



Our strategy for flood & coastal erosion risk in the UK



We are the Environment Agency. It's our job to look after your environment and make it a better place – for you, and for future generations. The Environment Agency. Out there, making your environment a better place.

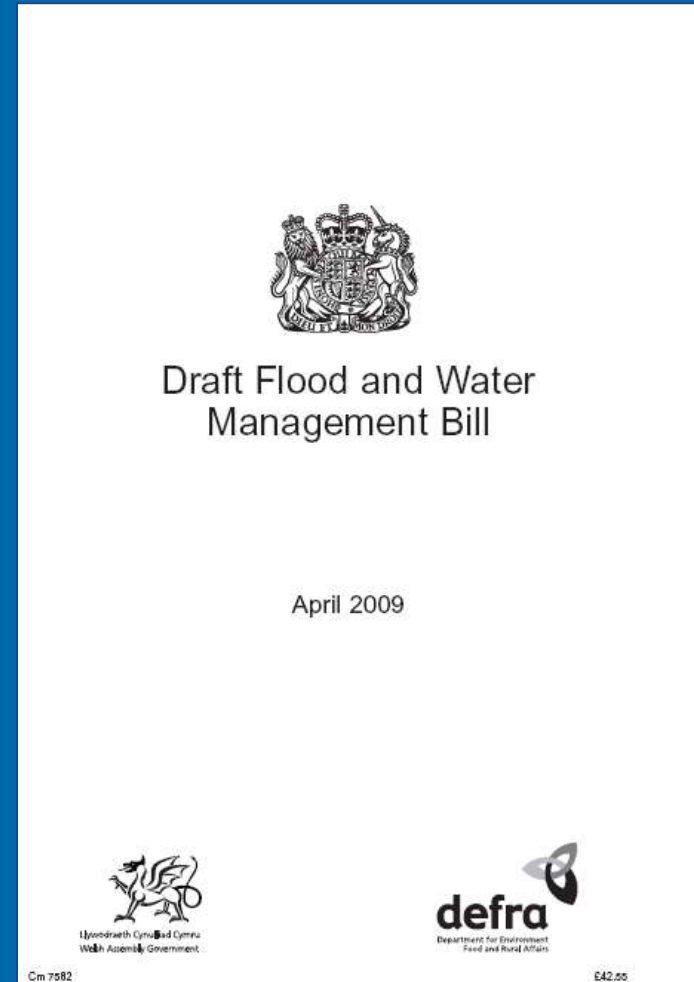
Our Living Coast



A Strategy for the coast

➔ Flood and Water Bill

➔ National flood and coastal erosion risk management strategy



Current risk

Flooding

- ➔ 3500km at risk
- ➔ £130bn assets at risk
- ➔ 90% defended

Erosion

- ➔ 2500km at risk
- ➔ £10bn assets at risk
- ➔ 20% defended



Current trends

- Sea level rise
 - over 20th century rose by about 1mm/yr
 - Recently the rate has been higher
- Extreme sea levels
 - Changed but no obvious trends in surge
- Wave height
 - Observed increase – natural variation or change?
- Rainfall
 - Increase will affects landslip / erosion

Current projections

2050s
+9 inches (22cm)



2080s
+14 inches (36cm)

But, also High++ scenario:

