

# Zeynep Ersoy

POSTDOCTORAL RESEARCHER IN UNIVERSITAT DE BARCELONA | FEHM-LAB RESEARCH GROUP

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## Summary

I'm an early-career aquatic ecologist with extensive international experience (Turkey, Denmark, Spain, Germany, Portugal). My research centers on understanding the response of **aquatic food webs** to global **climate crisis** and other **environmental perturbations** (e.g., eutrophication, salinization, microplastics), using approaches ranging from mesocosm **experiments** to **biodiversity monitoring** to investigate trophic interactions, energy transfer, **ecosystem functioning and health**.

## Research Experience



### Universitat de Barcelona

POSTDOCTORAL RESEARCHER

*Barcelona, Spain*

*May 2022 - Present*

- **Project:** Ecological status of the temporary rivers: methods of assessment of the disconnected pools
- **Advisors:** Núria Bonada & Miguel Cañedo-Argüelles



### The Rui Nabeiro Biodiversity Chair, Universidade de Évora

POSTDOCTORAL RESEARCHER

*Évora, Portugal*

*Jul.2019 - Mar.2022*

- **Project:** AdaptAlentejo: Predicting ecosystem-level responses to climate change
- **Advisors:** Miguel Matias & Miguel Araujo



### University of Vic-Central University of Catalonia (UVic-UCC)

PHD FELLOW

*Vic, Spain*

*Jul.2015 - Dec. 2018*

- Doctoral thesis work in Aquatic Ecology Research Group



### Leibniz-Institute of Freshwater Biology and Inland Fisheries (IGB)

GUEST PHD FELLOW

*Berlin, Germany*

*Apr. - Dec. 2016*

- **Project:** Recovery rate of zooplankton **body size distributions** after massive fish predation
- **Advisor:** Thomas Mehner



### Aarhus University, Lake Ecology Group

VISITING RESEARCH STUDENT

*Aarhus, Denmark*

*Feb. - Jun. 2014*

- **Project:** Assessment of changes in macrophyte communities in Lake Stigsholm using long-term monitoring data
- **Advisors:** Martin Søndergaard & Torben Lauridsen



### Middle East Technical University, Department of Biological Sciences

RESEARCH AND TEACHING ASSISTANT

*Ankara, Turkey*

*Jan.2013 - Jun. 2015*

- 4 semesters of teaching in practical undergraduate courses



### EU Project - REFRESH

PROJECT ASSISTANT

*Ankara, Turkey*

*2012 - 2014*

- **Project:** Adaptive strategies to mitigate the impacts of climate change on European freshwater ecosystems

## Education



University of Vic-Central University of Catalonia (UVic-UCC)

Vic, Spain

PHD IN EXPERIMENTAL SCIENCES AND TECHNOLOGY PROGRAM

2015 - 2018

- **Thesis:** Biotic and environmental factors shaping body size distributions in freshwater planktonic food webs
- **Advisors:** Sandra Brucet & Mireia Bartrons



Middle East Technical University (METU)

Ankara, Turkey

MSC IN BIOLOGY, SPECIALIZED IN LIMNOLOGY

2012 - 2015

- **Thesis:** Impact of nutrient and water level changes on the submerged macrophytes along a latitudinal gradient: A Pan-European mesocosm experiment
- **Advisor:** Meryem Beklioğlu
- **CGPA:** 3.93/4.00



Middle East Technical University (METU)

Ankara, Turkey

BSC IN BIOLOGY (MAJOR) AND ENVIRONMENTAL MICROBIOLOGY (MINOR)

2007 - 2012

- **CGPA:** 3.66/4.00 (Ranked 3rd among 50 Biology graduates)

