

# MATTEO RIZZUTO

Ecosystem Ecology Lab  
Department of Biology  
Memorial University of  
Newfoundland and Labrador  
St. John's, NL, Canada

+39 320 196 2339  
matteomrizzuto@gmail.com  
  matteorizzuto  
 @MatteoRiz  
 0000-0003-3065-9140

## EDUCATION

### Ph.D., *Biology*

2016–2022

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

### Master of Research (Distinction), *Ecology, Evolution, and Conservation*

2013–2014

Imperial College London—Silwood Park, Ascot, UK

### Master of Science, *Evolution of Animal and Human Behaviour*

2009–2012

University of Turin, Turin, Italy

### Bachelor of Science (Honours), *Biology*

2004–2009

University of Turin, Turin, Italy

## PUBLICATIONS

Note: for papers where I am first author, I led study design, data collection, analysis, and writing. For papers where I am fourth author or later, I contributed to ideas, data collection, and writing.

<sup>†</sup> stands for equal contribution.

### Peer Reviewed

- Little, C.J.<sup>†</sup>, **Rizzuto, M.**<sup>†</sup>, Luhning, 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. *Oikos*. DOI: [10.1111/oik.08892](https://doi.org/10.1111/oik.08892)
- 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-vector 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-vector nutrient flows across resource gradients influences the nature of local and meta-ecosystem functioning. Submitted, *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 revision, *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

RESEARCH  
APPOINTMENTS

- Visiting Assistant in Research, Schmitz Lab** FEB.-APR. 2019  
School of the Environment, Yale University, New Haven, CT
- Research Assistant, Pawar Lab** JAN.-MAR. 2016  
Imperial College London-Silwood Park, Ascot, UK
- Research Assistant, Tsaobis Baboon Project** JUN.-OCT. 2015  
Zoological Society of London, London, UK
- Research Assistant, Roe & Red deer in Trentino & Technology Project** JUN.-SEPT. 2013  
Trento, Italy
- Graduate Intern, Piedmont Wolf Project** JUN.-DEC. 2011  
Maritime Alps Nature Park, Entraque (CN), Italy
- Undergraduate Intern, Ethology Lab** JUN. 2008-MAR. 2009  
University of Turin, Turin, Italy

TEACHING EXPERIENCE	<b>Guest Lecturer, <i>Department of Biology</i></b>	
	Memorial University of Newfoundland and Labrador, St. John's, NL, Canada	
	- <i>Models in Biology</i>	WINTER 2020
	<b>Teaching Assistant, <i>Department of Biology</i></b>	
	Memorial University of Newfoundland and Labrador, St. John's, NL, Canada	
	- <i>Principles of Ecology</i>	FALL 2018
	- <i>Principles of Biology</i>	WINTER 2017
	<b>Undergraduate Teaching Assistant, <i>Department of Life Sciences</i></b>	
	Imperial College London, London, UK	
	- <i>Ecology</i>	SPRING 2015
SERVICE	- <i>Behavioral Ecology</i>	WINTER 2015
	- <i>Introduction to Biological Statistics</i>	FALL 2014
	<b>Graduate Teaching Assistant, <i>Department of Life Sciences</i></b>	
	Imperial College London-Silwood Park, Ascot, UK	
	- <i>Statistics</i>	FALL 2014
	- <i>Macroecology and Climate Change</i>	FALL 2014
	Manuscript reviewer for <i>Biological Conservation</i> , <i>Science of the Total Environment</i> , and <i>Ecology and Evolution</i> .	
	<b>Courses</b>	
	- <b>Becoming a More Equitable Educator: Mindsets and Practices,</b>	MAR.-JUN. 2020
PROFESSIONAL DEVELOPMENT	<i>MIT Teaching Systems Lab</i>	
	Attended online at <a href="https://edX.org">edX.org</a>	
	- <b>Teaching Skills Enhancement Program,</b>	SEPT.-AUG. 2020
	<i>Centre for Innovation in Teaching and Learning</i>	
	Memorial University of Newfoundland and Labrador, St. John's, NL, Canada	
	<b>Workshops</b>	
	- <b>Reproducible Research through Open Science,</b>	11 JUNE 2020
	<i>Canadian Institute for Ecology and Evolution &amp; NSERC-CREATE "Living Data Project"</i>	
	Attended online at <a href="https://osf.io">osf.io</a>	
	- <b>Teaching Inclusively &amp; Equitably Online,</b>	21 MAY 2020
	<i>American Society for Engineering Education &amp; NSF INCLUDES Aspire Alliance</i>	
	Attended online through Blackboard Collaborate Ultra	
	- <b>H5P Maker Session,</b>	24 OCT. 2019
	<i>Centre for Innovation in Teaching and Learning</i>	
	Memorial University of Newfoundland and Labrador, St. John's, NL, Canada	
	- <b>Community of Inquiry Coffee Break: Open Access,</b>	23 OCT. 2019
	<i>Centre for Innovation in Teaching and Learning</i>	
	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* 1–3 APR. 2009  
Asti, Italy

**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