

Curriculum Vitae

Rachel E. Schultz, Ph.D.

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I. EDUCATION

- 2010 Ph.D., The Ohio State University, Environment and Natural Resources
2006 M.S., Technical University of Munich, Ecology
2003 B.S., Northland College, Environmental Studies-Restoration Ecology, *summa cum laude*

II. PROFESSIONAL EXPERIENCE

- 2018- **Associate Professor**, Department of Environmental Science and Ecology, The College at Brockport, Brockport, NY
2016-2018 **Lecturer and Research Scientist**, College of Natural Resources, Fisheries and Water Resources Discipline, University of Wisconsin–Stevens Point
2011-2016 **Assistant Professor**, Center for Earth and Environmental Science, State University of New York (SUNY) at Plattsburgh
2010-2011 **Postdoctoral Researcher**, Department of Wildlife, Fisheries and Aquaculture, Mississippi State University

III. PEER-REVIEWED PUBLICATIONS

Schultz, R. and L. Pett. 2018. Plant community effects on CH₄ fluxes, root surface area, and carbon storage in experimental wetlands. *Ecological Engineering* 114, 96-103.

Webb, K., Schultz, R. and E. Dibble. 2016. The influence of invasive aquatic plant removal on diets of bluegill in Minnesota lakes. *Journal of Aquatic Plant Management* 54, pp. 37-45.

Lenihan, W. and R. Schultz. 2014. Carnivorous plant (*Sarracenia purpurea* L.) increases root growth in response to nitrogen addition. *Botany* 92(12): 917-921.

Maynard, G., Mihuc, T., Schultz, R., Sotola, V., Reyes, A., Malchoff, M., and D. Garneau. 2013. Use of external indicators to evaluate stress of largemouth (*Micropterus salmoides*) and smallmouth (*M. dolomieu*) bass at tournaments. *Open Fish Science Journal* 6:78-86.

Andrews, S., Schultz, R., Bouchard, V., and S. Frey. 2013. The role of plant community structure in mediating potential methane production and potential iron reduction in experimental wetland mesocosms. *Ecosphere* 4(4): 44. <http://dx.doi.org/10.1890/ES12-00314.1>

Schultz, R. and E. Dibble. 2012. The effects of invasive macrophytes on fish and macroinvertebrates: the role of invasive plant traits. *Hydrobiologia* 684 (1):1-14.

Schultz, R., Bouchard, V. and S. Frey. 2012. Overyielding and the role of complementary use of nitrogen in wetland plant communities. *Aquatic Botany* 97 (1):1-9.

Schultz, R., Andrews, S., O'Reilly, L., Bouchard, V. and S. Frey. 2011. Plant community composition more predictive than diversity of carbon cycling in freshwater wetlands. *Wetlands* 31 (5):965-977.

Drösler, M., Bergmann, L., Freibauer, A., Jungkunst, H.F., Schultz, R., Höll, B.S., Fielder, S., 2006. Long-term effect of fen-restoration on the C-balance and the GWP-balance. *Verh. Ges. Ökol* 36, 26.

IV. MANUSCRIPTS IN REVISION

Schultz, R., Straub, J., Kaminski, M., and Ebert, A. Floristic and macroinvertebrate responses to different wetland restoration techniques in southeastern Wisconsin. *Wetlands*. (submitted 8/15/2019, in revision as of 10/28/19)

V. MANUSCRIPTS UNDER REVIEW

Pett, L., Schultz, R., Mihuc, T. Wetland plant functional group diversity mitigates some tradeoffs among ecosystem services. *Wetlands*. (submitted 11/4/2019)

VI. MANUSCRIPTS IN PREPARATION

Hornbach, D., Shea, K., Gartner, T., Thomas, C., Machado, J., Geedey, K., Boyce, R., Dosch, J., Nieto, F., Schultz, R., Lyons, K., Anderson, L. Continental-scale patterns of decomposition in aquatic and terrestrial invaded systems. *Ecology*.

VII. REPORTS AND OTHER PUBLICATIONS

Straub, J., Schultz, R. 2015. Geo-botany of globally rare sandstone pavement pine barrens, Clinton County, NY. New York State Geological Association Field Trip Guidebook, 87th Annual Meeting.

