University of Antwerp
Faculty of Science

ECO🌊SPHERE

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.
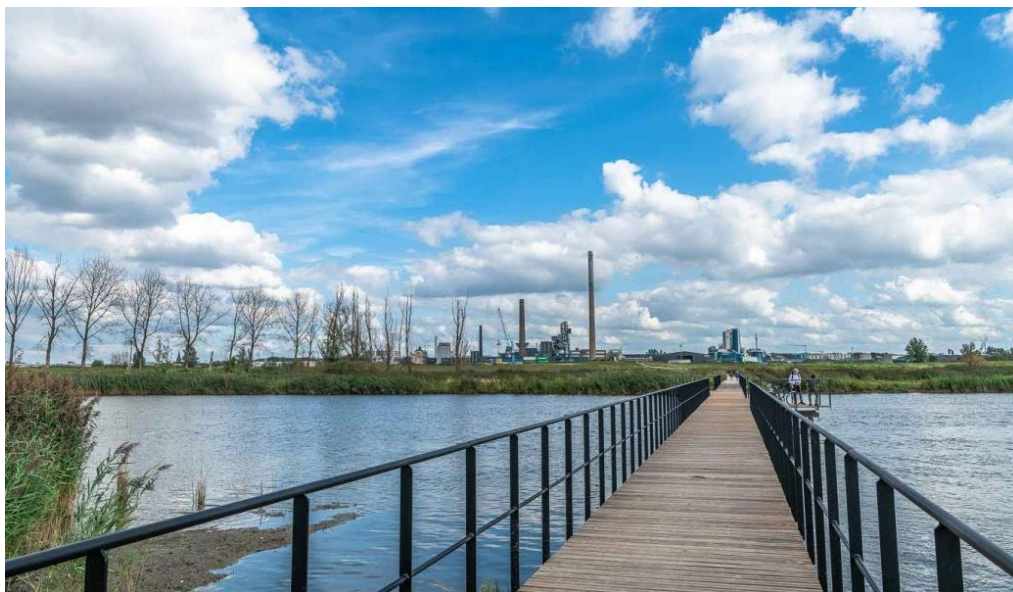
MASTER THESIS SUBJECT 2025-2026

<u>Ecosystem service delivery in a flood control area with a controlled reduced tide: Water quality in the Polders van Kruibeke</u>

Research group: ECOSPHERE

Hosting laboratory: CDE – building C

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Polders van Kruibeke

Summary

Within the Scheldt River basin, many tidal wetlands have been restored for their ecosystem service provisioning. On of the techniques to restore tidal nature in a flood control area, is the 'controlled reduced tide', used in the Polders van Kruibeke. This system, using high inlet and low outlet sluices, introduces a daily tidal regime into an embanked site. In this way, tidal marshes are developing in this

> ➢ **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**
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former polder area. But can this created marsh fulfill equal ecosystem functions as natural tidal marshes?

In this thesis you will focus on water quality. How efficient is nutrient removal? Is the site retaining nitrogen or phosphorus? Is it delivering dissolved silicon? What influences the sink or source function of this newly created marsh?

To investigate this, monitoring campaigns are organized, measuring water quality at in- and outflow during a full tidal cycle. You will take part in these campaigns. Together with data from previous years, you will investigate the functioning of this area for water quality regulation.

- ➢ **This topic mostly contains ⊠ literature study, ⊠ lab work, ⊠ field work, ☐ experimental work, ☐ GIS, ☐ numerical modelling, ☐ other: …………………………………………………………………**
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