

RYAN B. STEPHENS

Wildlife Ecologist

| Curriculum Vitae |

University of New Hampshire
56 College Road
Durham, NH 03824

🖥️ www.ryanbstephens.com

✉️ rbd8@wildcats.unh.edu

🐦 @ryanbstephens

☎️ (715) 412-2281

EMPHASIS AREA

By exploring the linkages among small mammals, mycorrhizal fungi, and trees, my research addresses questions at the nexus of animal ecology, fungal ecology, and forestry to better understand how forests function and to best inform wildlife management practices. I study how small mammals use food and habitat resources and how resource pulses, competitive interactions, and changes in community composition modulate their functional role in an ecosystem. I am dedicated to teaching and mentoring the next generation of wildlife researchers and natural resource professionals.

EDUCATION

- Ph.D.**, University of New Hampshire, Durham, NH 2012 – 2018
Natural Resources and the Environment | Advisor: Dr. Rebecca Rowe
Small mammal community dynamics and the dispersal of mycorrhizal fungi
- M.S.**, University of Wisconsin Stevens Point, Stevens Point, WI 2010 – 2012
Natural Resources - Emphasis in Wildlife Ecology | Advisor: Dr. Eric Anderson
Small mammal assemblages in natural plant communities of Wisconsin
- B.S.**, University of Wisconsin Stevens Point, Stevens Point, WI 2005 – 2009
Double Major in Wildlife Ecology (Research and Management) and Biology
Minor in Museum Methods | GPA: 3.99
-

PROFESSIONAL EXPERIENCE

- 2018 – Present **Postdoctoral Research Associate** – Linking small mammals and mycorrhizal fungi to forest regeneration; University of New Hampshire, Durham, NH | Advisors: Drs. Rebecca Rowe and Serita Frey
- 2014 – Present **Yale Peabody Museum of Natural History Curatorial Affiliate** – Appointed by a vote of the Board of Curators, this honorary title is given to individuals who give some of their time and expertise to the Division. I have prepared a collection of over 1,000 specimens for the Yale Peabody Museum of Natural History.
- 2014 – 2017 **Graduate Teaching Assistant** – Taught labs for Studio Soils (fall semesters 2014 – 2016), Mammalogy (spring semester 2016), and Ornithology (spring Semester 2017); University of New Hampshire, Durham, NH
- 2012 – 2013 **Graduate Research Assistant** – Studied factors influencing small mammal community dynamics; University of New Hampshire, Durham, NH
- 2011 – 2012 **Graduate Teaching Assistant** – Taught labs for Mammalogy (spring semester 2012) and Ecological Basis for Natural Resources Management (spring semester 2012); University of Wisconsin Stevens Point, Stevens Point, WI

- 2010 – 2012 **Independent contractor for the Wisconsin DNR** – Wrote guidance documents for six small mammal species listed as Species of Greatest Conservation Need. Conducted field inventories of small mammals during the summer of 2011 on State properties in the Driftless Region along with Mead and McMillan Wildlife Areas, Wisconsin.
- 2008 **Smithsonian Research Training Program** – Smithsonian Institution Summer Internship, Washington, D.C. | Advisor: Dr. Neal Woodman
- 2006 – 2012 **Assistant Curator of Mammalogy and Ornithology** – Prepared birds and mammals specimens, maintained a dermestid colony, and prepared and packaged loans; Museum of Natural History, University of Wisconsin Stevens Point, Stevens Point, WI

