

# A Method for Evaluating and Mapping Terrestrial Deposition and Preservation Potential- for Palaeostorm Surge Traces.

## Remote Mapping of the Coast of Scania, Blekinge and Halland, in Southern Sweden, with a Field Study at Dalköpinge Ängar, Trelleborg

By Lykke Lundgren Sassner

### Background:

Palaeostorm surge studies provide a great insight into how high the storm surge sea level will be as well as examines at what frequencies similar storms should be expected to return. Looking at the past records it makes it possible to analyse probable future storm surge scenarios and knowing the frequencies and how large the sea level rise has been historically, we can better prepare ourself for the storms ahead. This has never been more important than now, as we continue to build infrastructure close to the sea, risking both the infrastructures and lives.

### Method:

By studying old data of the maximum sea level recorded during storm surges and the natural variations in storm surge sea level due to the large scale morphology along the Swedish coast, as well as determining the important factors for storm surge formation and terrestrial preservation, it was possible to remote map areas of possible preservation of palaeostorm surge sediments.

An area was selected, Dalköpinge Ängar, Trelleborg, Scania, in order to see if the mapping had been a success and if a palaeostorm surge could be identified. This was done with Loss On Ignition, species identification (mainly diatoms and gastropods) and a  $C^{14}$  dating from cores collected with a Russian drill core.

### Results:

During the remote mapping localities with good potential for deposition and preservation of palaeostorm surge remnants were found.

A change to a freshwater environment with brackish traces at the transition was recorded in the drilling core from Dalköpinge ängar. This was dated to somewhere before 1957-1958 or 1990-1993 and was correlated to the large storm 1954.

*To conclude: This is the first remote mapping and identification of a paleostorm surge from sediments in Sweden, and the study was a success*

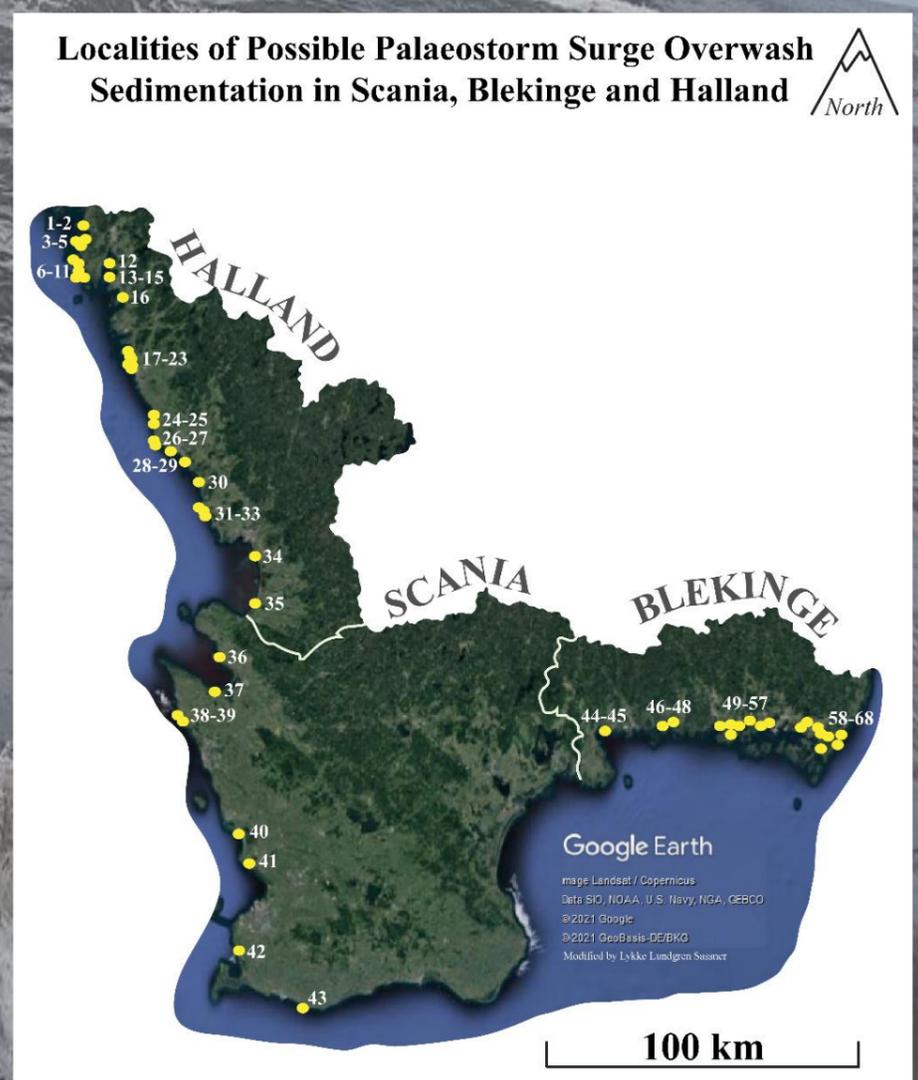


Figure 1, Areas of possible palaeostorm surge remnants