

Emily Beasley  
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Department of Biology  
University of Vermont

## EDUCATION

**Aug. 2018–Present, University of Vermont**

**Ph.D. Biology**

**Advisor: Nicholas Gotelli**

- Defense date: 8 March 2023
- QuEST Trainee
- Vertebrate Collections Manager: Zadock 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., 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*, <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.

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

Beasley, E.M. Ecologically informed priors improve Bayesian model estimates of species richness and occupancy for undetected species. In revision at *Ecological Applications*.

## PRESENTATIONS

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.
- 2017 Central Plains Society of Mammalogists Annual Meeting. Island biogeography of small mammals in the Ozark glades. Talk.
- 2017 American Society of Mammalogists Annual Meeting. Island biogeography of small mammals in the Ozark glades. Poster.

## **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.

### **Jan. 2015-Apr. 2015, Rockhampton Zoo, Rockhampton, Australia**

#### *Student Intern*

- Research: Captive koala stress. Collected baseline behavioral data for comparisons to different housing conditions. Collected feces for analysis of glucocorticoid concentrations using GC-MS machine.
- Animal Husbandry. Cared for various exotic animals, such as dingoes, goannas, koalas, emus, etc. under the supervision of zoo staff.

### **SKILLS**

- *Computer Skills:* R, OpenBUGS/JAGS, 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**

- 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)
- American Society of Mammalogists Student Travel Award (2017)
- Missouri State General Biology Scholarship (2017)

### **SERVICE**

- American Society of Mammalogists Human Diversity Committee Member (2022–Present)

### Manuscripts Reviewed:

2022 *Ecology*

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

2019 *Theoretical Ecology*

**MEMBERSHIPS**

- American Society of Mammalogists
- Ecological Society of America
- The Wildlife Society