6ft (1.9 metres) by 2100

Increased coastal erosion

Increased coastal flooding

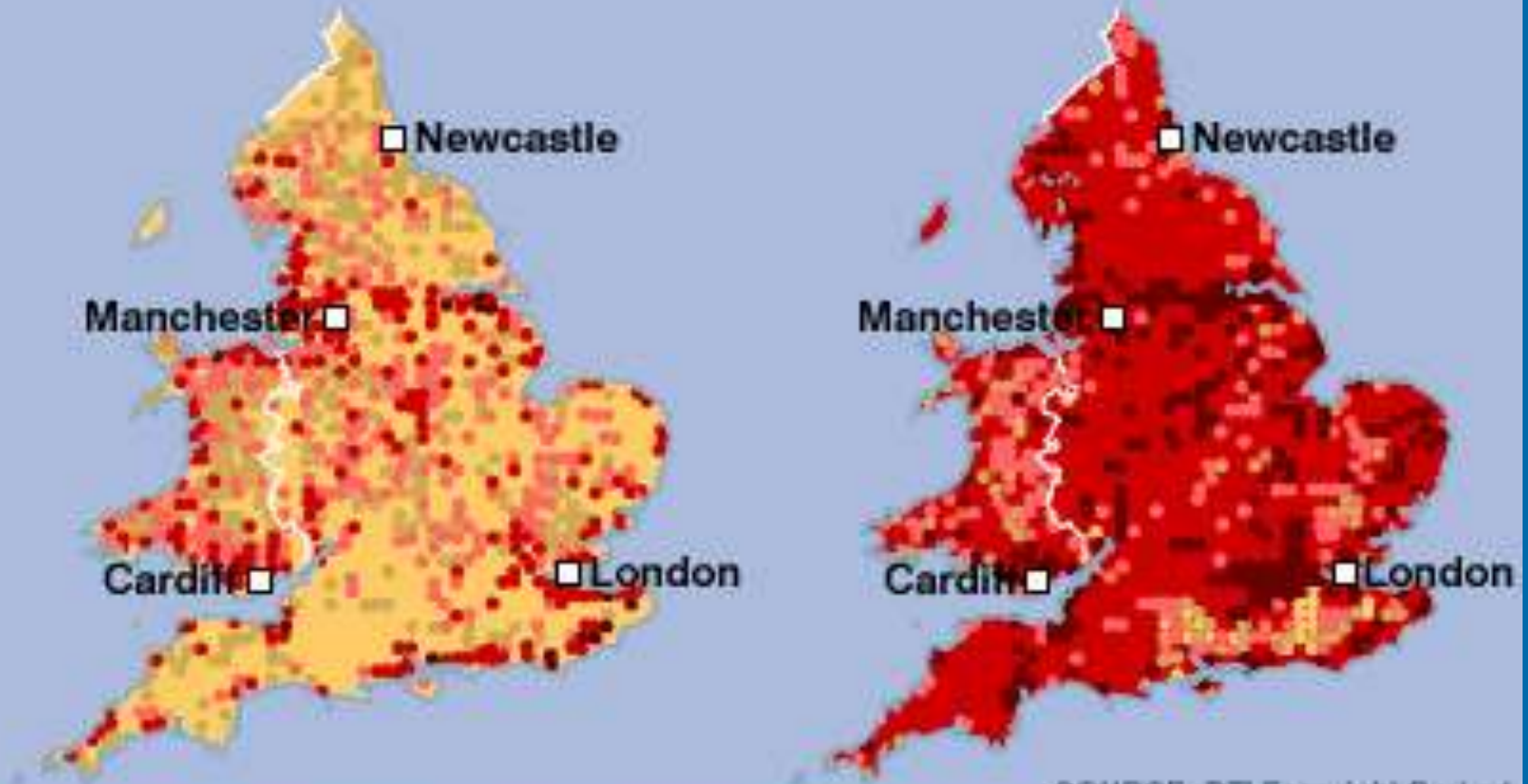
Significant challenges for regeneration schemes, roads and homes

