

Sara Johnson, M.S.

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EDUCATION

M.S. in Natural Resources and Environmental Science, Rare Plant Conservation

University of Illinois: Urbana-Champaign: Champaign, IL

May 2021

B.A. in Biology, Minor in Psychology

Niagara University: Lewiston, NY

Graduated May 2010

Relevant Coursework: Advanced and Intro to GIS in Natural Resources, Native Plant ID and Floristics, Wetland Ecology & Management, Quantitative Methods, Species Distribution Modeling, Ecology, Genetics

RESEARCH AND FIELD EXPERIENCE

University of Illinois: Urbana-Champaign, Illinois Natural History Survey: Champaign, IL

Plant Ecologist

May 2021 – Present

- Survey populations, study pollinators, and conduct reproductive biology and seed ecology studies for *Physaria thamnophila*, a rare, federally endangered, South Texas endemic bladderpod.
- Conduct floristic assessments and document occurrence records for listed plant species and Plants of Concern throughout Illinois North Shore ravines. Document the flora, plant communities, and erosion risk.
- Survey grasslands throughout Illinois to locate focal plant species and critical habitat for insect species of greatest conservation need. Compile condition, source population proximity, and species lists for each site.
- Data cleaning, management, and analysis for reporting and publications. General project management, oversight, and team member coordination. Create and deliver presentations for sponsor and public education.

Graduate Research Assistant, Dept. of Natural Resources and Environmental Sciences

May 2018 – Present

- Created and field verified habitat suitability models and identified habitat associations for a rare mint species, *Macbridea alba* in the Florida panhandle. Using this map, I located new populations and habitat for reintroduction.
- Worked with multiple governmental agencies including USFWS to assess populations within the species range. Created and implemented a protocol for reproductive studies and *ex-situ* conservation of the species.
- Assisted with population and reproductive studies of three state-listed *Pinguicula* species in the Florida panhandle.

Assistant Botanist for Biological Monitoring

May 2018 – Present

- Developed germination protocol under varying salt concentrations for *Thuja occidentalis* seeds with colleagues. Collected seed set and morphometric data from multiple *Thuja occidentalis* populations in the Chicago region for the Illinois Tollway. Assisted with locating and identifying rare plants using existing element of occurrence records.

Bat Field Technician

May 2017 – August 2017

- Assessed bridges and surrounding habitat for the presence of bats in fulfillment of IDOT contracts.
- Identified bat species present, conducted tree diversity surveys, and located potential roost trees.
- Handled bats during mist-netting for proper identification and conducted emergence counts.
- Completed technical reports for the state of Illinois.

WEST Inc.: Central IL

Avian Field Technician

April 2017 – December 2017

- Conducted surveys for threatened and endangered species including American Golden Plovers on a proposed wind facility site. Conducted passerine and bird of prey surveys during breeding season.

Shoener Environmental Inc.: Champaign, IL

Wildlife Research Crew Leader

August 2016 – January 2017

- Crew supervisor for researchers conducting bat fatality monitoring at a wind energy facility. In charge of daily crew operations and coordination, plot set-up and maintenance, training, and acted as a liaison between wind crew, Conservation Canine research personnel, and Shoener supervisors.
- Database management and integration of human and CK9 searcher data. Quality control of carcasses.

- Completed threatened and endangered species reports for baseline data.
- Composed end of year study analysis and reporting of findings for the 2016 field season deterrent study.

Coweeta LTER Program at University of Georgia: Otto, NC

Seasonal Avian Ecologist

May 2016 – July 2016

- Conducted point count surveys in addition to capturing, marking (using aluminum and color banding), and tracking adult warblers. Surveyed larval insects to assess spatial and temporal food availability, measuring vegetation. GIS data and GPS used to identify and locate over 50 plots along precipitation gradient of multiple sub-watersheds.
- Assisted in electro-fishing field day with the Mainspring Trust to assess fish and invertebrate populations.

Niagara University: Lewiston, NY

Research Assistant, UG Research: Phylogeny of the Genus Petrocosmea

2009 – 2010

- Performed extraction of DNA from *Petrocosmea*, *Chiritopsis*, and *Raphiocarpus* species. Used PCR and gel electrophoresis of samples to analyze DNA and genetic sequence.
- Presented research at ECSC, Eastern Collegiate Science Conference, Posters on the Hill. *Phylogenetic Reconstruction of the Genus Petrocosmea*.

Rocky Mountain Field Ecology Research

August 2009

- Participated in a 51-year study in association with Rocky Mountain National Park, CO, tracking the regeneration of alpine plants after trampling by analysis of species richness, biodiversity, and areal cover.
- Observed genetic variation in re-growth of pine populations along a burn site above Ouzel Falls in the Rocky Mountain National Park, CO.