Madsen, J.D., P. Amburn, R. Brown, E. Dibble, G. Ervin, C. Abbott, C. Brooks, D. Irby, S. Lee, V. Maddox, R. Schultz, L. Wasson, R. Wersal, T. Woolf, D. McBride, and N. Madsen. 2012. Research to support integrated management systems of aquatic and terrestrial invasive species: annual report, 2011. Geosystems Research Institute GRI#5051, Mississippi State University, Mississippi State, MS.

Schultz, R. 2011. Ecosystem Ecology: a New Synthesis – Bridging the gap between natural and social science to reach holistic management goals. *Landscape Ecology* 26 (4):603-604.

Madsen, J.D., P. Amburn, R. Brown, E. Dibble, G. Ervin, D. Shaw, C. Abbott, G. Baker, K. Bloem, C. Brooks, D. Irby, S. Lee, V. Maddox, R. Rose, R. Schultz, L. Wallace, L. Wasson, M. Welch, R. Wersal, D. McBride, and N. Madsen. 2011. Research to support integrated management systems of aquatic and terrestrial invasive species: annual report, 2010. Geosystems Research Institute GRI#5047, Mississippi State University, Mississippi State, MS.

Schultz, R. 2010. Plant diversity and community composition effects on carbon cycling and nitrogen partitioning in freshwater wetlands. Dissertation. The Ohio State University.

Schultz, R. 2006. Ecosystem respiration of degraded and restored fen ecosystems in Southern Bavaria. Thesis. Technical University of Munich.

VIII. EXTERNAL GRANTS AND CONTRACTS

- 2019-20 Principal Investigator “Assessing the Effects of Cattail Treatment on Methane Emissions from Lake Ontario Coastal Wetlands”, Great Lakes Research Consortium, \$25,000.
- 2019-21 Co-principal Investigator “Sustaining the Birds of the Great Lakes Phase 2” subcontract with National Audubon Society Incorporated. \$63,000 (PI-Dr. Doug Wilcox).
- 2019-23 Project Director “Braddock Bay Post-Restoration Studies for Adaptive Management – Ecological Monitoring” Memorandum of Understanding with the New York State Department of Environmental Conservation \$27,700 of \$300,000 total (PI – Dr. Doug Wilcox).
- 2019-20 Co-principal Investigator “Great Lakes Coastal Wetland Monitoring Program” \$20,500 of \$246,000 contract to The College at Brockport funded by the Environmental Protection Agency (PI- Dr. Doug Wilcox).
- 2018-20 Co-principal Investigator “Effectiveness of Long Term Resource Monitoring Vegetation Data to Quantify Waterfowl Habitat Quality”, US Army Corps of Engineers Upper Mississippi River Restoration Fund, \$193,233 (PI – Dr. Jacob Straub)
- 2017-21 Project Director “Monitoring Wetland Reserve Program easements in Wisconsin” USDA Natural Resources Conservation Service, \$95,040, currently a subcontract with SUNY Brockport for \$19,645.
- 2016 Participating Scientist ‘U.S. Science International Collaborations and Contributions to EcoSummit 2016 "Sustainability: Engineering Change"’ National Science Foundation, Environmental Sustainability Program

IX. INTERNAL GRANTS AND FELLOWSHIPS

- 2019 Pre-Tenure Grant Development Award, “Designing and Refining a Closed Chamber Method for Sampling Greenhouse Gas Emissions from Temperate Wetlands using a Portable Gas Analyzer”, SUNY Brockport, \$2,000
- 2019 UUP Individual Development Award, SUNY Brockport, \$1,000
- 2015 Co-Principal Investigator “Developing a New York Waterfowl & Wetlands Collaborative Network.” SUNY 4E Grant Program. \$9,581

2012-13 Presidential Research Award, SUNY Plattsburgh, \$5,000

2006-07 University Fellowship, The Ohio State University

X. INVITED PRESENTATIONS

Schultz, R., Straub, J. "Healthy Wetlands, Healthy Bird Populations?: Evaluating Restoration at the Landscape Scale," Graduate Seminar Series, School of Environment and Natural Resources, The Ohio State University, February 28, 2019, Columbus, OH.