Risk to national infrastructure

Foresight Future Flood Risk

Best case scenario

Worst case scenario

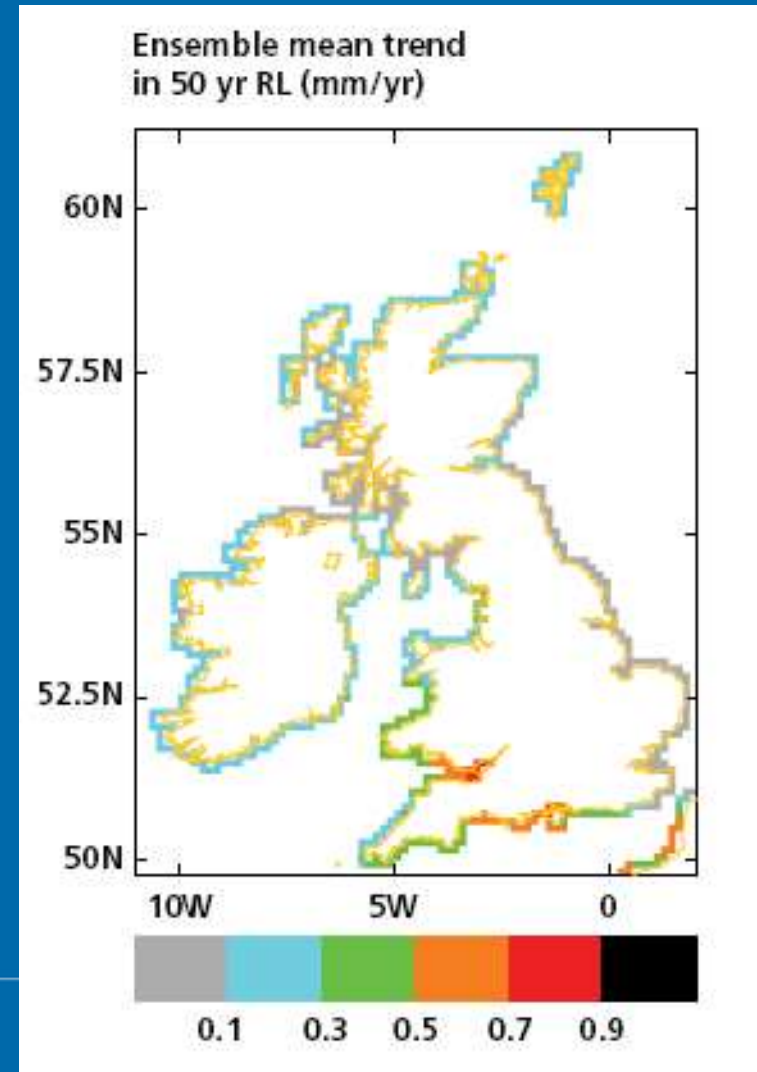


Change in risk of flooding damage (from 2004)



Changes to storm surge

- ⇒ Met Office model:
 - suggests small changes
- ⇒ Other models:
 - suggest changes up to +95cm for 1:50yr storm



Looking to the future



Flooding in England:

A National Assessment of Flood Risk



omes that are at threat from damage. Critical infrastructure such as water treatment works and power stations are often close to
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ations for new building or development in flood and coastal risk areas. Our interventions help control development and prevent
act of flooding can reduce if we continue to invest in flood warnings and public information campaigns. They help householders



investing for the future

Flood and coastal risk management in England

A long-term investment strategy



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Future investment scenarios

- ➔ Developed to present investment choices associated with future risk
- ➔ Scenarios agreed by project sponsor governance board: us, Defra, HMT and CLG
- ➔ Outputs highlight need for additional investment beyond planned £800m in 2010-2011



Implications on coastal defences

⇒ Higher water levels

- increased wave overtopping

⇒ Larger waves

- increased impact on defence structures
- increase scour of beach
- reduce stability and increase failure risk

