

# MATTEO RIZZUTO

Ecosystem Ecology Lab  
Department of Biology  
Memorial University of  
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RESEARCH APPOINTMENTS	<b>PostDoctoral Associate, <i>Schmitz Lab</i></b> School of the Environment, Yale University, New Haven, CT, United States <b>Visiting Assistant in Research, <i>Schmitz Lab</i></b> School of the Environment, Yale University, New Haven, CT, United States <b>Research Assistant, <i>Pawar Lab</i></b> Imperial College London-Silwood Park, Ascot, UK <b>Research Assistant, <i>Tsaobis Baboon Project</i></b> Zoological Society of London, London, UK <b>Research Assistant, <i>Roe &amp; Red deer in Trentino &amp; Technology Project</i></b> Trento, Italy <b>Graduate Intern, <i>Piedmont Wolf Project</i></b> Maritime Alps Nature Park, Entraque (CN), Italy <b>Undergraduate Intern, <i>Ethology Lab</i></b> University of Turin, Turin, Italy	JUL. 2022–PRESENT FEB.–APR. 2019 JAN.–MAR. 2016 JUN.–OCT. 2015 JUN.–SEPT. 2013 JUN.–DEC. 2011 JUN. 2008–MAR. 2009
EDUCATION	<b>Ph.D., <i>Biology</i></b> Memorial University of Newfoundland and Labrador, St. John's, NL, Canada - Thesis: From elements to landscapes: the role of terrestrial consumers in ecosystem functioning - Supervisor: Dr. Shawn J. Leroux <b>Master of Research (Distinction), <i>Ecology, Evolution, and Conservation</i></b> Imperial College London—Silwood Park, Ascot, UK <b>Master of Science, <i>Evolution of Animal and Human Behaviour</i></b> University of Turin, Turin, Italy <b>Bachelor of Science (Honours), <i>Biology</i></b> University of Turin, Turin, Italy	2016–2021 2013–2014 2009–2012 2004–2009
PUBLICATIONS	Note: for papers where I am fourth author or later, I contributed to ideas, data collection, and writing. † stands for equal contribution. <i>Peer Reviewed</i> - Little, C.J. <sup>†</sup> , <b>Rizzuto, M.</b> <sup>†</sup> , Lühring, T.M., Monk, J.D., Nowicki, R.J., Paseka, R.E., Stegen, J.C., Symons, C.C., Taub, F.B., Yan, J.D.L. (2022) Movement with Meaning: Integrating Information into Meta-Ecology. <i>Oikos</i> . DOI: <a href="https://doi.org/10.1111/oik.08892">10.1111/oik.08892</a>	