Schultz, R. Effectiveness of wetland conservation programs in the Glacial Habitat Restoration Area of Wisconsin. Wisconsin Joint Venture Steering Committee Meeting, August 3, 2017, Stevens Point, WI.

Schultz, R. Wetland and waterfowl assessment project – GHRA. Private Lands Coordination Meeting, June 2017 & '18, Sarona, WI.

Schultz, R. and L. Pett. 2016. Plant community effects on biomass production and methane emissions from experimental wetlands: Applications for restoration. 5th International EcoSummit, August 29-Sept. 2 2016, Montpellier, France.

Schultz, R. 2014. Effect of invasive macrophytes on macroinvertebrates and fish: the role of traits. Joint Aquatic Sciences Meeting, May 18th-24th 2014, Portland, OR

Schultz, R. 2013. Green teams and armies of one: plant community effects on wetland and aquatic systems. Biology Department Seminar Series at Binghamton University.

Schultz, R. 2011. Green teams: plant community effects on wetland and aquatic systems. Graduate Seminar Series at the Rubenstein School of Environment and Natural Resources - University of Vermont.

Bouchard, V., Hossler, K. and R. Schultz. 2008. Shoots, roots and microbes in wetlands: how they interact and why we care. OSU School of Earth Sciences, Division of Global and Environmental Change Seminar Series, Columbus, OH.

Schultz, R. 2008. Centers for Ocean Science and Education Excellence (COSEE) Great Lakes Educators House Call Workshop for NSF GK-12 program at OSU, Columbus, OH.

XI. OTHER ACADEMIC PRESENTATIONS (selected presentations since 2015)

Kaminski, M., Schultz, R., Straub, J. "Assessment of macro-invertebrates in restored wetlands managed for waterfowl in east-central, WI" North American Duck Symposium, August 28, 2019, Winnipeg, CA

Schultz, R. E., **Loken, Z.**, Straub, J., "The loss of sedge meadow communities from 1935 to 2018 despite landscape-scale restoration efforts in southeastern Wisconsin," Society of Wetland Scientists Annual Meeting, May 30, 2019, Baltimore, MD.

Georgousi, F., Schwaller, H., Komoda, V., Schultz, R., Straub, J., Jadin R.C., Orlofske, S.A. "Parasites as bioindicators for wetland restoration projects". University of Wisconsin – System Undergraduate Research Symposium, April 26th, 2019, University of Wisconsin - Green Bay, Green Bay, WI.

Scoles, C., Schultz, R. E. "Assessing how invasive cattail affects methane emissions in Lake Ontario marshes," New York State Wetlands Forum Annual Meeting, April 2, 2019, Saratoga Springs, NY.

Schultz, R. E., Wilcox, D. A., "Hidden rubies: the (re)discovery of a coastal peatland on Lake Ontario," New York State Wetlands Forum Annual Meeting, April 2, 2019, Saratoga Springs, NY.

Loken, Z., Schultz, R. E., Straub, J., "Habitat heterogeneity and wetland-dependent bird use in Wisconsin's Glacial Habitat Restoration Area," Midwest Fish and Wildlife Conference, January 30, 2019, Cleveland, OH, United States.

Loken, Z., R.E. Schultz and J.N. Straub. Spatial heterogeneity and wetland-dependent bird use in Wisconsin's Glacial Habitat Restoration Area. Society of Wetland Scientists Annual Meeting, Denver, CO, 29 May - 1 June, 2018.

Schultz, R.E., J.N. Straub, J. Fleener, B. Glenzinski, S. Hygnstrom, G. Kidd, and K. Waterstradt. Marsh bird occupancy of wetlands in the Glacial Habitat Restoration Area of Wisconsin. 78th Midwest Fish and Wildlife Conference. Milwaukee, WI 28-31 January, 2018.

Pett, L. and Schultz, R. 2017. Effects of functional group richness of plants on invertebrate diversity in wetland mesocosms. Northeastern Natural History Conference, April 21-23, Cromwell, CT

Schultz, R. and Pett, L. 2017. Do plant community composition and diversity affect belowground carbon dynamics in experimental wetlands? Wisconsin Wetlands Association's 22nd Annual Wetland Science Conference, February 28 – March 2, Stevens Point, WI.

