

MSc thesis /intern project  
Soil Science and Environment; Agricultural Water Management

## **Pilot study on soil structural collapse due to saturated (flooded) agricultural land**

Flooding and saturation of crop land is an understudied topic, despite being a frequent issue in temperate boreal climate zones, especially in crop fields of poor drainage and low-lying flat (flood plain) areas. Currently there are few experimental controlled studies on saturated soil, soil physical and soil structural impacts (and indeed tentative recovery!). This study will be a pilot to determine a protocol and provide a first assessment of potential impact on soil structure collapse /resilience due to saturation. It will inform development of a future study to understand soil health and damage due to saturated field conditions, and effects on soil physical properties.



The activities will be to

- select soils/site of suitable -representative texture classes and management
- collect soil cylinders and loose samples in the field
- construct a protocol for saturation of cylinders
- analyse soils pF in saturated /unsaturated conductivity in sandboxes and Ecotech, or HYPROB devices (TBD if available)
- Write up and presentation

The work will be undertaken with practical advice by Lab Engineer Anna Eklöv Pettersson in [Soil Physics Lab](#) of Department of Soil and Environment. Soil samples and cylinders need to be collected in January (assuming no freeze) in the region of Uppsala. Some tasks may need to start in advance of January in order for completing the data collection.

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