Boverket

Swedish National Board of Housing,
Building and Planning

Dynamic sea level rise in a static spatial planning

5th Nordic Conference on Climate Adaptation (NOCCA)

Anders Rimne

2018-10-25

Planning and Building Act (2010:900)

Municipal responsibility

Chapter 1. Section 2.

Planning the use of land and water areas in accordance with this Act is a municipal responsibility.

Planning and Building Act (2010:900)

Land that is suited for the purpose

Chapter 2. Section 5.

In planning, … , built environment and construction works must be located on land that is suited for the purpose, with regard to:

1. the health and safety of people;

2. land, rock, and water conditions;

…

5. the risk of accidents, flooding, and erosion

Planning and Building Act (2010:900)

Supervision of municipal decisions

Chapter 11. Section 10.

…

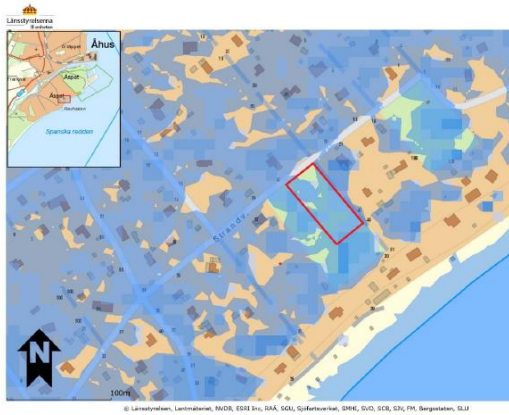
The County Administrative Board must re-examine the municipality's decision if the decision can be assumed to mean that:

1. …

…

5. a development will be unsuitable with regard to people's health or safety, or to the risk for accidents, flooding, or erosion.

Chapter 11. Section 11. The County Administrative Board must repeal the municipality's decision … if the decision has such import as is indicated in Section 10.



Figur 1: Illustration som visar lågpunktskartering och 3 meter över havet. Planområdet markerat med rött

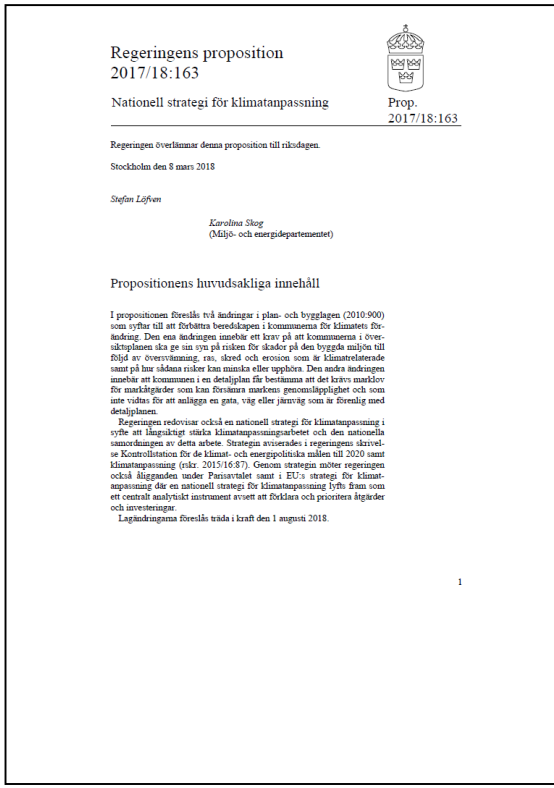
National assessment on climate adaptation

- Assessment suggestion: Politics on a national level need to address what future we should adapt our society to and what risks are acceptable.
- Response from government: No, we don´t agree. Not necessary to decide on a national level what risks are acceptable. Instead we give you 9 guiding principles.

National strategy on adaptation to climate change – Guiding principles

Risk management:

- When high risk, precautionary measures should be adopted
- When there is a “serious danger” of substantial damage to infrastructure and buildings - with high cost as a consequence - climate adaptation measures should be designed to handle scenarios with “very low probability”.



