



Flood and Coastal Erosion Risk Management Research Programme

Groundwater flood risk management in England

Project summary FRS19217/S

This project provides evidence of current approaches to managing groundwater flood risk across England. Sharing understanding of current practice will help risk management authorities and others carry out their roles and responsibilities as set out in the national flood and coastal erosion risk management (FCERM) strategy for England (2020). It will also help to target future work in groundwater flood risk management.

Context

Groundwater flooding occurs when the groundwater table rises to levels significantly higher than normal. The Environment Agency has a strategic overview role in groundwater flood management. Lead local flood authorities (LLFAs) are responsible for developing, maintaining and applying a strategy for managing groundwater flood risk.

Method

The project carried out a rapid evidence assessment and used other methods to gather data on the current approaches to managing groundwater flood risk in England. This included a comprehensive literature review, a survey sent to risk management authorities and partner organisations who have roles in groundwater flood risk management, and interviews with stakeholders. The review looked at governance, recording flooding incidents, flood risk assessment, flood forecasting and warning, mitigation action, and gaps against the national FCERM strategy.

Main findings

- There is considerable evidence of organisations working together and sharing data, particularly between the Environment Agency, LLFAs, water companies, the Coal Authority and others.
- Progress has been made since the Flood and Water Management Act 2010 gave powers to LLFAs to coordinate the management of local flood risks, including groundwater, and the strategic overview role to the Environment Agency.
- Where groundwater flood risk is considerable approaches to risk assessment, recording incidents, forecasting, warning and mitigation were found. Approaches are not consistent across England and there is limited access to risk information.
- There is very limited guidance on how to implement groundwater flood mitigation measures, particularly where groundwater integrates with other sources of flooding.
- There is limited evidence of groundwater flood risk being considered and addressed through spatial planning, under current or future climate conditions.

The following were identified as high priority activities that would bring greatest benefit to risk management authorities, which the Environment Agency should lead on to address significant gaps.

- Carry out further research to review the current governance arrangements for groundwater flood risk management.
- Improve processes for recording groundwater flood incidents consistently so that data can be better shared and used across organisations.
- Investigate the options for making groundwater flood risk spatial data that includes present day and climate change scenarios freely available in England.

- Incorporate local assessments of groundwater flood risk into a future update of the new national flood risk assessment (due to be released in 2024).
- Review and update the information supplied to the public on how to prepare and respond to groundwater flooding.
- Provide guidance that enables local resilience forums to consider groundwater flooding adequately in multi-agency flood plans.
- Develop guidance on how to implement groundwater flood mitigation schemes. This should clarify operational processes for the regulatory framework for larger groundwater pumping schemes.
- Deliver high level training sessions to risk management authorities on groundwater flood risk management.

Two additional high priority activities were identified for other organisations to lead:

- Any organisation that provides groundwater flood warning and/or alert service to the public should provide information on where those warnings are available to encourage people to sign up to the service.
- Guidance for local planning authorities should be improved to enable them to consider and assess groundwater flooding effectively within spatial planning and development management.

Next steps

The information on approaches and case studies gathered through this project will be used to help organisations work together, particularly LLFAs and the Environment Agency. The recommendations will be used to target areas of future work (guidance, skills development, systems and data improvements) to help achieve the ambitions of the Government's FCERM policy statement (2020) and the national FCERM strategy for England with regard to groundwater flood risk management.

This summary relates to information from project FRS19217, reported in detail in the following output(s):

Report: FRS19217/R

Title: Rapid evidence assessment and overview of groundwater flood risk management in England.

April 2021

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

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