⇒ Defences prevent landward adjustment

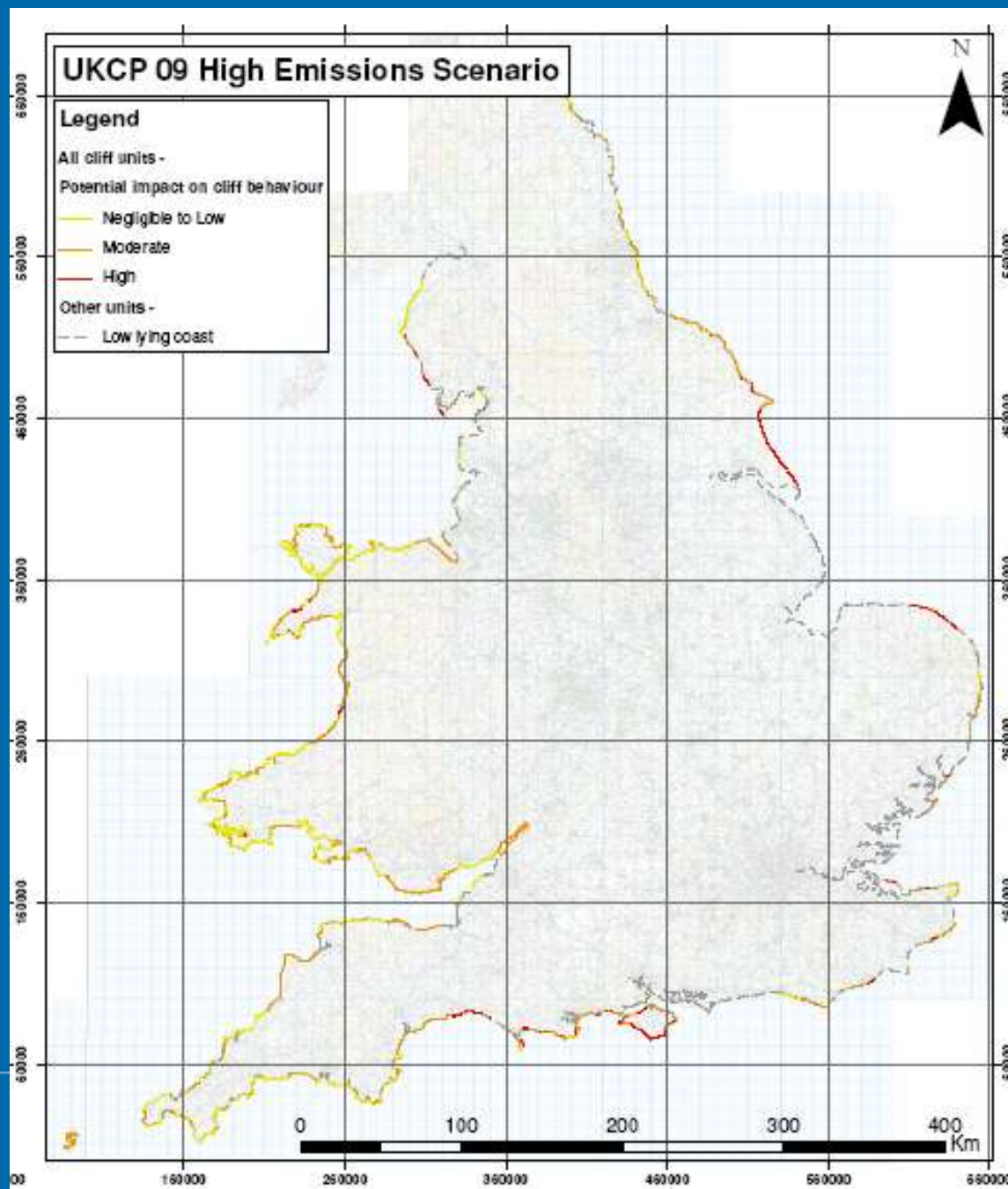
- beach levels reduce in front of structure
- squeeze leads to less potential for beach stability

⇒ Makes it harder to maintain defences



Practical application

Coastal erosion maps derived from UKCP09 marine projections



Habitats are at risk too

- ➔ 40–100 ha salt-marsh lost every year
- ➔ We don't just defend, we seek to enhance the environment
- ➔ 430ha intertidal habitat created since 2000



Our Strategic Overview

- ➔ Sets the strategic direction for the management of flood & coastal erosion risk on the coast
 - by approving the SMPs
- ➔ ensure the strategic direction is implemented
 - by approving investment schemes & allocating grant
- ➔ facilitate joined-up working with all those working on the coast

