

*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 2025

Effect of floating wetlands on the physicochemical and biological quality of the Binnen-Dijle (Mechelen)

Research group: ECOSPHERE

Hosting laboratory: CGB– building U

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Daily supervision:



Summary The water quality of the Binnen-Dijle in the city of Mechelen is insufficient. Mainly the levels of nutrients (phosphates, nitrates, ammonia) are exceeding the Flemish water quality standards and impairing the biological water quality. The city of Mechelen aims to construct floating wetlands that are inserted in the Binnen-Dijle and that hopefully extract nutrients from the water, improving the water quality. The first floating wetlands will be deployed in June 2026.

The aim of this subject is to assess the physico-chemical and biological quality before the installation of the floating wetlands and at different time points after the installation.

Physico-chemical variables that will be assessed are: dissolved oxygen, acidity, conductivity, nutrients such as nitrate, nitrite, ammonium, phosphate, sulfate and chloride. Besides the physico-chemical

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assessment also the biodiversity of the macro-invertebrates will be assessed applying the multi metric index of Flanders (MMIF). Samples will be taken at several locations up and downstream of the city of Mechelen as well as in the city itself. Samples will be taken from July until December and beyond. If feasible also the fish community will be assessed at different locations before and after the installation of the floating wetlands.

You will closely cooperate with the civil servants of the city of Mechelen.

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