De La Mater, D., Hammer, C., Malanchuk, J., Schultz, R., Straub, J. 2015. Vegetation characteristics of two uncommon floodplain forest types in the northeastern U.S. New York Waterfowl & Wetlands Network 2015, July 28-29, Oswego, NY.

Schultz, R., **Wilson, R., Christian, N.** 2015. Ferns, rushes, and tussocks: plant community effects on biomass in experimental wetlands. Society of Wetland Scientists Annual Meeting, May 31 – June 4, Providence, RI.

DaBreo, K., Moseman, E., Rosedale, A. and Schultz, R. 2015. Invasive species impact on leaf litter decomposition in an aquatic system. Northeastern Natural History Conference, April 19-20, Springfield, MA.

Bolded names indicate undergraduate authors / presenters.

XII. TEACHING EXPERIENCE (Instructor of record)**The College at Brockport**

Ecological Data Analysis in R (Spring '19)

Ecology (Fall '19)

Invasion Ecology (Spring '19)

Restoration Ecology (Fall '18)

Wetland Ecology and Management (Fall '18 & '19)

University of Wisconsin-Stevens Point

Advanced Studies in Wildlife: Restoration Ecology Theory and Practice (Spring '17) – graduate course

Design of Constructed Wetlands (Spring '17)

Ecological Data Analysis (Fall '16) - graduate course

Ecological Basis of Natural Resource Management lecture (Fall '16 and Spring '17) and lab (Fall '16-Spring '18)

People, Natural Resources, and the Biosphere discussion instructor (Spring '18)

Wetland Plant Identification Workshop (Summer '18)

State University of New York at Plattsburgh

Environmental Science Seminar (Spring semesters '11-'15)

General Ecology lecture (Fall semesters '11-'14 and S '16) and lab (Fall '11 and Spring semesters '12 – '16)

Restoration Ecology (Spring semesters '13-'16)

Statistical Analysis in R (Fall '12) – graduate course

Wetland Ecology and Management (Fall semesters '11-'15 and Spring semester '12)

Mississippi State University

Limnology lecture and lab (Fall '10)

The Ohio State University

Water Quality Management (Spring '09)

XIII. ADVISING**Undergraduate students:**

2019	Independent Study Research Mentor, SUNY Brockport (C. Pettengill)
2019	Summer Undergraduate Research Program Mentor (A. Becker)
2018-19	Supervision of Work Study Undergraduate Students (M. Santiago, R. Sickler)
2017-18	Independent Study Research Mentor, University of Wisconsin-Stevens Point
2011-16	Independent Study Research Mentor for 12 students, SUNY Plattsburgh
2009	Honors Thesis Committee member, The Ohio State University

Graduate students:

Master's Thesis advisor, SUNY Brockport (Scoles, C. 2018-; Mitchell, C. 2019-, Kirkpatrick, S. 2019-, Killigrew, K. 2019-)

Master's Thesis adviser, SUNY Plattsburgh (Pett, L. 2015- 2017)

Master's Thesis Committee member, SUNY Brockport (Aubertine, M. 2019-, Mackey, E. 2018-, Edwards, M. 2018-, Bleier, T. 2018-) & SUNY Plattsburgh (Malanchuk, J. 2015-2017; Zajac, J. 2014- 2016; LaMay, M. 2013- 2015; Hayes-Pontius, E. 2011-2013)

XIV. SOCIETY MEMBERSHIP

International Association of Great Lakes Research, New York Flora Association, New York Wetlands Forum, Society of Wetland Scientists, and Wisconsin Wetlands Association

XV. REFEREE

Aquatic Invasions, Aquatic Sciences, Austral Ecology, Ecography, Ecological Engineering, Freshwater Biology, Freshwater Science, Hydrobiologia, Journal of Natural History, Journal of Plant Ecology, Landscape Ecology, Limnologia, Neotropical Ichthyology, Oikos, Plant and Soil, Soil Biology and Biochemistry, and Wetlands

