



Karolina Bącela-Spychalska

FULL PROFESSOR – UNIVERSITY OF LODZ

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Currently held positions

Department of Invertebrate Zoology and Hydrobiology, Faculty of Biology and Environmental Protection

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University of Lodz

Scientific profile and collaborations

Since the beginning of my scientific career, I have been interested in the problem of **biodiversity loss and human impact on this process**. I focus primarily on biological invasions, with particular emphasis on invasive species (their biology and ecology) in inland waters, parasitism in **biological invasions**, and the application of molecular methods in phylogeography, phylogeny and organism identification.

I consider biological invasions in many ways by 1) testing the biological features of alien species that impact their invasive potential; 2) tracing sources and monitoring the dynamics of biological invasions using molecular tools (phylogeography); 3) testing interactions between invasive species (including the invasional meltdown hypothesis); 4) assessment of the impact of symbionts on invasive species and co-phylogeography of entire symbiomes in the host-parasite system.

Another important topic of my research is an **implementation of molecular methods in the taxonomy and identification of organisms** (including intracellular parasites - microsporidia) and the assessment of the cryptic diversity of amphipod crustaceans. In the last years, I have started studies on the biodiversity estimation using **environmental DNA and RNA metabarcoding** and trying to find best solution to implement these new methods in the environmental monitoring procedures.

Selected publications

- 2023 **Widespread infection, diversification and old host associations of *Nosema Microsporidia* in European freshwater gammarids (*Amphipoda*)** [\[link\]](#)
- 2015 **Out of the Black sea: Phylogeography of the invasive killer shrimp *Dikerogammarus villosus* across Europe** [\[link\]](#)
- 2020 **Chapter 18: Outlook: Crustaceans in the Anthropocene. In: Thiel and Poore (eds) *Evolution and Biogeography: Volume 8*, Oxford University Press** [\[link\]](#)

Research grants

Principal Investigator: 2 grants: KBN, Conseil Regional de Bourgogne and Egide, France

Project Manager: 5 grants: Norwegian, BiodivERsA BiodivMon, NCN, MNiSW, Polonium

Co-Investigator: 11 grants: NCN, MNiSW, The European Commission's HORIZON 2020

International research stays

France, Equipe Ecologie Evolutive, UMR CNRS 5561 Biogeosciences, Universite de Bourgogne, France, supervised by dr hab. Thierry Rigaud and dr Remi Wattier

The Netherlands, Department of Animal Ecology and Ecophysiology, University of Nijmegen, collaboration with Prof. Gerard van der Velde