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Sea Level Rise

Independent findings reveal a similar pattern

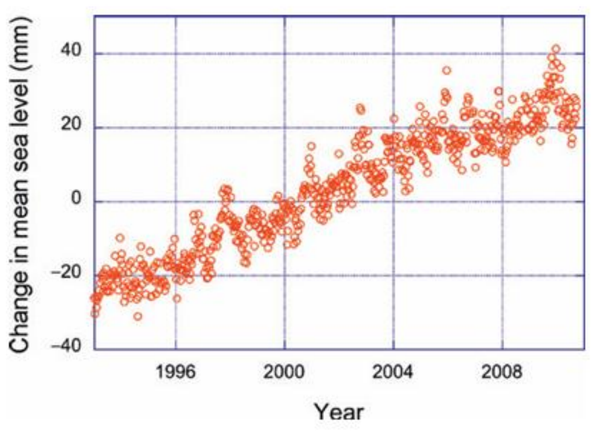
Sea Level Rise is a global concern with local impacts

Stockholms universitet

HOW TO MEASURE

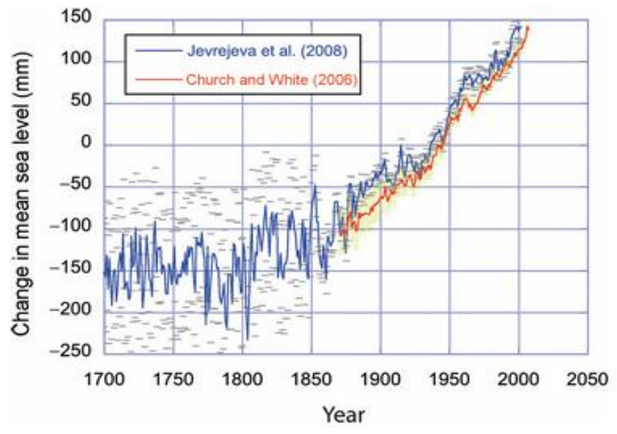
Absolute Sea level

Satelite measurement relative center of the earth



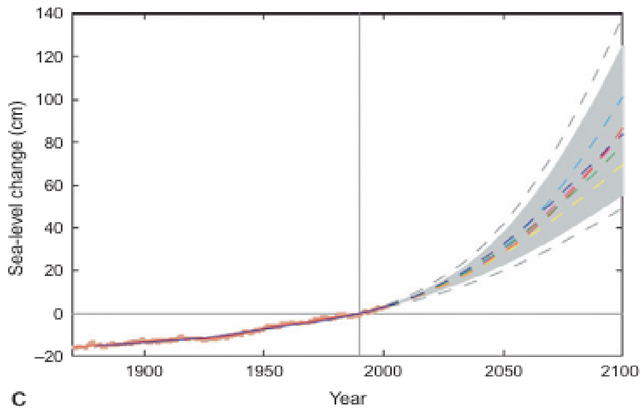
Relative Sea level

Measurements relative to the land by tide gauges



Projections

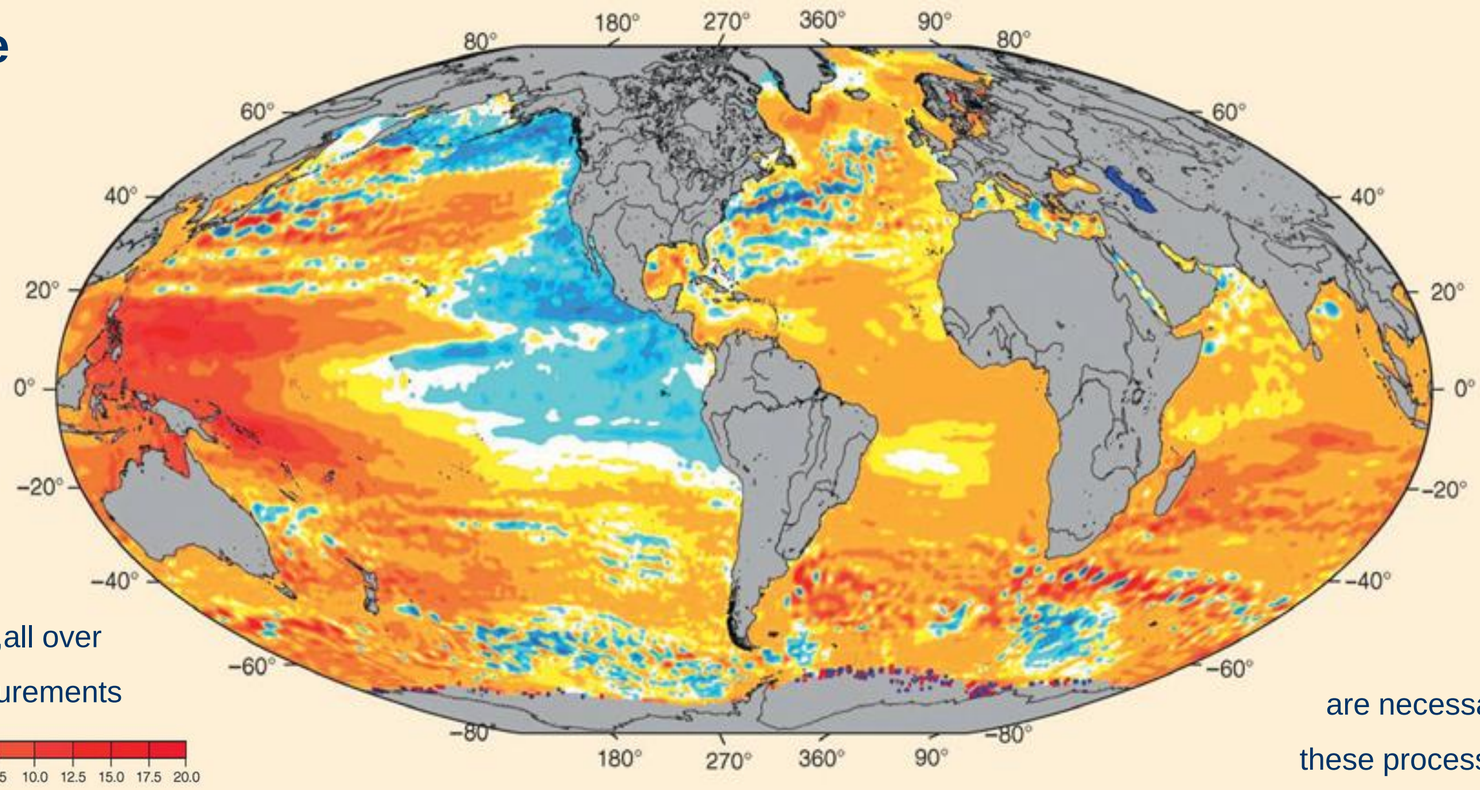
Rate shows that global sea level rise is accelerating



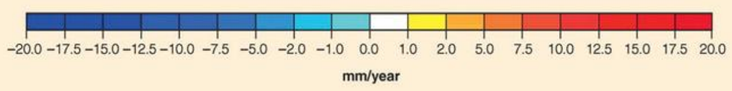
RESULTS

Sea level change rate

Taking all studies in to acount the Sea Level rise in **year 2100** will differ from approximately **+ 0.2 to + 2 meters**



This Projection of Sea Level change,all over the world is based on Satellite Measurements



Research needed

Improved and more comprehensive observations of ice melt and flow are necessary, along with improvements of how these processes are described in climate models.

SOURCES

Will Land Rise Save us?

Glacial Isostatic Adjustments, GIA, is the land rising as result of the relief from a heavy ice cap, that covered the area during the last Ice age.