## Publications & Presentations

### PUBLISHED JOURNAL ARTICLES

- Hintz, W. D., Arnott, S. E., Symons, C. C., Greco, D. A., McClymont, A., Brentrup, J. A., Cañedo-Argüelles, M., Derry, A. M., Downing, A. L., Gray, D. K., Melles, S. J., Relyea, R. A., Rusak, J., Searle, C. L., Astorg, L., Baker, H. K., Beisner, B. E., Cottingham, K. L., **Ersoy, Z.** et al., Current water quality guidelines across North America and Europe do not protect lakes from salinization. **PNAS** (2022), [doi:10.1073/pnas.2115033119](https://doi.org/10.1073/pnas.2115033119)
- Hébert, M. P., Symons, C. C., Cañedo-Argüelles, M., Arnott, S. E., Derry, A. M., Fugère, V., Hintz, W. D., Melles, S. J., Astorg, L., Baker, H. K., Brentrup, J. A., Downing, A. L., **Ersoy, Z.** et al., Lake salinization drives consistent losses of zooplankton abundance and diversity across coordinated mesocosm experiments. **Limnology & Oceanography Letters** (2022), [doi:10.1002/lol2.10239](https://doi.org/10.1002/lol2.10239)
- Ersoy, Z.**<sup>‡</sup>, Scharfenberger, U.<sup>‡</sup>, Baho, D.L., Bucak, T., Feldmann, T., Hejzlar, J., Levi, E.E., Mahdy, A., Nöges, T., Papastergiadou, E., Stefanidis, K., Šorf, M., Søndergaard, M., Trigal, C., Jeppesen, E., Beklioğlu, M. Impact of nutrients and water level changes on submerged macrophytes along a temperature gradient: a Pan-European mesocosm experiment. **Global Change Biology** (2020), 26, 6831-6851, [doi:10.1111/gcb.15338](https://doi.org/10.1111/gcb.15338)
- Ersoy, Z.**, Brucet, S., Bartrons, M., Mehner, T. Experimental tests of fish predation on zooplankton, and recovery rate of zooplankton community structure after stop of predation, **PLoS ONE** (2019), 14(2): e0212351, [doi:10.1371/journal.pone.0212351](https://doi.org/10.1371/journal.pone.0212351)
- Ersoy, Z.**, Jeppesen, E., Sgarzi, S., Arranz, I., Cañedo-Argüelles, M., Quintana, X.D., Landkildehus, F., Lauridsen, T.L., Bartrons, M., Brucet, S. Size-based interactions and trophic transfer efficiency are modified by fish predation and cyanobacteria blooms in Lake Mývatn, Iceland. **Freshwater Biology** (2017), 62, 1942-1952, [doi:10.1111/fwb.13039](https://doi.org/10.1111/fwb.13039)
- Brucet, S., Tavşanoğlu, U.N., Ozen, A., Levi, E., Bezirci, G., Çakıroğlu, A.İ., Jeppesen, E., Svenning, J.C., **Ersoy, Z.**, Beklioğlu, M. Size-based interactions across trophic levels of food webs in shallow Mediterranean lakes, **Freshwater Biology** (2017), 62, 1819-1830, [doi:10.1111/fwb.12997](https://doi.org/10.1111/fwb.12997)
- Cañedo-Argüelles, M., Sgarzi, S., Arranz, I., Quintana, X.D., **Ersoy, Z.**, Landkildehus, F., Lauridsen, T., Jeppesen, E., Brucet, S. Role of predation in biological communities in naturally eutrophic subarctic Lake Mývatn, Iceland, **Hydrobiologia** (2017), 790, 1, 213-223, [doi:10.1007/s10750-016-3031-0](https://doi.org/10.1007/s10750-016-3031-0)

### BOOK CHAPTERS

- Ersoy, Z.**, Elverici, M. Biodiversity indices in aquatic ecosystems Field and Laboratory Techniques in Freshwater Ecosystems, pp.393-410 (in Turkish) Editors: Nihan Tavşanoğlu, Gökben Kankılıç Başaran, Şeyda Erdoğan, Nobel Publishing, ISBN 978-625-402-870-0

5. **Ersoy, Z.**, Castillo-Escrivà, A., Pereira, CL., Sroczynska, K., Ribeiro, S., Araújo, MB., Matias, MG. Environment mediates body mass-abundance scaling regardless of species richness. Under review in **Ecology**
4. **Ersoy, Z.**, Cañedo-Argüelles, M., Espinosa-Angona, C., Vendrell-Puigmitja, L., Proia, L. Experimental assessment of salinization effects on freshwater zooplankton communities and their trophic interactions under eutrophic conditions. Under review in **Environmental Pollution**
3. Pereira, CL.<sup>‡</sup>, **Ersoy, Z.**<sup>‡</sup> Gravel, D., Araújo, MB., Matias, MG. Future-proofing environmental DNA and trait-based predictions of food webs. Under review in **TREE**
2. Arnott, S.E., Fugère, V., Symons, C.C., Melles S.J., Beisner, B.E., Cañedo-Argüelles, M., Hébert, M. P., Brentrup, J.A., Downing, A. L., Gray, D.K., Greco, D., William D. Hintz, W.D., McClymont, A., Rick A. Relyea, R.A., James A. Rusak, J.A., Searle, C.L., Astorg, L., Baker, H.K., **Ersoy, Z.** et al., Broad scale intraspecific variation in freshwater zooplankton salt tolerance. Under review in **Limnology & Oceanography Letters**
1. Sgarzi, S., Badosa, A., Leiva-Presa, À., Bartrons, M., **Ersoy, Z.**, López, E., Brucet, S. Water depth and resource availability mediate planktonic size spectra in temporary Mediterranean ponds along the hydroperiod. In preparation for **Aquatic Sciences**

