

JUSTINE WEBER

State University of New York || College of Environmental Science and Forestry
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EDUCATION

PhD Candidate, Ecology

State University of New York College of Environmental Science and Forestry (SUNY-ESF), 2019 (expected)
Dissertation: Ecological drivers of marl fen vegetation: controls on the presence and abundance of rare species with a focus on Houghton's goldenrod (*Solidago houghtonii*)
Advisor: Donald J. Leopold, Ph.D.

Bachelor of Science, Biology and Environmental Education

Messiah College, 2006
Advisor: James Makowski, Ph.D.
GPA: 3.8/4.0, *Magna Cum Laude*

Pennsylvania Teaching Certification: Biology 7-12
Pennsylvania Teaching Certification: Environmental Science K-12

TEACHING

SUNY-ESF, Department of Environmental and Forest Biology

Instructor and Coordinator

EFB 210: Diversity of Life I, Fall 2014-2018

EFB 211: Diversity of Life II, Spring 2014-2019

- Year-long, required, team-taught biodiversity survey course w/ lecture and lab components, ~200 students
- Provided about 1/3 of fall semester lectures - on biodiversity, history of life, taxonomy, conservation, etc.
- Managed and collaborated with over 20 guest-lecturing faculty to organize and provide course content
- Designed, created, and compiled student assessments and compiled final course grades
- Curated Blackboard (course management) site for student materials
- Conducted guided review sessions before exams to help coalesce material from different guest-lecturers
- Wrote objectives for, edited, and formatted lab manuals for both semesters
- Provided logistical and technical support for course's lab coordinator

Research Mentor:

EFB 498: Independent Research for Undergraduates, 2016-2019

- Provided direct supervision to three students conducting research for degree requirements
- Guided students in scientific inquiry process – hypotheses, experimental design, data management and analysis, and presenting work via poster
- Supervised and mentored two additional students as paid field assistants, not for degree requirements

Teaching Assistant:

EFB 210: Diversity of Life I, Fall 2012-2013 (with lab instruction)

EFB 305: Indigenous Issues and the Environment, Spring 2013

EFB 446: Ecology of Mosses, Spring 2013 (with lab instruction)

Lancaster Mennonite High School

High School Science Teacher, tenured in 2009

Environmental Science, ninth grade, 2006-2010

General Biology, tenth grade, 2006-2010

Wildlife Science, elective, 2009-2010

Advanced Environmental Science, elective, 2010

- Developed and implemented lesson plans, classroom activities, and indoor and outdoor labs
- Initiated revision of existing Environmental Science curriculum to center around a new textbook
- Collaborated with other Biology teachers to maintain curriculum consistency and effectiveness

GLOBE Certified Teacher

- Collaborative organization connecting K-12 science classrooms to research networks
- Developed and implemented custom lesson plans and data collection methods for students to participate in research; data contributed to the Chesapeake Bay Foundation

FFA Assistant Advisor

- Envirothon Coach, 2006-2010 (3 teams each year), won county competition in 2007
- Competition Team Coach and Mentor (Wildlife and Forestry teams), 2006-2010

OUTREACH AND ENVIRONMENTAL EDUCATION

National Audubon Society, Hog Island Audubon Camp

Instructor: Living on the Wind: Migration and Monhegan II, 2018 and 2019

- Work with Scott Weidensaul and other Audubon staff leading a one-week adult birding experience emphasizing coastal Maine's fall bird migration

SUNY-ESF, Open Academy (Outreach Department)

Teaching Fellow: Graduate Assistant Colloquium on Teaching and Learning, 2017 and 2018

- Colloquium works to develop teaching and leadership skills for incoming teaching assistants
- Developed and implemented annual 2-day required workshop with team of selected teaching fellows
- Teaching Fellows are selected to develop schedule, present at colloquium, and facilitate other presenters

Millbrook Marsh Nature Center

Naturalist Program Leader, September 2010-May 2012

- Guided themed explorations (based on PA State Education Standards) of a wetland system for children
- Conducted bird walks, plant walks, and other activities throughout the nature center for adult visitors
- Developed custom programs encouraging visitors to appreciate the role of wetlands in their watershed
- Assisted in summer wetlands camp by supervising and engaging ten kindergarten students for one week

Edwin B. Forsythe National Wildlife Refuge

Environmental Education Intern, May 2006-August 2006

- Designed educational programs and instructional materials related to the Refuge
- Conducted nature hikes and activities for school children
- Protected endangered species nesting area through community outreach and education

Glacier National Park

Park Ranger Naturalist Intern, June 2005-August 2005

- Competitive position through Student Conservation Association (SCA)
- Underwent four weeks of National Association of Interpretation (NAI) Training
- Developed detailed informative programs; guided hikes; conducted boat tours and campfire programs

