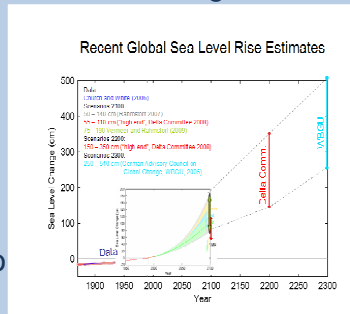


## Background

With the progression in the science of **climate change** new findings emerge about possible and/or plausible **changes in sea level rise** during this and coming centuries.

Recent estimates indicate that **sea levels** could rise by as much as **1.9 metres by 2100**, a considerably higher estimate than those made only a few years ago by e.g. the IPCC.



## Goal and scope

The **overall aim** of the study is to understand how municipalities in Sweden deal with **uncertainties in planning for sea level rise**. We studied 33 coastal municipalities in southern Sweden, those most affected by future sea level rise.

*Southern Sweden is most vulnerable to rising sea levels, because of:*

- Limited or no post ice age land rise
- Local geology
- Winds, wave height

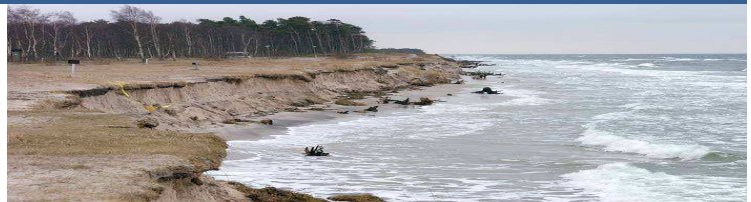


## Methods

- **Identification of guiding municipal planning documents** dealing with sea level rise, and estimated future sea levels, in 33 municipalities in southern Sweden.
- **Interviews with persons in charge** of planning for sea level rise at: 6 municipalities, 3 county administrative boards, 2 government authorities (MSB and SMHI), and 1 planning consultant.



Vulnerable coastline, Löderups strandbad, Ystad municipality, southern Sweden



## Results and conclusions

**SMHI is the dominant source for estimates of sea level rise:** 70 % of municipalities that plan for rising sea levels refer to SMHI (Swedish Meteorological and Hydrological Institute) as a main source.

**There is a broad variety of estimated sea level rise 2100:** in current municipal planning documents estimates mainly vary between the ranges **0.2-0.7 m** and **0.28-0.9 m**, and “**about one metre**”, with other estimates found in the range **0.2-1.3 m**.

“**About one metre**”: in more recent documents, there is a trend towards using SMHI’s “about one metre” as an estimate of sea level rise until 2100.

**Lacking municipal planning:** 30 % (10 out of 33) of the studied municipalities lack planning documents dealing with rising sea levels altogether.

**Lacking transparency:** in municipalities with planning documents, 60 % (14 of 23) lack transparent sources to future sea level rise estimations.

**Lacking inclusion of worst case scenarios:** only MSB (Swedish Civil Contingencies Agency) fully considers “worst case” future sea level rise.

**Time horizon:** there is a lack of planning beyond 2100.

**Demand for coordinated state policy and support:** There is a demand from municipalities and county administrative boards for clear and comprehensive official government guidelines on sea level rise, including guidelines for long term planning.

## Contact

**Division of Environmental Strategies Research – fms:**  
Our field of research is located at the interface of strategic environmental issues, planning, technological & societal change. This project is part of the FOI research programme **Climatools**, financed by Sweden’s Environmental Protection Agency.