Yorkshire Dales Rivers Trust



www.yorkshiredalesriverstrust.com

More specific NFM information can be found at: www.yorkshiredalesriverstrust.com/natural-flood-management

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What is NFM?



"Natural flood management involves techniques that aim to work with natural hydrological and morphological processes, features and characteristics to manage the sources and pathways of Flood waters. These techniques include the restoration, enhancement and alteration of natural features and characteristics, but exclude traditional flood defence engineering that works against or disrupts these natural processes."

SAIFF (2011). What is meant by restoration, enhancement, and alteration under the Flood Risk Management (Scotland) Act 2009. Edinburgh: Scottish Advisoryand Implementation Forum for Flooding

Natural flood management aims to reduce the downstream maximum water height of a flood (the flood peak) or to delay the arrival of the flood peak downstream, increasing the time available to prepare for floods.

This is achieved by restricting the progress of water through a catchment using a range of techniques which work with the natural features to slow down or store flood waters.

Yorkshire Dales National Park Authority- NFM Handbook

Natural flood management (NFM), managing flood risk by protecting, restoring and emulating the natural regulating function of catchments and rivers, has the potential to provide environmentally sensitive approaches to minimising flood risk, to reduce flood risk in areas where hard flood defences are not feasible, and to increase the lifespan of existing flood defences.

Natural Environment Research Council

Working with Natural Processes (WWNP) to reduce flood and coastal erosion risk (FCRM) involves implementing measures that help to protect, restore and emulate the natural functions of catchments, floodplains, rivers and the coast. WWNP takes many different forms and can be applied in urban and rural areas, and on rivers, estuaries and coasts. It is also referred to as Natural Flood Management (NFM).

Environment Agency- Working With Natural Processes

Emulating, SUDS, rewilding Protect, Risk, asos, Multi, RSUDS, Urban Flood wetlands, Restore, Slowing, Drainage, Reducing, Sustainable ocesses,





Reduces Flood Risk

Works with Natural Processes

Provides Multiple Benefits

Resilient to future climatic changes

Working with Natural Processes (WWNP) to reduce flood and coastal erosion risk (FCRM) involves implementing measures that help to protect, restore and emulate the natural functions of catchments, floodplains, rivers and the coast. That provides multiple benefits, are resilient to future climatic changes and work at a Catchment Scale.





Why NFM?



Some Stats

9 of 17 record breaking rainfall months/ seasons since 1910 occurred after 2000 Met Office

2.7 million homes in the UK are at risk of surface level flooding.

Environment Agency

The 2015/16 flood where estimated to cost roughly £1.6 billion

Environment Agency

The government have committed £2.6 billion to fund 1,500 flood defence projects.

Despite the 25 year environmental plan stating it would 'expand the use of natural flood management solutions' it forms a tiny proportion of funds committed.

Environment Agency

Case Studies

Slowing the Flow- Pickering Beck

Lead: Forestry Research

Key findings: 12% reduction in flood peak in late December 2013

- Leaky Woody Dams
- Moorland Management
- Riparian Woodland creation
- Woodland farm creation
- Buffer zones
- Improve Soil infiltration
- Low level Bunds



LARGE CONSTRUCTED FLOOD ALLEVIATION SCHEME

Case Studies

From Source to Sea- Holnicote

Lead: National Trust

Key findings: *Limited planting of riparian woodland and installation of LWD dams predicted to reduce flood peak by 4-8%*

- Leaky Woody Dams
- Moorland Management
- Formal Flood Storage Area
- Woodland creation
- Arable reversion



ONE LAND OWNER- NATIONAL TRUST

https://www.nationaltrust.org.uk/holnicote-estate/documents/from-source-to-sea ---natural-flood-management.pdf

Case Studies

Making space for Water- Dark Peak, Derbyshire

Lead: Moors for the Future **Key findings:** *Revegetation across 12% of a 9km catchment could reduce flood peaks from severe storms by 5%*

- Peatland restoration
- Bare peat restoration



ONLY FOCUSES ON ONE ELEMENT

Examples

A catalogue of nature-based flood risk management projects in the UK

http://naturalprocesses.jbahosting.com Interactive Map



Any Questions?

