KARI E. NORMAN

Rocky Mountain Research Station
United States Forest Service
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EDUCATION

University of California, Berkeley 8/2016–12/2021
Ph.D., Environmental, Science, Policy, and Management
Dissertation: *Synthesis approaches to quantifying biodiversity change, tools and applications*
Advisor: Dr. Carl Boettiger

Utah State University 8/2012–5/2016
B.S. Statistics, B.S. Conservation and Restoration Ecology with Honors
Minor in Biomathematics, *Magna cum Laude*
Thesis: *Biodiversity Prioritization: A Comparison of Data Types*
Advisor: Dr. Ethan White

PROFESSIONAL APPOINTMENTS

Biological Scientist (Ecological Data Scientist) 9/2023 – Present
USDA Forest Service
Rocky Mountain Research Station

Visiting Scholar 9/2023 – Present
Center for Fire Resilient Ecosystems & Society
University of New Mexico

BIOS^2 Postdoctoral Fellow, University of Montreal 4/2022 – 9/2023
Department of Biological Sciences
Mentor: Dr. Timothée Poisot

Developer, GEO BON 4/2022 – 9/2023
Developed pipelines for translating species observation data into monitoring networks, including implementing algorithms for site selection.

SCHOLARSHIP

Total number of citations: 200 | h-index: 7
Accessed from Google Scholar 3 Jun 2025

Publications

1. Jones, GM, C Thompson, SC Sawyer, **KE Norman**, SA Parks, TM Hayes, DL Hankins. Conserving landscape dynamics, not just landscapes. 2025. *BioScience*, 75(5): 409–415, https://doi.org/10.1093/biosci/biaf023
2. **Norman, KE,** T Poisot. 2025. Algorithm selection for optimal ecological monitoring design. *EcoEvoRxiv.* doi.org/10.32942/X2XC96.
3. Miller-ter Kuille, A, JS Sanderlin, J Ayars, HE Chmura, M Dressen, JD Golding, GM Jones, R Kirby, KE Norman, Z Steel, VS Foster. 2025. Functionalizing ecological integrity: using functional ecology to monitor animal communities. *Frontiers in Ecology and the Environment* e2852. *Contribution: conceptual, writing*
4. **Norman, KE**, P de Valpine, C Boettiger. 2025. No general trend in functional diversity in bird and mammal communities despite compositional change. *Global Ecology and Biogeography* 34 (1), e13950. *Contribution: conceptual development, analysis, writing*
5. Banville, F, T Strydom, P Blyth, C Brimacombe, MD Catchen, G Danseareau, G Higino, T Malpas, H Mayall, **KE Norman**, D Gravel, T Poisot. 2024. Deciphering probabilistic species interaction networks. *EcoEvoRxiv.* doi.org/10.32942/X28G8Z. *Contribution: conceptual development*
6. Griffith, J, JM Lord, MD Catchen and 43 others (including **KE Norman).** 2024. BON in a Box: An Open and Collaborative Platform for Biodiversity Monitoring, Indicator Calculation, and Reporting. *EcoEvoRxiv.* doi.org/10.32942/X2M320.
7. Chapman, Melissa, B Goldstein, C Schell, J Brashares, N Carter, D Ellis-Soto, H Faxon, J Goldstein, B Halpern, J Longdon, **KE Norman**, D O'rourke, C Schell, C Scoville, L Xu C Boettiger. 2024. Biodiversity monitoring for a just planetary future. *Science* 383 (6678): 34-36. *Contribution: conceptual, writing*

8. Halpern, BS, C Boettiger, MC Dietze, JA Gephart, P Gonzalez, NB Grimm, PM Groffan, J Gurevitch, SE Hobbie, KJ Komatsu, KJ Kroeker, HJ Lahr, D Lodge, CJ Lortie, JSS Lowndes, F Micheli, HP Possingham, MH Ruckelshaus, C Scarborough, CL Wood GC Wu and NCEAS Future of Synthesis Summit Participants (including **KE Norman**). 2023. Priorities for synthesis in ecology and environmental science. *Ecosphere* 14 (1): e4342. *Contribution: conceptual development, writing*

9. Lapeyrolerie, M, MS Chapman, **KE Norman**, C Boettiger. 2022. Deep Reinforcement Learning for Conservation Decisions. *Methods in Ecology and Evolution* 00:1–14.