Regeringens proposition
2017/18:163

Nationell strategi för klimatanpassning

Prop.
2017/18:163

Regeringen överlämnar denna proposition till riksdagen.

Stockholm den 8 mars 2018

Stefan Löfven

Karolina Skog
(Miljö- och energidepartementet)

Propositionens huvudsakliga innehåll

I propositionen föreslås två ändringar i plan- och bygglagen (2010:900) som syftar till att förbättra beredskapen i kommunerna för klimatets förändring. Den ena ändringen innebär ett krav på att kommunerna i översiktsplanen ska ge sin syn på risken för skador på den byggda miljön till följd av översvämning, ras, skred och erosion som är klimatrelaterade samt på hur sådana risker kan minska eller upphöra. Den andra ändringen innebär att kommunen i en detaljplan får bestämma att det krävs marklov för markåtgärder som kan försämra markens genomsläpplighet och som inte vidtas för att anlägga en gata, väg eller järnväg som är förenlig med detaljplanen.

Regeringen redovisar också en nationell strategi för klimatanpassning i syfte att långsiktigt stärka klimatanpassningsarbetet och den nationella samordningen av detta arbete. Strategin avviserades i regeringens skrivelse Kontrollstation för de klimat- och energipolitiska målen till 2020 samt klimatanpassning (rskr. 2015/16:87). Genom strategin möter regeringen också åligganden under Parisavtalet samt i EU:s strategi för klimatanpassning där en nationell strategi för klimatanpassning lyfts fram som ett centralt analytiskt instrument avsett att förklara och prioritera åtgärder och investeringar.

Lagändringarna föreslås träda i kraft den 1 augusti 2018.

1

What is “very low probability” when it comes to sea level rise?

