Nicholas J. Lyon

Research Interests: Data Science, Community Ecology, Biostatistics, Plant-Insect Interactions, Restoration Ecology

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EDUCATION

M.Sc. Ecology and Evolutionary Biology – May 2019 – Iowa State University, Ames IA
Thesis: *An Integrated Approach to Restoring Grassland Function to Working Lands*

B.Sc. Biology – May 2016 – University of Puget Sound, Tacoma WA
Interdisciplinary Emphasis in **Bioethics**, Minor in **Humanities**
Thesis: *Mytilus Mussels as Bio-indicators of Regional Microplastic Trends*

RESEARCH

LTER Network Office Data Analyst (Feb. 2022 – Present)
National Center for Ecological Analysis and Synthesis (NCEAS), Santa Barbara CA
- Wrote custom R functions to streamline recurring data tidying tasks
- Collaborated with Long-Term Ecological Research (LTER) synthesis working groups to meet their data-related needs
- Wrangled and analyzed spatial data from a variety of sources (including lithology, land cover, etc.)

Data Scientist & Network Administrator (Aug. 2021 – Jan. 2022)
Herbivory Variability Network, Lansing MI
- Coded a quality assurance pipeline in R for a database collected by 200 collaborators based in more than 30 countries
- Designed a data management plan to standardize post-collection data handling and distribution across the Network
- Revised the set of protocols used to train collaborators before and during data collection
- Created an R Shiny app for data submission and error checking (code: github.com/HerbVar-Network/Data-Portal)
- Handled communication to and from current and prospective collaborators

Entomology Consultant (Jan. – Nov. 2021)
BrdgAI, Pittsburgh PA
- Provided entomology expertise on study design and sampling procedure for insects across a range of cropping contexts
- Collaborated with software developers and agronomists in regular meetings to reach project goals
- Identified over 65,000 insects to species, family, or sub-order level from pictures of sticky cards
- Created framework for consistent insect classification between India, the United States, and Canada

Agroecological Predator-Prey Interactions Researcher (Aug. 2019 – May 2021)
University of Georgia, Athens GA & Clemson University, Clemson SC
- Identified 16,916 insects to family-level from 15 orders in the field and *post hoc* from pitfall and vacuum samples
- Formed productive working relationships with 23 organic farmers in South Carolina and Georgia
- Wrote R code to tidy and analyze data collected via 8 distinct methods at varying spatial and temporal scales
- Mentored 6 undergraduates as they worked towards completing independent research projects
- Maintained colonies of squash bugs (*Anasa tristis*) and melon aphids (*Aphis gossypii*) in a greenhouse

Grassland Plant and Pollinator Researcher (May 2016 – May 2019)
Iowa State University, Ames IA
- Performed field surveys for butterflies, wild bees, and flowering plants in remnant and restored prairie
- Wrote univariate and multivariate analysis code for ecological community data in the R statistical environment
- Built species distribution models (SDMs) in R for grassland plant species to inform climate-resilient seed-mix design
- Interviewed, hired, trained, and managed field technicians for summer 2017 and 2018
- Wrote protocols for field data collection and database management

Vegetation Sampling Field Crew Coordinator (June – July 2017 & June – July 2018)
Iowa State University, Ames IA
- Conducted vegetation percent cover estimations for several plant functional groups
- Trained technicians with variable previous field experience in identification of plant species and functional groups
- Planned and executed an intensive sampling schedule with field technicians from three different universities
- Wrote customized functions in R for response calculation as well as tidy and analysis scripts for raw collected data

Marine Microplastics Researcher (Apr. 2014 – May 2016)
University of Puget Sound, Tacoma WA
- Developed a novel methodology using fluorescence microscopy to quantify plastic load in mussels (*Mytilus spp.*)
- Wrote competitively funded grant proposals for university funding for the summer of 2014 and 2015
- Selected as the university's sole 'Biological Sciences' representative at the Murdock College Science Research Conference

TEACHING

Biology Teaching Assistant (Jan. 2021 – May 2021)
University of Georgia, Athens GA – **Biology 1108 (Concepts in Biology II)**
- Facilitated students in honing their scientific observation, experimental design, and writing skills
- Aided students in identifying their first independent research question and implementing the subsequent experiment
- Designed instructional content for 13 weeks of labs that emphasized class discussion and critical thinking skills
- Provided thorough and constructive written feedback on lab reports as well as on quiz-style assignments

Biology Teaching Assistant (Aug. 2020 – Dec. 2020)
University of Georgia, Athens GA – **Biology 1103 (Concepts in Biology)**
- Provided facilitative feedback on multiple drafts of lab reports and other written assignments
- Created lectures for 12 weeks of hands-on and virtual lab content on introductory biology
- Trained students in performing laboratory techniques (e.g., using spectrophotometer, pipetting, etc.)