PROFESSIONAL EXPERIENCE

Urbana Parks District, Anita Purves Nature Center: Urbana, IL

Environmental Education Assistant/Organic Garden Supervisor/Natural Areas Committee Member August 2015 to Present

- Lead educational tours for field trips of pre-k to 5th grade about prairie plants, habitat and local flora and fauna through the seasons. Created interpretive materials for field station and social media.
- Managed and assisted with community gardens at Meadowbrook Park.

Menne Garden and Nursery, Amherst, NY

Annual and Perennial Team Member

2013 – 2015

- Basic maintenance tasks: watering, pruning, dead-heading, fertilizing, and pest monitoring.
- Specialized in helping customers with native and alpine plant collections.

AmeriCorps ABLE, Buffalo and Erie County Botanical Gardens: Buffalo, NY

Environmental Education Assistant

2011 – 2012

- Assisted horticulture team with garden projects including propagation, out-planting, and carnivore collection and assisted with outreach, education, and interpretive projects including school tours, public programs, and horticulture courses.
- Developed after-school programs Bud Buddies and Exploration Earth focused on sustainability and climate change.

AmeriCorps ABLE: Tifft Nature Preserve

Environmental Education Assistant

2011 - 2012

- Assisted with outreach, education, and interpretive projects including school tours and public programs about the flora and fauna of urban ecosystems of the Great Lakes region. Helped coordinate volunteers for workdays and restoration projects including invasive species removal and tree and wetland planting and monitoring efforts.

SOCIETY MEMBERSHIPS

Society of Wetland Scientists North Central Chapter Student Chapter at UIUC, <i>President/Treasurer</i>	2019 - 2021
Society of Wetland Scientists North Central Chapter, <i>Student Representative</i>	2019 - 2021
Champaign County Audubon Society, <i>Membership/Communications Chair</i>	2019 - Present
Champaign County Audubon Society, <i>President/ Vice President/Program Chair</i>	2017 - Present
Western New York Carnivorous Plant Club, <i>President/Vice President</i>	2012 - 2014

PRESENTATIONS

- Lightning Talk* - Botanical Society of America Virtual Conference, July 31st, 2020. "Reproductive ecology of a rare Florida endemic mint, *Macbridea alba*."
- Oral Presentation* – Botanical Society of America Virtual Conference, July 27th, 2020. "Habitat Suitability Models as a Conservation Tool for *Macbridea alba*."
- Lightning Talk* – Society of Wetland Scientists Student Section Virtual Conference, June 11th, 2020. "A year as a new student chapter: a case study at University of Illinois: Urbana-Champaign."
- Oral Presentation* – Southeastern Partners in Plant Conservation Conference, March 4th, 2020. "Habitat Suitability Models as a Conservation Tool for a rare Florida mint, *Macbridea alba*."
- Oral Presentation* – Received Best Student-Awarded Pre-Prelim Talk, Honorable Mention for Best Faculty-Awarded Pre-Prelim Talk at the UIUC GEEB Symposium on February 8th, 2020. "Assessing the Conservation Status of a rare Florida mint, *Macbridea alba*."
- Poster and Lightning Talk* – Great Lakes Coastal Wetland Symposium, Maumee OH, September 19th, 2019. "Effect of soluble salt on the Germination of *Thuja occidentalis*" Eric D. Janssen, Patricia A. Dickerson, Dr. Brenda S. Molano-Flores, University of Illinois Urbana-Champaign Champaign
- Poster* – Received First Place in Botany Division: Illinois State Academy of Science 2019 Annual Meeting. "Effect of soluble salt on the Germination of *Thuja occidentalis*" Eric D. Janssen, Patricia A. Dickerson, Dr. Brenda S. Molano-Flores, University of Illinois Urbana-Champaign Champaign

PUBLICATIONS

- Johnson, S., Janssen, E., Glass, N., Dickenson, P., Whelan, C., and Molano-Flores, B. (*in review*, 2022). The role of maternal environment on reproduction, seed morphology, and germination: a case study of Northern White Cedar, *Thuja occidentalis* L.
- Johnson, S., Zaya, D., and Molano-Flores, B. (*in review*, 2022). Field validation as a tool for mitigating uncertainty in species distribution modeling for conservation planning.
- Johnson, S., Zaya, D., and Molano-Flores, B. (*in prep*, 2021). Habitat associations of *Macbridea alba* from a comprehensive survey of its known range.
- Johnson, S., Janssen, E., Dickerson, P.A., and Molano-Flores, B. (2020). Results of 2018-2019 Assessment of *Thuja Occidentalis* Populations at the Fox River Fen. Illinois Natural History Survey Technical Report. 2020 (4):1–15 (Restricted: no online release, threatened and endangered species locations).
- Candeias, M., Johnson, S. (2018). A Rare Observation of the Feeding Habits of the Gila Monster, *Heloderma suspectum* (Lacertilia: Helodermatidae). *Southwestern Center for Herpetological Research Bulletin* (17-18).
- Romano, W. B., Skalski, J. R., Geist, C., Townsend, R., Meekins, C., Johnson, S., Chapman, K., Austin, T., Kinzie, K., & Coppinger, K. (2017). Task 6 -- Turbine Field Study During BP 2. Final Report to the US Department of Energy. Issued under Grant No. DE-EE0007035.

