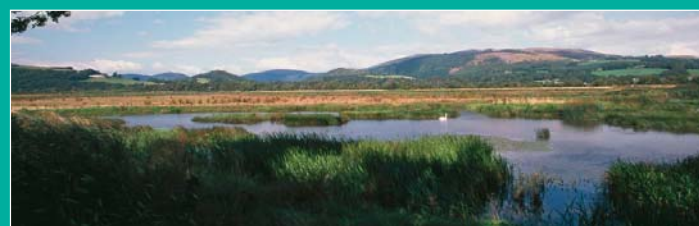




Natural flood management in action

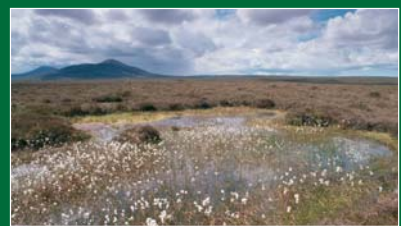


What is natural flood management?

With climate change comes an increased risk of flooding. Natural flood management provides cost-effective and sustainable means of adapting to climate change impacts.

Natural flood management presents a shift from our predominantly piecemeal and reactive approach to flooding towards a strategic, catchment-based approach. Natural flood management is achieved by:

- adopting a strategic, source to sea (catchment) approach
- protecting and using natural systems and habitats
- promoting soft engineering techniques.



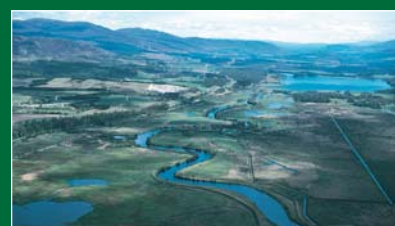
Protecting and using natural systems and habitats

- Restore bogs and keep them healthy so they retain water.
- Manage uplands to reduce run-off and erosion.
- Protect and restore natural floodplains both inland and at coasts.
- Use natural forests to store water and slowly release it back into rivers.
- Use wetland habitats such as bogs, fens and saltmarsh to soak up water and release it slowly back into rivers.



Promoting and implementing soft engineering techniques

- Recognise the role that wetlands play in helping to alleviate flooding.
- Re-connect rivers with their natural floodplains.
- Establish more demonstration sites to test the effectiveness of natural flood management.
- Protect and restore wetland habitats through the programme of measures.



Catchment-scale planning

- Consider the whole catchment, from source to sea.
- Ensure better co-ordination of flood management by local authorities, individual landowners and farmers.
- Use river basin management plans to provide a strategic forum to consider natural, sustainable flood management.
- Establish clear links with other plans and strategies.
- Encourage neighbouring farmers to work together for more coherent management.



Social benefits

- People living and working in urban areas downstream are protected from floods.
- Wetland habitats and landscapes are good for ecotourism and education.
- Recreation opportunities encourage a healthy lifestyle.



Economic benefits

- Hard engineered, concrete flood defences are expensive to construct and maintain.
- Soft engineered schemes are cost-effective and sustainable, fulfilling many roles as well as flood defence.
- Wetlands act as natural cleansers and improve water quality by storing pollutants.
- Soft engineered solutions are cheaper in the long-term and provide sustainable adaptation to climate change.
- Healthy wetland systems are vital to our economy, supporting industries such as freshwater fisheries, the whisky industry and tourism.



Uplands

- Manage uplands to reduce erosion and run-off.
- Keep bogs healthy so they retain water.
- Restore gullies and natural forests.
- Avoid overgrazing by sheep and deer to prevent damage to upland habitats and peatlands.



Floodwater storage areas

- Avoid embankments that divorce the river from the floodplain.
- Let water stand on low-lying fields when the rivers overflow, reducing pressures on urban areas downstream.
- Store floodwaters in natural habitats to release them back into the river system.



Floodplain management

- Consider grazed grassland rather than intensive arable cropping.
- Allow shallow flooding or surface flashes of water in spring for the benefit of breeding wading birds.
- Leave wet corners or patches within fields, as these are good for wildlife.
- Manage native wet woodlands as an alternative to crop production.
- Make sure that agricultural incentives reflect the important flood alleviation role.



Urban areas

- These will require only modest flood embankments to defend them against flooding, thanks to protection by sustainable management of the catchment.



Wetland wildlife benefits

- A natural approach to sustainable flood management helps to achieve national and local biodiversity action plan targets.
- Lochs and rivers provide habitats for threatened species such as the Atlantic salmon, the freshwater pearl mussel, the osprey and the water vole.
- Ponds and pools support the rare medicinal leech, the northern blue damselfly and the great crested newt.
- Blanket bogs support a rich diversity of invertebrates and breeding wading birds such as greenshanks, dunlins and golden plovers.
- Floodplain wetlands support farmland wading birds and wildfowl, including lapwings, snipe, teals and pintails.