The Humber: from Strategy to Action

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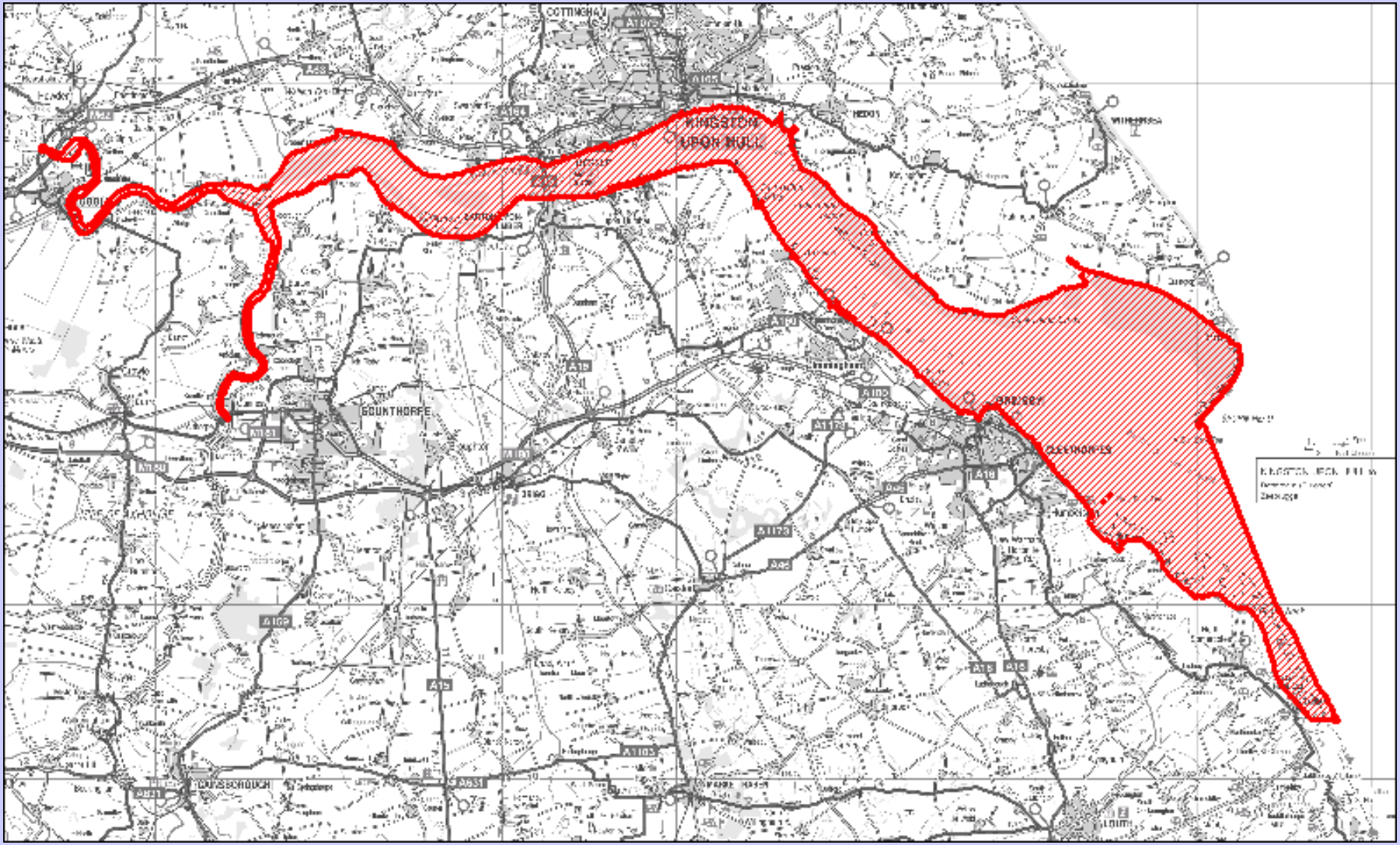
ABPmer and Environment Agency

