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

Biodiversity monitoring in newly restored tidal nature: HPP, from polder to conservation area

Research group: ECOSPHERE

Hosting laboratory: CDE – building C, CGB

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

Daily supervision: Roy Münstermann roy.munstermann@uantwerpen.be

Salicornia europaea, one of the plant species currently to be found in HPP. Except for its beauty, this plant known for its deliciousness.

- **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 – Within the Scheldt River basin, many tidal wetlands have been restored for their ecosystem service provisioning. One of these wetlands is the Hedwige-Prosper polder (HPP): 465 ha of previous agricultural land, now brought back into nature for the realisation of Grenspark Groot Saeftinghe. Because of the sheer size of this restoration project, HPP forms an ideal opportunity to evaluate how nature restoration in brackish tidal marshes works on a landscape scale. Not only is this expected to become very relevant for its nature, but on a regional scale this can also become an important site with regards to flood protection, green job creation and tourism.

To now properly evaluate whether the restored wetland is transforming into functional nature, biodiversity is one of the key aspects that needs to be monitored. In the freshly deposited Scheldt sediments, we expect to find pioneer benthos and plant species. Whether this is the case, and which species this are for the HPP remains to be studied. Within the larger research framework in HPP this information is valuable and can be linked to various other abiotic factors including sedimentation and erosion, soil properties, pollution presence, water quality,…

For this thesis, you will help field-technicians with sampling for benthos, evaluation of plant presence and abundance, and study of various other linked abiotic factors. Afterwards, you will e.g. assist in the identification of all present species in the benthos samples, and aid with data processing. The findings of this study can be compared to previous measurements and similar ecosystems to get an impression of its current biodiversity status. Due to the novel nature of this project, this pioneering step in the further monitoring of HPP is bound to provide interesting insights in the functioning and evolution of brackish tidal marshes. A sense for adventure, perseverance, and detail is recommended.

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