## ORAL PRESENTATIONS (INCLUDING ONLY FIRST AUTHOR TALKS IN THE LAST 5 YEARS)

11. **Ersoy, Z.** Ponds are full of different forms of life, let's take a closer look! **Lisbon Soapbox Science Event**, 23 October 2021, **Virtual**
10. **Ersoy, Z.**, Baker, H.K., McClymont, A., Hassal, E., Jonassen, K.L., Kirkwood, A., Melles, S., Searle, C.L., Shurin, J.B., Siddons, S.R., Symons, C.C., Cañedo-Argüelles, M. Effect of salinization on zooplankton size structure: an intercontinental coordinated mesocosm experiment, **SEFS 2021**, 25-30 July 2021, Virtual
9. **Ersoy, Z.**, Castillo-Escrivà A., Pereira CL., Sroczynska K., Ribeiro S., Araújo MB., Matias MG., Changes in community size structure in experimental freshwater food webs across biogeographical gradients, **ASLO 2021**, 22-27 June 2021, Virtual
8. **Ersoy, Z.**, Pereira CL., Gilbert TP., Araújo MB., Matias MG., Reconstructing food webs in a multi-site mesocosm facility- Iberian Pond Network, **2nd International Aquatic Mesocosm Research Symposium**, 12-14 April 2021, Virtual
7. **Ersoy, Z.**, Castillo-Escrivà A., Pereira CL., Sroczynska K., Ribeiro S., Araújo MB., Matias MG., Abundance-body mass relationships structuring aquatic food webs across biogeographical gradients, **AIL 2020**, 26-29 October 2020, Virtual
6. **Ersoy, Z.** Size-abundance scaling across biogeographical gradients in aquatic food webs, **International Biogeography Society, Humboldt Day Event**, 12-19 September 2020, **Virtual (invited talk)**
5. **Ersoy, Z.** Tatlısu ekosistemlerinde besin ağları ve boyuta bağlı etkileşimler (in Turkish), **Eko-EvoOnline Seminars**, 10 July 2020, **Virtual (invited talk)**
4. **Ersoy, Z.**, Bartrons, M., Mehner, Jeppesen, E., Brucet, S. Influence of fish predation on size-based interactions and recovery of zooplankton communities in freshwater planktonic food webs: Examples from mesocosm experiments, **EEBST 2019**, 10-12 July 2019, Ankara, Turkey
3. **Ersoy, Z.**, García-Comas, C., Bartrons, M., Hsieh, C.H., Brucet, S. Influence of prey and predator size diversity on trophic transfer efficiency in freshwater and marine ecosystems, **SIBECOL 2019**, 4-7 February 2019, Barcelona, Spain
2. **Ersoy, Z.**, Bartrons, M., Mehner, T., Brucet, S. Recovery rate of zooplankton community structure after stop of fish predation, **AIL 2018**, 24-29 June 2018, Coimbra, Portugal
1. **Ersoy, Z.**, Jeppesen, E., Sgarzi, S., Quintana, X.D., Arranz, I., Cañedo, M., Landkildehus, F., Lauridsen T.L., Einarsson, Á., Brucet, S. Size-based interactions within the food web of Lake Mývatn, Iceland: a mesocosm experiment, **SIL 2016**, 31 July-5 August 2016, Torino, Italy

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<sup>‡</sup>Co-first authorship

