

Expert review by Nils-Axel Mörner* of Chapter 9

Preamble

I have been expert reviewer 1999, 2003 and 2013 (when I withdraw due to the exceptionally low quality of the sea level chapter).

I am a sea level specialist – yes, indeed.

But just because I am a sea level specialist, it implies that I will guide my review with respect to Science of sea level changes and its frames set by physical laws, accumulated knowledge, observational facts and ethics (Figure 1).

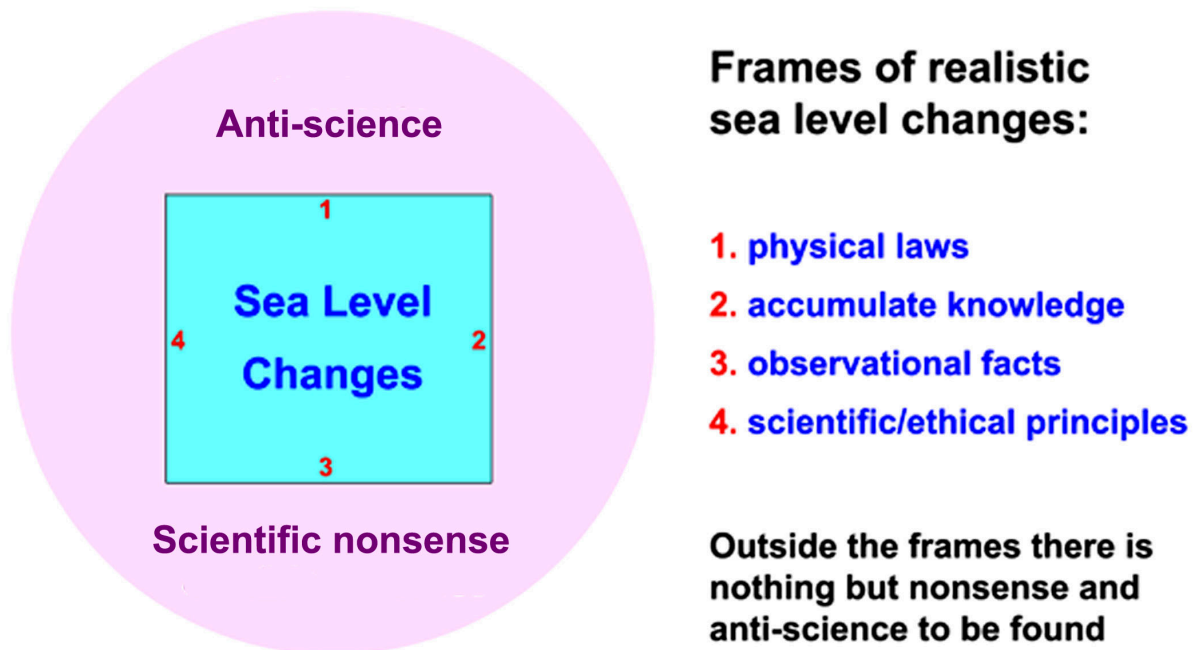


Figure 1. Frames of realistic sea level changes and the nonsense outside those frames.

Chapter 9 – What is this?

First, I ask myself; what kind of document is this chapter?

- A scientific document that should be evaluated for its scientific standard
- A document set to glorify previous concepts by the IPCC implying that it can only be assessed as a lobbying document with respect to preconceived pro or con views

In the instructions for the IPCC Sixth Assessment Report (AR6) it was decided (point 2):

- That this report assesses relevant literature

We can immediately answer this point:

No, it just consider literature favourable in view of the rapidly rising and acceleration sea level scenario of the IPCC. In this matter, the chapter implies a total failure, and must be rebuffed.

[Conclusion-1]

*Paleogeophysics & Geodynamics, Stockholm, Sweden, mornerpog.nu

The illusive idea of a future sea level acceleration

Several of the authors engaged in the writing of Chapter 9, have a background firmly fixed in the idea of a sea level acceleration soon to come. This acceleration was announced in 1990 and the pushed forward step by step because no such things were observed – always just claimed to start in the future. About 30 years have elapsed and still no traces of acceleration, just proposals. Every single example of a possible acceleration has been revealed as an error (e.g. Mörner, Wysmuller & Parker, *J. Mari. Sci. Res. Ocean*, 2019, 2:1, 1-5).

