

## Modelling nutrient export in a Swedish agricultural headwater catchment under future climatic conditions

**Credits:** 30 credits  
**Level:** Master  
**Subject:** Environmental Science  
**Start:** Anytime

### Background

Nitrogen and Phosphorous are key nutrients for agricultural production. However, decades of high fertiliser application on croplands has led to diffuse pollution from soils and eutrophication of the water bodies. In the context a changing climate, there is an increasing need to evaluate the efficacy of water quality measures on reducing nutrient export.

### Objectives

In this project, you will set-up and calibrate a nutrient export model using the Soil and Water Assessment Tool (SWAT) for an agricultural headwater catchment. You will use the model to estimate the dominant sources and pathways of nutrients and estimate the potential impact of mitigation measures including ditch remediation on reducing the nutrient loads. Finally, you will apply the model under different climatic scenarios to evaluate the efficacy of mitigation measures under future climatic conditions.

### Performance

The work involves:

- Setting-up and calibrating a hydrochemical model in SWAT,
- Modelling nutrient fluxes under future climatic conditions,
- Literature review and report writing.

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