The Benelux Congress of Zoology 2024 ("Zoology 2024")

Celebrating biodiversity between land and sea

Conference Booklet December 12 – 13, 2024

Organised by the University of Mons, Belgium

Palais des Congrès de Mons, Avenue Mélina Mercourie 9, 7000 Mons, Belgium

Contact: <u>UMONS.Zoology.2024@gmail.com</u> Web site: <u>rbzs.be/zoology-2024/</u>







UM



IS

()

University of Mons

ZOOLOGY 2024

Celebrating biodiversity between land and sea

Mons-Belgium 💡

12тни 🕨 13 глі

December 2024

rbzs.be/zoology-2024/

Scan me!



Plenary speakers



Nicola Nadeau University of Sheffield Evolutionary biology of Heliconius butterflies

Université de Mons



Peter Ladurner University of Innsbruck Stem cell biology, reproduction and bioadhesion of flatworms



SYMBIOTIC INTERACTIONS CHALLENGED BY ENVIRONMENTAL STRESS IN AQUATIC TRANSITIONAL HABITATS

<u>Martina TOPIĆ</u>^{1*}, Nikol KMENTOVÁ^{1,2}, Maarten VAN STEENBERGE³, Maarten P.M. VANHOVE¹

¹Zoology: Biodiversity and Toxicology group, Centre for Environmental Sciences, Hasselt University, 3590 Diepenbeek, Belgium.

² OD Natural Environment, Royal Belgian Institute of Natural Sciences, 1000 Brussels, Belgium.

³ OD Taxonomy and Phylogeny, Royal Belgian Institute of Natural Sciences, 1000 Brussels, Belgium.

*Presenting author, martina.topic@uhasselt.be

Keywords: Climate change, Parasites, Killifishes, Estuaries

Estuaries present transitional habitats between freshwater and marine ecosystems. They are known for their changing abiotic conditions, influenced by daily and seasonal changes in sea levels, changes in temperature, and river influx. Estuaries are also significantly impacted by climate change, which affects them through changes of sea levels, water temperature, salinity and acidity. These changes will increase the environmental stress experienced by aquatic organisms and their symbiotic communities, which include bacteria and metazoan parasites, and influence their symbiotic relationships. The impact of climate change and environmental stress on aquatic estuarine organisms is underexplored on the level of symbiotic communities. This project is focused on understanding the effects of global climate change on these communities. We will research the diversity present in fish-parasite-microbiome communities on the east coast of the United States of America using the Atlantic mummichog (Fundulus heteroclitus) as a fish host model species; identify mechanisms of stress response to salinity change in fish ectoparasites; describe the genomic landscape of salinity tolerance in a symbiont community; and model the possible direction of change in a symbiont community under the influence of climate change. The project started with the research of ectoparasites of estuarine fishes from South Carolina. Species of Anchoa, Fundulus, Gambusia, Gobiosoma, Menidia and Mugil (n=11) were screened for the presence of ectoparasites. In total, 15 species belonging to different lineages of monopisthocotylan flatworms (Gyrodactylus, Ligophorus, Salsuginus), polyopisthocotylan flatworms (Metamicrocotyla) and copepods (Bomolochus, Caligus, Ergasilus, Naobranchia). From all screened hosts species Ligophorus have the highest mean intensity and prevalence. Furthermore, M. cephalus harbors the highest parasite species richness (seven). Some of the parasites identified present new records for the study area. These parasites show strong patterns of host-specificity and can be found in different habitats within the estuary, such as creeks, small lakes and water reservoirs.