

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 (*Oligoneuron 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
- Lectured on introductory topics - biodiversity, history of life, taxonomy, conservation – and bryophytes
- 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)

EFB 305: Indigenous Issues and the Environment, Spring 2013

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

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 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

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

- Worked 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 (*Oligoneuron 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 PROPOSALS

Research awards:

- \$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 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 (*Oligoneuron houghtonii*): Evaluating factors associated with population persistence. To be submitted to *Native Plants Journal* spring 2019.

Technical reports:

- Final Report to U.S. Fish and Wildlife Service, 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, 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

PRESENTATIONS and GUEST LECTURES

Guest Lecture

SUNY-ESF, Department of Environmental and Forest Biology

EFB 414: Senior Synthesis in Conservation Biology, spring 2018 and 2019

Title: Nature Apps as Tools for Conservation

Poster Presentations

Botany2017, Fort Worth, TX, June 2017

SUNY-ESF, Student Spotlight on Research Symposium, April 2017

National Native Seed Conference, Washington D.C., February 2017

Title: Greenhouse germination trials with federally-protected Houghton's goldenrod: evaluating factors associated with population persistence

Invited Talk

U.S. Fish and Wildlife Service, NY Field Office, 2016

Title: Houghton's Goldenrod Range Wide Status Update

Keynote Speaker

Bergen Swamp Preservation Society Annual Meeting, 2013

Title: Potential impacts of deer herbivory and non-native *Phragmites australis* on marl rarities

Guest Lecture

SUNY-ESF, Department of Environmental and Forest Biology

EFB 446: Ecology of Mosses, spring 2013

Title: Moss Life History Strategies

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