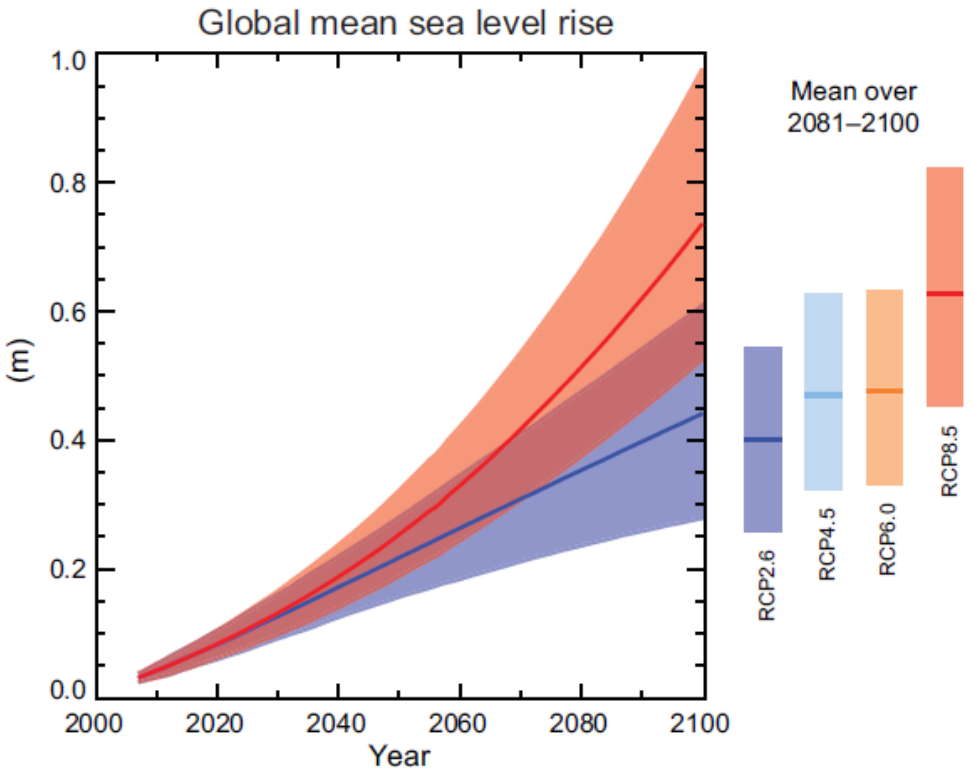
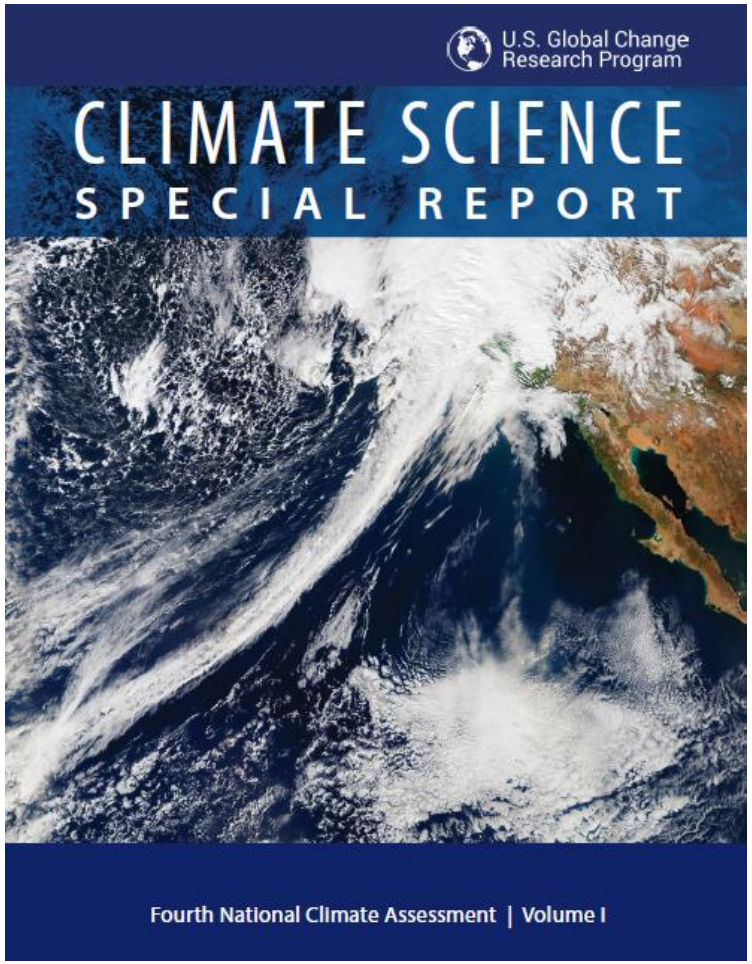


Figure SPM.9 | Projections of global mean sea level rise over the 21st century relative to 1986–2005 from the combination of the CMIP5 ensemble with process-based models, for RCP2.6 and RCP8.5. The assessed *likely* range is shown as a shaded band. The assessed *likely* ranges for the mean over the period 2081–2100 for all RCP scenarios are given as coloured vertical bars, with the corresponding median value given as a horizontal line. For further technical details see the Technical Summary Supplementary Material {Table 13.5, Figures 13.10 and 13.11; Figures TS.21 and TS.22}

the following terms have been used to indicate the assessed likelihood of an outcome or a result: likely 66–100%

IPCC, 2013: Summary for Policymakers. In: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

New research and new reports after IPCC 2013



USGCRP, 2017: *Climate Science Special Report: Fourth National Climate Assessment, Volume I* [Wuebbles, D.J., D.W. Fahey, K.A. Hibbard, D.J. Dokken, B.C. Stewart, and T.K. Maycock (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, 470 pp., doi: 10.7930/J0J964J6

Sea level rise in US Climate Science Special Report

Boverket

Table 12.1. The Interagency GMSL rise scenarios in meters (feet) relative to 2000. All values are 19-year averages of GMSL centered at the identified year. To convert from a 1991–2009 tidal datum to the 1983–2001 tidal datum, add 2.4 cm (0.9 inches).

