Nicholas J. Lyon

Research Interests: Data Science, Biostatistics, Community Ecology, Synthesis Research, 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*

SELECTED PROFESSIONAL EXPERIENCE

LTER Network Office Data Analyst (Feb. 2022 – Present)
National Center for Ecological Analysis and Synthesis (NCEAS), Santa Barbara CA
- Worked with over 100 researchers from 12 working groups to meet their data-related and analytical needs
- Designed and taught workshops on code collaboration with version control, R's Tidyverse, and making R Shiny apps
- Managed projects throughout their lifecycle and created documentation to clearly define institutional best practices
- Translated Python and SQL code into equivalent scripts in R
- Analyzed and wrangled spatial data from a variety of sources (including lithology, land cover, etc.)

Adjunct Professor of Biology (May – July 2023)
Stonehill College, Easton MA
- Designed an 8-week summer course introducing fundamental data science skills to life sciences undergraduates
- Created low- and high-stakes assignment rubrics with course-aligned learning objectives
- Offered holistic feedback on student work and encouraged iterative revision processes
- Helped students develop professional portfolios of their strongest in-class work hosted on GitHub

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

Biology Teaching Assistant (Aug. 2020 – May 2021)
Concepts in Biology I & II (BIO 1103 & 1108), University of Georgia, Athens GA
- 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 25 weeks of labs that critical thinking skills across two semesters
- Provided thorough and constructive written feedback on lab reports as well as on quiz-style assignments

Agroecological Predator-Prey Interactions Researcher (Aug. 2019 – May 2021)
Entomology Department, University of Georgia, Athens GA
- 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)
Ecology and Evolutionary Biology Graduate Program, 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

Recruitment Committee Graduate Student Representative (May 2017 – May 2019)
Ecology and Evolutionary Biology Graduate Program, Iowa State University, Ames IA
- 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

SELECTED PUBLICATIONS & PRODUCTS

Brun, J. et al. Enabling Data-Driven Collaborative and Reproducible Environmental Synthesis Science. *[In prep]*

Johnson, K. et al., 2024. Establishing Fluvial Silicon Regimes and Their Stability Across the Northern Hemisphere. *Limnology and Oceanography Letters*

Robinson, M.L. et al. 2023. Plant Size, Latitude, and Phylogeny Explain Within-Population Variability in Herbivory. *Science*

Lyon, N.J. 2023. supportR: Support Functions for Wrangling and Visualization. *R package version 1.2.0*.

Lyon, N.J. 2023. lterpalettefinder: Extract Color Palettes from Photos and Pick Official LTER Palettes. *R package version 1.1.0*.

Kucuk, R.A. et al., 2022. Gut Bacteria of Adult and Larval *Cotinis nitida* Linnaeus (Coleoptera: Scarabaeidae) Demonstrate Community Differences According to Life Stage and Gut Region. *Frontiers in Microbiology*

Gaynor, K. et al., 2022. Ten Simple Rules to Cultivate Belonging in Collaborative Data Science Research Teams. *PLOS Computational Biology*

Lyon, N.J. et al., 2021. Responses of Flowering Plant and Butterfly Communities to Experimental Herbicide and Seeding Treatments for Native Grassland Restoration. *Ecological Restoration* 3.

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

SELECTED WORKSHOPS & PRESENTATIONS

Lyon, N.J. and Chen, A. Collaborative Coding with GitHub and RStudio. **American Geophysical Union (AGU)**, San Francisco, CA, December 2023. Workshop.

Lyon, N.J. and Chen, A. Collaborative Coding with GitHub and RStudio. **National Center for Ecological Analysis and Synthesis**, LTER Network Office, May 2023. Workshop.

Lyon, N.J., De La Rosa, G., Guerrero, F. Sharing Science with R Shiny Apps. **LTER All Scientists' Meeting**, Monterey, CA, September 2022. Workshop.

Lyon, N.J., Chen, A., Brun, J. Coding with the Tidyverse. **National Center for Ecological Analysis and Synthesis**, LTER Network Office, July 2022. Workshop.

Lyon, N.J., Chen, A., Brun, J. Collaborative Coding with GitHub and RStudio. **National Center for Ecological Analysis and Synthesis**, LTER Network Office, May 2022. Workshop.

Lyon, N.J. Introduction to Statistics and R in Ecology Research. Insect Ecology (ENT 4250/6250), **Clemson University**, SC, Fall 2020. Guest Lecture.

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. Multivariate Statistics in R. Data Management and Analysis in R for Ecologists and Evolutionary Biologists (EEB 698) **Iowa State University**, IA, Fall 2019. Guest Lecture.

Lyon, N.J. Choosing the "Right" Statistical Test. Data Wrangling in R for Natural Resource Professionals (NREM 305), **Iowa State University**, IA, Spring 2019. Guest Lecture.

Lyon, N.J. Plotting with `ggplot2`. Data Wrangling in R for Natural Resource Professionals (NREM 305), **Iowa State University**, IA, Spring 2019. Guest Lecture.

SELECTED CERTIFICATIONS & AWARDS

2022 – **Carpentries Instructor** – The Carpentries, Santa Barbara CA
2020 – **South Carolina Master Gardener** – Clemson University Extension Program, Clemson SC
2020 – **W. Carl Nettles, Sr., and Ruby S. Nettles Memorial Endowment Travel Grant** – $330
    Clemson University Entomology Graduate Program
2019 – **Joel A Berly Research Fellow** – Clemson University, Clemson SC
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 – **Preparing Future Faculty Fellow** – Iowa State University, Ames IA
2018 – **Graduate Student Travel Award** – $500
    Ecological Society of America, Applied Ecology Section
2017-19 – **Society for the Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS) Member** – Iowa State University, Ames IA
2017 – **Science Communication Fellow** – Reiman Gardens, Ames IA
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)
2016 – **Biology Department Honors** – University of Puget Sound, Tacoma WA