

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

**A. De Kraker (Referee)**

krakeram@zeelandnet.nl

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Documentary evidence of historical floods and extreme rainfall events in Sweden 1400–1800

General The paper written by D. Retsö presents a whole range and long-term series of floods and rainfall events of the pre-instrumental period (1400–1800), extending our knowledge of the extremes far beyond the period of instrumental measurement of synoptic weather. Whereas quite some research for Central Europe in this field has already been carried out, this study for northern Europe is of interest and forms another building block to complete the picture of weather events in Europe of the past. The author demonstrates how meticulously he has analysed the documents, summarizing all the

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extreme events in an extensive data base at the end of the paper. After having analysed the data the author uses a simple methodology to assess the flooding and rainfall events.

Scientific questions and issues The research question of this paper is rather simple and only aims at presenting data. There is no attempt to look for differences with Central Europe. The period under study is the mainly the Little Ice Age, which is not specifically discussed neither in term of beginning or end, neither in terms of stability or fluctuations within this long seemingly colder period. In the introduction the author talks about the connection of possible harvest failures and the extremes events being discussed in the article. As such this is a plausible connection, but there is no discussion about which factors might cause harvests to fail. The heavy rainfall in 1661 might have been at the heart of misery in France, but similar bad weather did hardly harm the economy in much better accessible areas such as the Low Countries. Concerning the method used which is an indexation into three categories using the following three criteria: duration, spatial scale and damage. This sort of assessment method is by far the only useful method to assess proxy's, because that is what is being dealt with. In the past millers developed a similar kind of method to assess the impact of the wind, the miller's wind classification, however, consists of sixteen categories, followed by Beaufort who used twelve. Also using documentary evidence De Kraker (1999) used eight categories to assess the impact of storms. Using temperature related proxy's usually nine categories (+) and nine categories (-) are being used. The author only uses three categories, which does not allow to distinguish neatly the fluctuations over four centuries. Moreover, 157 events have been found covering 400 years. In fig 1 this is visualised, but what about the years of which there is no reliable evidence? Is this shown in fig 2? Concerning fig 1: is there some multiple year moving average possible to include? This last kind of information could be linked to the fluctuations during the Little Ice Age? Concerning the three criteria, there should be more evidence about the impact, e.g. in terms of when the event happened during the daytime or during the night. Did flooding occur when it was still very cold or when temperatures were pretty

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comfortable? Did flooding occur during a period of great stress, such as warfare or last year's harvest failure or during a time of peace? Also of interest to know is the fact whether also urban areas were hit and if such areas were flooded more often as time went on, because the urban areas simple grew in size and therefore became more vulnerable to flooding. Finally, as you go further back in time data generally becomes more questionable, so some band of error could perhaps be introduced. This can be easier done if the number of categories used to asses is extended.

Some details On page 10089 I miss the mentioning of possible flood marks in towns. On page 10090 I miss the explanation given of the huge increase of documentary evidence form 1520s onward. On page 10090, 10. Weather and Climate ???? The author talks about spatial extention, better would be spatial scale.

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