SCHOLARSHIPS, FELLOWSHIPS, AND GRANTS

- 2020: Illinois State Academy of Science Student Research Grant
- 2019: NRES Graduate College Conference Travel Grant and Educational Opportunity Travel Grant for BSA 2020 Conference

2019: Travel Grant and Registration from Society of Wetland Scientists North Central Chapter to attend Great Lakes Coastal Wetland Symposium 2019
 2019: NRES Educational Opportunity Travel Grant for ESA 2019 Conference
 2007- 2009: UFCW Scholarship (United Food and Commercial Workers International Union)
 2006-2010: Niagara University Presidential Scholarship, Niagara University

PROFESSIONAL SERVICE & OUTREACH

July 2021: Ecology 4 Session Judge for Botany 2021 Virtual Conference
 July 2020: Ecology 4 Session Judge for Botany 2020 Virtual Conference
 July 2020: Sci-Comm Celebration Participant for Botany 2020 Virtual Conference
 February 2020: Session Judge for GEEB Symposium
 December 2019: Native Seed Collection for Restoration, Society of Wetland Scientists NCC Student Chapter at UIUC
 October 2019: NRES Research Open House
 September 2019: 2019 Busey Woods BioBlitz: Citizen Scientists with Schools.
 March 2019: Vernal Pool Hike at Busey Woods, Society of Wetland Scientists NCC Student Chapter at UIUC

COMMUNITY SCIENCE AND VOLUNTEER ACTIVITIES

- Botanical Society of America, Planting Science Mentor: Liaison and Mentor** *2020 - 2022*
- Team liaison and mentor for middle school students using PS “Wonder of Seeds” curriculum
- Champaign County Audubon Society, Membership/Communications Chair: Board of Directors** *2017 - Present*
- Collaborate with web developer to update and improve CCAS website and content creation.
 - Increased public programming to include “Nerds who Bird” trivia event, organized the first annual Champaign County Dark Sky Week, and introduced academic professionals for presentations to members.
 - In collaboration with the board, we approved two conservation projects in Urbana, Illinois and increased the amount of mini-grants funded for educators in central Illinois, and worked on collaborative funding.
 - Curated social media content and created educational videos for the community on local flora and fauna.
 - Gave many public presentations and webinars to local groups including nursing homes, birding festivals, and for the UIUC Wellness Center: Gardening for Wildlife, Benefits of Birdwatching, and Backyard Birding
- Champaign County Forest Preserve, Frog Call Monitoring Program** *Spring 2017 - 2018*
- Performed regular point counts and call monitoring for various amphibian species native to central Illinois
- Sylvatica Shop, Inc., Founder & Owner** *2011 - 2015*
- Organized and facilitated horticultural workshops for the community of Buffalo, NY
- MAPS Bird Banding at Beaver Meadows Audubon Center** *2013 - 2015*
- Assisted with banding of migratory birds and educating the public during the migration season
- Marsh Monitoring Environment Canada** *Summer 2012*
- Volunteered for field research at Strawberry Island and Grass Island in Buffalo, NY. Monitoring the presence and behaviors of marsh habitat species

MEDIA

[Good Growing Podcast](#)

[In Defense of Plants Podcast: The Challenges of Conserving an Endemic Mint](#)

SKILLS AND TRAININGS

I am experienced in the use of R statistical software, ArcMap and ArcPro software, GPS equipment, and plant taxonomy.

Micro-propagation Workshop, Atlanta Botanical Garden, SePPCon 2020	<i>March 2020</i>
Social Media for Scientists, Illinois Natural History Survey	<i>March 2020</i>
ESRI Online: MOOC, Going places with Spatial Analysis	<i>October 2019</i>
R Basics Workshop, Missouri Botanic Gardens	<i>June 2018</i>

Bombus Identification Workshop, Illinois Natural History Survey
Grass Identification Workshop, Illinois Natural History Survey
Intro to ArcGIS, Parkland College
Greenhouse Management Course, Niagara County Community College
River Academy, Buffalo Niagara Riverkeeper

December 2017
September 2016
Fall 2016
Fall 2014
Fall 2012

Language: Conversational Spanish, Adequate Proficiency in Reading and Translation