

Acid Sulfate Soils in Northern Europe. A preliminary overview

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Acid sulfate soils (ASS) are naturally occurring soils, sediments and peats that contain iron sulfides. These soils are most commonly found in low-lying land bordering the coasts or estuarine and saline wetlands.

In an anoxic state, these materials cause no harm to the environment. However the disturbance of the sulfidic sediments, and their exposure to oxygen, leading to formation of sulphuric acid and leaching of acidity and heavy metals, has the potential to cause significant environmental and economic impacts, including fish kills and loss of biodiversity in wetlands and waterways, loss of agricultural productivity, and corrosion of concrete and steel infrastructure. The sediments have been transformed to active ASS. ASS also cause trouble and costs in land-use related to construction and infrastructure. **Acid sulfate soils have been described as the nastiest soils in the World.**

ASS currently cover approximately 17-24 million ha in coastal regions worldwide. Major occurrences are found in Africa, Australia, SE Asia and Latin America.

In Europe, the largest and most studied ASS occurrences are found in Finland and Sweden. They have originally developed / are developing mainly as fine-grained sulfidic sediments in the Baltic Sea during the last 8000 years, and have later been / are being uplifted on land by isostatic land-uplift.

Also in parts of Denmark (Jutland; North Sea), Northern Germany (both Baltic Sea and North Sea) and the Netherlands (North Sea) ASS occur, and some ASS sites have recently been described from the coast of Poland. In these countries the sulfidic sediments are mainly related to sand or peat.

In Russia ASS have been described from the eastern parts of the Gulf of Finland and on the southern shores of the White Sea they are common (N Putkinen, GTK: oral communication).

The fact that ASS exist in many regions in Northern Europe, raises the question: Do ASS also occur in the Baltic States and in Norway?

We suggest that the next step could be a multinational project, producing an ASS map of Northern Europe and ultimately some common guidelines for identification and management of ASS!

If you have information about Acid Sulfate Soils or relevant contacts in your country or want to participate in a multinational project, please let us know!