PUBLICATIONS

Peer-Reviewed Publications

* denotes undergraduate mentee

- Stephens, R. B.** and R. J. Rowe. in review. The underappreciated role of generalists in rodent-mycorrhizal dispersal networks. *Ecology*
- Tisell, H. B., A. L. Deggrassi, **R. B. Stephens**, and R. J. Rowe. in review. Influence of field technique, density, and sex on home range and overlap of the southern red-backed vole (*Myodes gapperi*). *Canadian Journal of Zoology*
- Stephens, R. B.**, E. A. Hobbie, T. D. Lee, and R. J. Rowe. in review. Pulsed resource availability changes dietary niche breadth and partitioning between generalist rodent consumers. *Journal of Animal Ecology*
- Stephens, R. B.**, C. B. Burke*, N. Woodman, L. B. Poland*, and R. J. Rowe. 2018. Skeletal injuries in small mammals: a multispecies assessment of prevalence and location. *Journal of Mammalogy* 99:486-497.
- Stephens, R. B.**, T. J. Remick*, M. J. Ducey, and R. J. Rowe. 2017. Drivers of truffle biomass, community composition, and richness among forest types in the northeastern US. *Fungal Ecology* 29:30-41.
- Stephens, R. B.**, D. J. Hocking, M. Yamasaki, and R. J. Rowe. 2017. Synchrony in small mammal community dynamics across a forested landscape. *Ecography* 40: 1198–1209. (Cover page)
- Castellano, M. A. and **R. B. Stephens**. 2017. *Elaphomyces* species (*Elaphomycetaceae*, *Eurotiales*) from Bartlett Experimental Forest, New Hampshire, USA. *IMA Fungus* 8:49-63.
- Stephens, R. B.**, K. H. Karau*, C. J. Yahnke, S. R. Wendt*, and R. J. Rowe. 2015. Dead mice can grow – variation of standard external mammal measurements from live and three postmortem body states. *Journal of Mammalogy* 96:185-193.
- Stephens, R. B.** and E. M. Anderson. 2014. Effects of trap type on small mammal richness, diversity, and mortality. *Wildlife Society Bulletin* 38:619-627.
- Stephens, R. B.** and E. M. Anderson. 2014. Habitat associations and assemblages of small mammals in natural plant communities of Wisconsin. *Journal of Mammalogy* 95:404-420.
- Stephens, R. B.**, E. M. Anderson, S. R. Wendt*, and J. K. Meece. 2014. Field identification of *Peromyscus leucopus noveboracensis* and *P. maniculatus gracilis* in Wisconsin from external measurements. *The American Midland Naturalist* 171:139-146.
- Woodman, N. and **R. B. Stephens**. 2010. At the foot of the shrew: manus morphology distinguishes closely-related *Cryptotis goodwini* and *Cryptotis griseoventris* (Mammalia, Soricidae) in Central America. *Biological Journal of the Linnean Society* 99:118-134.

OTHER PUBLICATIONS

Wisconsin Department of Natural Resources Guidance Documents (Three additional documents pending publication)

Wisconsin woodland vole species guidance. 2013. Bureau of Natural Heritage Conservation, Wisconsin Department of Natural Resources, Madison, Wisconsin. [PUB-ER-691](#).

Wisconsin woodland jumping mouse species guidance. 2013. Bureau of Natural Heritage Conservation, Wisconsin Department of Natural Resources, Madison, Wisconsin. [PUB-ER-690](#).

Wisconsin northern flying squirrel species guidance. 2012. Bureau of Endangered Resources, Wisconsin Department of Natural Resources, Madison, Wisconsin. [PUB-ER-678](#).

PRESENTATIONS

Invited Seminars

- 2019 **Small mammals, truffles, and the dispersal of mycorrhizal fungi**
Aldo Leopold Audubon Society, Stevens Point, WI | *Scheduled May 15, 2019*
- 2019 **The importance of small mammals and mycorrhizal fungi in forest management**
New England Society of American Foresters Meeting: session on forest wildlife habitat management, Burlington, VT | *Scheduled March 27-29, 2019*
- 2019 **Small mammals, truffles, and trees: linking above- and below-ground multitrophic forest interactions**; Department of Wildlife, Fisheries and Conservation Biology Seminar Series; University of Maine, Orono, ME | *Scheduled February 25, 2019*
- 2018 **Small mammals, truffles, and the dispersal of mycorrhizal fungi**
Department of Liberal Arts and Sciences Seminar; SUNY – Delhi, Delhi, NY
- 2017 **Consumer dynamics and mycophagy: small mammals as dispersers of mycorrhizal fungi**
Department of Plant Pathology Seminar Series; University of Florida, Gainesville, FL
- 2016 **Truffles: the mycorrhizal hitchhiker**
Cascade Mycological Society, Eugene, OR
- 2016 **Truffles: the mycorrhizal hitchhiker**
North American Truffling Society, Corvallis, OR

