

Comment on esd-2021-54

Anonymous Referee #1

Referee comment on "Human impacts and their interactions in the Baltic Sea region" by
Marcus Reckermann et al., Earth Syst. Dynam. Discuss.,
<https://doi.org/10.5194/esd-2021-54-RC1>, 2021

Comment: Human impacts ...

General: This is a fine overview about a very complex field, and the authors are to be applauded for a good overview. In principle it could be accepted as is, but I take the opportunity to list a few issues, which the authors may want to think about, plus as series of minor points.

- It would be helpful, if all aspects discussed would be introduced with a similar sketch-diagram showing the major and minor influences upon each other.
- The societal dimension could be covered more seriously. For instance, for tourism, it may matter more the perception of climate change than climate change itself. Also societal preferences may change preferred tourist sites.
Figure 8 places ecosystems in the center- but there should also be "societal system", which is not really part of the ecosystem (or the rest of the manuscript had to be written differently. In the summary the relationship of society/ecosystem and the role of societal value systems is dealt with in a superfluous manner (characteristic of ecologists)
- In general, the historical dimension is a bit weak. What about "pristine"/"undisturbed" conditions, earlier "strange" events; so far it is almost entirely on conditions since 1950 or 1990. (e.g., 6.4, 6.12)
- In the section of shipping, the issue of using different fuels should be mentioned, also the effect of phasing out crude oil (also 6.14)
- In general: reduce the list of linkages to significant ones, and mention: "the issues X, y, and z likely are insignificant."
- In Sec 6.1, the issues: effect of aerosol emissions and of land use need to be listed as major issues in the knowledge gaps.
- In Sec 6.8 – the issue of cities should be addressed.

- Why have big constructions not been addressed – this was a big issue some years ago, and partly still so (Fehmarn belt tunnel).

Minor

- Both tables are hard to read.
- line 295: authors'
- 328: I guess this is not so much an issue of the latitudinal position but of the fact that most of Earth is covered by the ocean, but that the sa is only a minor part of the Baltic Sea region.
- 355: warming of the ... why so?
- 363 – the numerical estimate of sa level rise – still valid in view of the new IPCC report; also this number MUST be associated with a time horizon – when?
- 545 – emissions of chemicals ...
- 604 – “unfortunate” for whom?
- 623 – “dangerous” – for whom?
- 630 ff – needs better structuring. Why “as a consequence”?
- 643 – What is the “running out of sand”-concept”?
- 695ff – unclear; what does the sentence “nt a total load ...” tells the reader?
- 801 – a repetition
- 823 – are these significant effects or just something tny? How much “may speed up corrosion”?
- Figure 2 – needed?
- 892 – “importance of short-term variability” – consisting of what?
- 1067 – BSAP?
- 1095 – refer to climate change section
- 1105ff – us fold face key words.
- 1181 – “driving a regime shift through” sound a bit Germanic.
- 1255 – “projected decrease in the South” was earlier declared uncartein.
- 1285 – “migration” – of whom?
- 1323ff something missing
- 1335 – “loss of social welfare” - hm, this may be a value-based assertion by a friend of pristine ecosystems
- 1355 – I remember that kay Emeis had an early key paper on this.
- 1448 – what does blue and blue-green stand for?
- 1475 – More probable – why?
- 1480 – add number for usage of wind energy.
- 1601 – delete – trivial and vague; same with 1608
- 1658 – “An engineering” – much too general an assessment.
- 1664 – “periodicity of climate” – what shall that be: annual cycle?
- 1728 – deepening
- 1774 – “gentle” is not an adequate word.
- 1882 – There are --- which?

- 1836 – Anholt is in the Baltic Sea?
- 1856 – discussed before
- 1870 – what are black waters, what grey waters?
- 1876 – Kadet
- 2935 – one scenario or an ensemble of scenarios?
- 2308 – something I was wondering while reading: what about military ships and military exercises?
- Figure 6 carries no informational value
- 2378 – very general statement
- 2394- detrimental – for whom? This is related to values.
- Figure 7 – significant for the paper?
- 2447 – so what?
- 2813 – farms
- 2982 “eradication of hunger” – hu? This is a key point in the UN millenniums goals.
- 3145 – what is “blue growth”?