

MATTEO RIZZUTO

Ecosystem Ecology Lab
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RESEARCH APPOINTMENTS	PostDoctoral Associate, <i>Schmitz Lab</i> School of the Environment, Yale University, New Haven, CT, United States Visiting Assistant in Research, <i>Schmitz Lab</i> School of the Environment, Yale University, New Haven, CT, United States Research Assistant, <i>Pawar Lab</i> Imperial College London-Silwood Park, Ascot, UK Research Assistant, <i>Tsaobis Baboon Project</i> Zoological Society of London, London, UK Research Assistant, <i>Roe & Red deer in Trentino & Technology Project</i> Trento, Italy Graduate Intern, <i>Piedmont Wolf Project</i> Maritime Alps Nature Park, Entraque (CN), Italy Undergraduate Intern, <i>Ethology Lab</i> 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
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EDUCATION	Ph.D., <i>Biology</i> 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), <i>Ecology, Evolution, and Conservation</i> Imperial College London—Silwood Park, Ascot, UK Master of Science, <i>Evolution of Animal and Human Behaviour</i> University of Turin, Turin, Italy Bachelor of Science (Honours), <i>Biology</i> University of Turin, Turin, Italy	2016–2021 2013–2014 2009–2012 2004–2009
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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.†, Rizzuto, M.† , 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. <i>Oikos</i> 2022(8). DOI: 10.1111/oik.08892 <i>Editor's Choice</i>	
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- 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.[†], Ferraro, K.M.[†], **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. Accepted, *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
- 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
- **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
- **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, \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