Professional Meetings

* denotes undergraduate mentee

- Stephens, R. B.**, and R. J. Rowe. 2018. Rodent–mycorrhizal dispersal networks and the underappreciated role of generalists. 97th Annual Meeting of the American Society of Mammalogists, Manhattan, KS (talk)
- Stephens, R. B.**, and R. J. Rowe. 2018. Rodent–mycorrhizal dispersal networks and the underappreciated role of generalists. Northeast Natural History Conference, Burlington, VT. (talk)
- Stephens, R. B.**, Erik A. Hobbie, and R. J. Rowe. 2017. Quantifying temporal and spatial variability in fungivory by eastern chipmunks (*Tamias stratus*). 85th Meeting of the Mycological Society of America, Athens, GA. (talk)
- Stephens, R. B.**, Erik A. Hobbie, and R. J. Rowe. 2017. Pulsed resource availability changes dietary niche breadth and partitioning between two generalist rodent consumers. 97th Annual Meeting of the American Society of Mammalogists, Moscow, ID. (talk)
- Stephens, R. B.**, T. J. Remick*, M. J. Ducey, and R. J. Rowe. 2016. Biomass and richness of truffle-producing fungi from field surveys and eastern chipmunk (*Tamias striatus*) scat. MassMyco Conference, Amherst, MA. (talk)
- Stephens, R. B.**, T. J. Remick*, M. J. Ducey, and R. J. Rowe. 2016. Richness and biomass of truffle-producing fungi in the northeastern US from field surveys and eastern chipmunk (*Tamias striatus*) scat. 84th Meeting of the Mycological Society of America, Berkeley, CA. (talk)

- Burke*, C. B., **R. B. Stephens**, N. Woodman, and R. J. Rowe. 2016. Skeletal injuries in small mammals: a multi species assessment of injury type and prevalence. 96th Annual Meeting of the American Society of Mammalogists, Minneapolis, MN. (poster)
- Stephens, R. B.** and R. J. Rowe. 2016. Quantifying variation in fungivory by eastern chipmunks (*Tamias striatus*). 96th Annual Meeting of the American Society of Mammalogists, Minneapolis, MN. (talk)
- Stephens, R. B.**, D. J. Hocking, M. Yamasaki, and R. J. Rowe. 2014. Impacts of forest structure and habitat type on small mammal communities in the White Mountain National Forest. 70th Annual Northeast Association of Fish & Wildlife Agencies Conference, Portland, ME. (poster)
- Stephens, R. B.** and E. M. Anderson. 2013. Habitat associations and assemblages of small mammals in natural plant communities of Wisconsin. 93rd Annual Meeting of the American Society of Mammalogists, Philadelphia, PA. (talk)
- Stephens, R. B.** and E. M. Anderson. 2012. Effects of trap type on small mammal richness and diversity. 92nd Annual Meeting of the American Society of Mammalogists, Reno, NV. (talk)
- Stephens, R. B.** and E. M. Anderson. 2012. Trap efficacy and mortality of Sherman and pitfall traps for Midwestern small mammals. The 2012 Wisconsin chapter of The Wildlife Society Winter Meeting, Rothschild, WI. (talk)
- Stephens, R. B.** and E. M. Anderson. 2011. Comparison of small mammal trap bias in Wisconsin. Joint meeting of the SE and SW chapters of the Wisconsin Society of American Forester and the Wisconsin chapter of The Wildlife Society, Wisconsin Dells, WI. (poster)
- Stephens, R. B.** and E. M. Anderson. 2010. Small mammal community and natural community association in Wisconsin. The 2010 Wisconsin chapter of The Wildlife Society Winter Meeting, Rothschild, WI. (poster)
- Stephens, R. B.** and N. Woodman. 2009. Differentiation of the Broad-clawed Shrews (Soricomorpha, Soricidae), *Cryptotis griseoventris* and *C. goodwini*, using skeletal morphology of the fore foot. 89th Annual Meeting of the American Society of Mammalogists, Fairbanks, AK (poster).
- Stephens, R. B.** and N. Woodman. 2008. Differentiation of broad-clawed shrews, *Cryptotis griseoventris* and *C. goodwini*, based on bone forefoot morphology. Research Training Program Presentation, Washington D.C. (poster and talk)