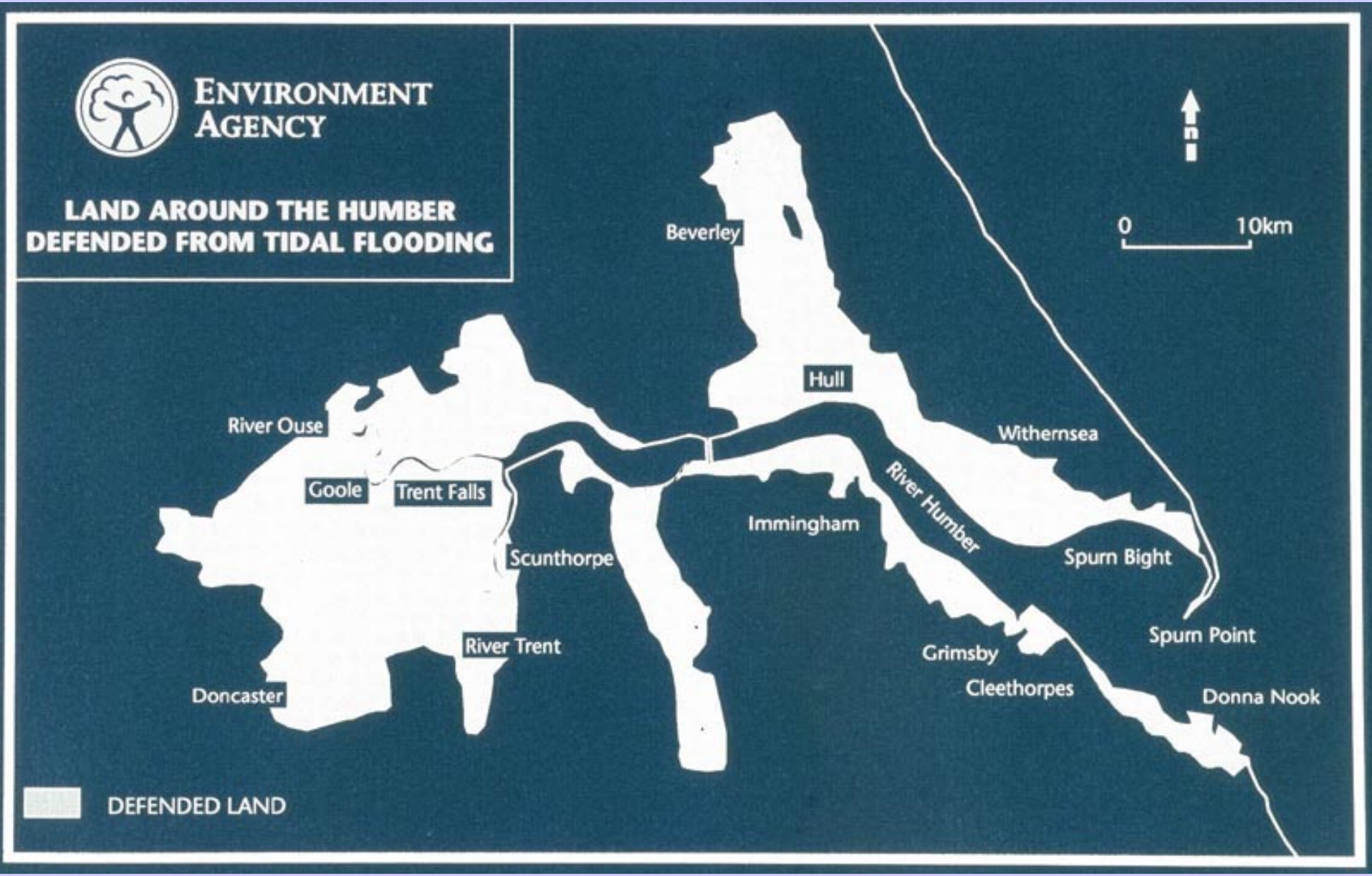
Topics

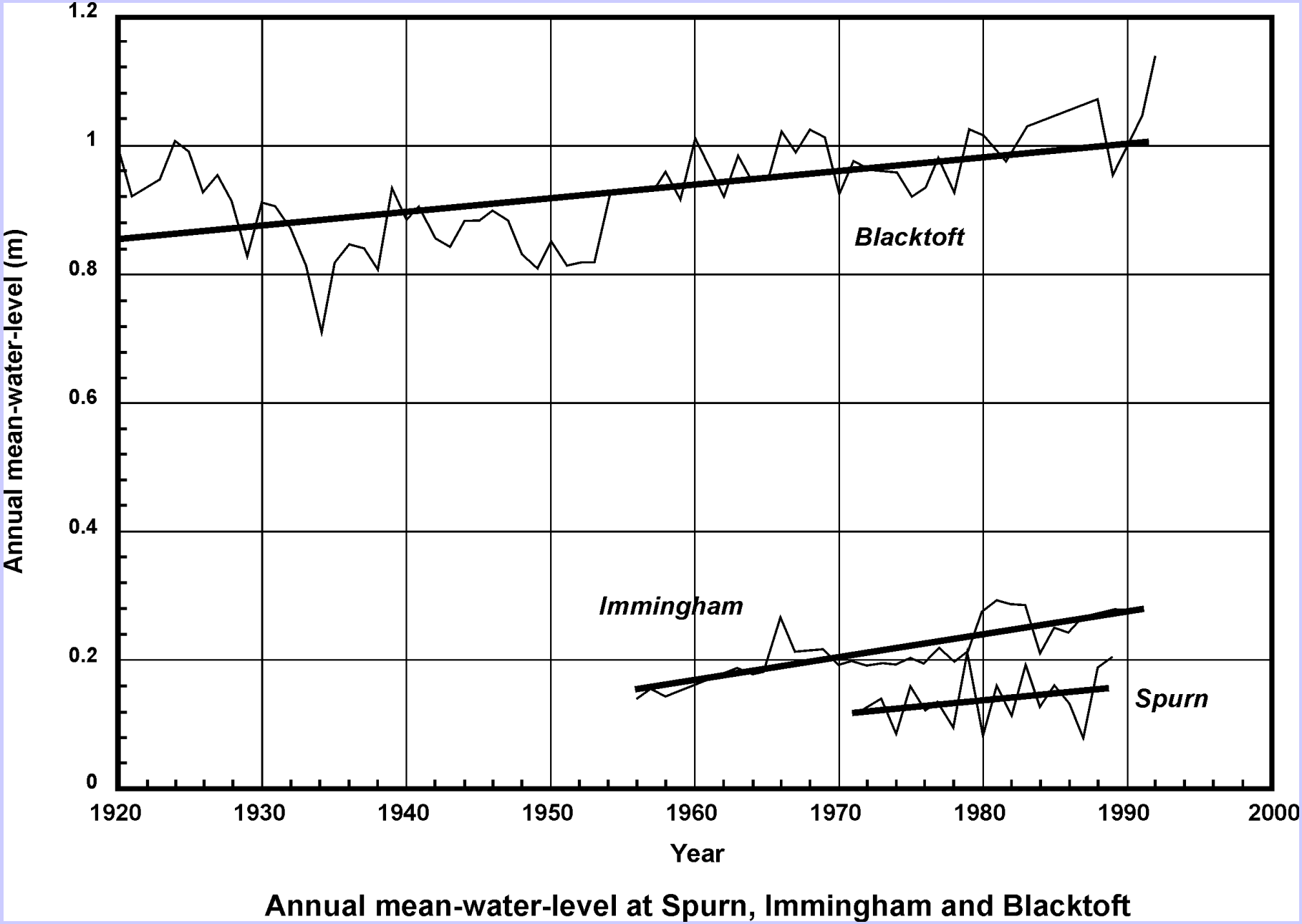
- Humber background
- Understanding change
- Planning for the Rising Tides: Managed realignment
- Case studies: Paull Holme Strays, Immingham Outer Harbour
- Conclusions

