

*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

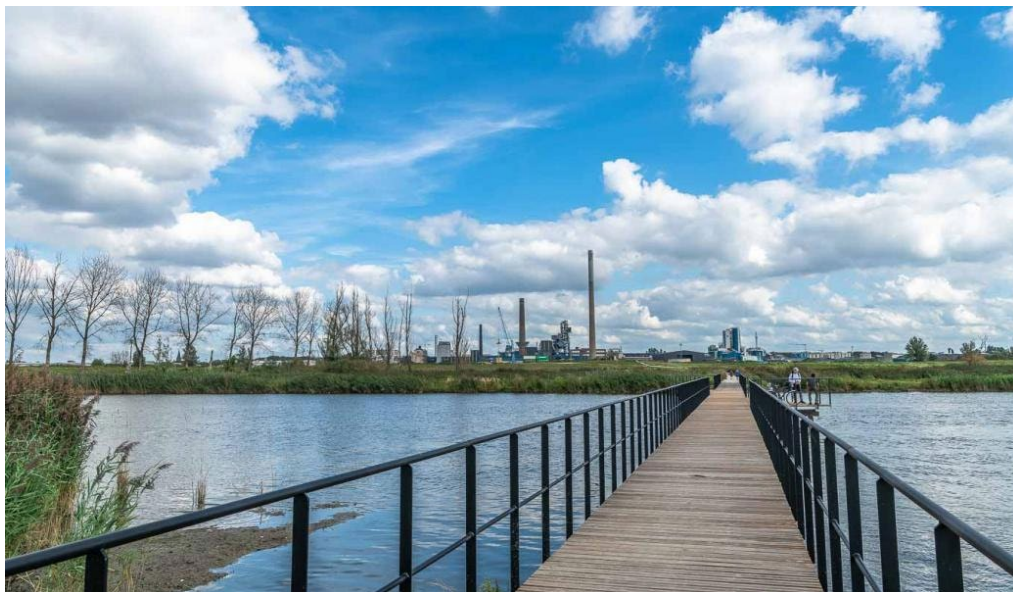
How is sedimentation changing the ecology of a constructed tidal marsh, Lippenbroek?

Research group: ECOSPHERE

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Summary

Lippenbroek was the first area with a controlled reduced tide worldwide. This pilot project started in 2006 and has been monitored since with great care to see whether these artificial tidal marshes can develop equal structures and functions as natural tidal marshes.

Much attention is paid to sedimentation and erosion. In natural marshes, sedimentation rates decline when a marsh is silting up, because the inundation frequency goes down. In Lippenbroek on the contrary, this negative feedback of increasing elevation on sedimentation rate, is absent. Increasing

- This topic mostly contains ☒ literature study, ☒ lab work, ☒ field work, ☐ experimental work, ☐ GIS, ☐ numerical modelling, ☐ other:
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elevation is not changing the amount of incoming water in Lippenbroek: this is only depending on the sluice dimensions.

After 20 years, sedimentation has changed the topography in Lippenbroek. How is this influencing the tides? Are there feedback mechanisms? What is the consequence for vegetation and the ecological functioning? Do we need to adapt the sluice characteristics to this altered topography?

In this study you will analyse elevation changes and sedimentation, accretion in Lippenbroek. You will compare your data with long term sedimentation records. You will analyze sedimentation in relation to tidal data and vegetation cover, and link this to the development of the site. Final goal is to advice the Flemish Waterways if adaptations to the sluices of Lippenbroek are needed, after 20 years of succession.

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