

Interactive comment on “Strong increases in flood frequency and discharge of the River Meuse over the late Holocene: impacts of long-term anthropogenic land use change and climate variability” by P. J. Ward et al.

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This is a very interesting and well-written paper, and I commend the authors for their thorough work.

The main story comes through very well, and is supported well by the model simulations. Essentially, the authors are saying that over the 1000-2000 BP time period, most of the increases in runoff and flood frequency can be attributed to land use changes.

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However, by the beginning of the last century these land use changes had become stabilized. However, runoff and flood frequency continued to increase over the last century, but these can be attributed to "climate change", especially increase in rainfall.

The results make sense - however, how much confidence can be placed on these conclusions given the uncertainties in the models and the data that have been used? It would have been valuable to carry out some first-order sensitivity analyses to test the strength of these conclusions. This should be fairly easy to do.

Secondly, the results of the model simulations can be made a lot richer through giving more insights into the mechanisms that give rise to these increases in runoff and flood frequency. This will be not only instructive, but also address the weaknesses I mentioned above, i.e., they make the conclusions more believable and understandable.

I recommend that the authors revise the paper in respect of these comments and those of the two reviewers. I believe that the paper is very interesting and should eventually be published if the authors can respond to these comments and criticisms.

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