RESEARCH

SUNY-ESF, Department of Environmental and Forest Biology

Dissertation Research

Plant Ecology and Conservation Lab, Dr. Donald Leopold, August 2012-present

- Dissertation Title: Ecological drivers of marl fen vegetation: controls on the presence and abundance of rare species with a focus on Houghton's goldenrod (*Solidago houghtonii*)
- Initial research focused on the impacts of deer herbivory, invasive species (*Phragmites australis* ssp. *australis*), and humans on rare and endangered plant species in marl fens
- Additional research focuses on ecology and demography of Houghton's goldenrod, a federally-listed and state-protected Great Lakes endemic

Research Associate

Collaboration with Drs. Sara Scanga (Utica College) and Dr. Donald Leopold, January 2018-present

- Updating population status of spreading globeflower (*Trollius laxus*) at Nelson Swamp Unique Area
- Surveyed subpopulations found in paired experimental canopy gaps and control plots (est. 2002/3)
- Gathered and processed data on sapling regeneration, average height of plot vegetation, and percent cover of associated plant groups
- Working on update manuscript regarding canopy gap development's impact on *Trollius vigor*
- Supervised and mentored two undergraduate students during data collection, entry, and analysis process

The Pennsylvania State University

Research Technician

Wildlife Habitat Lab, Dr. Margaret Brittingham, May 2012 – August 2012

- Gathered data for study evaluating impact of Marcellus shale development on breeding forest songbirds
- Conducted stationary point count breeding bird surveys throughout north-central Pennsylvania
- Entered data into Microsoft Excel and Access for future analysis

Research Technician

Wildlife Habitat Lab, Dr. Margaret Brittingham, November 2011 – December 2012

- Gathered and analyzed avian abundance data for a 452-acre property purchased by Penn State, with the goal of providing management and use recommendations
- Conducted point count and line transect bird surveys; conducted habitat and vegetation surveys; wrote a final report with recommendations in conjunction with Dr. Brittingham
- Coordinated regular volunteer bird surveys throughout the fall, winter, and early breeding season

Lab Assistant

Crop and Soil Sciences Lab, Dr. Robert Gallagher and PhD candidate Jeffrey Law, Nov 2010-Aug 2012

- Gathered data for a study focused on agricultural weed control via beneficial ground-dwelling invertebrates
- Sorted seeds from soil samples, completed seed volatile analysis using gas chromatography and CO₂ measurements; tended study plants in greenhouse setting
- Sorted and identified soil invertebrates; pinned insects; entered and compiled data

Research Technician

Wildlife Habitat Lab, Dr. Margaret Brittingham, summer 2011

- Gathered data for study focused on use of idled farm fields by grassland birds in Pennsylvania
- Measured vegetation cover and density, and identified vascular plants at study sites
- Conducted stationary and traveling bird surveys
- Created GIS maps and compiled and entered data

FUNDED GRANTS and AWARDS

Research awards:

- \$2600 Wilford A. Dence Fellowship**, for achievements in natural history and wild life, **2019**
SUNY-ESF Department of Environmental and Forest Biology, first botany student to receive award
- \$100 Excellence in Applied Research Award**, nominated for rare plant conservation work, **2019**
SUNY-ESF Graduate Student Association
- \$2900 Maurice Alexander Graduate Award**, for wetland research, **2017**
SUNY-ESF Department of Environmental and Forest Biology
- \$149,600 Great Lakes Restoration Initiative, U.S. Fish and Wildlife Service, 2015**
J.Weber – lead author/researcher, D. Leopold – principal investigator on record
Range-wide status assessment of Houghton's goldenrod, with special emphasis on niche limits, demographic transitions, and population stability
- \$7370 Edna Bailey Sussman Foundation Fellowship**, for student summer research, **2015**
Edna Bailey Sussman Foundation

Travel awards:

- \$250 Student Travel Grant** for attendance to Northeast Natural History Conference, **2019**
SUNY-ESF Graduate Student Association
- \$250 Student Travel Grant** for attendance to Botany2017 (BSA annual meeting), **2017**
SUNY-ESF Graduate Student Association
- \$350 Student Travel Grant** for attendance to National Native Seed Conference, **2017**
SUNY-ESF Graduate School

PUBLICATIONS and TECHNICAL REPORTS

Manuscripts in preparation:

- Weber, J.** and D.J. Leopold. Germination experiments with Houghton's goldenrod (*Solidago houghtonii*): Evaluating factors associated with population persistence. To be submitted to *Native Plants Journal* summer 2019.

