



Phosphorus biogeochemistry in managed wetlands

Applicants are invited for a PhD fellowship/scholarship at Graduate School of Technical Sciences, Aarhus University, Denmark, within the ECO Science programme. The position is available from 1 December 2022 or later.

Title: Phosphorus biogeochemistry in managed wetlands

Research area and project description

Department of Ecoscience at Aarhus University invites applicants for a PhD fellowship in "Phosphorus Biogeochemistry in Managed Wetlands". The project is part of the research project "Rewetting of organic lowland soils in Denmark: a NIFA project network". The project is financed by the Environmental Ministry of Denmark and is further closely linked to another peatland restoration project "ReWet-DK" (<https://projects.au.dk/rewet>) which supports the instrumentation of the NIFA and other project sites to be established as "Living Wetland Labs" or "Wetland Observatories" in order to intensively monitor fluxes of greenhouse gases, water, and nutrients in organic soils.

The project

In the natural state, riparian peatlands serve important functions as sinks for nutrients and hydrological buffers for downstream systems, which has earned them the name "kidneys" of post-glacial landscapes. Upon rewetting, long-term drained and agriculturally used peatlands can turn into shallow lakes, characterized by high nutrient and methane emissions and by slow development towards peat-forming vegetation in the decades to come. Therefore this PhD project will investigate three approaches to foster peatland restoration: i) topsoil removal, ii) plant biomass removal, and iii) implementation of phosphorus filters. The PhD candidate will conduct experiments to assess the potential of these measures to moderate high phosphorus mobilization in rewetted peatlands. Specifically field experiments will be conducted to improve our understanding of phosphorus retention and/or release at certain environmental conditions or peatland management and their implication for carbon storage. The project will run in selected "wetland observatory sites" in Denmark which was comprehensively instrumented in the course of a Roadmap for Research Infrastructure project of Aarhus University to monitor ground water table changes, soil temperature and moisture, GHG fluxes and nutrient transformations (<https://projects.au.dk/rewet/>).

Who are we looking for?

We are looking for candidates within the field(s) of environmental chemistry/microbiology, soil chemistry and/or geochemistry. Applicants should be familiar with element cycling and chemical/microbial processes in soils. Experimental experience with soil analyses and geochemical methods applied to soils and water will be an advantage. The applicant should be interested in both field and laboratory work and need to hold or obtain a drivers licence.

Our group and research - and what do we offer?

You will be affiliated with the wetland research group of the Department of Ecoscience-Catchment Science and Environmental Management, Aarhus University, Aarhus. We deal with biological and chemical processes as well as the interactions between elements such as nutrients, hazardous substances, biological structure and climate changes. We cover topics such as lake and stream restoration, nutrient dynamics, the importance of water holes, small lakes and other wetlands in the uptake and release of greenhouse gases, biodiversity and the interaction between catchment areas and freshwater areas and develop models for calculating nitrogen and phosphorus losses from fields and transport through freshwater systems to the marine environment.

We offer creative and stimulating working conditions in dynamic and international research environments. Our research facilities include modern laboratories with facilities for both water, soils and gas analysis.

Project description. For technical reasons, you must upload a project description. Please simply copy the project description above, and upload it as a PDF in the application.

Qualifications and specific competences:

Applicants must have a relevant Master's degree or at least one year of a Master's degree in Environmental Science. We are looking for candidates within the field(s) of environmental chemistry/microbiology, soil chemistry and/or geochemistry. Applicants should be familiar with element cycling and chemical/microbial processes in soils. Experimental experience with soil analyses, and geochemical methods applied to soils and water will be an advantage. The applicant should be interested in both field and laboratory work and need to hold or obtain a drivers licence.

Place of employment and place of work:

The place of employment is Aarhus University, and the place of work is C. F. Møllers Allé 3, 8000 Aarhus C.

Contacts:

Applicants seeking further information are invited to contact:

- Hans Estrup Andersen, hea@ecos.au.dk, +4587158768.
- Dominik Zak, doz@ecos.au.dk +45 9350847.

How to apply:

Please follow [this link](#) to submit your application. Application deadline is 23 September 2022 at 23:59 . Preferred starting date is 1 December 2022.

For information about application requirements and mandatory attachments, please see our [application guide](#).

Please note:

- The programme committee may request further information or invite the applicant to attend an interview.
- Shortlisting will be used, which means that the evaluation committee only will evaluate the most relevant applications.

Aarhus University's ambition is to be an attractive and inspiring workplace for all and to foster a culture in which each individual has opportunities to thrive, achieve and develop. We view equality and diversity as assets, and we welcome all applicants. All interested candidates are

encouraged to apply, regardless of their personal background. Salary and terms of employment are in accordance with applicable collective agreement.



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