Other Presentations

- | | |
|------|--|
| 2017 | Small mammals: the forest pollinators
UNH Three Minute Thesis, Durham, NH (talk) |
| 2016 | Chipmunks, truffles, and trees
UNH Natural Resources and the Environment Seminar Series, Durham, NH (talk) |
| 2011 | GIS-based habitat models for small mammal species with information needs in Wisconsin: arctic shrew case study
Chancellor Patterson's Inauguration ceremony, Stevens Point, Wisconsin (poster) |
| 2010 | Small mammal and natural plant communities in Wisconsin
UWSP Student Chapter of The Wildlife Society, Stevens Point, Wisconsin (talk) |

GRANTS AND FELLOWSHIPS

Pending

- | | |
|------|--|
| 2018 | NIFA Post-doctoral Fellowship. Linking small mammals and mycorrhizal fungi to forest regeneration, \$157,244 (decision expected early 2019) |
|------|--|

Awarded

2018	American Society of Mammalogists: Student Travel Award, \$400
2018	University of New Hampshire: NRESS Student Support Fund, \$500
2017	University of New Hampshire: Dissertation Year Fellowship, \$20,060
2017	Mycological Society of America: Forest Fungal Ecology Research Award, \$1,250
2017	Mycological Society of America: Mentor Student Travel Award, \$750
2016	University of New Hampshire: NRESS Student Support Fund, \$1,000
2016	University of New Hampshire: Graduate School Travel Grant, \$200
2016	University of New Hampshire: Farrington Fund Travel Grant, \$1,732
2016	University of New Hampshire: Summer Teaching Assistant Fellowship, \$3,150
2015	University of New Hampshire: NRESS Student Support Fund, \$1,000
2015	American Society of Mammalogists: Grants in Aid of Research, \$1,500
2014	North American Truffling Society: Pavelek Memorial Scholarship, \$1,500
2014	University of New Hampshire: NRESS Student Support Fund, \$1,000
2014	University of New Hampshire: Farrington Fund Travel Grant, \$450
2011	University of Wisconsin – Stevens Point: Student Research Grant, \$500
2010	Wisconsin Department of Natural Resources, \$25,211
2010	Prairie Biotics Research Inc. Grant, \$1,000
2009	Undergraduate Research Initiative: University of Wisconsin Stevens Point, \$1,550
2009	Doug Stevens Wildlife Grant: University of Wisconsin Stevens Point, \$2,400

Not Awarded

2017	NSF Preliminary Proposal. Collaborative proposal: Interactions among mycorrhizal fungi, small mammals, and trees affect ecosystem functioning in a temperate forest E. A. Hobbie, R. J. Rowe, A. P. Ouimette, T. R. Horton, R. B. Stephens , J. Craine, D. L. Phillips
2016	Northeastern States Research Cooperative. Small mammals, truffles, and trees: the importance of multitrophic biodiversity to ecological functioning, \$61,297 R. J. Rowe, E. A. Hobbie, A. P. Ouimette, R. B. Stephens
2015	Northeastern States Research Cooperative. Mycophagy and consumer competition: small mammals as ecosystem engineers of ectomycorrhizal fungal diversity, \$92,306 R. J. Rowe, E. A. Hobbie, T. R. Horton, R. B. Stephens
2015	NSF Doctoral Dissertation Improvement Grant Program. Multitrophic interactions and ecosystem function: small mammals as engineers of mycorrhizal fungal communities, \$19,070 R. B. Stephens , R.J. Rowe
2013	Northeastern States Research Cooperative. Impacts of forest management and biotic interactions on small mammal communities in the White Mountain National Forest, \$103,344 R. J. Rowe, M. Yamasaki, R. B. Stephens

HONORS AND AWARDS

2017	Robert and Patricia Switzer Foundation - Finalist
2017	UNH Graduate Research Conference - Best NRESS PhD Oral Presentation
2017	University of New Hampshire Three Minute Thesis - Third Place
2016	Martha & Theodore Frizzell Scholarship

