



TEST AREA n°2

Kolleberga, Sweden



Innovative approaches for risk management for former forest nursery sites contaminated with pesticides, test area Kolleberga, south Sweden

Type of soil contaminants

DDT is the main contaminant at many former forest nurseries as it is persistent and immobile. Other pesticides can also be found to a varying degree.

Scale

- Local scale
- The area of the contaminated fields at the Kolleberga site is approximately 22 ha
- There are around 750 former forest nurseries in Sweden
- These are classified within the two highest risk classes

Special focus

The special focus will be on Nature-based Solutions (NbSs) as sustainable remediation options, the inclusion of soil health in the Source-Pathway-Receptor (S-P-R) concept, and on understanding of the wider benefits of remediation and models for financing of land and soil restoration.

Ambition for the end of the project

The test area will be used to evaluate risk management options which include Nature-based Solutions and to test the inclusion of soil health in the S-P-R concept. It will also be used for mapping externalities (wider benefits) of remediation, and to identify models for financing of land and soil restoration.

Ambition beyond the project

Development of risk management solutions for contaminated forest and plant nurseries across the EU. Application of low-cost measures to improve soil health in northern Europe.

Current state of Test Area

Kolleberga has been investigated and a risk assessment has been carried out. Human health risks are considered low, but ecological risks are present. Hot spots at the site will require remediation in a very near future, as per demand from the controlling environmental authority, most probably with conventional techniques such as excavation and transportation to a waste site. There are also demands from the authority to reduce the ecological risks posed by the larger field areas, but how to achieve this is as yet unresolved.

Conventional remediation techniques are likely to affect the soil functionality at the site negatively. Currently, a pilot study is ongoing for investigating more gentle remediation technologies (NbSs) combining stabilising soil amendment (biochar) with various plants for phytoextraction, phytodegradation and phytostabilisation to both manage risks and to maintain and even improve soil functionality.

The upper picture shows a view of one of the fields at Kolleberga and the lower figure the field trial in the pilot study at year 1 (2021). There are 24 plots with 8 different treatments (in triplicates), where the effectiveness regarding risk management and soil function improvement is being evaluated.

