

Interactive comment on “Millennial scale variability in high magnitude flooding across Britain” by N. Macdonald

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The reviewer is thanked for their considered comments on the paper and recognising the value and potential contribution of this paper to the broader literature on historical flooding and signals within these series. Below are a series of comments on the specific points raised by the reviewer.

The reviewer raises concerns that ‘too little is done to appraise quality, reliability and potential of the data. . . particularly pre-1750’. As stated in the paper the absence of records does not necessarily indicate an absence of floods, simply that they were not recorded, or that the data has been lost (pg4, line 5). The cited papers provide a detailed discussion of a number of the issues raised by the reviewer. As stated in com-

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ment to reviewer #1, the intention of the paper was to provide a ‘rapid communication’ style paper to permit a review of the datasets and the patterns/trends that they identify rather than focus on the series themselves in great detail, as this is provided for most of the series within the cited papers.

As stated in the paper greater confidence is placed in the data post-1750, whilst I accept and appreciate the concerns with the pre-1750 data, if accepting of the limitations, then this can be of value in better understanding some the broader trends, but as stated this needs to be treated with caution. Whilst a number of the published studies focus on flood frequency analysis, they focus on the value of adding historical information into flood frequency analysis, as such a detailed and extensive chronology was constructed in each case, with large amounts of data not included as ‘confidence’ in an estimated flow was low, not that no event was recorded. A number of accounts detail floods, with over 3000 accounts held for the rivers discussed, but very few provide sufficient detail to permit the estimation of flow, the exclusion of the early accounts on the Tweed reflects a lack in confidence in estimated flows by the author, locally based individuals may feel that estimates could be provided with some degree of confidence, not that these accounts have been missed, as the reviewer states, confidence in accounts is vitally important.

Concerning the drivers, I have been working the seasonality aspect and will add this to the revised paper – I agree that this is will strengthen the paper, along with a more detailed discussion of the analysis.

An improved and more detailed explanation of the statistical analysis will be included, this is also requested for reviewer #4, I appreciate that upon reflection this can be improved and both reviewer’s comments are appreciated. It is worth noting that this has not previous been attempted.

I agree with the reviewer that the changes to the channel form, cross section, landuse are all important issues and have been detailed in considerable depth within the cited

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specific case study analyses; but sites do exist where comparison can be drawn as a result of long series, stable cross sections etc, but one must be careful in site selection and not just dismissive of complete systems. I strongly disagree with the reviewer in stating that the case studies do not provide this detail, as in these case studies these points are explicitly and in great detail discussed, as to the value of the site used for analysis as it fulfills the criterion the reviewer states.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 11, 10157, 2014.

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