- Balluffi-Fry, J., Leroux, S.J., Wiersma, Y.F., Richmond, I.C., Heckford, T.R., **Rizzuto, M.**, Kennah, J.L., Vander Wal, E. (2022) Integrating plant stoichiometry and feeding experiments: state-dependent forage choice and its implications on body mass. *Oecologia* **198**(3), 579–591. DOI: [10.1007/s00442-021-05069-5](https://doi.org/10.1007/s00442-021-05069-5)
- Richmond, I.C., Balluffi-Fry, J., Vander Wal, E., Leroux, S.J., **Rizzuto, M.**, Heckford, T.R., Kennah, J.L., Riefesel, G.R., Wiersma, Y.F. (2022) Individual snowshoe hares manage risk differently: integrating stoichiometric distribution models and foraging ecology. *Journal of Mammalogy* **103**(1), 196–208. DOI: [10.1093/jmammal/gyab130](https://doi.org/10.1093/jmammal/gyab130)
- Heckford, T.R., Leroux, S.J., Vander Wal, E., **Rizzuto, M.**, Balluffi-Fry, J., Richmond, I.C., Wiersma, Y.F. (2022) Spatially explicit correlates of plant functional traits inform landscape patterns of resource quality. *Landscape Ecology* **37**, 59–80. DOI: [10.1007/s10980-021-01334-3](https://doi.org/10.1007/s10980-021-01334-3)
- **Rizzuto, M.**, Leroux, S.J., Vander Wal, E., Richmond, I.C., Heckford, T.R., Balluffi-Fry, J., Wiersma, Y.F. (2021) Forage stoichiometry predicts the home range size of a small terrestrial herbivore. *Oecologia* **197**(2), 327–338. DOI: [10.1007/s00442-021-04965-0](https://doi.org/10.1007/s00442-021-04965-0)
- Ellis-Soto, D.<sup>†</sup>, Ferraro, K.M.<sup>†</sup>, **Rizzuto, M.**, Briggs, E., Monk, J.D., and Schmitz, O.J. (2021) A methodological roadmap to quantify animal-vectored spatial ecosystem subsidies. *Journal of Animal Ecology* **90**(7), 1605–1622. DOI: [10.1111/1365-2656.13538](https://doi.org/10.1111/1365-2656.13538)
- Richmond, I.C., Leroux, S.J., Vander Wal, E., Heckford, T.R., **Rizzuto, M.**, Balluffi-Fry, J., Kennah, J., Wiersma, Y.F. (2020) Temporal variation and its drivers in the elemental traits of four boreal plant species. *Journal of Plant Ecology* **14**(3), 398–413. DOI: [10.1093/jpe/rtaa103](https://doi.org/10.1093/jpe/rtaa103)
- Balluffi-Fry, J., Leroux, S.J., Wiersma, Y.F., Heckford, T.R., **Rizzuto, M.**, Richmond, I.C., Vander Wal, E. (2020) Quantity-quality trade-offs revealed using a multiscale test of herbivore resource selection on elemental landscapes. *Ecology and Evolution* **10**(24), 13847–13859. DOI: [10.1002/ece3.6975](https://doi.org/10.1002/ece3.6975)
- **Rizzuto, M.**, Leroux, S.J., Vander Wal, E., Wiersma, Y.F., Heckford, T.R., Balluffi-Fry, J. (2019) Patterns and potential drivers of intraspecific variability in the body C, N, and P composition of a terrestrial vertebrate, the snowshoe hare (*Lepus americanus*). *Ecology and Evolution* **9**(24), 14453–14464. DOI: [10.1002/ece3.5880](https://doi.org/10.1002/ece3.5880)
- **Rizzuto, M.**, Carbone, C., and Pawar, S. (2018) Foraging constraints reverse the scaling of activity time in carnivores. *Nature Ecology and Evolution* **2**(2), 247–253. DOI: [10.1038/s41559-017-0386-1](https://doi.org/10.1038/s41559-017-0386-1)

*Cover Story*

#### *In Progress*

- **Rizzuto, M.**, Leroux, S.J., Schmitz, O.J., Vander Wal, E., Wiersma, Y.F., Heckford, T.R. Animal-vectored nutrient flows across resource gradients influences the nature of local and meta-ecosystem functioning. In review, *The American Naturalist*, manuscript id: 61395.

- McLeod, A.M., Leroux, S.J., **Rizzuto, M.**, Leibold, M.A., Schiesari, L. Integrating ecosystem and contaminant models to study the spatial dynamics of contaminants. In review, *The American Naturalist*, manuscript id: 60949.
- Heckford, T.R., Leroux, S.J., Vander Wal, E., **Rizzuto, M.**, Balluffi-Fry, J., Richmond, I.C., Wiersma, Y.F. Foliar elemental niche responses of balsam fir (*Abies balsamea*) and white birch (*Betula papyrifera*) to differing community types across geographic scales. In review, *Ecology and Evolution*, manuscript id: ECE-2022-02-00239.

#### Outreach

- Wiersma, Y.F., Catto, N., Deal, C., Edinger, E., Evans, R., Geissinger, E., Hearn, C., Sun Lim, K., McCann, N., MacDonald, K., Meyer, A., Prosser, J., Quinn, D., Richmond, I.C., **Rizzuto, M.**, Roncal, J., Swain, M. (2020). The classroom goes virtual—experiences at Memorial University. *Blog post*, URL: [nllandscapeecology.com](https://nllandscapeecology.com)
- Cagnacci, F., Rocca, M., Nicoloso, S., Ossi, F., Peters, W., Mancinelli, S., Valent, M., **Rizzuto, M.**, Hebblewhite, M. (2013). Il progetto 2C2T. *Il Cacciatore Trentino*, 93, 4–15.