Contribution: writing

10. Li, D, S Record, ER Sokol, ME Bitters, MY Chen, YA Chung, MR Helmus, R Jaimes, L Jansen, MA Jarzyna, MG Just, JM LaMontagne, B Melbourne, W Moss, **KE Norman**, S Parker, N Robinson, B Seyednasrollah, C Smith, S Spaulding, T Surasinghe, S Thomsen, P Zarnetske. 2022. Tidy NEON organismal data for biodiversity research. *Ecosphere* 13 (7): e4141 *Contribution: conceptual development, analysis, writing*

11. Jarzyna, MA., **KE Norman**, JM LaMontagne, MR Helmus, D Li, SM Parker, M Perez Rocha, S Record, ER Sokol, PL Zarnetske, and TD Surasinghe. 2022. Ecosystem stability is related to animal diversity dynamics at a continental scale. *Ecosphere* 13 (3): e3970. *Contribution: conceptual development, analysis, writing*

12. Nagy, RC, JK Balch, EK Bissell, ME Cattau, NF Glenn, BS Halpern, N Ilangakoon, B Johnson, MB Joseph, S Marconi, C O'Riordan, J Sanovia, TL Swetnam, WR Travis, LA Wasse, PL Zarnetske and 2019 NEON Science Summit Participants (including **KE Norman**; 118 authors). 2021. Harnessing the NEON data revolution to advance open environmental science with a diverse and data-capable community. *Ecosphere* 12 (12): e03833. *Contribution: conceptual development*

13. **Norman, KE**, S Chamberlain, and C Boettiger. 2020. Taxadb: A High-Performance Local Taxonomic Database Interface. *Methods in Ecology and Evolution* 11 (9): 1153–9. *Contribution: conceptual development, software development, writing*
14. **Norman, KE** & EP White. 2019. *Preprint.* Implications of data type for biodiversity prioritization. *bioRxiv.* : https://doi.org/10.1101/685735 *Contribution: conceptual development, analysis, writing*

SOFTWARE

Taxadb R Package (https://github.com/ropensci/taxadb)
BiodiversityObservationNetwork.jl Julia package
(https://github.com/EcoJulia/BiodiversityObservationNetworks.jl)

GRANTS

BIOS² Postdoctoral Fellowship for Persistence 2022-2023
Project: Large-scale ecosystem modeling for biodiversity monitoring, $35,000
Department of Energy Computational Science Graduate Fellowship 2017-2021
Project: Development of multi-taxa joint species distribution models, $150,000
National Science Foundation Graduate Fellowship 2016 (deferred) 2016
Project: Development of multi-taxa joint species distribution models $96,000
NSF NRT Fellowship, Data Science for the 21st Century, $20,000 2016-2017
Undergraduate Research and Creative Opportunities Grant 2014
Project: Climate change impacts on the Uinta Ground Squirrel, $2,000

Undergraduate Research Fellowship, $4000 2012-2016
Quinney Scholar Fellowship, $16,000 2012–2016
Utah State University Presidential Scholar, $12,000 2012–2016
State of Utah Regents Scholar, $6,000 2012–2014

AWARDS

Utah State University College Honors 2016
Outstanding Statistics Undergraduate 2016

TEACHING EXPERIENCE

Teaching Assistant
Reproducible and Collaborative Data Science (ESPM 288) 2017
Led weekly lab sessions, developed teaching resources for a class with varied coding background

Python Tutor
Self Employed (Utah State University) 2014-2016
Developed exercises for teaching basic to intermediate Python concepts

Training
Professional Preparation: Teaching in Environmental Science, Policy, and Management, Semester-long course 2016

SEMINARS & CONFERENCE PRESENTATIONS

Invited Seminars
"Synthesis approaches to assessing biodiversity change: yesterday and tomorrow's data" 2023
Department of Biology, University of Montreal

Oakridge National Lab 2018

Invited Symposia
"Evaluating the evidence of widespread maintenance of functional diversity in vertebrate communities" 2022
Functional Traits Across Scales
Unifying Ecology Across Scales Gordon Research Seminar

"A computational approach to biodiversity change" 2021
Computational Science Graduate Fellowship Program Review

