

Natural Flood Management (NFM) Symposium

Edinburgh Centre for Carbon Innovation, Edinburgh
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Environment Agency

The Environment Agency

We work to create better places for people and wildlife, and support sustainable development.



Natural Flood Management Programme

- £15m announced
- Integrate NFM techniques in our 6 year programme
- £13.2m at Catchment Scale
- £1.8m Community lead



The Aims

- Reduction in Flood and Coastal Erosion risk
- Improve habitats and increase biodiversity
- Contribute to Research & Development; reducing the evidence gap for NFM
- Promote partnership working



Ministerial Involvement

- Minister Coffey has been involved in the process
- Her aspiration is that interventions are
 - Delivered at pace
 - Not over engineered
 - Community led
- This is about testing interventions and drawing conclusions from the data



Types of Interventions

- A variety of interventions
- A range of catchment types
- Different methods of delivery
- Long term monitoring



Natural Flood Management Projects

NORTH



- Catchment Projects
- Community Projects



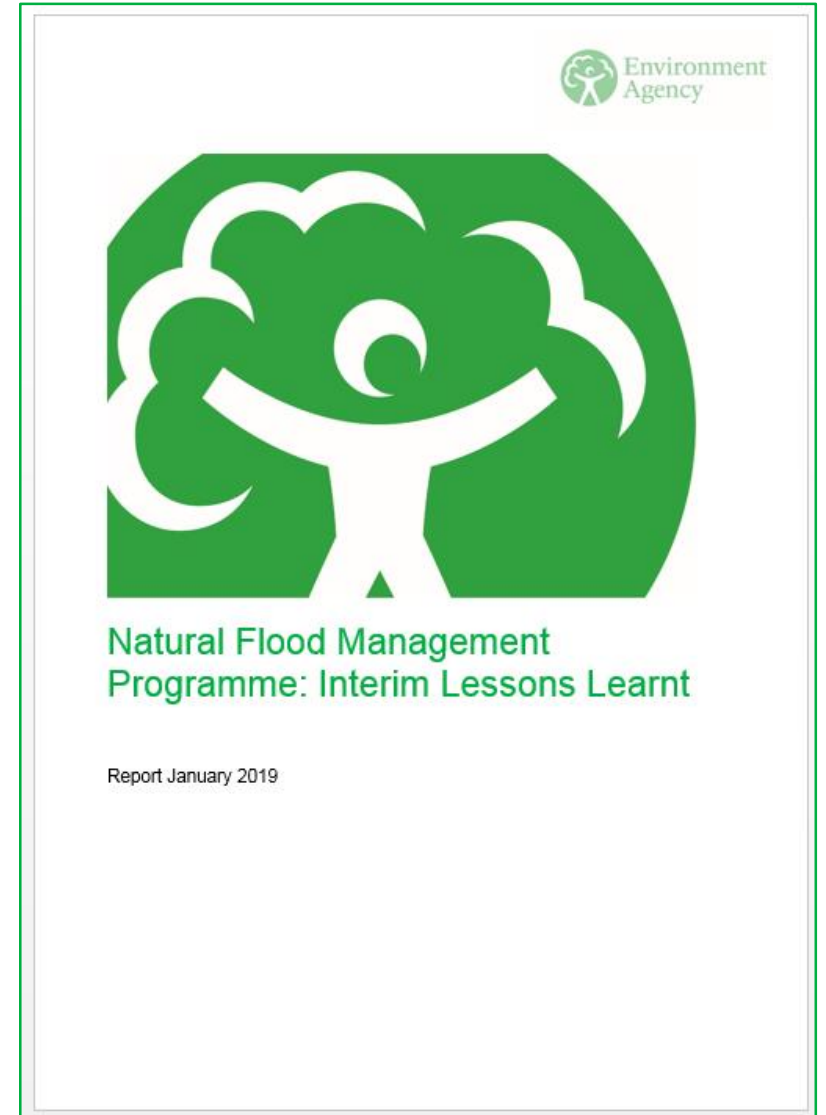
- 1 Aiconbury
- 2 Bacton Sand Engine
- 3 Clothworkers Wood
- 4 Cumbria Floods Partnership Action Plans
- 5 Dartmoor Headwaters
- 6 Dorking FAS
- 7 Evertide
- 8 Marine Pioneer - North Devon - Tew Torridge
- 9 Marine Pioneer - Suffolk - Slaughden
- 10 Medway NFM
- 11 NFM interventions across ENS
- 12 North Yorkshire NFM - Beckstone Beck
- 13 North Yorkshire NFM - Brompton
- 14 North Yorkshire NFM - Upper Ure / Bishopdale
- 15 Redcliffe and Redvales
- 16 River Lugg and Wye Integrated
- 17 River Soar Tributaries
- 18 Shipston
- 19 Shropshire Slow the Flow - Severn Tilts
- 20 'Slow the Flow' delivery in GMMC
- 21 Swaton Flood Resilience Scheme
- 22 Weardale NFM Demonstrator
- 23 Willaton Monk silver and Dunaford catchments
- 24 Wootton Brook
- 25 Worce Avon/Cotswold Escarpment Tributaries
- Community Projects**
- 26 Bishop's Wood NFM
- 27 Bourne Rivulet Restoration & Flood Management
- 28 Collingham Beck NFM
- 29 Derwent Villages
- 30 Filongley and River Bourne NFM
- 31 Havergate & Orford
- 32 Hawden Stream
- 33 Kenwith Valley NFM
- 34 Lowdham NFM
- 35 Lower River Crane Restoration
- 36 Northey Island Saltmarsh Regeneration
- 37 Ottery St. Mary
- 38 Pang Valley NFM
- 39 Papermill Dyke NFM
- 40 Pymmes Brook Deculverting
- 41 Rise Park Stream
- 42 River Leck Catchment NFM
- 43 River Pinn Park Woods
- 44 Rogenscale Floodplain Reconnection
- 45 Salmons Brook Natural Flood Management
- 46 Slowing the Flow - Upper Dane
- 47 Slowing the Flow - Upper Dean
- 48 SuDS in Sutton's Schools
- 49 Swallowfield Flood Relief
- 50 The Midgefield Brook Project
- 51 Teyver NFM
- 52 Upper Cohn NFM
- 53 Upper Piddle Headwaters
- 54 Wellington Catchment Management Scheme
- 55 Woodland and river management in two headwater streams
- 56 Wye NFM
- 57 Yarrow Meadows
- 58 Yazor Brook flood alleviation

