Emanuele Giacomuzzo
emanuelegiacomuzzo@gmail.com | +41 76 79 08 556 | Winterthurerstrasse 438, Zürich, 8051, Switzerland

Education

Doctor of Philosophy (PhD) in Ecology — 10/2021 – present
Swiss Federal Institute of Aquatic Science and Technology (Eawag) & University of Zürich, Switzerland

- **Thesis title:** The Role of Patch Size in Driving Meta-Ecosystem Biodiversity and Function.
- **Supervisor:** Prof Florian Altermatt (Eawag & University of Zürich, Switzerland).
- **Committee members:** Dr Isabelle Gounand (iEES-Paris, France), Prof Jordi Bascompte (University of Zürich, Switzerland).
- **Key achievements:** Designed and conducted five large-scale microcosm experiments (up to 192 replicates), developed R scripts which integrate data assembly, visualization, and data analysis through mixed-effect models, compiling results into dynamic, reproducible R Markdown reports.
- **Additional activities:** I ran a storytelling club where scientists can practice what makes for a good narrative in scientific writing. The club is based on the And, But, Therefore framework (ABT) developed by Dr Randy Olson.

Master of Science (MSc) in Wildlife Biology & Conservation — 9/2018 – 10/2019
Edinburgh Napier University, UK

- **Thesis Title:** Habitat Preferences, Home Range, Diet and Primate Community of the Black-Crested Leaf Monkey (*Presbytis melalophos*) in West Sumatra (Indonesia).
- **Supervisors:** Dr Jason Gilchrist (Edinburgh Napier University, UK) and Dr Rizaldi (Andalas University, Indonesia).
- **Key achievements:** organised field-work with a team of ten students, conducted vegetation surveys (estimating tree dominance, tree density, tree composition, diameter at breast height, tree height & first branch height, canopy gaps percentage, maximum slope, and storing vegetation samples), and learned how to use GIS and estimate home range using Minimum Convex Polygon (MCP).

Exchange Student — 9/2016 – 1/2017
Vrije Universiteit Amsterdam, Netherlands

Bachelor of Science (BSc) in Biological Sciences — 9/2014 – 7/2018
University of Florence, Italy

- **Thesis Title:** Analysis of Ant Communities (Hymenoptera: Formicidae) Across an Altitudinal Gradient.
- **Supervisors:** Prof Giacomo Santini (University of Florence, Italy) and Prof Guido Chelazzi (University of Florence, Italy).
- **Additional activities:** Student representative of the School of Biology.

Research Experience

Food Web Ecology Intern — 9/2020 – 5/2021
Balaton Limnological Institute, Hungary

- **Supervisor:** Prof Ferenc Jordán (Balaton Limnological Institute, Hungary).
- **Key achievements**: The identity of keystone species depends on their interactions with other species. However, there are multiple ways to describe a species interaction network, which could potentially lead to varying results depending on the method of network construction. Therefore, I compared different approaches to constructing food webs and demonstrated that these methods can indeed yield different conclusions regarding which species are keystone (Giacomuzzo & Jordán (2021)).

Food Web Ecology Trainee — 6/2021 – 8/2021
Ludwig Maximilian University of Munich, Germany

- **Supervisor:** Prof Maria Stockenreiter (Ludwig Maximilian University of Munich, Germany).
- **Key achievements:** As part of AQUACOSM and AQUACOSM plus traineeships, I designed and performed a mesocosm experiment examining how brownification influences the predatory behaviour of

Notonecta and its cascading effects on trophic cascades. Also, I contributed to a mesocosm experiment led by Dr Katalin Patonai, which evaluated the forecasting capabilities of simple food web models.

Research Assistant 10/2019 – 1/2020
University of California, Santa Barbara & Santa Barbara Museum of Natural History, USA

- Identified invertebrates for the reconstruction of empirical food webs from Palmyra Atoll (USA) in the lab of Prof Hillary Young (supervisor: Dr John McLaughlin).
- Educated the public about Snowy Plover (*Charadrius nivosus*) conservation at Coal Oil Point Natural Reserve (supervisor: Jessica Nielsen).
- Organised and databased the zoological collection of the Cheadle Center for Biodiversity and Ecological Restoration (CCBER) (supervisor: Dr Katja Seltmann).
- Curated the entomological collection of Santa Barbara Museum of Natural History by pinning and point mounting beetle (Order: Coleoptera) specimens (supervisor: Dr Matthew Gimmel).

List of Publications

- **Giacomuzzo, E.**, Peller, T., Gounand, I., Käser, S., & Altermatt, F. (2024c). Relative vs absolute magnitude of disturbances affects auto-heterotrophic meta-ecosystems. Early draft.
- **Giacomuzzo, E.**, Peller, T., Gounand, I., & Altermatt, F. (2024b). Ecosystem size tunes the spatial feedback between autotrophic and heterotrophic ecosystems. Complete draft, to be submitted to *Ecology Letters*.
- **Giacomuzzo, E.**, Peller, T., Gounand, I., & Altermatt, F. (2024a). Ecosystem size mediates the effects of resource flows on species diversity and ecosystem function at different scales. *Ecology and Evolution*. Accepted.
- **Giacomuzzo, E.**, & Jordán, F. (2021). Food web aggregation: effects on key positions. *Oikos*, *130*(12), 2170-2181.
- **Giacomuzzo**, E. (2021). *Food web analysis toolbox*. MathWorks. https://shorturl.at/2r7Yh.

