

# WETLANDS UNDER INFLUENCE OF ACID SULFATE SOILS, CASE STUDY: SOUTHERN SWEDEN, KRISTIANSTAD, NORRA LINGENÄSET

*Sina Shahabi Ghahfarokhi<sup>1</sup>,  
Henric Djerf<sup>2</sup>,  
Changxun Yu<sup>1</sup>,  
Mats Åström<sup>1</sup>,  
Marcelo Ketzer<sup>1</sup>*

*1) Department of Biology and Environmental Science, Linnaeus University,  
Sweden*

*2) Department of Environmental Science and Bioscience, Kristianstad  
University, Sweden*

## **Abstract**

In recent years, wetlands have drawn scientific attention due to their environmental and economic importance. Preliminary studies show that wetlands in southern Sweden in the vicinity of Kristianstad may be contaminated by iron and aluminium (and possible other metals). Iron precipitates has led to the loss of flora and fauna within the protected natural wetland “Norra Lingenäset” over the last decade. The source of iron is the focus of our investigations, and it is possibly associated with drained acid sulphate soils (ASS) in the north of the wetland. The drained water (varying pH 3-8) from the nearby crop land is pumped to the Norra Lingenäset wetland. Therefore, the interrelation and correlation among the ASS (source of iron contamination) and the wetland are of interest. Our primary results shows 5-70 mg/L of iron in drained water from the ASS and 50-150 mg/g of iron in the accumulated sediments in the draining ditch. Hence, the conditions and state of the cropped ASS regarding iron species and concentrations will be studied. The results from this stage will enable us to design an iron pool for the Kristianstad case study. Understanding metal transportation, speciation and depositions will aid Kristianstad crop lands and wetland managers to provide efficient and effective management plans.

**Keywords:** Metal, Contamination, Acid Sulfate Soil, Wetland