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Interim Lessons Learnt Report

- Project teams require clarity on how projects proposals will be assessed.
- Timetables should not be fixed before practicalities are agreed with partners.
- Teams want information to assess and value the benefits and costs of NFM.
- Engagement is crucial to form and sustain partnerships needed for NFM.
- Engagement to clarify long responsibilities is critical.



Our Evidence Base

Department for Environment
Food & Rural Affairs

Uyweddeth Cymru
Welsh Government

Cyfoeth Naturiol Cymru
Natural Resources Wales

Environment Agency

SEPA
Scottish Environment Protection Agency

WOODLAND TRUST

Working with Natural Processes – Evidence Directory

SC150005

Case study 50. Medmerry Managed Realignment

Author: Robert Harvey
Main driver: Improved defences and habitat creation
Project stage: Completed 2013

Photo 1: Medmerry managed coastal realignment site, 10 October 2013 (source: © Environment Agency and John Akerman ABfimer)

Project summary:

The Medmerry Managed Realignment scheme in West Sussex (Photo 1) was identified in the Pughan to East West Coastal Strategy (2009). The project came about through a combination of the need to improve flood risk management and the requirement of the Environment Agency's Regional Habitat Creation Programme to create essential habitat. The Environment Agency purchased most of the land required for the project and constructed 6.2km of new retreated sea defences, led into the existing shoreline with rock revetments. Additional land was contributed by RSPB.

