

Understanding of and response to severe flash flooding Science Summary SC070021

The Environment Agency has published a new report looking at how the public understand and respond to incidents of severe flash flooding.

The Halcrow Group, Ben Cave Associates and the Flood Hazard Research Centre at Middlesex University were commissioned to undertake the research in March 2008.

Flash floods are characterised by very short periods of time between rainfall and subsequent flooding, which makes effective preparation and response very difficult. The sudden rise in water level, the large volume of water involved, the speed at which the water moves and debris carried along by the flood can be very dangerous, posing a threat to life, property and local infrastructure.

The UK has recently experienced a number of flash floods, such as in Boscastle in 2004 and Helmsley in 2005. National policy in this area is complex and rapidly evolving, including the Pitt Review into the 2007 floods, the proposed National Flood Emergency Framework and Floods and Water Bill, and *Making Space for Water*, the Defra project of which this report forms a part.

At present there is no national warning system in place for flash flooding, though the Environment Agency is currently defining rapid response catchment areas that are at particular risk. With research by the Intergovernmental Panel on Climate Change and others indicating that flash flooding is likely to become more frequent and more dangerous in the years to come, understanding the public's perceptions of severe flash flooding and clarifying what is needed for them to be able to make an effective and appropriate response is very important.

The research project was carried out in four main stages:

- A literature review (available separately).
- Two focus groups with members of the public.

- One focus group with professional partners.
- Telephone interviews with professional partners.

The report is divided into four main chapters considering the following issues:

- Understanding of the term 'flash flooding'.
- Appropriate and effective responses to flash flooding.
- Warnings for flash flooding.
- Raising awareness of flash flooding.

The study reports a number of key findings and makes a total of 28 recommendations on how to move forward. The key messages and recommendations have been formulated to help the Environment Agency with its investigation into the feasibility and advisability of a warning system for severe flash flooding, and in development of effective awareness-raising strategies and messages.

Recommendations include:

- Developing a definition of flash flooding that stresses its potential danger.
- Working with partners such as local communities to undertake hazard mapping and local planning in areas at risk of flash flooding.
- Identifying and enforcing statutory requirements for vulnerable locations such as caravan parks and campsites.
- Research into the use and effectiveness of debris interceptors.
- Giving statutory responsibility for water rescue to fire and rescue services.
- Providing practical advice on how to respond as part of flood warning messages, and highlighting the dangers of risk-taking behaviour.

- Ensuring that the design of future warning systems for flash floods take account of vulnerable groups for whom traditional communication methods may be inappropriate.
- Exploring the development of a schools' information pack to encourage schools to teach children about flood risk and effective response.
- Encouraging the reporting of success stories in the media.

The report authors emphasise that the study relied heavily on an extensive literature review and that primary research was limited. As such, further primary research will be essential to create a more detailed and representative picture of public and professional perceptions of flash flooding, and in developing interventions that support effective responses.

This summary relates to information from Science Project SC070021, reported in detail in the following output(s):

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This project was commissioned by the Environment Agency's Science Department, as part of the joint Environment Agency/Defra Flood and Coastal Erosion Risk Management Research and Development Programme.

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