THE HUMBER & THE OTHER PRINCIPAL CATCHMENTS OF ENGLAND & WALES

Humber European Marine Site




ENVIRONMENT AGENCY
LAND AROUND THE HUMBER DEFENDED FROM TIDAL FLOODING
n
0
10km
Beverley
Hull
River Ouse
Goole
Trent Falls
Withernsea
River Humber
Immingham
Scunthorpe
Spurn Bight
Spurn Point
River Trent
Grimsby
Cleethorpes
Donna Nook
Doncaster
DEFENDED LAND



Annual mean-water-level at Spurn, Immingham and Blacktoft

Understanding Change

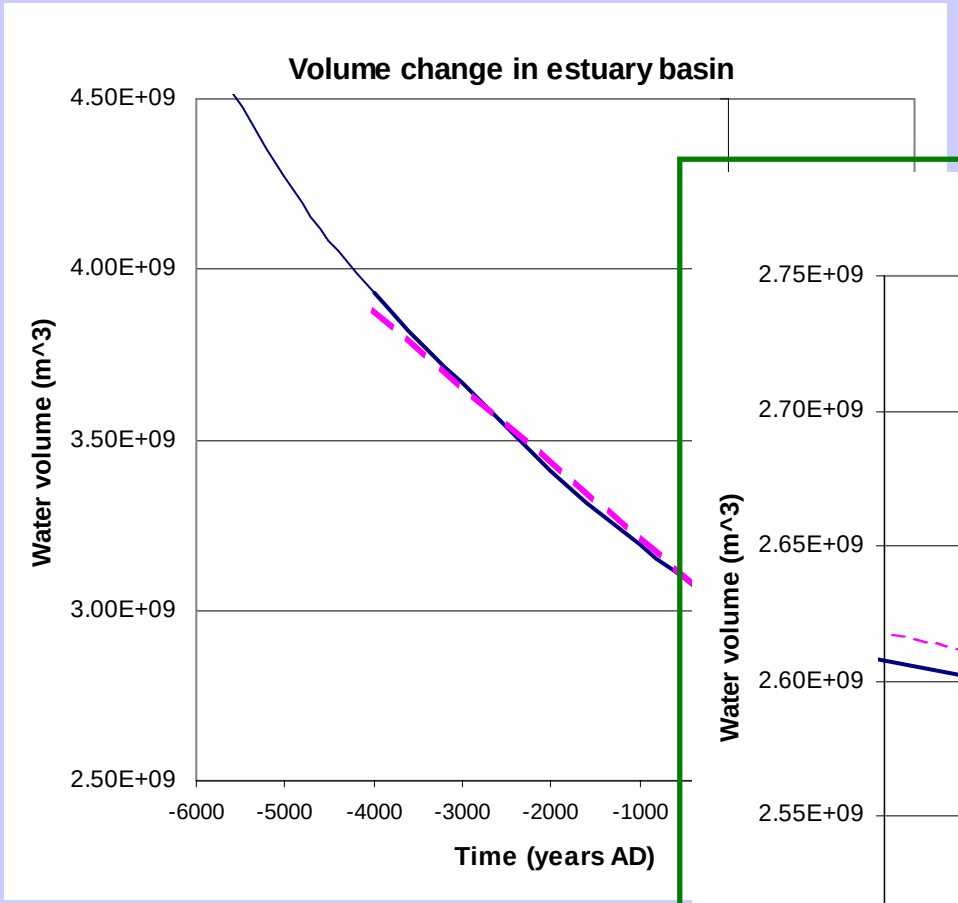
Understanding Change

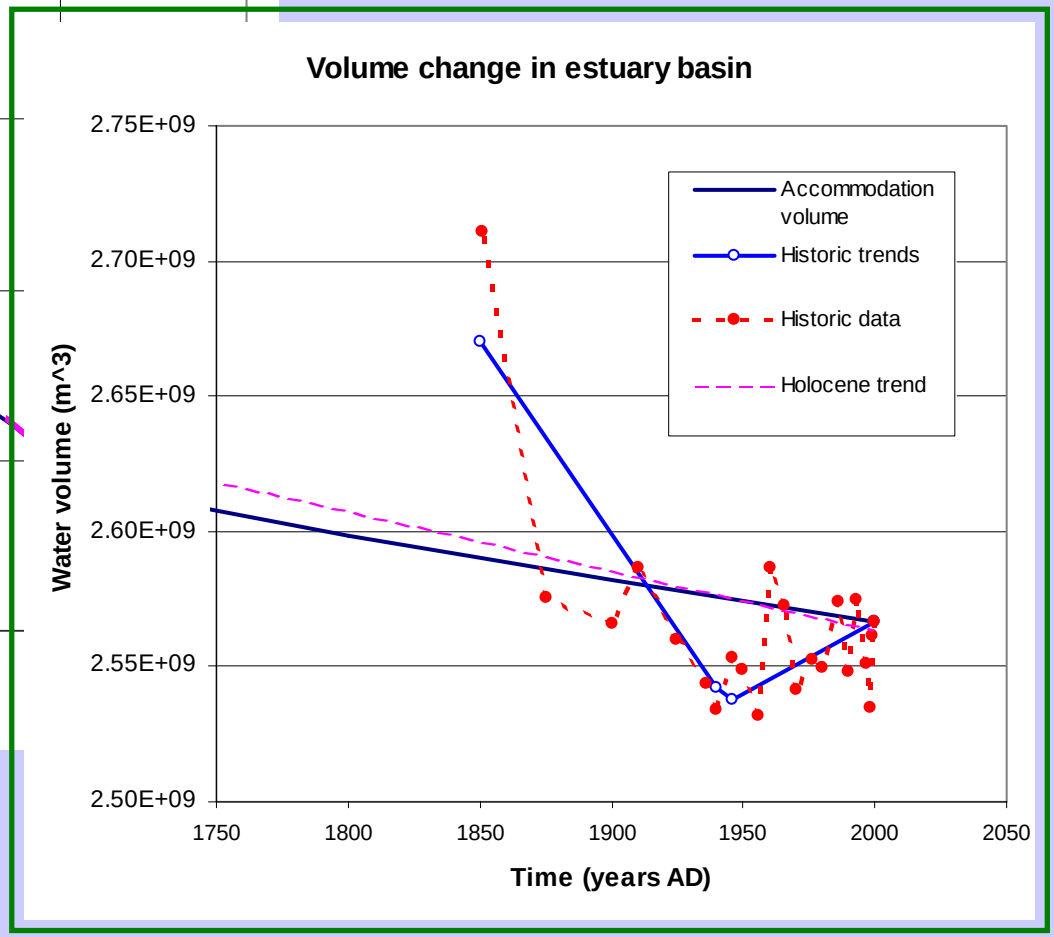
- *Scoping*
- *Geo 2 Studies*
- *SMP Studies*
  - *Historical Trends Analysis*
  - *Detailed Process Modelling*
  - *Long-term Morphological Modelling*
  - *Synthesis*