"Ecosystem stability is related to animal diversity dynamics at a continental scale" 2021
Leveraging FAIR data to discover new connections in ecology Symposium
Ecological Society of America Meeting

Contributed Talks
KE Norman, P. de Valpine, and C Boettiger, "Evaluating the evidence of widespread maintenance of functional diversity in vertebrate communities", Ecological Society of America, Montréal, CA, August 2022.
KE Norman and C Boettiger, "Global functional diversity trends, a lens for detecting biodiversity change", Ecological Society of America, Salt Lake City UT, August 2020.
KE Norman and L Aubry, "Demographic Consequences of Climate Change in a Hibernator, the Uinta Ground Squirrel", Utah State Student Research Symposium, Utah State University, April 2015.
KE Norman and S Null, "Modeling Streamflow in the Wasatch Mountain Region with Climate Change", iUtah Cohort Session, Salt Lake City, August 2013.

Contributed Posters
KE Norman and A Boyer, "Measuring biodiversity change: does function follow richness?", International Biogeography Society Conference, January 2019.
KE Norman and E White, "Biodiversity Prioritization: A comparison of data types", Gordon Research Conference: Unifying Ecology Across Scales, University of New England, July 2016.
KE Norman and L Aubry, "Demographic Consequences of Climate Change in the Uinta Ground Squirrel", Research on Capitol Hill, Salt Lake City, January 2016.
KE Norman and E White, "Biodiversity Prioritization: A comparison of data types", Ecological Society of America, Baltimore, August 2015.
KE Norman and E White, "Biodiversity Prioritization: A comparison of data types", National Conference of Undergraduate Research, Spokane, April 2015.

RESEARCH POSITIONS

Research Fellow, Oakridge National Lab, PI: Dr. Alison Boyer 2018
Synthesized and standardized functional trait databases, developed a cloud-based workflow for calculating functional diversity null models.

Botanist, US Forest Service, PI: Mike Duncan 2016
Established long-term range land quality monitoring system, completed ground-truthing for development of a state-wide vegetation map.

Undergraduate Research Fellow, Utah State University, PI: Dr. Ethan White 2014-2016
Created biodiversity maps of bird species in North America using PostgreSQL and Python programming language, code found at www.github.com/weecology/diversity-conservation

Undergraduate Research Fellow, Utah State University, PI: Dr. Lise Aubry 2014-2016

Performed surveys of Uinta Ground Squirrel populations**,** assessed demography using Capture-Mark-Recapture Robust Design model in RMark

DAAD Rise Research Intern, University of Göttingen, PI: Dr. Benjamin Saefken 2014
Developed model to predict forest biomass from LiDAR data using mixed effects and nonparametric modeling approaches

PROFESSIONAL SERVICE

University

ESPM Student Grant Review Panel 2017
Vice President, USU Chapter, Society for Range Management, 2015-2016
Wildland Dept. Rep., Natural Resources Student Council, 2013-2016
Founding Member, Ecology Club, 2014

Peer Review

Nature Biodiversity Reviews, Conservation Biology, Plant Diversity, Proceedings of the Royal Society B, ROpenSci Package Review

External

Society for Open, Reliable, and Transparent Ecology and Evolutionary, 2022-2023
Awards Committee Co-Chair
National Ecological Observation Network Technical Working Group, 2022-2023
Beetles and Forecasting Working Groups
Expanding Your Horizons Network, 2016 – 2020
Organizational Committee Chair

PROFESSIONAL SOCIETIES, WORKING GROUPS, WORKSHOPS

Working Groups

BON in the Box, GEO BON Initiative 2022 -2023
Identifying priority sampling locations for local food webs in Canada, BIOS^2 2021-Present
Ecological Forecasting Initiative NEON Forecasting Challenge Planning 2020-Present
Tidy NEON organismal data, pipeline and application 2019-2021

Society Membership

Ecological Society of America, International Biogeography Society

Meetings Attended

Ecological Society of America 2011, 2020-2022
Gordon Research Conference: Unifying Ecology Across Scales 2016, 2022
International Biogeography 2019
Society for Conservation Biology, California 2017

Training & Workshops

Future of Synthesis in Ecology Virtual Workshop	2021
NEON Science Summit	2019
Data Science for the 21st Century NSF Research Traineeship	2016-2018