

## ***Interactive comment on “Estimating the long-term historic evolution of exposure to flooding of coastal populations” by A. J. Stevens et al.***

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The exclusion of defences does not nullify the analysis presented. Exposure as defined in this paper is a measure of the people in the floodplain should defences fail (i.e. as for the indicative floodplain map used in flood management by the UK Environment Agency). We will review the text of the paper to make sure that this point is made as clearly as possible.

We carried out the modelling without the presence of flood defences because for emergency planning purposes it is vital to know the number of people who could be at risk should defences fail. The assumption that defences will never fail, or that no unforeseen flood pathways exist, is dangerous.

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We are in agreement with the reviewer that interventions (such as structural defences and beach management) are very likely to have reduced the risk of flooding. Indeed we have acknowledged in the paper that the population of Portsea are mostly protected by sea defences constructed to a modern day 1 in 200 event (see Conclusions). However, as stated in the paper information on flood defences in the Portsea case study has historically been poorly recorded – hence it's exclusion and our focus on exposure not risk.

The evolution of exposure to flooding, and the influence of underlying drivers presented in this paper form a foundation for further research into flood risk. This empathises the importance of documenting defence characteristics over time, and was highlighted as an area for further study. Characterising the evolution of defences and hence flood risk over time represents an important continuation of the method presented in this paper.

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