

*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

Ecological effects of fluvial flooding.

Case study: Kleine Struisbeek CDE

Research group: ECOSPHERE

Hosting laboratory: CDE

Promotor(s):

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- 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 Kleine Struisbeek flows along the southern part of the Drie Eiken Campus. An area along the stream has been designated as a WORG (Water Retention and Buffer Area), intended to eventually serve as a floodplain. The University of Antwerp wants to take this chance to develop this area as a so-called outdoor laboratory in favour of climate adaptation. With support from the University of Antwerp's Climate Adaptation Fund, we are developing a Living Lab, encompassing system analysis, design, and baseline measurements for a controlled floodplain tailored to small stream valleys.

The proposed thesis topic will be part of a larger study encompassing multiple thesis topics, to form the basis of the design, the monitoring, and the future evaluation of the WORG. The topic will serve as an important first step to summarise the international knowledge on the ecological effects of fluvial flooding, focussing mainly on hydrochemical dynamics (nutrients, pH, pollutants). Taking the Kleine Struisbeek as a case study, it will look more detailed at the water and sediment quality of the Kleine Struisbeek and its interaction with floodplain ecology, thereby identifying constraints and solutions to these constraints in developing the WORG.

Special skills/remarks:

Knowledge of hydrochemistry is a benefit. A driver's license is not necessary since the research area is the Drie Eiken Campus.

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