

New approach needed to deal with increased flood risk

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Considering the impacts of climate change on flood risk may not be effective unless current risk is managed better, according to new research from the University of Bristol published today in the Journal of Hydrology.

Climate change is happening and flood risk increases as the [climate](#) warms. However, there is so much uncertainty in estimating the magnitude of flooding today, regardless of any [future](#) change, that flood risk management plans should focus on making systems robust to current uncertainties, the researchers say.

Using a number of regional climate models (RCMs), Andy Smith and colleagues in Bristol's Hydrology Research Group explored the impacts of [climate change](#) on flooding for the River Avon catchment in the central UK. Alongside projections of future change, they also explored the uncertainty that exists in flood risk estimation under current climate conditions.

The results under the future (2061–2099) climate scenario revealed an increase in annual maximum flows. However the magnitude and spread of the projected changes varied significantly. The results also revealed that there was already a large amount of variability in estimating flood magnitude under current climate conditions.

Andy Smith said: "Flood risk is predicted to increase as the climate warms, according to the modelling tools we have available. However the window of uncertainty in [flood risk](#) is already extremely wide for today's climate. Our results show that dealing properly with current uncertainties in flood hazard and managing the risk better will actually confer a lot of the protection we are likely to need for the future."

More information: Andrew Smith, Jim Freer, Paul Bates, Christopher Sampson, "Comparing ensemble projections of flooding against flood estimation by continuous simulation," *Journal of Hydrology*, Volume 511, 16 April 2014, Pages 205-219, ISSN 0022-1694, [dx.doi.org/10.1016/j.jhydrol.2014.01.045](https://doi.org/10.1016/j.jhydrol.2014.01.045).

Provided by University of Bristol

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