

Service offer • Mesodrome: a mesocosm for ecological impact assessment

At Campus Drie Eiken two research groups of the University of Antwerp, Sphere and Ecobe, constructed a large mesocosm facility. A mesocosm is a controllable semi-natural system in which environmental and biological processes can be studied on an ecologically relevant scale of complexity and timeframe. We invite organisations to join us to find answers to their ecological, toxicological and risk assessment questions in cooperation with our researchers.



TTO-23-ENG-171030



Sphere

Systemic Physiological & Ecotoxicological Research
University of Antwerp



**Ecosystem Management
Research Group (Ecobe)**
University of Antwerp

■ Infrastructure

The installation consists of a 1000 m² greenhouse housing 16 large ponds, four 5 m long temperature controlled raceways with variable water-flow equipped as respirometers and an aquaculture installation. Besides the ponds all systems are fully temperature controlled and equipped for gas exchange (e.g. CO₂). In the near future (2017) a large 25 m long flume allowing simulation of tides in shore-lands will be added. A wastewater management system is in place.

■ Use

The sustainable use and management and protection of the aquatic environment in all its diversity is key to the success of a whole range of human activities and the long range perspectives of these. This requires a fundamental understanding of the functioning of these systems and the development of criteria which allow the long term use and exploitation. A good ecological quality of surface and ground waters is essential as is also required by the European Water Frame Directive. Our researchers are skilled in assessing impact on aquatic systems and understand the importance and relevance of measurements as close as possible to the complexity of a natural ecosystem. We invite industrial and societal stakeholders to collaborate with Sphere and Ecobe researchers to better understand and control the potential adverse effects of chemicals and other stressors, including climate change on the environment.

■ About the researchers/ research groups

The research group 'Systemic Physiological and Ecotoxicological Research' (SPHERE) conducts fundamental and applied research concerning the adaptation of aquatic and terrestrial organisms to their environment and the effects of environmental contamination on the health status of organisms, populations and communities.

The Ecobe research group concentrates on the ecology of aquatic ecosystems and wetlands and the processes in the land-water interphase along the whole river continuum and the river-coastal sea interaction. The studied systems vary from small streams with riparian margins over larger rivers and floodplains to estuaries. These studies, both descriptive and experimental in nature, are integrated to predict the impact of different management options on the functioning and the biodiversity of the system. Both laboratories belong to Enviromics, a consortium that is funded by the Industrial Research Fund and focuses on the field of environmental sciences and technology.



More information

Dr. Freddy Dardenne
Research Manager Enviromics
University of Antwerp
Campus Groenenborger
Groenenborgerlaan 171/U7
2020 Antwerpen - Belgium

T +32 3 265 33 39
T +32 497 54 80 47
freddy.dardenne@uantwerpen.be
www.enviromics.be
www.mesodrome.be