

## Tiziana A. Gelmi Candusso, PhD

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### RESEARCH INTERESTS

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Landscape Ecology; Wildlife Behavior; Human-Wildlife Coexistence; Urban Ecology; Species Interaction; Forest ecosystem; Ecosystem Services; Species distribution; Habitat Conservation

### ACADEMIC APPOINTMENTS

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<b>Postdoctoral Researcher</b> , Urban Wildlife Institute, Chicago IL, USA	2024–current
Research focus: Human-wildlife coexistence in urban areas (advisor: Prof. Dr. Seth Magle; Dr. Maureen Murray)	
<b>Postdoctoral Researcher</b> , University of Toronto, ON, Canada	2019–2024
Research focus: Wildlife ecology in urban areas (advisor: Prof. Marie-Josée Fortin)	

### EDUCATION

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#### Degrees

<b>Ph.D. in Biodiversity and Ecology</b> , Georg-August Göttingen University	2019
developed at Behavioral Ecology department at the German Primate Center Committee: Prof. Eckhard W. Heymann, Prof. Pierre-Michel Forget, Prof. Oliver Schülke	
<b>M.Sc. in Environmental Biology</b> , University of Trieste, Italy	2012
<b>B.Sc. in Biology</b> , University of Padua, Italy	2010

#### Additional Education

Science Policy and Advocacy Certificate program – University of California Irvine	2023
Forecasting for Decision-making. Short school – CEFI	2023
AI Computer vision methods for Ecology Summer school – Caltech	2022
Agent-based modeling with NetLogo. Summer school – Göttingen University	2017
Spatially-Explicit Modeling of Ecological Systems in R. Summer course – Würzburg U.	2017
GIS for ecology, and Species distribution modeling – Marburg University	2016
Modelling of Biogeochemical cycles. Summer school – Christian-Albrecht-Universität	2012
Taxonomy and Physiology of marine fauna. Summer school – Sorbonne Université	2011

### PUBLICATIONS

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#### Journal papers

2024	<b>Gelmi-Candusso TA</b> , Chin ATM, Thompson CA, McLaren AAD, Wheeldon TJ, Patterson BR, Fortin MJ. (2024) Dynamic connectivity assessment for a terrestrial
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- predator in a metropolitan region. **Frontiers in Ecology and the Environment**. <https://esajournals.onlinelibrary.wiley.com/doi/10.1002/fee.2633>
- Fidino, M., Sander, HA., Lewis, JS., Lehrer, EW., Rivera, K., Murray, MH., Adams, HC., Kase, A., Flores, A., Stankowich, T., Schell, CJ., Salsbury, CM., Rohnke, AT., Jordan, MJ., Green, AM., Gramza, AR., Zellmer, AJ., Williamson, J., Surasinghe, TD., Storm, H., Sparks, KL., Ryan, TJ., Remine, KR., Pendergast, ME., Mullen, K., Minier, DE., Middaugh, CR., Mertl, AL., McClung, MR., Long, RA., Larson, RN., Kohl, MT., Harris, LR., Hall, CT., Haight, JD., Drake, D., Davidge, AM., Cheek, AO., Bloch, CP., Biro, EG., Anthonysamy, WJB., Angstmann, JL., Allen, ML., Adalsteinsson, SA., Gianotti, AGS., LaMontagne, JM., **Gelmi-Candusso, TA.** and Magle, S.B. (2024) Gentrification drives patterns of alpha and beta diversity in cities. **Proceedings of the National Academy of Sciences** <https://www.pnas.org/doi/10.1073/pnas.2318596121>
- Gelmi-Candusso, T.**, Rodriguez, P., Fidino, M., Rivera, K., Lehrer, E., Magle, S. and Fortin, M.-J. (2024), Leveraging Open-Source Geographic Databases to Enhance the Representation of Landscape Heterogeneity in Ecological Models. **Ecology and Evolution**, 14: e70402. <https://doi.org/10.1002/ece3.70402>
- 2023 **Gelmi-Candusso, T.**, Wheeldon TJ, Patterson B, Fortin MJ. (2023) The effect of urbanization and behavioral factors on coyote net displacement and its implications for seed dispersal. **Urban Ecosystems**. <https://doi.org/10.1007/s11252-023-01460-7>
- Gelmi-Candusso TA**, Rodriguez P, Fortin M-J. (2023) Unveiling Urban Complexity: Enhancing Fine-Scale Landscape Heterogeneity through OpenStreetMap Integration. **Biorxiv**. <https://doi.org/10.1101/2023.10.31.564785>
- Gelmi-Candusso TA**, Brimacombe C, Collinge Menard G., Fortin MJ. (2023) Generating predator-prey networks from camera traps. **Food webs** 37. <https://doi.org/10.1016/j.fooweb.2023.e00305>
- 2019 **Gelmi-Candusso TA**, Hämäläinen, A. (2019) Seeds and the city: the interdependence of zoochory and ecosystem dynamics in urban environments. **Frontiers in Ecology and Evolution**. <https://doi.org/10.3389/fevo.2019.00041>
- Gelmi-Candusso TA**, Bialozyt, R., Slana, D., Zarate-Gomez R., Heymann, E. W., and Heer, K. (2019). Estimating seed dispersal distance: a comparison of methods using animal movement and plant genetic data on two primate-dispersed Neotropical plant species. **Ecology and Evolution**. <https://doi.org/10.1002/ece3.5422>
- Gelmi-Candusso TA** (2019) Frugivore behavior and plant spatial genetics. **Doctoral dissertation**. Georg-August-Universität, Göttingen, Germany. <http://hdl.handle.net/11858/00-1735-0000-002E-E5C8-C>
- 2017 **Gelmi-Candusso TA**, Heymann, EW., and Heer, K. (2017). Effects of zoochory on the spatial genetic structure of plant populations. **Molecular Ecology**. <https://doi.org/10.1111/mec.14351>.