Gardner et al., (2017) published a paper on the proposed sea level rise in New York City (Gardner, Mann, Emanuel, Kopp, Lin, Alley, Horton, DeConto, Donnelly & Pollard. Impact of climate change on New York City’s coastal flood hazard: Increasing flood heights from the preindustrial to 2300 CE. PNAS, 114, 2017, 1161-11868). This paper violates physics, accumulated knowledge, observational facts and geothics (cf. Figure 1). A group of quite experienced specialists (Mörner, Parker, Burton, Easterbrook, Khandekar, Legates, Matlack-Klein, Wysmuller & Yim) wrote a “comment” to PNAS (not even considered for reviewing) where we concluded: *Hazard prediction is important, but the essence of science is the testing of predictions by comparison with observational facts. Without that validation, predictions are really just speculations.* Figure 2 shows the deviation of the proposed sea level rise by Gardner et al. (2017) with respect to local observations.

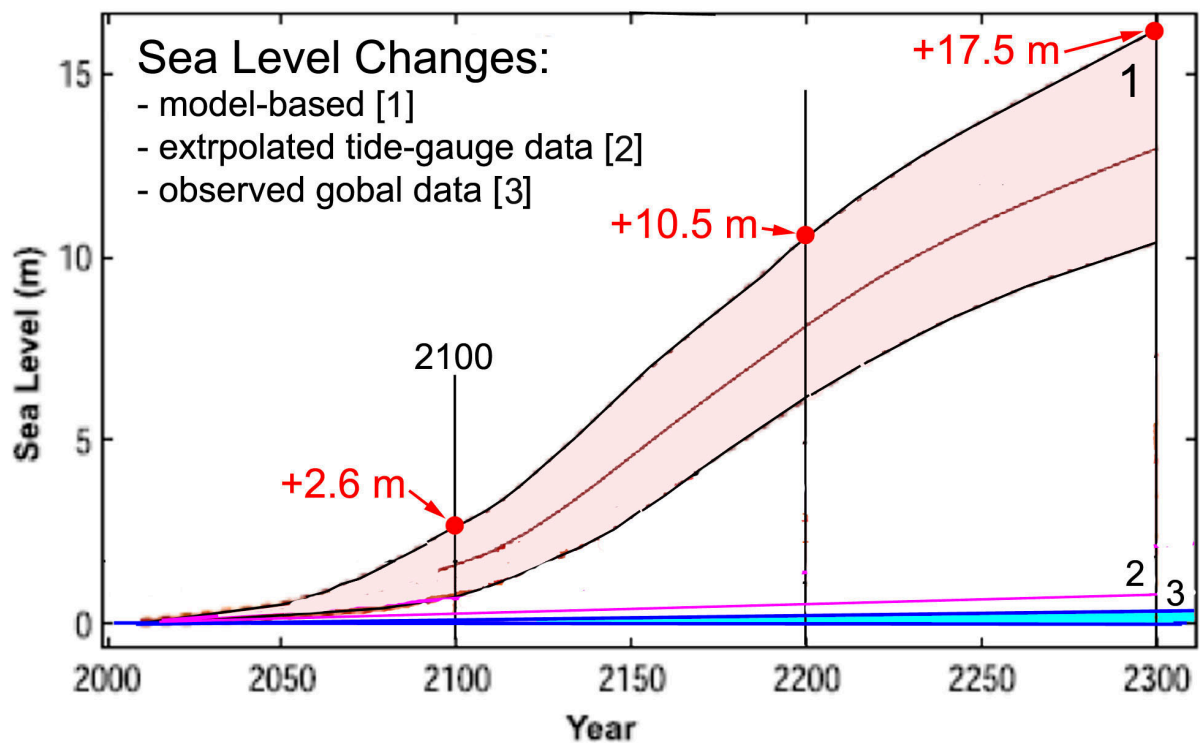


Figure 2. Deviation between inferred acceleration by Gardner et al. (1) and the extrapolation of local tide-gauge observations (2) and mean global sea level trends (3).

References: (1) N.-A. Mörner, A. Parker, D. Easterbrook & P. Matlack-Klein (2018). Estimating future sea level changes, avoiding misleading exaggerations, and recommending present coastal management. *IRJES*, 7 (4), 19-25, (2) N.-A. Mörner (2018). The illusive flooding of New York City. *Journal of Environmental Sciences*, 1 (2), 1-11.

