

Managing flood risk in the Broads

“...Sea level rise and the predicted impacts of climate change will pose real challenges for water management”

A water environment

Water obviously plays a dominant part in and around the Broads and provides a wide range of services for people and nature. The inter-connecting characteristics of water mean that the managers of the Broads are forever seeking ways to deal with changes in water levels. Sea level rise and climate change will continue to pose real challenges for water management in this easterly, low-lying wetland.

Flooding

While flooding is a natural occurrence within a floodplain, it can cause disruption and damage if not properly managed. The main flood risks to the Broads are:

- **Coastal flooding** resulting from a combination of high tides and stormy conditions overtopping or breaching sea defences;
- **Tidal flooding** within rivers and estuaries, when water levels are elevated during high tides by a storm surge and flood defences are overwhelmed; and

- **Fluvial flooding** caused by very heavy and prolonged rainfall raising river levels above adjacent banks or flood embankments.

Who manages flood risk?

The Department for Environment, Food and Rural Affairs (DEFRA) has overall policy responsibility for flood and coastal erosion risk in England. This policy is implemented by the Environment Agency, local authorities and Internal Drainage Boards.

The Environment Agency manages flood risk from main rivers, estuaries and the sea, and is responsible for river and tidal flood defences. Internal Drainage Boards, such as the Broads IDB, manage land drainage in lowland areas, improving and maintain watercourses, drainage channels and pumping stations.

Under the Flood and Water Management Act 2010, county councils are designated as Lead Local Flood Authorities. They manage flood risk from surface water, ordinary watercourses and groundwater.



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Where the Broads meet the sea: Breydon Water



Frontline coastal sea defences at Horsey
Source: www.tournorfolk.co.uk

The Broads Authority is the local planning authority for the Broads Executive Area. It provides guidance and advice to developers and planning applicants on management of flood risk and development in the Broads.

The Strategic Flood Risk Assessment for the Broads places the majority of the area in Flood Zone 3a, defined as 'High Probability' of flooding; over time, with rising sea levels, the majority of the area will be in Flood Zone 3a, 'The Functional Floodplain'. As such, flood risk is a major constraint on sustainable development in the Broads and on its social and economic viability.

Coastal and river flood defences

As a floodplain, it is natural for areas of the Broads to flood temporarily when water levels are high. A future scenario to cope with more regular flood events may be to make more space for water, such as creating new or realigned areas of washland.

Water levels are also controlled through hard engineering, and one approach would be to create more and higher barriers. Currently, 13km of frontline sea defences between Eccles and Winterton protect the Broads from flooding directly from the North Sea. This frontage is part of the Kelling to Lowestoft Shoreline Management Plan, which sets out the proposed approaches to managing the short, medium and long-term risks from coastal flooding and erosion, including adaptation to climate change and rising sea levels.

There is a 'hold the line' policy approach to maintaining the beaches and existing sea defence structures along this frontage so that the position of the shoreline remains. However, it is recognized that other approaches - such as managed realignment of the natural coastline, no active intervention, or new defences on the seaward side - may have to be considered if holding the line becomes unsustainable in future.

The Broadland Flood Alleviation Project is working to strengthen and maintain existing flood defences and make new provision for undefended Broads communities. The 20-year project, started in 2001, includes 240km of earth embankments running alongside the rivers Bure, Wensum, Waveney, Yare and Ant.

Future approaches

The technical and financial challenges of maintaining flood defences into the future will continue to increase. A better understanding of the implications of increased flood risk and land use will allow us to develop feasible and sustainable options that take into account the wide range of interests and issues relevant to those who live in, work in and manage the Broads.

For more information contact:

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Useful websites:
Shoreline Management Plans (2006): www.gov.uk/defra
Environment Agency: www.environment-agency.gov.uk
East Anglian Coastal Group: www.eacg.org.uk