



HR Wallingford  
*Working with water*

# Flood risk modelling and mapping

Leading-edge solutions in flood risk management



# Flood risk modelling and mapping

Flooding is a widespread natural hazard. Millions of people around the globe are at risk of flooding from pluvial, fluvial, coastal, dam break and urban wastewater sources. Effective modelling and mapping solutions are critical to our improved understanding of these risks.

HR Wallingford has extensive experience of mapping and modelling floods and their consequences. Our clients include government agencies, insurance companies, research councils and developers. We apply a wide range of computational models and modelling systems to address a diverse range of flood risk issues. We have developed many of these tools ourselves, so we know how and why they work. This means we can implement tailored systems to address the challenges faced by our clients.



## Leading edge solutions

- > National, regional and local scale flood hazard maps that meet legislative criteria (e.g. EU Floods Directive)
- > National, regional and local scale flood risk mapping combining the likelihood of different events with their consequences (e.g. economic impact, loss of life)
- > Dam break simulation and risk analysis
- > Climate change impact analysis
- > Urban drainage and wastewater flooding
- > Dynamic breach growth
- > Flood defence infrastructure reliability and risk analysis
- > Tsunami simulation and propagation
- > Software and associated training
- > Flood forecasting and warning
- > GIS based software systems
- > Forensic analysis of severe flood events



This map is reproduced from the OS map by HR Wallingford with the permission of the Controller of Her Majesty's Stationery Office, Crown Copyright. Reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Licence Number 100019904.



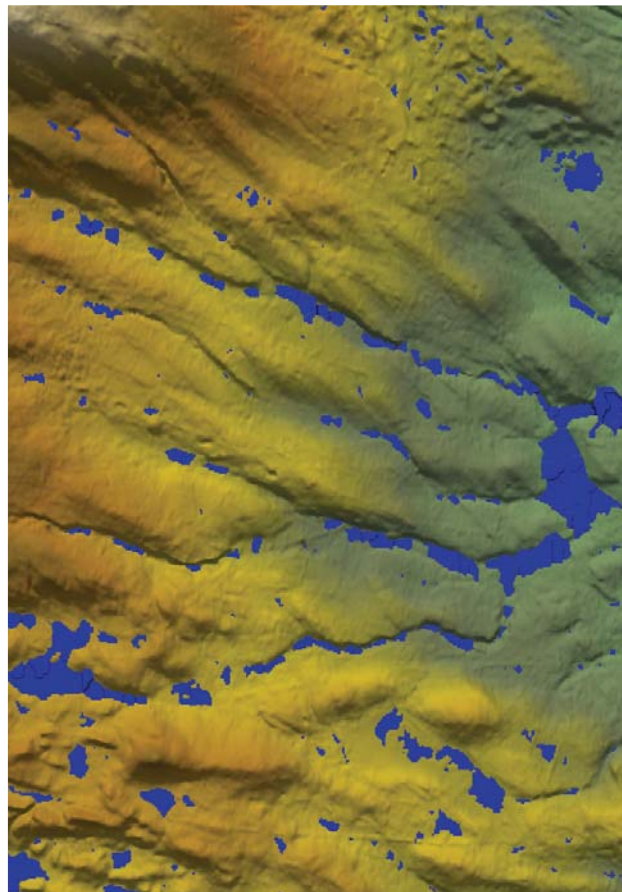
## Practical applications

- > Development of strategic flood risk management plans
- > Identifying the most appropriate areas to undertake development
- > Informing members of the public about flood hazards
- > Emergency planning and evacuation
- > Asset management plans
- > Flood forecasting and warning systems

## Research into practice

HR Wallingford carries out research for a variety of clients, including the European Commission, government agencies and research councils.

Our expert engineers and scientists feedback the outcomes of this research in to our consultancy projects, ensuring the modelling solutions we deliver are truly state of the art.

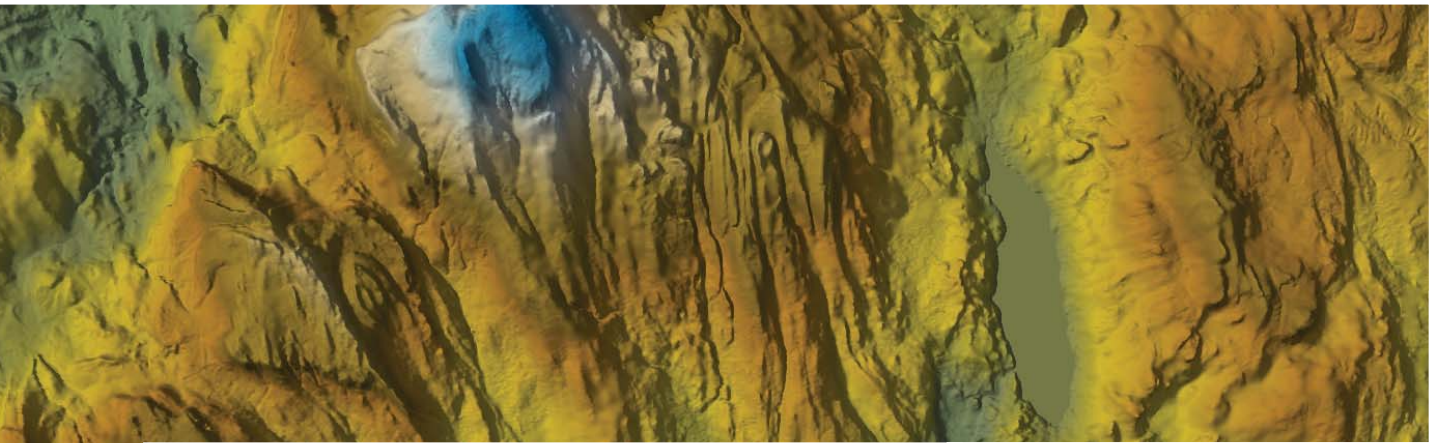




HR Wallingford  
Howbery Park  
Wallingford  
Oxfordshire OX10 8BA  
United Kingdom

**tel** +44 (0)1491 835381  
**fax** +44 (0)1491 832233  
**email** [info@hrwallingford.com](mailto:info@hrwallingford.com)

[www.hrwallingford.com](http://www.hrwallingford.com)



HR Wallingford is an independent engineering and environmental hydraulics organisation. We deliver practical solutions to the complex water-related challenges faced by our international clients. A dynamic research programme underpins all that we do and keeps us at the leading edge. Our unique mix of know-how, assets and facilities includes state of the art physical modelling laboratories, a full range of numerical modelling tools and, above all, enthusiastic people with world-renowned skills and expertise.