Shoreline Management Plans

➔ 22 SMPs for England & Wales

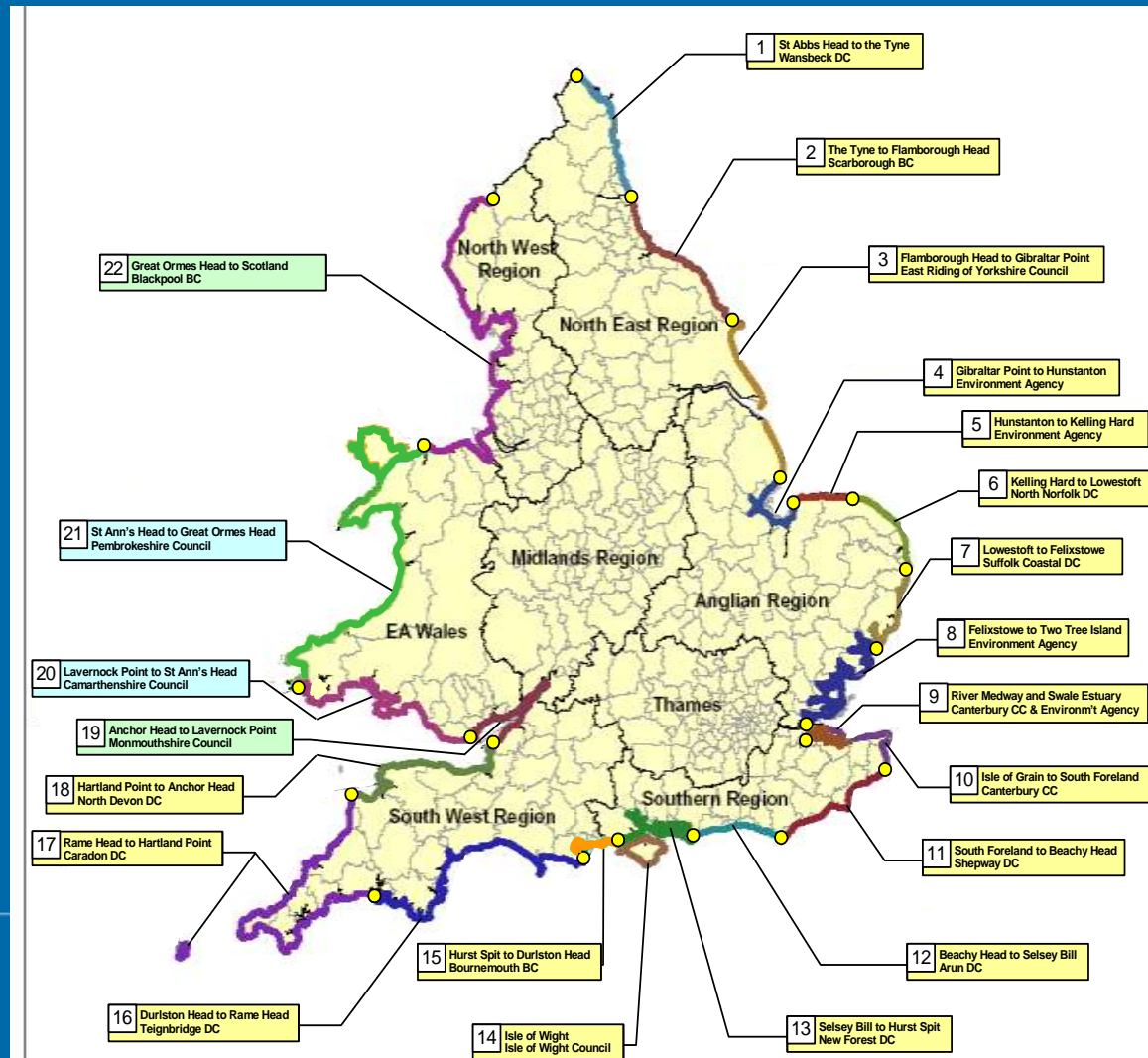
➔ 'Route map' for managing the coast:

➔ 0-20 years

➔ 20-50 years

➔ 50-100 years

➔ Action plan



Legislation and guidance

➔ Climate Change Act

➔ Reporting power

➔ 100 organisations report on adaptation during 10/11

➔ Guidance

➔ Existing guidance 2006 & before

➔ New guidance in March 2010

- signpost data, advice and tools
- make links to existing plans and strategies

Coastal Change policies

➔ Defra: Coastal change

➔ Pathfinders

➔ CLG: Development and Coastal Change

➔ Flexible approach

➔ Coastal Change Management Areas



Our work

➔ Better information

- ➔ mapping



➔ Community Engagement

- ➔ Coastal engagement officers



➔ Managed realignment

- ➔ e.g. Alkborough



➔ Investment in defences

- ➔ e.g. Jaywick, Pevensey



Big challenges ...



... require a
strategic approach