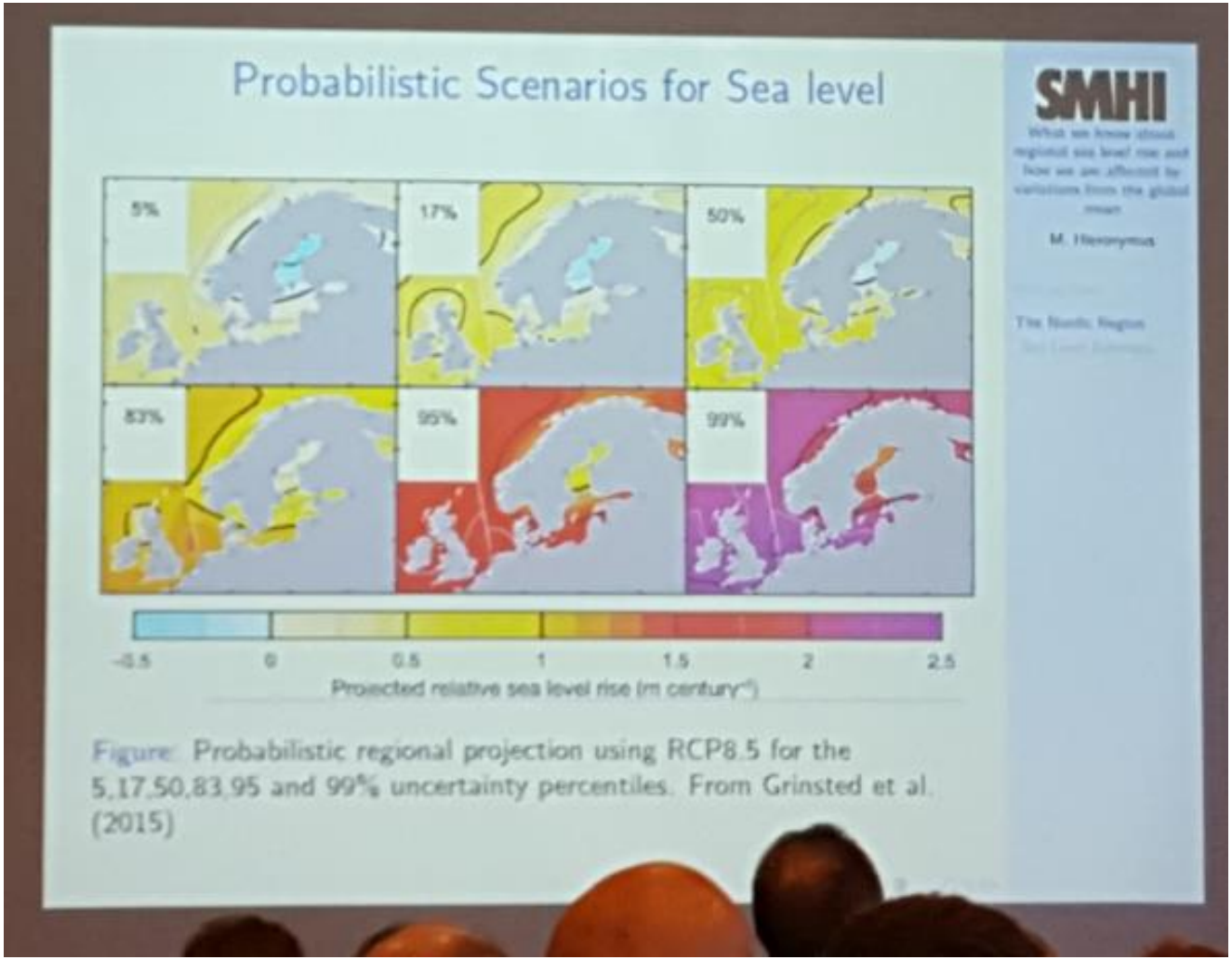
Scenario	2020	2030	2050	2100
Low	0.06 (0.2)	0.09 (0.3)	0.16 (0.5)	0.30 (1.0)
Intermediate-Low	0.08 (0.3)	0.13 (0.4)	0.24 (0.8)	0.50 (1.6)
Intermediate	0.10 (0.3)	0.16 (0.5)	0.34 (1.1)	1.0 (3.3)
Intermediate-High	0.10 (0.3)	0.19 (0.6)	0.44 (1.4)	1.5 (4.9)
High	0.11 (0.4)	0.21 (0.7)	0.54 (1.8)	2.0 (6.6)
Extreme	0.11 (0.4)	0.24 (0.8)	0.63 (2.1)	2.5 (8.2)