The project provides a 1 in 100 year standard of defence in year 100 (increased from 1 in 1 year standard prior to implementation) to 348 properties, the road serving Selway and a waste water treatment works. It has created 183ha of intertidal habitat and 80ha of transitional grassland. Mitigation was also provided for 50ha of freshwater site of Special Scientific Interest (SSSI) within and around the realignment area. The project has increased recreation and tourism, creating new amenity and providing both new and replacement footpaths, cycleways and bridleways. Most of the land within the project area has been leased to the Environment Agency to RSPB for management as a nature reserve.

River Restoration

What is it?

Historically rivers have been modified for many reasons (e.g. navigation, development, flood risk management). River restoration is the reinstatement of the natural physical processes and features (e.g. pools, riffles) that are characteristic of a river.

It can help reduce flood risk, by slowing the flow of water within the channel.

Case studies

- River Avon
- Dorset Frome
- Maves Brook
- New Forest

Flood Risk Benefits

Benefit	Level	Confidence	Notes
Can slow flood flows and increase conveyance through the river to improve left bank protection	Low	Medium	Based on a 2D hydrodynamic model of a 100m reach and a 10% increase in peak flow discharge
Can reduce flood risk, the extent of flow affected depends on length of reach restored and to upstream flow	Low	Medium	Based on a 2D hydrodynamic model of a 100m reach and a 10% increase in peak flow discharge
Can reduce flood risk, the extent of flow affected depends on length of reach restored and to upstream flow	Medium	Medium	Based on a 2D hydrodynamic model of a 100m reach and a 10% increase in peak flow discharge
Can reduce flood risk, the extent of flow affected depends on length of reach restored and to upstream flow	Low	Medium	Based on a 2D hydrodynamic model of a 100m reach and a 10% increase in peak flow discharge

Multiple Benefits

River restoration can provide a wide range of benefits across most ecosystem services (see benefits wheel).

Benefits wheel

Monetary value estimate(s)

Benefit	Value (£/ha/yr)	Notes
Ecological	£2000	Based on a 2D hydrodynamic model of a 100m reach and a 10% increase in peak flow discharge
Cultural	£1000	Based on a 2D hydrodynamic model of a 100m reach and a 10% increase in peak flow discharge
Aesthetic	£500	Based on a 2D hydrodynamic model of a 100m reach and a 10% increase in peak flow discharge

Knowledge gaps

- Limited field based evidence that demonstrates flood risk benefits
- Need for more evidence on the benefits of river restoration
- Need for more evidence on the benefits of river restoration

Key reading and maps

- Guidance on River Restoration
- Guidance on River Restoration

Terms of reference

For more information on the evidence base for river restoration, please visit the Evidence Directory website.

Mapping the Potential for Working with Natural Processes

Waterbody Catchment
Bris (Brimham Bk to Bristol Avon)

Tree Planting

Watercourse and Waterbodies

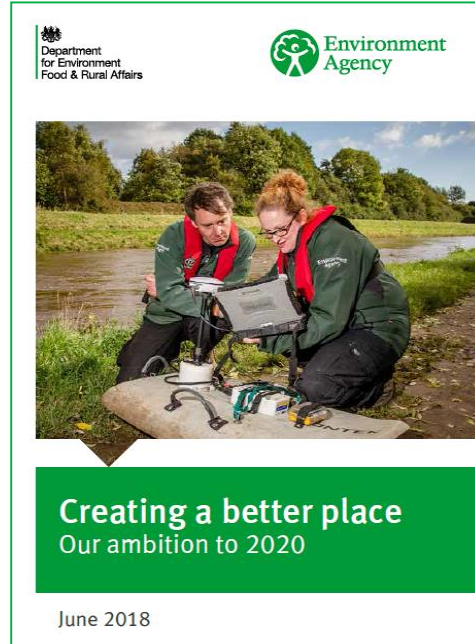
- Watercourse
- Waterbody

All Potential for W&NP

- 3.3%AFF Runoff Attenuation Features
- 1.3%AFF Runoff Attenuation Features
- Floodplain: Reconstruction
- Floodplain: Woodland
- Roadside Woodland
- Water Catchment Woodland

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The opportunity and evidence



Launch of the National FCERM Strategy consultation

Environment Agency @EnvAgency · May 9
 Floods destroy lives, livelihoods and property. As part of the #25YEP we want to build a nation resilient to #flooding and coastal change. Have your say on our flood and coastal erosion strategy up to 2100. gov.uk/government/new...
 #ClimateChange #FCERMStrategy2100



Flood and coastal change affects us all.
 Have your say.

