

Emily Beasley
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Department de Sciences Biologiques
Université de Montréal

EMPLOYMENT

August 2023–Present, Université de Montréal
Postdoctoral fellow

EDUCATION

Aug. 2018–May 2023, University of Vermont
Ph.D. Biology
Advisor: Nicholas Gotelli

- Defense date: 8 March 2023
- Graduation date: 21 May 2023
- QuEST Trainee
- Vertebrate Collections Manager: Zaddock Thompson Natural History Collections

Jan. 2016–Dec. 2017, Missouri State University
M.S. Biology
Advisor: Sean Maher

- Thesis: Island biogeography of small mammals and associated ectoparasites in the Ozark glades

Aug. 2011-May 2015, Missouri State University
B.S. Wildlife Biology (Summa cum Laude, Honors)

PUBLICATIONS

Beasley, E.M. Host traits explain more variation in occupancy of generalists than specialists due to strong host preferences among generalists. *Journal of Parasitology* 110(6): 577–589.

Beasley, E.M. 2024. Ecologically informed priors improve Bayesian model estimates of species richness and occupancy for undetected species. *Ecological Applications* 34(2):e2941.

Beasley, E.M., Nelson, K.M., Slate, D., Gilbert, A., Pogmore, F., Chipman, R.B., and Davis, A.J. 2024. The impact of oral rabies vaccination targeting raccoons across a development intensity gradient in Burlington, Vermont, USA, 2015-2017. *Journal of Wildlife Diseases* 60:1–13.

Beasley, E.M., Aristizábal, N., Bueno, E.M., & White, E.R. 2022. The spore of the beans: Spatially explicit models predict coffee rust spread in fragmented landscapes. *Landscape Ecology* 37: 2165-2178. <https://doi.org/10.1007/s10980-022-01473-1>

Beasley, E.M. & Maher, S.P. 2019. Small mammal community composition varies among Ozark glades. *Journal of Mammalogy* 100:1774–1782.

Soucy, C.P., Banville, F., Beasley, E.M., Lefebvre, B., Poisot, T., & Cameron, C.B. Modeling the palaeoecological trophic network of the Lower Ordovician Fezouata Shale (Morocco) fossil fauna. In review at *Proceedings of the Royal Society B*.

WORKING GROUPS

2024 North American Raccoon Rabies Working Group (Organizer). Funded by the Wellcome Trust and falls under the mandate of the North American Rabies Management Plan.

PRESENTATIONS

2024 American Society of Mammalogists Annual Meeting. Seroprevalence rates and landscape barriers influence rabies dynamics in simulated urban landscapes. Talk.

2023 American Society of Mammalogists Annual Meeting. Ectoparasite life history traits influence occupancy patterns at varying organizational scales. Talk.

2022 American Society of Mammalogists Annual Meeting. The impact of oral rabies vaccination targeting raccoons across a development intensity gradient in Burlington, Vermont, USA, 2015-2017. Talk.

2021 The Wildlife Society Annual Meeting (Virtual). Vaccine baiting strategy influences rabies seroprevalence rates in urban raccoon populations. Talk.

2021 Ecological Society of America Annual Meeting (Virtual). Dealing with nondetection: ecologically informed priors improve Bayesian model estimates of missing species. Talk.

2021 American Society of Mammalogists Annual Meeting (Virtual). Dealing with nondetection: ecologically informed priors improve Bayesian model estimates of missing species. Talk.

2020 Ecological Society of America Annual Meeting (Virtual). The spore of the beans: Using spatially explicit methods to model the spread of coffee rust in simulated landscapes. Talk.

2019 American Society of Mammalogists Annual Meeting. Characterizing Small Mammal Communities in an Agriculture/Forest Landscape. Lightning talk.

2019 Northeast Natural History Conference. Responses of Small Mammal Communities to Local and Landscape Factors in a Forest/Agriculture Mosaic. Poster.

- 2018 American Society of Mammalogists Annual Meeting. Applying island biogeography to small mammals while accounting for imperfect detection. Talk.

PROFESSIONAL DEVELOPMENT

- 2018 Holistic Specimen Collection Workshop: Small Mammal Parasite Sampling, Preservation, and Identification. American Society of Mammalogists Annual Meeting.

