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 2026-2027

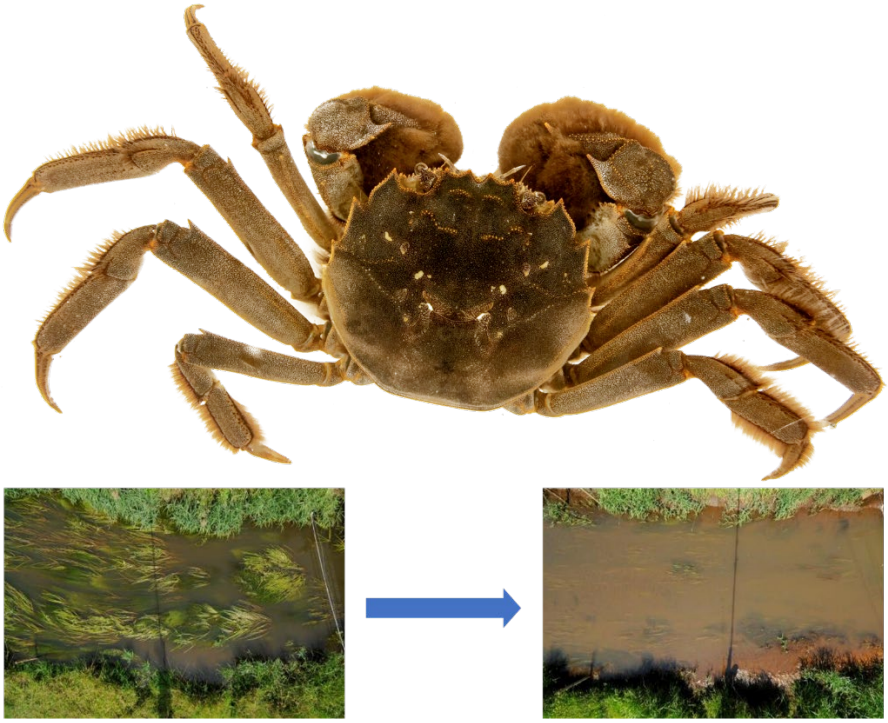
Determination of a maximum Chinese mitten crab density that will not harm the aquatic ecosystem

Research group: ECOSPHERE

Hosting laboratory: CDE – building C and Mesodrome

Promotor(s): Jonas Schoelynck jonas.schoelynck@uantwerpen.be

Daily supervision: Heleen Keirsebelik



Chinese mitten crabs can bring damage to submerged aquatic vegetation. When the vegetation disappears, its ecosystem functions disappear as well and it is hard to get them back.

- **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 The Chinese mitten crab (*Eriocheir sinensis*) is a freshwater invasive crab species that has become widespread in Flanders. The population can be so large, especially during the juvenile spring migration, that it causes ecological and economic damage. One of these damages is done to submerged aquatic vegetation. The crabs cut of many of the plant stems, thereby thinning the vegetation. This leads to a loss of habitat for other species and of the ecosystem services the plants provide.

The Flemish Environmental Agency has therefore developed a trap that catches Chinese mitten crabs when they are migrating. The first trap is so successful – up 700.000 crabs a caught in 1 year – that more traps are being build in Flanders and elsewhere in Europe. Although these traps clearly catch a lot of crabs, their effectiveness for the ecosystem is unclear since we don't have clear population reduction goals set. In this thesis we will try to define these goals.

In artificial ponds, different aquatic plant species will be subjected to different crab densities and the effects on the plants will be evaluated. The end goal of this thesis is to determine a 'safe' crab density for aquatic vegetation.

Besides this, the student will help with other ongoing research on estimating the crab population in Flanders.

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