Fundings Acquired

- PhD Travel Money (CHF 979.90 ~ $1103,17) 7/2024
  I was awarded funding through the University of Zürich to travel and present my research at the BES annual meeting 2024 (Liverpool, UK) in December 2024.
- AQUACOSM and AQUACOSM plus transnational access fundings 6/2021 – 8/2021
  I received funding to cover transportation, accommodation, meals, and access to the mesocosm facility for two one-month training programs focused on conducting mesocosm experiments.

Conferences & Seminars Presentations

- Giacomuzzo, E., Peller, T., Gounand, I., & Altermatt, F. (2024, December). *Ecosystem size tunes the effects of the spatial feedback between autotrophic and heterotrophic ecosystems on ecosystem function* [Poster presentation]. BES Annual Meeting 2024, Liverpool, UK.
- Giacomuzzo, E., Peller, T., Gounand, I., & Altermatt, F. (2024, May). *Size matters again: how spatial feedbacks can depend on patch size* [Oral presentation]. Eawag PhD Symposium, Zürich, Switzerland.
- Giacomuzzo, E., Peller, T., Gounand, I., & Altermatt, F. (2024, January). *Patch size influences biodiversity through resource flows* [Oral presentation]. Biology24, Zürich, Switzerland.
- Giacomuzzo, E., Peller, T., Gounand, I., & Altermatt, F. (2023, December). *Patch size mediates the effects of resource flow on biodiversity at different scales* [Oral presentation]. BES Annual Meeting 2023, Belfast, UK.
- Giacomuzzo, E., Peller, T., Gounand, I., & Altermatt, F. (2023, September). *Does (Ecosystem) size matter? With regards to how resource flow influences biodiversity* [Oral presentation]. Zürich Interaction Seminar, Zürich, Switzerland.
- Giacomuzzo, E., Peller, T., Gounand, I., & Altermatt, F. (2023, September). *Does size matter? With regards to all types of ecosystem connections* [Oral presentation]. Eawag PhD Symposium, Zürich, Switzerland.
- Giacomuzzo, E., Peller, T., Gounand, I., & Altermatt, F. (2022, September). *Size matters: how meta-ecosystem function is driven by patch size* [Oral presentation]. Eawag PhD Symposium, Zürich, Switzerland.

Teaching & Advising Experience

Supervisor for Bachelor Students in Aquatic Ecology Research — 9/2023 – 11/2023

Aquatic Ecology block course (ETH & University of Zürich)

I served as the primary supervisor for two bachelor students learning how to conduct research in aquatic ecology. I taught them how to perform a microcosm experiment, formulate research questions, develop hypotheses, structure and plot data in R and R Markdown, write a scientific paper, and orally present their findings. Finally, I assisted with grading their final reports.

Supervisor for Bachelor Students in Aquatic Ecology Research — 9/2022 – 11/2022

Aquatic Ecology block course (ETH & University of Zürich)

See above.

Supervisor for Bachelor Students in Aquatic Ecology Research — 9/2024 – 11/2024

Aquatic Ecology block course (ETH & University of Zürich)

I assisted Dr Tianna Peller in designing a microcosm experiment for two bachelor students studying aquatic ecology research and supported the students with data analysis.

Teaching Assistant — 4/2024 – 7/2024

Biodiversity and Habitats of Switzerland (University of Zürich)

I assisted Prof. Florian Altermatt by providing support to students with practical assignments related to bird and plant identification. I helped with supervising and grading the final exams.

Teaching Assistant — 11/2022

Freshwater Environmental and Ecosystem Modelling (University of Zürich)

I acted as a teaching assistant of Dr Luca Carraro, offering support to students going through assignments on modelling freshwater dynamics with R.

Peer review

- Reviewed article submitted to Oecologia (Springer) 1/2024
- Reviewed article submitted to Community Ecology (Springer) 10/2021

Organised symposia

- Eawag PhD Symposium, September 2023. I organised a symposium which brought together PhD students from the Swiss Federal Institute of Aquatic Science and Technology (Eawag) and keynote speakers Prof Helmut Hillebrand (University of Oldenburg, Germany), Dr Ester Eckert (Water Research Institute Verbania, Italy), and Dr Oliver Schelske (Swiss Re, Switzerland). I managed speaker invitations, logistics, and accommodations, curated the program, and coordinated all event aspects, including venue, catering, and departmental communication. I organised in equal measure as Sarah Levasseur.

References

- Prof Florian Altermatt (Eawag & University of Zürich, Switzerland, florian.altermatt@eawag.ch).
- Dr Isabelle Gounand (iEES-Paris, France, isabelle.gounand@cnrs.fr).