

## ***Interactive comment on “Investigating compound flooding in an estuary using hydrodynamic modelling: A case study from the Shoalhaven River, Australia” by Kristian Kumbier et al.***

### **Anonymous Referee #1**

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An excellent and well written study that is of clear importance and interest to the reader some extremely minor clarifications in the text needed (see below).

Abstract - a strong opening statement that is not entirely true, please consider starting "Many previous" Also, please consider modifying the line "we recommend to consider..." perhaps rephrase to "Therefore, joint probability analysis of storm-tide and riverine flooding is crucial in estuaries" Although true that quickly responding catchments are prone to compound hazard long-term duration events may also be an issue..

Other comments: p1 L27. Consider expanding the Zheng et al. 2013 reference to give some examples - such as Bangladesh (Lewis et al. 2013) p3 L5 Please consider

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also Maskell et al. 2013 who found non-linear interaction effects to be small and that simplified hydrodynamic modelling techniques suitable for river-storm tide interaction in an idealised estuary p9 l1 - the method is similar to the water-line method to determine inundation area (e.g. Lewis et al. 2013b, perhaps consider adding this for clarity for the reader

REFS: Lewis, M., Bates, P., Horsburgh, K., Neal, J. and Schumann, G., 2013. A storm surge inundation model of the northern Bay of Bengal using publicly available data. Quarterly Journal of the Royal Meteorological Society, 139(671), pp.358-369.

Maskell, J., Horsburgh, K., Lewis, M. and Bates, P., 2013. Investigating River–Surge Interaction in Idealised Estuaries. Journal of Coastal Research, 30(2), pp.248-259.

Lewis, M., Schumann, G., Bates, P. and Horsburgh, K., 2013b. Understanding the variability of an extreme storm tide along a coastline. Estuarine, Coastal and Shelf Science, 123, pp.19-25.

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