2014	70th Annual Northeast Association of Fish & Wildlife Agencies Conference - Best Student Poster Award
2012	Wisconsin Chapter of the Wildlife Society Graduate Student Aldo Leopold Memorial Scholarship
2012	Wisconsin Chapter of the Wildlife Society - Best Student Presentation Award
2012	Jack Massopust Memorial Scholarship
2012	College of Natural Resources Outstanding Graduate Research Student
2012	UWSP Outstanding Graduate Research Student
2012	UWSP Merit Scholarship
2009	Wisconsin Chapter of the Wildlife Society Undergraduate Student Aldo Leopold Memorial Scholarship
2009	Aldo Leopold Audubon Society Scholarship
2009	Arthur W. Mueller Jr. Scholarship
2009	Chancellor's Leadership Award
2009	White-Tails Unlimited Marshfield Chapter Scholarship
2008	Eric Munson Memorial Award
2008	White-Tails Unlimited Marshfield Chapter Scholarship
2007	Almond Bancroft Rod and Gun Club Scholarship
2006	Almond Bancroft Rod and Gun Club Scholarship
2005	Almond Bancroft Rod and Gun Club Scholarship

MEMBERSHIPS IN PROFESSIONAL SOCIETIES

2016 - Present	Mycological Society of America
2014 - Present	North American Truffling Society
2011 - Present	American Society of Mammalogists

TEACHING AND MENTORING EXPERIENCE

Graduate Teaching Assistant

2017	Ornithology (ZOOL 542) University of New Hampshire, Spring Semester Designed and taught labs
2016	Studio Soils (NR 501) University of New Hampshire, Fall Semester Taught soil labs, graded papers
2016	Mammalogy (NR 712/812) University of New Hampshire, Spring Semester Designed and taught labs
2015	Studio Soils (NR 501) University of New Hampshire, Fall Semester Taught soil labs, graded papers
2014	Studio Soils (NR 501) University of New Hampshire, Fall Semester Taught soil labs, graded papers
2012	Ecological Basis for Natural Resources Management (NR151) Associate lecturer position at University of Wisconsin Stevens Point, College of Natural Resources, Spring Semester Lectured, prepared tests, and graded papers
2011	Mammalogy (Bio 378) University of Wisconsin Stevens Point, Biology Department, Spring Semester Specimen preparation labs and topical lectures

Guest Lectures

- 2016 - 2018 **Inventory and Monitoring of Ecological Communities (NR 740)**
Co-lead module on techniques and methods for studying small mammals including study design considerations, live trapping demonstration, marking techniques, and study skin preparation; University of New Hampshire, Natural Resources and the Environment, Fall Semesters
- 2016 **Soil Ecology (NR 706)**
Guest lecture on truffles and mycorrhizal fungi; University of New Hampshire, Natural Resources and the Environment, Fall Semester

Undergraduate Mentees

UNH Summer Undergraduate Research Fellowship (SURF), UNH Undergraduate Research Award (URA)

- 2017 - Present **Corina Danielson** - Factors influencing seed selection by small mammals in New England forests (SURF)
- 2017 - 2018 **Samm Stein-Azen** - Linking rodents to our roots (SURF)
- 2015 - 2016 **Lilly Poland** - Missing digits in shrews: insights into a secret life (URA)
- 2014 - 2016 **Chris Burke** - Skeletal injuries in small mammals: a multi species assessment of injury type and prevalence (URA)
- 2014 - 2015 **Rebecca Graves** - Effects of age, density, and seasonality on molt pattern in the mammal genus *Peromyscus* (Honor's Thesis 2015)
- 2014 - 2015 **Jonny Nowick** - Do diets of woodland jumping mice and southern red-backed voles differ across forest types? (Senior Project)
- 2013 - 2015 **Marissa Cyr** - Effects of small mammal density on diet breadth (SURF)
- 2013 - 2015 **Tyler Remick** - Truffle abundance and mycophagy by small mammals in northern New England forests (SURF and Honor's Thesis 2015)
- 2012 - 2015 **Andrew Uccello** - Variation in truffle consumption by *Myodes gapperi* between managed and unmanaged forests in northern New Hampshire (Senior Project)
- 2011 - 2012 **Krishun Karau** - Effects of researcher experience and animal disposition on measurement variation in *Mus musculus* (Senior Project)
- 2010 - 2012 **Sara Wendt** - Distinguishing *Peromyscus leucopus noveboracensis* and *P. maniculatus gracilis* using external field measurements in Wisconsin (Senior Project)

