

## Review of esd-2021-13

Anonymous Referee #2

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Referee comment on "Natural hazards and extreme events in the Baltic Sea region" by Anna Rutgersson et al., Earth Syst. Dynam. Discuss.,  
<https://doi.org/10.5194/esd-2021-13-RC2>, 2021

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The paper presents a review of the literature dealing with natural hazards and extreme events in the Baltic Sea region. It covers both, the historical period and future climate change scenarios. The paper covers: (1) changes in circulation patterns, (2) wind storms, (3) extreme waves, (4) sea level, (5) precipitation, (6) sea-effect snowfall, (7) river flooding, (8) warm and cold spells in the atmosphere, (9) marine heat waves, (10) drought, (11) ice seasons, (12) ice ridging, (13) phytoplankton blooms, (14) forest fires, (15) coastal flooding, (16) offshore wind energy activities and (17) shipping. All the topics covered follow a similar scheme. Some gaps are identified and the main conclusions of the analysis for each topic presented.

I am not an expert on the Baltic Sea Region, but the paper seems to present quite a complete review. References are relevant and up to date, and therefore, the article may be a useful resource for any researcher or practitioner with an interest in the region. Relations are presented among the topics covered, increasing the value provided to the reader. The organization is also quite standard and correct, adequate to constitute a reference of easy look up. In my opinion, the article deserves to be published. However, I have some comments that I would like the authors to tackle before publication.

(1) The paper needs an extensive review of its use of English. I am uploading an annotated version of the manuscript with many suggestions, but I am not a native English speaker, and thus, many other improvements may be done. The paper scope is so wide, that it resulted in a very long text. Therefore, the use of English must be improved to facilitate the reading of the paper. Currently, it is hard to read and some paragraphs need to be repeatedly read before understanding the content. In some other cases, the meaning cannot be extracted from the written words and, in others, contradictory messages can be perceived.

(2) The knowledge gaps section is disorganized and the main points to be covered in future research are not very clearly stated. I suggest the authors to rewrite this section,

keeping an order similar to the one followed to present the topics. Indeed, an even better idea could be to present the knowledge gaps under each specific heading, and leaving just a small summary for this section. It would simplify the understanding of the message of the paper. Moreover, this would be the most "important", if you will, contribution of the paper, so I believe it should be better developed.

(3) Although the general organization of the paper may be correct, some of the topics are better presented than others. I do not know if it is because of the use of English or an organizational issue. I would suggest the authors to harmonize all topics, following the same order of presentation and stating where information has not been found. Indeed, subdividing each topic with paragraph headings (italic sentence introducing the topic of the paragraph) would help the reader a lot.

(4) I would start section 2.2.5 on sea-effect snowfall with the paragraphs starting in line 585 that define the phenomenon. It would help readers not familiar with it to understand which is the problem that is being analyzed in the section.

(5) On top of the use of English, a date format should be adopted and maintained throughout the complete manuscript.

(6) Section 2.2.9 is accompanied by the name of an author. I believe this belongs only the draft version and that it can be safely removed for the final version.

(7) Line 721. I would say that something is statistically significant or statistically not significant. Stating that something is statistically insignificant may be interpreted as being negligible in a statistically significant way. However it is, the non-standard wording leads to confusion.

(8) Several rephrasing suggestions, and additional small comments, can be found in the annotated version of the manuscript.

Please also note the supplement to this comment:

<https://esd.copernicus.org/preprints/esd-2021-13/esd-2021-13-RC2-supplement.pdf>