## Projects

2022–Now	<b>Co-PI-</b> ACROSS-LATitudinal gradients of speCies Richness and bOdy-Size Spectrum in multiple trophic levels and ecosystems, SIBECOL project <a href="#">Link</a>	<i>Worldwide</i>
2022–Now	<b>4th co-champion-</b> GLEON ZooSize project <a href="#">Link</a>	<i>Worldwide</i>
2019–Now	<b>Researcher-</b> AdaptAlentejo Predicting ecosystem-level responses to climate change	<i>Portugal</i>
2019–Now	<b>Collaborator-</b> GLEON - GALACTIC: GlobAl LAke miCroplasTICs <a href="#">Link</a>	<i>Portugal</i>
2018–Now	<b>Collaborator-</b> GLEON - Global Salt Experiment <a href="#">Link</a>	<i>Spain</i>
2018–2019	<b>Collaborator-</b> Urban Algae - Ecological Status and the Perception of Ecosystem Services of Urban Ponds (2 <sup>nd</sup> Collaborative European Freshwater Science Project for Young Researchers - FreshProject)	<i>Spain</i>
2016–2018	<b>Collaborator-</b> AGRHYDROM- A timely look at effects of agriculture on fluvial DOM: the role of hydrology, 2 <sup>nd</sup> Young Collaborative Project from the Iberian Association of Limnology (AIL)	<i>Spain</i>
2015–2017	<b>Researcher-</b> Restoration of Mediterranean temporary ponds in Can Torres (Serra de l'Albera). Funded by ANDRENA.	<i>Spain</i>
2014–2015	<b>Researcher-</b> Will climate-related changes in fish stocks lead to significant ecosystem shifts in the natural eutrophic Lake Myvatn (Iceland)? Funded by Carlsberg Foundation	<i>Spain</i>

## Grants & Awards

2022	SIBECOL Projects for Early Career Researchers (4k€)	<i>Iberian Peninsula</i>
2021	ASLO 2021 Aquatic Sciences Meeting Registration Grant (\$250)	<i>Virtual, Worldwide</i>
2018	Representative of Spain, SIL Student Competition for the best published article in Limnology	<i>Vic, Spain</i>
2018	AIL 2018 Conference Registration Grant (160€)	<i>Coimbra, Portugal</i>
2016	UVic-UCC, International Research Stay Grant (2k€)	<i>Vic, Spain</i>
2016	Wetzel SIL Congress Travel Award (\$225)	<i>Turin, Italy</i>
2016	International IGB Fellowship (8k€)	<i>Berlin, Germany</i>
2015	Antiga Caixa Manlleu & BBVA Foundation, International Mobility Grant (700€)	<i>Vic, Spain</i>
2015	UVic Predoctoral Fellowship (48k€)	<i>Vic, Spain</i>
2014	ERASMUS Student Mobility Grant (800€)	<i>Aarhus, Denmark</i>

## Skills

- **Programming:** R (tidyverse, dplyr, nlme, mgcv, randomForest, igraph, Rmarkdown), Python (beginner)
- **Languages:** Turkish (native), English (proficient), Catalan (elementary), Spanish (beginner)
- **Fieldwork and Laboratory:** Invertebrate, plankton and water chemistry sampling, water chemistry analysis, plankton and invertebrate identification & enumeration, respirometry experiment

## Memberships

2017-Present	<b>European Fresh and Young Researchers (EFYR)</b> representative of <b>European Federation for Freshwater Scientists (EFFS)</b>
2015-Present	Member, <b>International Society of Limnology (SIL)</b>
2015-Present	Member, <b>Iberian Association of Limnology (AIL)</b>
2015-Present	Member, <b>Ecology and Evolutionary Biology Society of Turkey (Eko-Evo)</b>

## Academic Service & Outreach

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- **Supervision:** David José Batista Reisinho, Reconstructing the aquatic food web of the Alqueva dam: a bibliographic approach, 2019-2021, Master thesis at Universidade de Évora, co-supervised with Miguel Matias
- **Mentoring:** Álvaro Gómez Ramírez, Effect of global warming on the physiology of aquatic invertebrates, 2021, Bachelor thesis at Universidad de Alcalá, Spain
- **Reviewer - Journals:** Hydrobiologia (2), Freshwater Biology (1), Aquatic Sciences (1), Ecology and Evolution (1), Water (1), PloS ONE (1), Climatic Change (1), Environmental Science and Pollution Research (1), Fundamental and Applied Limnology (1), Anais da Academia Brasileira de Ciências (1)
- **Reviewer - Funding:** European Federation for Freshwater Scientists (EFFS) Collaborative European Freshwater Science Project- FreshProject
- **Science Communication:** Lisbon Soapbox Science Event Speaker (October 2021) and STEM mentoring at Epistem Turkey (2018-2020)
- **Organizations:** Organizing committee member **2<sup>nd</sup> Ecology and Evolutionary Biology Symposium**, **8<sup>th</sup> Shallow Lakes Conference** and **SEFS 2019 and 2021**