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Natural flood management in Southwell (Nottinghamshire, UK): an interdisciplinary approach in a rural-urban catchment

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The town of Southwell (Nottinghamshire, UK) is situated within a rural catchment and has experienced multiple flood events. In summer 2013 an extreme event occurred in which 107.6mm of rain fell within two hours, flooding up to 300 homes. As a result, a voluntary flood action group was established in the community (Southwell Flood Forum).

An experimental natural flood management research project has been developed within the Potwell Dyke catchment (above Southwell). This has led to the creation of a catchment partnership of relevant stakeholders (academics, community, statutory bodies, local government and conservation organisations).

Prior to intervention, water level monitoring was installed at five locations and flows were gauged for approximately one year. Rainfall data are available from the university weather station within the catchment. Ten large woody debris dams were installed on two of the streams within the catchment in summer 2016. In November, a stream restoration took place to reinstate historic meanders and create online storage in a previously ditched channel reach, together with the construction of five earth bunds in the corners of the fields. These interventions are designed to store and slow water whilst promoting ecological gains.

The research takes an interdisciplinary approach. The aims are to assess the extent to which natural food management (NFM) can reduce fluvial flood occurrence but also identify and analyse current barriers to NFM uptake. Interviews with landowners in the catchment have taken place. Practitioners have also been interviewed in order to discuss the barriers to current uptake from an industry perspective. This study therefore not only addresses the evidence gap but also draws upon current barriers to advise future NFM projects.

This paper will present preliminary findings from the hydrological monitoring and summarise barriers identified and lessons learned from stakeholder engagement activities.