PROFESSIONAL SERVICE AND OUTREACH

Professional Service

- 2012 - Present **Referee/Reviewer**
American Midland Naturalist, Botany, Canadian Journal of Zoology, Ecological Applications, Journal of Mammalogy, Landscape Ecology, Mammal Research, Northeastern Naturalist, Oecologia, The Prairie Naturalist, Scientific Reports, Wildlife Society Bulletin & Zoologia
- 2017 - Present **Informatics Committee Member**
American Society of Mammalogists
- 2017 **Poster judge, UNH Graduate Research Conference**
University of New Hampshire, Durham, NH
- 2015 **Video posted to YouTube on how to repair bear damaged Sherman live traps**
<https://www.youtube.com/watch?v=awdX3g-xGKU>

- 2015 **One-day seminar on study skin preparation of mammals for Yale students**
Yale University, New Haven, CT
- 2011 **Two-day seminar on study skin preparation of bird and mammals for University of Wisconsin Parkside students and faculty**
University of Wisconsin Stevens Point, Stevens Point, WI

Educational Outreach

- 2018 **Linking Rodents to Our Roots** – Co-developed an outdoor education program with an undergraduate student that illustrates the importance of rodents and fungi to forest health. In collaboration with White Pine Programs, York, ME.
- 2017 **Elementary school visit** – Hands on demonstration of mammals of North America using museum specimens as part of National Parks Day at Acton Elementary School. Acton, ME
- 2014 **Environmental Literacy Program (Hubbard Brook Research Foundation)** – Participated in a program that provides teachers from local schools with the resources and training to bring science from Hubbard Brook and Bartlett Experimental Forests into their science education efforts. I worked with a high school science teacher from North Conway (near my dissertation study site) on ways to bring results from my research into her classroom.
- 2009 - 2012 **Annual UWSP Collections Crawl** – Collection (mammalogy and ornithology) tours and demonstrations at the Museum of Natural History to the general public at the University of Wisconsin Stevens Point, Stevens Point, WI.

Museum Collaborations

Museum specimens document the occurrence of species in space and time and are used by ecologists, morphologists, and conservation biologists among others. Since 2006 I have deposited over 5,000 mammal specimens and hundreds of truffle specimens in museum collections across the United States. I have also arranged exchanges for museum specimens with no data to build teaching collections at UWSP and UNH. Below is a list of museums that I have deposited specimens in.

Mammal specimens

- Museum of Southwestern Biology, Albuquerque, NM
- University of Wisconsin – Stevens Point Museum of Natural History, Stevens Point, WI
- National Museum of Natural History, Smithsonian Institution, Washington, D.C.
- Yale Peabody Museum of Natural History, New Haven, CT
- Natural History Museum of Utah, Salt Lake City, UT
- Monte L. Bean Life Science Museum, Provo, UT
- Harvard Museum of Comparative Zoology, Cambridge, MA
- University of Alaska Museum, Fairbanks, AK
- Oakland Museum of California, Oakland, CA

Truffle specimens

- Oregon State University Mycological Collection, Corvallis, OR
- University of Florida Herbarium, Gainesville, FL
- National Fungal Collection, Smithsonian Institution, Washington, D.C.

MEDIA

- 2018 **Chipmunks and truffles - a recipe for a healthy forest** (Northern Woodland Magazine)
<https://northernwoodlands.org/articles/article/chipmunks-truffles-healthy-forest>

2017 **5 new truffle species identified in New Hampshire** (Associated Press)
<https://www.apnews.com/3daeddec946a42abbec1f2b75a962afe>

2016 **Moles, shrews, mice and more: researchers focus in on New Hampshire's many small mammals** (New Hampshire Wildlife Journal Magazine)
<https://wildlife.state.nh.us/pubs/documents/samples/moles-shrews-mice.pdf>