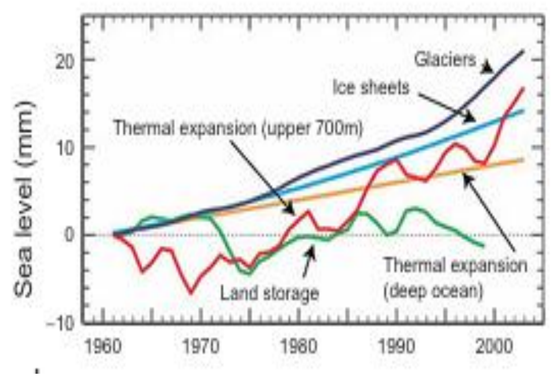
When is Sweden expected to be affected?

Given the Sea level rise rate from the projection above, and that the yearly landrise is about 10 mm in the north of Sweden and about 1 mm in the south*.

*Reference www.lantmateriet.se/sv/geodata/gps-geodesi-och-swepos/Referenssystem/Landhojning

Major sources

Trends of major antropogenic sources to Sea level rise



Antropogenic Sources

- Thermal expansion due to warmer water.
- Addition of volumes due to melting of Ice caps and glaciers.
- Changes in ocean and atmospheric circulation redistribute water and heat energy at a global level.
- Land subsidience due to excessive groundwater extraction.

CONSEQUENSES

Flooding

Submergence and increased flooding of coastal land

Land loss

Disappearance of low-lying islands

Increased erosion

Resource loss

Saltwater intrusion of surface and subsurface waters

Habitat destruction in coastal areas

Fatalities

Mass exodus

Financial Impacts

SOLUTIONS

- Minimize the damage - stop global warming
- Plan ahead - Adapt land use and relocate people and moveble assets from risk areas
- Water Barriers and Evacuate communities and transportable resources from high risk areas and severe danger zones