## Journal papers in review

2024	<b>Gelmi-Candusso</b> , Chin ATM, Ruppert J, Fortin, M.-J. (in revision), Urban planning for wildlife connectivity, a multispecies assessment of urban sprawl and SLOSS renaturalization strategies. <b>Journal of Applied Ecology</b>
	Dimitrov N, <b>Gelmi-Candusso TA</b> , Krkošek M, Fortin M.-J. (in revision) The effects of fox movement and landscape heterogeneity on the spread of sarcoptic mange in urban settings. <b>Landscape Ecology</b>

## PRESENTATIONS

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### Invited Talks

June 2024	“Movement corridors for urban wildlife: Pivotal infrastructure for carnivores” North American Congress for Conservation Society (NACCB), Vancouver, Canada
June 2023	“The impact of landscape connectivity on urban biodiversity” –International Urban Wildlife Conference, Washington DC.
Sep 2022	“Training a machine learning object classifier for the urban ecosystem” – Camtrap Ecology meets AI Workshop
Aug 2021	“Dynamic connectivity for coyotes in the Toronto region” The International Society for Ecological Modelling Global Conference. <i>Cancelled due to Travel Restrictions</i>
May 2021	“Landscape connectivity for coyotes in the Toronto region” Atwood EEB, University of Toronto
May 2021	“Key urban features affecting mammalian mesopredator movement across cities” International Urban Wildlife Conference, Portland, Oregon

### Conference Talks

Aug 2021	“Coyotes as seed dispersers in urbanized landscapes”, CSEE–SCEE, Vancouver
May 2020	“Landscape connectivity for coyotes in the Toronto region” IALE - Toronto
Mar 2020	“Urban Seed dispersal” Frugivore Seed Dispersal Conference, India
Feb 2017	“How does territoriality behavior of seed dispersers affect spatial genetics of dispersed plants?” European conference of Tropical Ecology - Brussels, Belgium
Sep 2016	“The influence of animal behavior on plant population genetics” Annual Meeting of the Ecological Society of Germany, Austria, and Switzerland - Marburg, Germany

## TEACHING

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### Guest lectures

<b>Camera traps for Urban Ecology</b>	2024
Course: Forest Conservation Biology M.Sc of Forest Conservation. University of Toronto	
<b>Landscape Ecology for Conservation</b>	2023

Course: Spatial Ecology. Graduate level. University of Toronto

**Animal Seed dispersal**

2019

Course: 408: Primate ecology. M.Sc. of International Nature Conservation – Göttingen University

**Seminars**

Insights on our local nocturnal wildlife Jan 2025  
*Meeting of **The Brodie Club***, planned for January 21, 2025

Considering Wildlife coexistence in Urban Planning Nov 2024

**Ontario Professional Planners Institute**: Webinar Wildlife & Urban Planning

Maintaining landscape connectivity for reaching Biodiversity targets Aug 2023  
**Toronto Regional Conservation Authority**

The interaction between Wildlife, Landscape and People Jun 2024  
School of Cities, **University of Toronto**

The Ecology of Urban mammals in Toronto Nov 2022  
UTM Biology Seminar Series. **University of Toronto Mississauga**

**Workshops**

**Spatial Visualization in R**– UWIN workshop series Jun 2024

**Spatial Analysis in R**– Toronto Region Conservation Authority May 2024

**Landscape connectivity in Julia** – Omnidirectional connectivity with Omniscape Nov 2021, Sep 2022

**Mentoring**

**Final year undergraduate research projects** 2022-2023

BIO98 Janice Hau, Juan de los Rios. Introduction to ArcGIS Pro, Julia, R.