TEACHING

August 2019-Present, University of Vermont

Instructor

- Introduction to R for Biologists. Teach students the programming language R through live in-class coding, weekly assignments, and a semester project. Students use R as a template for learning foundational skills in computer programming, such as directory structures, data structures, and writing and executing functions, that can be applied to other programming languages such as Python or Julia. Students also learn the principles and skills necessary for managing and analyzing data, including but not limited to cleaning data, planning and executing an analysis, and data visualization. Students apply these skills to existing datasets from the realms of ecology and public health.

Teaching Assistant

- Computational biology. Graduate-level course teaching students a variety of computational tools to make analysis, writing, and presentations more efficient and attractive, including R, plain-text editors, markdown, github, regular expressions, and shell commands. Additionally, students learn how to use probability distributions; simulate data; recognize, use, and analyze 4 archetypal experimental designs for biologists, and apply them to real and simulated data; and create publication quality graphs with the ggplot2() package in R. TA duties involve running the lab component of the course, which begins with a brief overview of the week's programming assignment, introduces tips and strategies for completion, and providing troubleshooting help.
- Mammalogy. Provide students with an overview of mammals, including important adaptations, morphology, and taxonomy of major orders and families. Introduce students to various techniques used for studying mammals, including field methods, curation skills, and the use of software such as R and ARBIMON. Reinforce essential scientific skills including scientific writing, data analysis, and communication via a series of data labs.
- Natural History Internship. Assist students in projects with the intent to develop the range of skills and tasks associated with natural history collection curation, management, and outreach. Invite seminar speakers whose careers and research showcase the value of

natural history collections to scientific community, policy-makers, and the public. Aid students in developing skills in independent learning and project management.

Jan. 2016-Dec. 2017, Missouri State University

Teaching Assistant

- Introductory Biology II. Present introductory biology lab material in a clear and understandable manner. Teach essential scientific and writing skills through class experiments and lab reports.
- Advising. Provide information to high school students and parents regarding Missouri State undergraduate programs and resources in general and Biology Department programs specifically. Give tours of department facilities. Represent the department in an informative, professional manner.
- Mammalogy. Organize field trips, including transporting field gear such as traps, bait, etc. Instruct students on field methods for trapping and collecting data on small mammals in southwest Missouri.

OTHER EMPLOYMENT

Feb. 2018-July 2018, Nemours Wildlife Foundation

Wildlife Technician

- Collected data on small carnivore/mesocarnivore use of managed coastal impoundments in South Carolina. Collected scat for use in population genetic analysis. Identified mammalian tracks to species. Collected camera trap data for occupancy and abundance estimates.

May 2015-Aug. 2015, Missouri State University

Field Biologist

- Tracked alligator snapping turtles using radiotelemetry. Collected environmental data. Operated small-engine boat in adverse weather conditions.

SKILLS

- *Computer Skills:* R, Git, BUGS/JAGS, Julia, Python, ArcGIS
- *Other Skills:* Small mammal trapping/handling, ectoparasite identification, small mammal collection curation and specimen preparation, camera trap operation, radiotelemetry

EXTRAMURAL GRANTS

- American Society of Mammalogists Grant-in-Aid of Research (2020-2021, 1500 USD)
- Theodore Roosevelt Memorial Fund (Apr. 2019–Apr. 2020, 750 USD)

AWARDS

- American Society of Mammalogists Early Career Travel Award (2024)
- University of Vermont GTA of the Year (2023)
- American Society of Mammalogists Student Travel Award (2022)
- American Society of Mammalogists Annie M. Alexander Award (2018)

- Central Plains Society of Mammalogists Best Talk by a Master's Student (2017)

SERVICE

- Open Data Hours Peer Mentoring Group: Organizer and mentor (2023-Present)
- American Society of Mammalogists Inclusion, Diversity, Equity, and Anti-Bias Committee member (2022–Present)

Manuscripts Reviewed:

2024 *PLOS Computational Biology*

2022 *Ecology*

2020 *Agriculture, Ecosystems, and Environment; Ecological Monographs*

2019 *Theoretical Ecology*

MEMBERSHIPS

- Quebec Center for Biodiversity Studies
- American Society of Mammalogists
- Ecological Society of America
- American Society of Parasitologists
- The Wildlife Society (former member)