

## ***Interactive comment on* “Documentary evidence of historical floods and extreme rainfall events in Sweden 1400–1800” by D. Retsö**

### **Anonymous Referee #2**

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Hydrometeorological extremes, such as floods and extreme rainfall events, are gaining more attention in the current climatic change discussion. The paper is a very important supplement to the recent study of such events and addresses their occurrence in Sweden in the period 1400–1800 using various types of documentary sources. The floods and extreme rainfall events were analyzed with respect to their duration, spatial extension and material damage/human casualties on the one hand and to their seasonality on the other hand. This study completes knowledge of extreme weather events in Europe in the pre-instrumental period.

When finalizing the paper, the author should take some comments in consideration.

Comments: In the text there are some problems associated with the analysis of docu-

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mentary evidence in general well described, concerning mainly the quality and density of such type of data. In this context I miss the explanation of huge increase of documentary data after 1520, which is mentioned in section 3, page 10090 and further. Also it is not clear from the text which types of secondary sources (page 10089, line 21) were used for this study.

Although quite simple methodology was used to express the variation of historical floods, I recommend to confront your results with circulation character in the past. It would be appropriate to confront it with climate reconstructions, e.g. NAO index reconstruction (Luterbacher et al., 2002). The comparison with the situation in other parts of the Europe is also missing (some important studies are cited in References).

In the text I also miss the explanation which weather factors influence harvest failure (spring frosts?, cold and dry vegetation period?, extreme events during the harvest?). Could we find any relationship between harvest failure and temperature reconstructions, e.g. Stockholm winter/spring temperature reconstruction (Leijonhufvud et al., 2010)? Could the years with bad harvest be related not only to weather character (floods/droughts) but also to other factors, e.g. wars?

Formal shortcomings:

Links to all four figures (there is only a link to Map 1, page 10087, line 14) and two tables (= Appendix A and B, page 10086, lines 18 and 19) in the text are missing. Page 10092, line 6: Appendix A is probably Table A1, page 10094, line 21: Appendix B is probably Table B1.

Large lakes mentioned on the page 10087, lines 7 and 8, should be described also in the Figure 4 (e.g. by symbols a, b, c, d) with the link in the text; all four lakes (not only two selected) should be mentioned also in the Figure 3; at least the city of Stockholm should be marked in the map, because it is mentioned very often in the text.

Province Dalarna (page 10088, line 2) isn't marked in the Figure 3.

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Page 10089, line 4: Handl. rör. . . . missing year 1834

Page 10090, line 4: 2014a

Page 10090, line 10: 2014b

Page 10091, line 5 and 27: 2014

Page 10094, line 12: Jansson, 2003

Figure 1: y-axis description (“Frequency”) is missing, also the title is inaccurate (“Decadal frequency of . . .”)

Figure 2: y-axis description (“Percentage”) is missing, also the title is inaccurate (“ . . .expressed as a percentage”).

Figure 3: Provinces Bohuslän, Halland, Skåne and Blekinge are not mentioned in the text; the scale is missing.

Figure 4: The scale is missing.

Why there are several sources in Table A1 in bold?

References:

Page 10096, line 16 and 21 - DobrovolnĀĭ

Page 10097, line 17 – comma after Uppsala

Page 10097, line 23 – Is the year MDCCCXVIII necessary?

Page 10097, line 24, page 10089, line 23 – Ferner or Fermer?

Page 10098, line 4 – Halíčková

Page 10101, line 11 – no indent; put this citation after Olofsson and Stille (1965)

Page 10102, line 2 – comma after Norrköping

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Page 10102, line 11 – Svenska handelns och näringarnes . . .

Page 10103, line 33 – comma after Uppsala

Citations in References not mentioned in the text: Husberg (1994), Stockholms stad-sarkiv (1636)

Citation in Table A1 not mentioned in References: Edman (1980)

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**HESD**

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