University of Antwerp
Faculty of Science

ECOSPHERE

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

Is consumption of Chinese mitten crabs in Belgium associated with health risks for humans and zoo animals?

Research group: ECOSPHERE

Hosting laboratory: CDE and CGB

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Daily supervision: Thimo Groffen

Chinese mitten crab served in a restaurant and sold (alive) on the market (30/04/22)

- **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 Chinese mitten crabs live in fresh water, but rely on brackish and saltwater for their reproduction. Larvae are spread by sea currents, which enables the crabs to cover long distances in short timespans. Furthermore, these crabs can cover long distances for their migration and cross land to cross barriers such as dams. This invasive species can also be found across Flanders, especially in the Scheldt basin, at harbours, and in various channels. In these ecosystems, they can cause severe ecological and economical damage.

In Belgium these crabs are managed in several ways, including a crab trap in Grobbendonk. The captured crabs are destroyed by incineration, which is an expensive technique. Therefore, it is important to investigate other possibilities to use these crabs, including their use as feed for zoo animals. Chinese mitten crabs are also a delicacy in China and we know that they are sold on Flemish markets. Since the Flemish rivers and streams are often highly contaminated with various micropollutants, including metals and PFAS, it is still unclear to what extent the crabs are suitable and safe for human and animal consumption.

In this thesis, you will investigate the concentrations of micropollutants in the edible tissues of the crabs and the whole crab. Furthermore, you will compare accumulated concentrations with tolerable intake threshold values and quality standards for the protection of top predators.

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