Bamber, Oppenheimer, Kopp, Aspinall & Cooke (2019) claimed a +2 m global sea level by year 2100 by an “expert judgement”. Again all such claims violate physics, accumulated knowledge, observations and ethics (Figure 1), and represent the opposite of “expert judgement”.

And still – and here we have the relevance to Chapter 9 – those ideas form the base of the message of Chapter 9. Besides many of the authors are also involved as authors of Chapter 9.

[Conclusion 2]

This implies to me that we are not dealing with a scientific product, but to “a document set to glorify previous concepts by the IPCC” (cf. above).

[Conclusion 3]

If we are, indeed, not dealing with a scientific document, all expert reviewing becomes quite problematic, because everything would in that case be a matter of pro or con. In a scientific review all is about right or wrong – (holding pro and con outside the review).

In science, there are ethical rules of how to behave. Besides the obvious rules of no plagiarism, there are the rules of

- All available facts on the table
- Never hide or ignore troublesome facts

If those rules are violated in a Ph.D. defence, the thesis fails (I was myself in the jury at such a case).

Chapter 9 is, of course, not a scientific thesis, but it claims that it is a scientific product. If it would have been a Ph.D. thesis, it should have had to be rejected, because it only consider its own concept of a rapid and soon accelerating sea level rise – in the text and illustrations as well as in references listed.

[Conclusion 4]

In all the previous Assessments Reports, there has been a major shortcoming (failure) in the choice of authors and the focusing the concept driven by the IPCC. This report is by no means better.

In conclusion, this is a new lobbying product set to glorify the IPCC concept: i.e. the scaremongering of climate change with a global sea level flooding in the centre. Such a product cannot be reviewed in a meaningful way – just in meaningless pros or cons.

[Conclusion 5]

Chapter 9 – Some observations

Particular emphasis is placed on attribution of the observed changes, possible irreversible changes and the implied long-term commitment – I challenge this.

Present sea level changes are claimed to be *unprecedented over the last several millennia* – this is a very opinion based statement and not founded in observations.

Extreme sea levels are increasing, they say. Well, the observational records are in no way clear about this.

A lot is said about the changes in ice conditions – how can one do so without even a single reference to Easterbrook or Humlum or Patzel or several others.

Sea level is projected to rise in most regions, they state. Well, the truth is much more complicated.

Even “*Key processes driving sea-level change*” is badly written. It is in need of updating and modernization. In 2018, two important papers were published on this issue – none of which is discussed or even referred to. The papers are:

Mörner, N.-A. (2018) Development of ideas and new trends in modern sea level research: the Pre-Quaternary, Quaternary, Present and Future. Chapter 2, p. 13-62. In: M. Ramkumar et al., eds., *Coastal Zone Management: Global Perspectives, Regional Processes, Local Issues*, Elsevier. <https://doi.org/10.1016/B978-0-12-814350-6.00002-1>

Khan, A.A. (2018) Why would sea-level rise for global warming and polar ice melt? *Geoscience Frontiers*, <https://doi.org/10.1016/j.gsf.2018.01.008>

and a third (in press) may be added:

Mörner, N.-A. (2019). Rotational Eustasy as understood in Physics. *IJG*, 10, in press.

Figure 9.40b Is completely wrong

FAQ 9.2. Figure 1 is very wrong and misleading

In conclusion

In addition to Conclusions 1-6 above, I want to say:

- The Chapter is full of statements and information – but all of it devoted just to one thing: to glorify the IPCC concept of a rapidly, even accelerated, sea level rise.
- The references mirror this mode of working.
- Alternative ideas – even firm observational facts – are ignored.
- This is also the case with the references.

Though ambitious, this paper is nothing but a document meant to provide confirmation of the old IPCC idea of a sea level in rapidly rising mode where acceleration has been claimed but never documented by observations.

The chapter is a remarkable product in terms of lobbying for the sea level rise concept. But this is not what it portends to be: it is claimed to be a scientific product, which it fails to be.

So, in short:

A remarkable lobbying product for the IPCC

But a document failing to fulfil scientific standards

Nils-Axel Mörner

June 20, 2019

Paleogeophysics & Geodynamics, Stockholm, Sweden

morner@pog.nu