Academic Contributions

Infrastructure Services (IF)1 Vision:

"We have transport and network services that are resilient to the impacts of flooding and extreme weather"

Investigate the Impact of Flooding on the Stability of Small Single and Multi-span Masonry Arch Bridges

Dr Brian Solan, Ulster University

NI Evidence Report Risks & Opportunities Addressed

In5: Risks to bridges and pipelines from high river flows & bank erosion
In6: Risks to transport networks from slope & embankment failure

Collaborating Organisations:

Professor Robert Ettema, Colorado State University

Funders

Royal Society

Implementation Timeline

Initial research completed in April 2017, with conference paper (Civil Engineering Research Association of Ireland 2018) and journal paper published in 2018. Further research to continue (ongoing).

Research Project

Investigate the impact of flooding on the stability of small single and multi-span masonry arch bridges. Research undertaken will quantify climate change impacts, including projected increases in heavier and more frequent rainfall events and bridge scour risk. It will also consider the impact of adaptation measures and relevant maintenance regimes already underway. Results will be disseminated to advise long-term renewal programmes for bridge maintenance, earthworks and embankment.

Claudy Bridge, Co. Tyrone, destroyed in Aug 2017
Photograph credit: Mark Wilson, Ulster University

Climate Northern Ireland