#FCERMStrategy2100


Environment Agency Retweeted
Defra UK @DefraGovUK · May 9
 'Flooding and coastal erosion can have terrible consequences for people, businesses and the environment.' – Environment Minister @theresecoffey on announcing the intention to launch a call for evidence on floods and coastal erosion today.



"We will be launching a call for evidence to inform future action towards flood and coastal erosion risks, building on the important draft strategy the Environment Agency has launched today."
 Therese Coffey MP
 Minister for Environment


Department for Environment, Food & Rural Affairs

Therese Coffey, Emma Howard Boyd and Environment Agency



Search consultations 🔍

Consultation Hub
Find Consultations
We Asked, You Said, We Did



Draft National Flood and Coastal Erosion Risk Management Strategy for England

Overview

Flooding of any kind is horrendous. Erosion destroys. Flooding events are dirty, invasive, damaging, and they can kill. They can force people to leave their homes and their businesses, cause prolonged mental ill health, destroy livelihoods and natural habitats.

The Environment Agency has been leading a conversation with people and organisations who are affected by or work to manage flooding and coastal change. We are now consulting on a draft strategy, which sets out a vision for a nation ready for, and resilient to, flooding and coastal change – today, tomorrow and to the year 2100.

Closes 4 Jul 2019


Opened 9 May 2019

Contact

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Climate change: England flood planners 'must prepare for worst'


By Roger Harriman
 BBC Environment Analyst
 9 May 2019

England's flood planners must prepare for the worst on climate change, the Environment Agency has warned.

Its chairman, Emma Howard Boyd, said on current trends, global temperature could rise between 2C and 4C by 2100 and a year would need to be spent on flood management.

She said some communities may even need to move because of the risk of floods.

The government said it would be seeking evidence for its own flood policy in the autumn.



Climate crisis: flooding threat 'may force UK towns to be abandoned'

Sandra Laville
 The Guardian
 9 May 2019 00:01

Environment • Climate change • Weather • Energy • Pollution

The local council, in 2015, after the September surge in 20 years, proposed a plan to move the town.

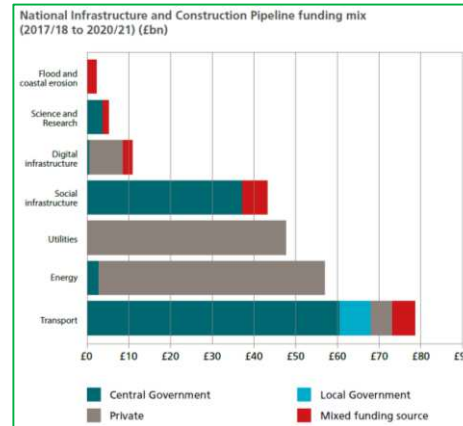
Environment Agency calls for urgent action to protect country from five vital natural assets.

Entire communities might need to be moved away from coasts and rivers as the UK takes urgent action to prepare for an average global temperature rise of 4C, the Environment Agency warned.

The warning was on Thursday after a series of decisions would be made by the government.

National FCERM strategy for England

“A nation ready for, and resilient to, flooding and coastal change – today, tomorrow and to the year 2100.”