Ecology Teaching Assistant (Aug. 2018 – Dec. 2018)
Iowa State University, Ames IA – **Biology 312 (Intro to Ecology)**
- Taught core ecological concepts to sophomore through senior undergraduate students
- Worked with students individually and in groups to facilitate formal scientific writing skills and strategies
- Led both lab and field exercises to promote hands-on interaction with course concepts
- Collaborated with another TA to modify the course structure to emphasize development of scientific writing skills

Instructor of Record (Aug. 2017 – Dec. 2017)
Iowa State University, Ames IA – **Environmental Sciences 490 (Independent Research)**
- Mentored an Iowa State University undergraduate in their first independent research experience
- Facilitated the student in hypothesis formation, methods development, statistical analysis, and results reporting
- Taught the student data management and cleaning in the R statistical environment
- Wrote guidelines and gave feedback on abstract writing and poster presentation skills

Instructor's Assistant (Jan. 2016 – May 2016)
University of Puget Sound, Tacoma WA – **Biology 111 (Unity of life)**
- Addressed questions from students as they learned and employed lab techniques
- Supervised and led trainings in the use of lab equipment
- Taught statistical and database management methods in Microsoft Excel

Guest Lectures
Clemson University – 2020 – Introduction to Statistics and R in Ecology Research. **Insect Ecology (ENT 4520/6520)**
Iowa State University (ISU) – 2019 – Plotting with ggplot2. **Data Wrangling in R for Natural Resource Professionals (NREM 305)**
ISU – 2019 – Choosing the "Right" Statistical Test. **Data Wrangling in R for Natural Resource Professionals (NREM 305)**
ISU – 2018 – Multivariate Statistics in R. **Data Management and Analysis in R for Ecologists and Evolutionary Biologists (EEB 698)**

SERVICE

Vice President (Sep. 2019 – May 2020)
Clemson University, Clemson SC – **Clemson Entomology Club**
- Led a campaign to get graduate student representation on faculty committees in the department
- Designed a suite of recruitment materials to increase program presence at national and regional conferences
- Organized ride and room sharing to local, regional, and national conferences to increase accessibility
- Spurred a partnership with a related program's graduate student organization to cooperate on advocacy for students

Social Media Coordinator (May 2018 – May 2019)
Iowa State University, Ames IA – **Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS)**
- Led workshops on professional networking and the process of applying to graduate school
- Created consistent branding for web presence across social media platforms
- Wrote and posted tweets in-line with the support for diverse identities in science consistent with the society's mission

Recruitment Committee Graduate Student Representative (May 2017 – May 2019)
Iowa State University, Ames IA – **Ecology and Evolutionary Biology Graduate Program**
- Established timeline for organizing the research symposium during recruitment weekend
- Worked with faculty, staff, and students to ensure a successful recruitment season
- Designed a promotional flier and the program for the event
- Elected for two consecutive terms by the graduate student members of the program

Graduate Student Senator (Dec. 2017 – May 2019)
Iowa State University, Ames IA – **Graduate and Professional Student Senate**
- Voted on policy and administrative matters that affect graduate students
- Advocated for issues relevant to graduate students in the Ecology and Evolutionary Biology Graduate Program
- Appointed as the first EEB Program Senator and subsequently elected for the following term

Applied Ecology Section Liaison (Aug. 2017 – Oct. 2018)
Ecological Society of America – **ESA Student Section**
- Provided social media (e.g., Twitter, newsletter, etc.) content on Applied Ecology Section news relevant to students
- Recorded a podcast with the ESA Student Section on my experience of being an applied ecology graduate student
- Member of the Ecological Society of America since August 2017

Phi Sigma Research Symposium Co-Chair (Apr. 2015 – May 2016)
University of Puget Sound, Tacoma WA – **Phi Sigma Biological Sciences Honors Society**
- Organized a symposium for student researchers across the natural sciences to present to the campus community
- Secured a keynote speaker for the symposium and coordinated logistics around their visit
- Sourced and managed a designer to produce posters to publicize the event around campus

PUBLICATIONS

Lyon, N.J., Stein, D.S., Debinski, D.M., Miller, J.R., Schact, W.H. 2021. Responses of Flowering Plant and Butterfly Communities to Experimental Herbicide and Seeding Treatments for Native Grassland Restoration. *Ecological Restoration* 3.