Technical reports:

- Final Report to U.S. Fish and Wildlife Service**, with Dr. Donald Leopold, *in preparation for March 2019*
Range wide status assessment of Houghton's goldenrod (*Oligoneuron [=Solidago] houghtonii*) with a special emphasis on niche limits, demographic transitions, and population stability
Interim Reports: 2017, 2018
- Final Report to U.S. Fish and Wildlife Service**, with Dr. Donald Leopold, *April 2016*
Restoring Critical Habitat, Mitigating Multiple Threats, and Evaluating Population Statuses for Bog Turtle, Eastern Massasauga Rattlesnake, and Houghton's Goldenrod Co-occurring in a Single, Exceptional Marl Fen Ecosystem, Bergen Swamp, Genesee County, New York
Interim Reports: 2014, 2015
- Final Report to Edna Bailey Sussman Foundation**, *December 2015*
Range-wide status assessment of Houghton's goldenrod (*Oligoneuron houghtonii*) with a special emphasis on niche limits, demographic transitions, and population stability
- Final Report to The Pennsylvania State University**, with Dr. Margaret Brittingham, *Fall 2012*
Recommendations for Rockview Property acquisitions as managed bird habitat

PRESENTATIONS and GUEST LECTURES

*undergraduate mentee

- April 2019 Weber, J and DJ Leopold. *Poster*. Evaluating reproductive niche characteristics of federally-listed Houghton's goldenrod to approximate range wide stability. *SUNY-ESF Student Spotlight on Research Symposium, Syracuse, NY*.
- April 2019 Crouch, M*, J Weber, SE Scanga, and DJ Leopold. *Poster*. Effect of gap position on *Trollius laxus* vigor. *SUNY-ESF Student Spotlight on Research Symposium, Syracuse, NY*.
- April 2019 Radford, C*, J Weber, SE Scanga, and DJ Leopold. *Poster*. Canopy gap effects on fecundity to biomass ratios and herbivory of spreading globeflower (*Trollius laxus* ssp. *laxus*). *SUNY-ESF Student Spotlight on Research Symposium, Syracuse, NY*.
- April 2019 Weber, J and DJ Leopold. *Poster*. Evaluating reproductive niche characteristics of federally-listed Houghton's goldenrod to approximate range wide stability. *Northeast Natural History Conference, Springfield, MA*.
- April 2019 Weber, J and DJ Leopold. *Oral Presentation*. Rediscovering our species sense: developing natural history appreciation and skill sets in undergraduate students. *Northeast Natural History Conference, Springfield, MA*.
- March 2019 Weber, J. *Guest Lecture*. Nature apps as conservation tools: thoughts from an old millennial. *SUNY-ESF Senior Synthesis in Conservation Biology (EFB 414)*.
- March 2018 Weber, J. *Guest Lecture*. Nature apps as conservation tools. *SUNY-ESF Senior Synthesis in Conservation Biology (EFB 414)*.
- June 2017 Weber, J, DJ Leopold, and JJ Wiley Jr., *Poster*. Greenhouse germination trials with federally-protected Houghton's goldenrod: evaluating factors associated with population persistence. *BOTANY17, BSA Annual Meeting, Fort Worth, TX*.
- April 2017 Lee, L*, J Weber, and DJ Leopold. Preliminary analysis of germination rate in Houghton's goldenrod (*Oligoneuron houghtonii*) in various substrate types. *SUNY-ESF Student Spotlight on Research Symposium, Syracuse, NY*.
- April 2017 Weber, J, DJ Leopold, and JJ Wiley Jr., *Poster*. Greenhouse germination trials with federally-protected Houghton's goldenrod: evaluating factors associated with population persistence. *SUNY-ESF Student Spotlight on Research Symposium, Syracuse, NY*.
- Feb 2017 Weber, J, DJ Leopold, and JJ Wiley Jr., *Poster*. Greenhouse germination trials with federally-protected Houghton's goldenrod: evaluating factors associated with population persistence. *National Native Seed Conference, Washington, D.C.*
- Sept 2016 Weber, J. *Guest lab instructor*. Botanical lab exploration of Rand Tract, Syracuse, NY: identification of local angiosperms. *SUNY-ESF Flowering Plants: Diversity, Evolution, and Systematics (EFB 435/635)*.
- Sept 2016 Weber, J. *Invited talk*. Houghton's goldenrod range wide status update. *US Fish and Wildlife Service New York Field Office, Cortland, NY*.
- Oct 2013 Weber, J. *Keynote speaker*. Potential impacts of deer herbivory and non-native *Phragmites australis* on marl fen rarities. *Bergen Swamp Preservation Society Annual Meeting, Bergen, NY*.
- March 2013 Weber, J. *Guest lecture*. Moss life history strategies. *SUNY-ESF Ecology of Mosses (EFB 446/646)*.

ACADEMIC AWARDS and HONORS

ETS Recognition of Excellence for High Praxis Scores (Biology Content Knowledge)
Messiah College Honors Program (Provost's and President's Scholarships)
Au Sable Institute of Environmental Studies Honors Scholarship and Fellowship
National Merit Commended Scholar
Messiah College Dean's List, 8 semesters

PROFESSIONAL SOCIETIES – CURRENT MEMBERSHIPS

Ecological Society of America (sections: Education, Natural History, Researchers at Undergraduate Institutions)
Botanical Society of America (sections: Ecological, Teaching, Northeastern, Primarily Undergraduate Institution)
New York Flora Association