XVI. OTHER PROFESSIONAL ACTIVITIES

2019	Invited participant in the inaugural Great Lakes Coastal Wetland Symposium
2018-19	Member of Programming Committee for the 2019 International Association for Great Lakes Research Annual Meeting
2018-19	Chair (with Dr. Doug Wilcox) of the "Great Lakes Coastal Wetlands: Innovative Research to Improve Restoration" Session for the 2019 International Association for Great Lakes Research Annual Meeting
2018-19	Member of the Society of Wetland Scientists - Women in Wetlands Section Conference Committee
2016	Peer-reviewer for the National Science Foundation Collaborative Research in Ecosystem Studies program
2014	Co-editor of the undergraduate e-journal, Scientia Discipulorum
2013-19	Presentation judge at Society of Wetland Scientists Annual Meetings and the International Association for Great Lakes Research Annual Meeting
2013-16	Member of the Ecological Research as Education Network (EREN) and participating scientist in the Decomposition in Aquatic and Terrestrial Invaded Systems (DATIS) project (2013-2015)
2013	Peer-review Panelist for the NASA 2013 Research Opportunities in Space and Earth Sciences solicitation
2012-	Expert Review Panelist for EPA grant, "Building a monitoring framework for detecting wetland response to climate change in the Adirondacks"
2012-16	Affiliate of the Lake Champlain Research Institute
2011-13	Junior Faculty Learning Community, Center for Teaching Excellence, SUNY Plattsburgh
2010-11	Mississippi Women in Natural Resources Mentoring Group, Mississippi State University, Department of Wildlife, Fisheries and Aquaculture
2010-11	Biogeochemistry Reading Group, Mississippi State University, College of Forest Resources and Department of Geosciences

XVII. ACADEMIC SERVICE

2019-	College Senator for the Environmental Science and Ecology Department, SUNY Brockport
2019-	Member of the Graduate Curriculum Committee of the Faculty Senate, SUNY Brockport
2018-	Member of the Graduate Committee for the Environmental Science and Ecology graduate program
2019	Poster Palooza judge – Scholars Day, SUNY Brockport
2018	Faculty search committee member, SUNY Brockport
2015-16	Member of the Faculty Senate Experiential Learning Ad Hoc Committee, SUNY Plattsburgh
2015-16	Member of the Feinberg Library Research Prize Committee, SUNY Plattsburgh
2014-16	Chair of the Curriculum Committee, Center for Earth and Environmental Science, SUNY Plattsburgh
2013-16	Faculty Senate representative for the Center for Earth and Environmental Science, SUNY Plattsburgh, (Fall 2014 – acting senator)
2014	Member of the Junior Faculty Advisory Group, SUNY Plattsburgh
2012-13	Visiting / Assistant Professor of Biology – Botany search committee member, SUNY Plattsburgh
2012-15	Hawkins Pond Infrastructure Replacement project, SUNY Plattsburgh
2011-13	Bylaws Committee, Center for Earth and Environmental Studies, SUNY Plattsburgh

XVIII. SELECTED OUTREACH ACTIVITIES AND SERVICE

2019-	Consultant for the BBC program, Green Planet
2018-	Member of the Braddock Bay Advisory Committee
2019	Invited speaker for The Margaret A. Davidson Coastal Society Career Development Workshop, SUNY Brockport, June 9
2017-18	Planting Science Scientist Mentor
2014-16	Project leader to propagate the rare plant, <i>Pyrola minor</i> , through the Adirondack Botanical Society
2013-14	Science Mentor for the BioAusable Environmental Science 4H project
2013	“Plants Are Cool, Too!” Featured guest on episode 3, “Skunk Cabbage”
2012	iMapInvasives training, Co-organizer, SUNY Plattsburgh
2011-16	Compost Group, Co-founder and Faculty Mentor, SUNY Plattsburgh
2010-11	Conservation Careers Discovery Day: Organizer, Mississippi Women in Natural Resources, Mississippi State University
2008-09	Scarlet and Gray Ag Day Educator: Wetland Ecology and Management, The Ohio State University
2007	Young Women's Summer Institute: Panelist

XIX. LANGUAGES

Native language - English, proficient in German and working knowledge of Spanish