Table 12.4. Probability of exceeding the Interagency GMSL scenarios in 2100 per Kopp et al.[76] New evidence regarding the Antarctic ice sheet, if sustained, may significantly increase the probability of the intermediate-high, high, and extreme scenarios, particularly under the higher scenario (RCP8.5), but these results have not yet been incorporated into a probabilistic analysis.

Scenario	RCP2.6	RCP4.5	RCP8.5
Low	94%	98%	100%
Intermediate-Low	49%	73%	96%
Intermediate	2%	3%	17%
Intermediate-High	0.4%	0.5%	1.3%
High	0.1%	0.1%	0.3%
Extreme	0.05%	0.05%	0.1%

USGCRP, 2017: *Climate Science Special Report: Fourth National Climate Assessment, Volume I* [Wuebbles, D.J., D.W. Fahey, K.A. Hibbard, D.J. Dokken, B.C. Stewart, and T.K. Maycock (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, 470 pp., doi: 10.7930/J0J964J6

SMHI yesterday



Sea level rise in US Climate Science Special Report

Boverket

Table 12.5. Post-2100 extensions of the Interagency GMSL rise scenarios in meters (feet)

Scenario	2100	2120	2150	2200
Low	0.30 (1.0)	0.34 (1.1)	0.37 (1.2)	0.39 (1.3)
Intermediate-Low	0.50 (1.6)	0.60 (2.0)	0.73 (2.4)	0.95 (3.1)
Intermediate	1.0 (3.3)	1.3 (4.3)	1.8 (5.9)	2.8 (9.2)
Intermediate-High	1.5 (4.9)	2.0 (6.6)	3.1 (10)	5.1 (17)
High	2.0 (6.6)	2.8 (9.2)	4.3 (14)	7.5 (25)
Extreme	2.5 (8.2)	3.6 (12)	5.5 (18)	9.7 (32)

USGCRP, 2017: *Climate Science Special Report: Fourth National Climate Assessment, Volume I* [Wuebbles, D.J., D.W. Fahey, K.A. Hibbard, D.J. Dokken, B.C. Stewart, and T.K. Maycock (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, 470 pp., doi: 10.7930/J0J964J6

What does the national strategy and ”very low probability” mean to municipal climate adaptation?

Harbours turning into new urban districts

New developments in Malmö and Helsingborg

Malmö stad

Sök på malmo.se

Översiktsplan för Nyhamnen

Visionsbild av Nyhamnen, MandaWorks

Översiktsplan för Nyhamnen

- Relaterade dokument
- Samråd av översiktsplanen 2016
- Uppstart Nyhamnen
- Utredningar

HELSINGBORG

Företagare | Självservice | Besökare | Vad letar du efter? | Sök

Arbete | Bo, bygga och miljö | Förskola och utbildning | Kommun och politik | Omsorg och stöd | Trafik och stadsplanering | Uppleva och göra