#### CONFERENCE PRESENTATIONS

##### Talks

- **Rizzuto, M.**, Leroux, S.J., Schmitz, O.J., Vander Wal, E., Wiersma, Y.F., Heckford, T.R. *Going against the flow: non-diffusive organismal movement influences local and meta-ecosystem functioning*. “Vital Connections in Ecology” Ecological Society of America Virtual Annual Meeting, Long Beach, CA, USA. 2–6 AUG. 2021
- **Rizzuto, M.**, Leroux, S.J., Vander Wal, E., Wiersma, Y.F., Heckford, T.R., Balluffi-Fry, J. *Ontogeny and Ecological Stoichiometry of Snowshoe hares (*Lepus americanus*) in the Boreal Forests of Newfoundland*. Canadian Society for Ecology and Evolution Annual General Meeting, Guelph, ON, Canada. 18–21 JUL. 2018
- **Rizzuto, M.**, Carbone, C., and Pawar, S. *Bio-mechanical constraints on foraging reverse the scaling of activity rate among carnivores*. Canadian Society for Ecology and Evolution Annual General Meeting, St. John's, NL, Canada. 7–11 JUL. 2016

##### Posters

- **Rizzuto, M.**, Leroux, S.J., Vander Wal, E., Wiersma, Y.F., Heckford, T.R., Balluffi-Fry, J. *Beyond Diffusion: Animal-Mediated Nutrient Transport at Different Spatial Scales*. “Unifying Ecology Across Scales” Gordon Research Seminar and Conference, Biddeford, ME, USA. 21–27 JUL. 2018

#### HONORS & AWARDS

- Mitacs Research Training Award, Mitacs Canada 2020
- First Place, H5P Maker Session, Centre for Innovation in Teaching and Learning, Memorial University of Newfoundland and Labrador 2019
- Mitacs Globalink Research Award, Mitacs Canada 2018
- Dean's Doctoral Award, Memorial University of Newfoundland and Labrador 2016–2018

- Graduated with Distinction, Imperial College London 2014
- Erasmus-LLP Scholarship, University of Turin 2010

#### TEACHING EXPERIENCE

##### **Guest Lecturer, *Department of Biology***

Memorial University of Newfoundland and Labrador, St. John's, NL, Canada

- *Models in Biology* WINTER 2020

##### **Teaching Assistant, *Department of Biology***

Memorial University of Newfoundland and Labrador, St. John's, NL, Canada

- *Principles of Ecology* FALL 2018
- *Principles of Biology* WINTER 2017

##### **Undergraduate Teaching Assistant, *Department of Life Sciences***

Imperial College London, London, UK

- *Ecology* SPRING 2015
- *Behavioral Ecology* WINTER 2015
- *Introduction to Biological Statistics* FALL 2014

##### **Graduate Teaching Assistant, *Department of Life Sciences***

Imperial College London-Silwood Park, Ascot, UK

- *Statistics* FALL 2014
- *Macroecology and Climate Change* FALL 2014

#### SERVICE

Manuscript reviewer for *Biological Conservation*, *Science of the Total Environment*, and *Ecology and Evolution*.

#### PROFESSIONAL DEVELOPMENT

##### *Courses*

- **Becoming a More Equitable Educator: Mindsets and Practices,** MAR.-JUN. 2020  
*MIT Teaching Systems Lab*  
Attended online at [edX.org](https://edX.org)
- **Teaching Skills Enhancement Program,** SEPT.-AUG. 2020  
*Centre for Innovation in Teaching and Learning*  
Memorial University of Newfoundland and Labrador, St. John's, NL, Canada

