

*The **ECOSPHERE research group** aims to study aquatic and valley ecosystems that are continuously challenged by natural and anthropogenic stressors. The research focuses on acquiring fundamental and applied knowledge at different levels of structural and functional organisation in order to underpin environmental management decisions.*

MASTER THESIS SUBJECT 2023

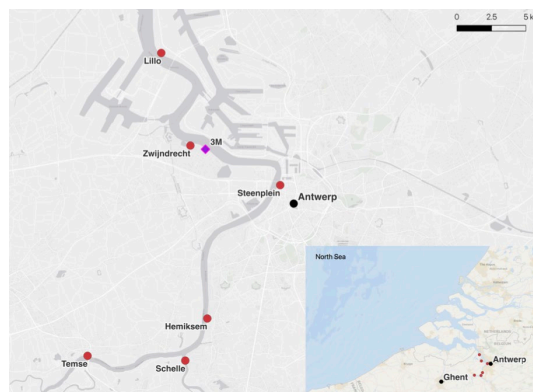
Bioaccumulation and effects in caged animals exposed in rivers

Research group: ECOSPHERE

Hosting laboratory: CGB – building U

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- This topic mostly contains literature study, lab work, field work, experimental work, GIS, numerical modelling, other:
- Possession of driver's license B is needed, recommended, not needed
- Possession of certificates needed: FELASA C, other:



Summary:

Traditionally, biomonitoring involves the sampling of resident organisms (e.g. fish, invertebrates, aquatic plants) in which accumulation and effects of micro pollutants are measured. However, the drawback of this approach is that it is very unlikely that at all sites under investigation the same species is found in sufficient numbers. In addition, when sampling resident organisms, it is unknown how long these organisms were present at the sampled sites and as a result they may not reflect the local conditions. To cope with this problem organisms can be exposed for a fixed time in cages at different sites. These organisms originate from a well known reference site or from a laboratory culture.

In this subject we plan to expose organisms at different sites in rivers for a certain period. Here after they are brought to the laboratory and several endpoints such as respiration, growth, feeding rate and/or biochemical biomarkers can be measured. In addition several contaminants will be measured in the tissues including (depending on the study area) metals, PFAS, pesticides, pharmaceuticals or other persistent organic pollutants.

Possible study areas are the Scheldt river (where we exposed already clams in two former years), or canals or tributaries of Scheldt or Meuse.

Possible study species are the Asiatic clam (*Corbicula fluminea*), zebra mussel (*Dreissena polymorpha*), amphipods (*Gammarus sp.*) or isopods (*Asellus sp.*).

This subject involves both field and laboratory studies.

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