Hem / Trafik och stadsplanering / Stadsutvecklingsprojekt / H+

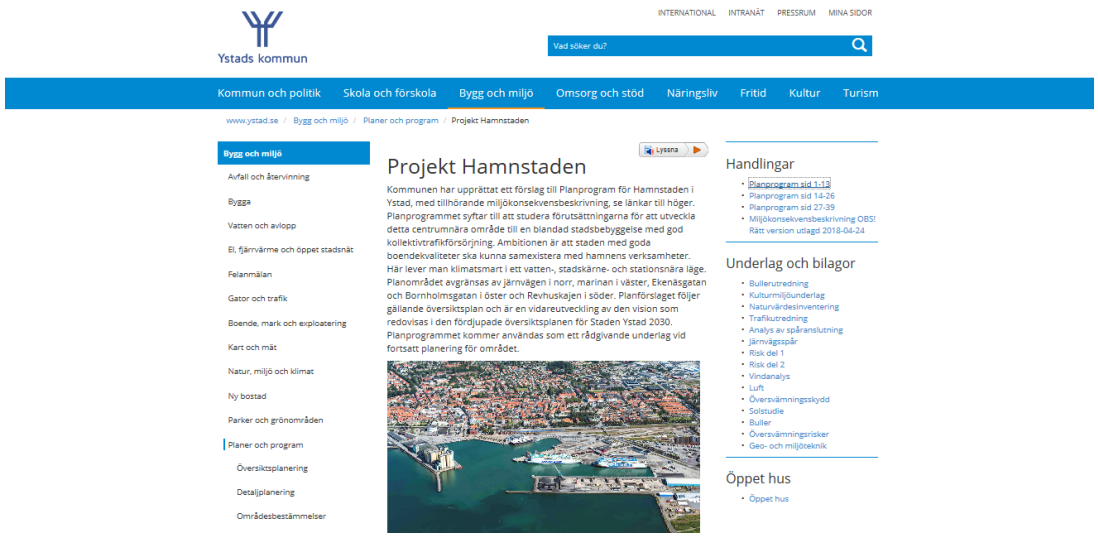
- Biltrafik
- Buss, båt och tåg
- Cykling
- Gator, vägar och trottoarer
- Parkering
- Planering och utveckling
- Renhållning och snöröjning
- Stadsutvecklingsprojekt
  - Bredbandsutbyggnaden
  - DrottningH
  - Fast HH-förbindelse
  - H+
    - Bro från Knutpunkten
  - Landborgskopplingen

H+

Lyssna Skriv ut

Med stadsförnyelseprojektet H+ ska det gamla hamn- och industriområdet i södra delen av Helsingborg göras om till nya stadsdelar med bostäder, kontor och affärer.

New developments in Trelleborg and Ystad



Who should decide what ”very low probability” implies?

- Municipalities are responsible for planning the use of land and water
- The County Administrative Board must repeal the municipality’s decision if a development will be unsuitable with regard to people’s health or safety, or to the risk for accidents, flooding, or erosion
- Boverket write guidance for the supervision made by the County Administrative Board
- Who gives guidance to Boverket?

Summary (my thoughts)

- New complex questions and we are still struggling to find out how to solve the issues with “dynamic” sea level rise in a “static” spatial planning
- There is a need for a wider discussion on this topic both on a national level and within the municipalities
- We need to develop strategies including plan A, plan B, plan C, …, that can be adjusted when we get more knowledge

- We need to radically decrease our carbon emissions!!!

Thank you!

anders.rimne@boverket.se

Boverket

Boverket – National Board of Housing, Building and Planning

What we do related to climate adaptation:

- Give advice to the municipal spatial planning according to the Planning and Building Act (2010:900)
- Guide County Administrative Boards with regard to supervision of municipal spatial planning
- Swedish Building Regulations (BBR)
- Coordinate national climate adaptation of the built environment (Since 2018-06-07)