##### *Workshops*

- **Reproducible Research through Open Science,** 11 JUNE 2020  
*Canadian Institute for Ecology and Evolution & NSERC-CREATE "Living Data Project"*  
Attended online at [osf.io](https://osf.io)
- **Teaching Inclusively & Equitably Online,** 21 MAY 2020  
*American Society for Engineering Education & NSF INCLUDES Aspire Alliance*  
Attended online through Blackboard Collaborate Ultra
- **H5P Maker Session,** 24 OCT. 2019  
*Centre for Innovation in Teaching and Learning*  
Memorial University of Newfoundland and Labrador, St. John's, NL, Canada

- **Community of Inquiry Coffee Break: Open Access,** 23 OCT. 2019  
*Centre for Innovation in Teaching and Learning*  
Memorial University of Newfoundland and Labrador, St. John's, NL, Canada
- **Open Access and Scholarly Publishing,** 22 OCT. 2019  
*Centre for Innovation in Teaching and Learning*  
Memorial University of Newfoundland and Labrador, St. John's, NL, Canada
- **Four Things to Consider for Graduate Student Teaching,** 8 NOV. 2018  
*Enhanced Development of the Graduate Experience*  
Memorial University of Newfoundland and Labrador, St. John's, NL, Canada
- **AARMS CRG Software Carpentry Workshop,** 27 MAY 2017  
*The Carpentries*  
Memorial University of Newfoundland and Labrador, St. John's, NL, Canada

**VOLUNTEER EXPERIENCE**

**Communications Officer, Biology Graduate Student Association** 2019–2020  
Memorial University of Newfoundland and Labrador, St. John's, NL, Canada

**Chair, Biology Graduate Student Association** 2018–2019  
Memorial University of Newfoundland and Labrador, St. John's, NL, Canada

**Seminar Coordinator, Biology Graduate Student Association** 2017–2018  
Memorial University of Newfoundland and Labrador, St. John's, NL, Canada

**Youth Educator, OASI-Operazione Mato Grosso** 2000–2013  
Turin, Italy

**Team Leader, XX Winter Olympic and IX Paralympic Games** 2005–2006  
Turin, Italy

**PROFESSIONAL AFFILIATIONS**

- Ecological Society of America 2021–2022
- Canadian Society of Ecology and Evolution 2016–2021

**CONFERENCES ATTENDED**

- “*Vital Connections in Ecology*” 2–6 AUG. 2021  
Ecological Society of America, Virtual Annual Meeting, Long Beach, CA, USA
- “*Unifying Ecology Across Scales*” 21–27 JUL. 2018  
Gordon Research Seminar and Conference, Biddeford, ME, USA
- *Annual General Meeting* 18–21 JUL. 2018  
Canadian Society for Ecology and Evolution, Guelph, ON, Canada
- *Annual General Meeting* 7–11 JUL. 2016  
Canadian Society for Ecology and Evolution, St. John's, NL, Canada
- *From Energetics to Macro Ecology: Carnivore Responses to Environmental Change* 14–15 NOV. 2013  
Zoological Society of London, London, UK
- *Euroscience Open Forum* 2–7 JUL. 2010  
Turin, Italy

- *XIX Congress of the Italian Primatological Society*  
Asti, Italy

1–3 APR. 2009

**SOFTWARE  
PROFICIENCY**

**Languages:** R, Python, Bash, Wolfram Mathematica,  $\text{\LaTeX}$ , HTML, CSS  
**Software:** VCS (Git, GitHub), RStudio, Atom, Sublime Text, QGIS, Inkscape, Gimp, File Maker Pro  
**Platforms:** macOS, Windows

**CERTIFICATES**

- Wilderness and Remote First Aid  
Canadian Red Cross, St. John's, NL, Canada  
2016–2019
- WHMIS and Lab Safety  
Memorial University of Newfoundland, St. John's, NL, Canada  
2017
- Basic Outdoor First Aid  
Marlin Training Ltd., London, UK  
2014
- International English Language Testing System, grade 8.5  
British Council, Turin, Italy  
2013
- International Computer Driving Licence  
University of Turin, Turin, Italy  
2007

**INTERESTS**

Backpacking, Hiking, Photography, Yoga