Coon, J.J., **Lyon, N.J.**, Raynor, E.J., Debinski, D.M., Miller, J.R., Schact, W.H. 2021. Using Adaptive Management to Restore Grasslands Invaded by Tall Fescue (*Schedonorus arundinaceus*). *Rangeland Ecology and Management* 76.

Lyon, N.J., Debinski, D.M., Rangwala, I. 2019. Evaluating the Utility of Species Distribution Models in Informing Climate Change-Resilient Grassland Restoration Strategy. *Frontiers in Ecology and Evolutionary Biology* 7.

Lyon, N.J., Debinski, D.M., Rogers, H.S. Pollinator and Plant Communities Changed Differently After Eleven Years of Management. *[In prep]*

SELECTED RESEARCH PRESENTATIONS

Lyon, N.J., Madden, M., Behnke M.F., Blubaugh C.K. Balancing the Risks and Benefits of Allowing Weeds to Persist in

Organic Agriculture. **Entomological Society of America**, FL, November 2020. Virtual Oral Presentation.

Lyon, N.J., Blubaugh C.K. The Enemy of my Enemy: Utilizing Diverse Weed Communities to Recruit Natural Enemies for Pest Suppression. **South Carolina Entomological Society**, SC, October 2019. *Awarded Best Poster Presentation.*

Lyon, N.J., Debinski, D.M. Evaluating the Effects of 11 Years of Consistent Restoration Management. **Ecological Society of America**, Louisville KY, August 2019. Oral Presentation.

Lyon, N.J., Debinski, D.M., Miller, J., Schact, W. Native Plant and Pollinator Response to Adaptive Management. **Ecological Society of America**, New Orleans LA, August 2018. Oral Presentation.

Lyon, N.J., Debinski, D.M., Miller, J., Schact, W. Plant and Pollinator Response to Adaptive Management. **Graduate and Professional Student Research Conference**, Ames IA, April 2018. *Awarded Best Oral Presentation.*

Lyon, N.J., Debinski, D.M. Butterfly and Nectar-Producing Plant Response to Invasive Grass Management. **Graduate Research in Ecology and Evolutionary Biology Symposium**, Ames IA, February 2018. Oral Presentation.

Lyon, N.J. An Integrated Approach to Tallgrass Prairie Restoration. **Three-Minute Thesis**, Ames IA, January 2018. Oral Presentation.

Lyon, N. J., Debinski, D.M., and Rangwala, I. Species Distribution Modeling to Predict Prairie Restoration Success under Climate Change. **Ecological Society of America**, Portland OR, August 2017. Oral Presentation.

HONORS & AWARDS

Fellowships & Honors
2019 – **Joel A Berly Research Fellow** – Clemson University, Clemson SC
2018 – **Preparing Future Faculty Fellow** – Iowa State University, Ames IA
2017 – **Science Communication Fellow** – Reiman Gardens, Ames IA
2017-19 – **Society for the Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS) Member** – Iowa State University, Ames IA
2016 – **Biology Department Honors** – University of Puget Sound, Tacoma WA
2013-16 – **Phi Sigma Biological Sciences Honors Society Member** – University of Puget Sound, Tacoma WA

Grants & Awards
2020 – **W. Carl Nettles, Sr., and Ruby S. Nettles Memorial Endowment Travel Grant** – $330
Clemson University Entomology Graduate Program
2019 – **Early Career Publication Award** – $250
Ecological Society of America, Restoration Ecology Section
2019 – **Real/Brown Graduate Student Travel Award** – $150
Ecological Society of America, Student Section
2018 – **Graduate Student Travel Award** – $500
Ecological Society of America, Applied Ecology Section
2017 – **Graduate Student Travel Grant** – $600
Center for Global and Regional Environmental Research (CGRER)
2017 – **Graduate Student Field Research Grant** – $1,377
Center for Global and Regional Environmental Research (CGRER)
2015 – **Student Research Award** – $3,250
University of Puget Sound, Biology Department
2014 – **Student Research Award** – $3,250
University of Puget Sound, Biology Department