FCERM Strategy 2100 aspirations

Climate resilient places



- Helping places plan and adapt to flooding and coastal change across a range of climate futures

Today's growth and infrastructure resilient in tomorrow's climate



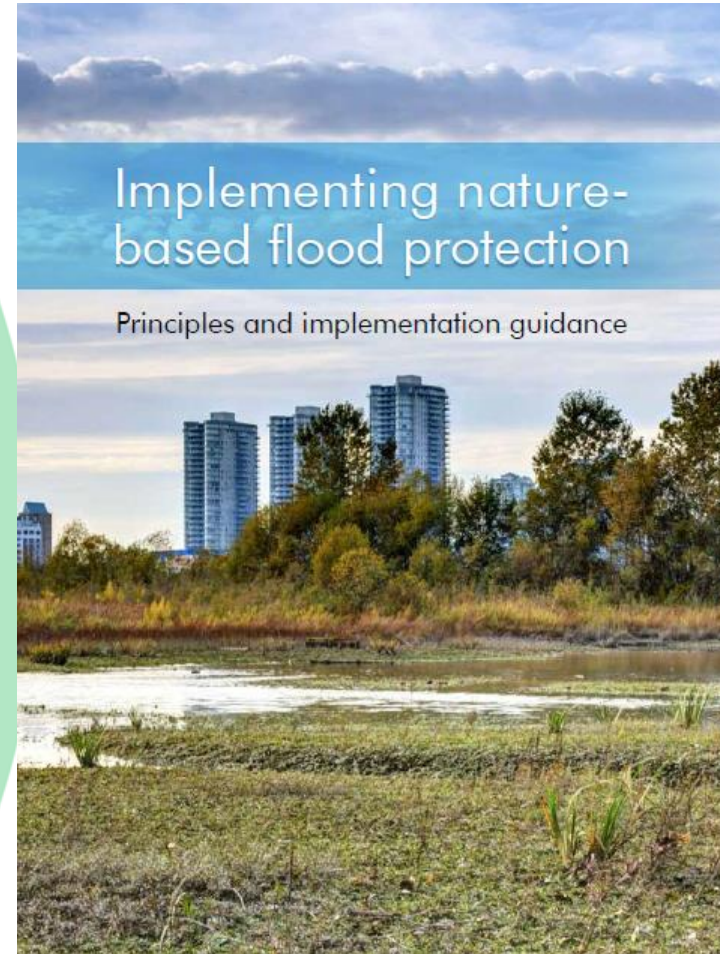
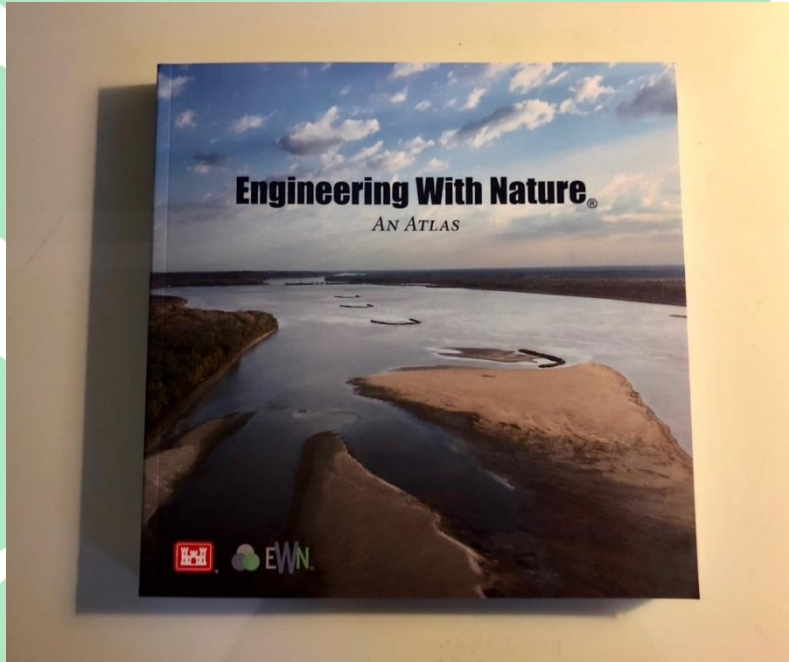
- Getting the right kind of development in the right places to deliver sustainable growth and infrastructure resilient to flooding and coastal change.

A nation of climate champions



- Better preparing society through education and accessible digital information as well as being a world leader in flood and coastal resilience.

Next steps



Thank you and questions

Julie Foley

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