Connectivity analysis and urban mammalian biodiversity

BIO98 - Jelany Duali. Urban Wildlife Ecology

**Summer undergraduate research projects** 2022

NSERC Germain Collinge Menard, BIO98 Jeffrey Chen, BIO98 Devni

Kumarasinghe

Introduction to R and spatial-occupancy analysis. Predator-Prey interactions

**Master thesis** 2021

Nikole Dimitrov. Agent-based Modelling using NetLogo

**Undergraduate thesis** 2021

Henry James. Landscape Connectivity assessment using Julia

**Data collection** 2020-2021

21 undergraduates, training on field biosafety, on-site sampling, and camera trap data processing

**Course development**

EEB125H1: Introductory Computation and Data Science for the Life and Physical Sciences. Ecology and Evolutionary Biology, University of Toronto 2021-2023

## RESEARCH ASSISTANTSHIP

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<b>Research Assistant</b> , Max Planck for multidisciplinary sciences	2012-2013
<b>Master student</b> , Helmholtz Institut GEOMAR	2011-2012
<b>Research intern</b> , <i>Marine mammal behavior lab</i> , University of Victoria	Jul 2011
<b>Research intern</b> , <i>Ecotoxicology lab</i> , Università di Trieste	Ago 2010
<b>Research intern</b> , <i>Taxonomy lab</i> , Area Marina Protetta Miramare Trieste	Sep 2010

## PROFESSIONAL SERVICE

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<b>Academic networks</b>	Urban wildlife information network UWIN (lead for U of Toronto) The Urban Wildlife Working Group TWS WILDLABS. The conservation technology network British Ecological Society BES Canadian Society for Ecology and Evolution CSEE The Ecological Society of Germany, Austria and Switzerland Gfö
<b>Committee member</b>	Technology committee, Wildlife health committee, and Administrative committee at Urban Wildlife Information Network (UWIN)
<b>Peer review</b>	Journal of Applied Ecology, Ecology and Evolution, Food webs, Scientific reports Movement Ecology, Conservation Biology, Urban Ecosystems
<b>Grant review panel</b>	EEB PhD research grant, University of Toronto, 2021
<b>Award jury panel</b>	EEB Undergraduate Research Fair, University of Toronto, 2022
<b>Symposiums organized</b>	Urban animal movement Symposium, International Urban Wildlife Conference, May 2021 Urban Seed Dispersal Symposium Frugivores and Seed dispersal conference, Mar 2020
<b>Conference organized</b>	Woman's Career Network conference Göttingen, Germany, 2018
<b>Community outreach</b>	Introduction to camera traps and urban ecology for School-aged students 2021, 2023 Science communication posts on plant spatial genetics for the Frugivore and Seed dispersal (FSD) webpage for General public - 2019 In-situ introduction to the ecology of marine protected areas for young school- aged children – 2010
<b>Media presence</b>	CBC Metro News, interview about urban wildlife in Toronto Toronto Star, interview on the effect of recent local flooding events on wildlife

## AWARDS AND GRANTS

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<b>MITACS</b> Postdoctoral Internship (8m, 35,000 CAD)	Nov 2023
<b>School of Cities, University of Toronto</b> Postdoctoral fellowship (1y, 30,000CAD)	May 2023
<b>German Research Foundation</b> Postdoctoral fellowship (3y6m, 271,800 CAD)	Nov 2019
<b>Georg-August- Göttingen</b> university grant (6m, 16,610CAD)	Jun 2017
<b>European Commission</b> Erasmus placement (8m, 6,040CAD)	Jan 2012
<b>University of Trieste</b> Scholarship (2y, 4,530CAD)	Oct 2010
<b>University of Padova</b> Excellence scholarship (3y, 27,180CAD)	Oct 2006

## LANGUAGE AND SKILLS

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<b>Language</b>	English (fluent), Spanish (fluent), Italian (fluent), German (advanced), French (advanced)
<b>Programming</b>	R, Python, Julia, SQL, GIS, NetLogo, Java, HTML
<b>Software</b>	R studio, VSC, ArcGIS Pro, PostgreSQL, Compute Canada, Omniscape
<b>Data types</b>	Remote sensing, GPS devices, Camera Traps, Microsatellites, Rodent traps, Surveys