Vermont, Burlington, VT.
- Hill Bermingham, L., Brody, A.K., and Tedesco, C.L. Mating strategies and pollen limitation in a globally threatened perennial plant, *Polemonium vanbruntiae* (Polemoniaceae). Botany Conference, University of British Columbia, Vancouver, Canada.
- Hill, L.M. The effects of an invasive grass on a globally threatened wetland plant. Northeast Natural History Conference, New York State Museum, Albany, NY.
- Hill, L.M. Various ecological & evolutionary factors affecting rare plant persistence. EcoLunch. University of Vermont. Burlington, VT.
- 2007 Hill, L.M. Demographic population viability analysis of a globally threatened wetland plant, *Polemonium vanbruntiae*. Plant Ecology and Evolution Symposium, Student Research in Plant Biology and Conservation. Chicago Botanic Garden, Glencoe, IL.
- Hill, L.M. Revisions to conservation management policies for the threatened Eastern Jacob's ladder (*Polemonium vanbruntiae*). Flora Advisory Council, Vermont Nongame and Natural Heritage Program. Pringle Herbarium, Burlington VT.
- 2006 Hill, L.M. The effect of pollinators and herbivores on rare plant populations. National NSF-EPSCoR Annual Meeting. Lexington KY.
- Hill, L.M. Ecology, demography and population genetics of rare plant *Polemonium vanbruntiae* (Eastern Jacob's Ladder). Annual Biology Department Retreat, Burlington, VT.
- 2005 Hill, L.M. Population persistence of rare perennial plant *Polemonium vanbruntiae* (Eastern Jacob's Ladder). Vermont EPSCoR annual meeting. Burlington, VT.
- Hill, L.M. Population persistence of rare perennial plant *Polemonium vanbruntiae*. National NSF-EPSCoR Annual Meeting. Rio Grande, Puerto Rico.
- 2004 Hill, L.M. Rare-common differences and the persistence of a rare perennial plant. Ecology and Evolution Meeting. University of Vermont. Burlington, VT.
- 2002 Hill, L.M. A comparative study of sediment toxicity in three Maine estuaries: Belfast Bay, the Penobscot River estuary in Bucksport, and the Back Cove in Casco Bay, Portland. Ecology and Evolution Meeting, University of Vermont. Burlington, VT.

PROFESSIONAL SOCIETY MEMBERSHIPS

- Ecological Society of America
- Botanical Society of America
- New England Botanical Club
- Union of Concerned Scientists
- The Nature Conservancy