Synthesis

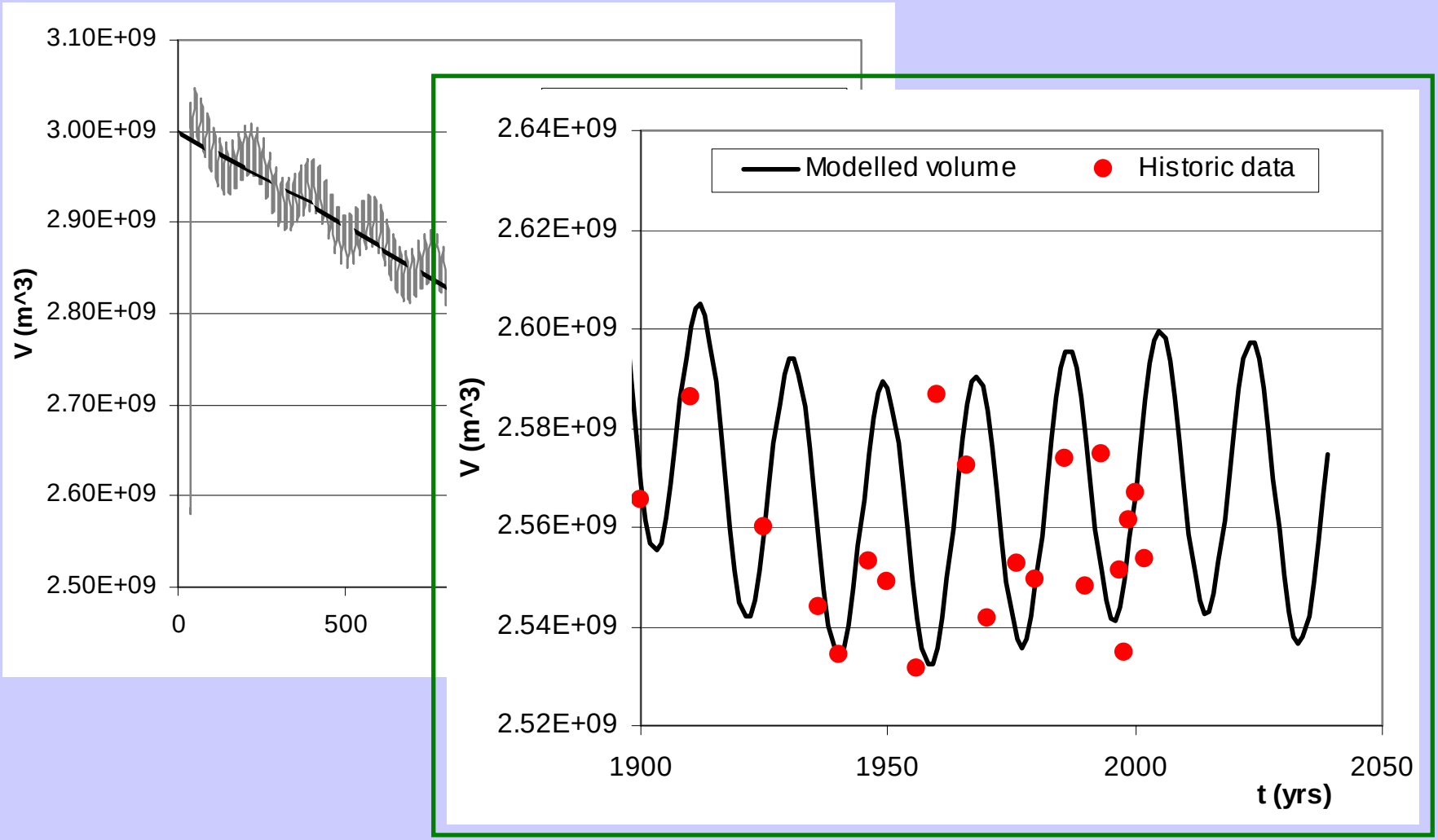
- *Responding to several signals*
  - *Sea level rise (trend in level - mm/year)*
  - *Nodal tide range (18.6 year cycle – cm/year)*
  - *Tidal range (cycle?- mm/year)*
- *Phase lag to response*
- *Sediment budget is almost in balance*
- *Models providing reasonable representation*

Holocene & Historic Change





Conceptual Model



Planning for the Rising Tides: Managed Realignment

Planning for the Rising Tides: Objectives

1 To develop a coherent and realistic plan for the estuary's flood defences that is:

- Compatible with natural processes
- Compatible with adjacent development
- Sustainable taking account of likely future changes including climate, sea level, land use, etc.

Planning for the Rising Tides : Objectives

2 To ensure all proposals are:

- Technically feasible
- Economically viable
- Environmentally appropriate
- Socially acceptable

Approach

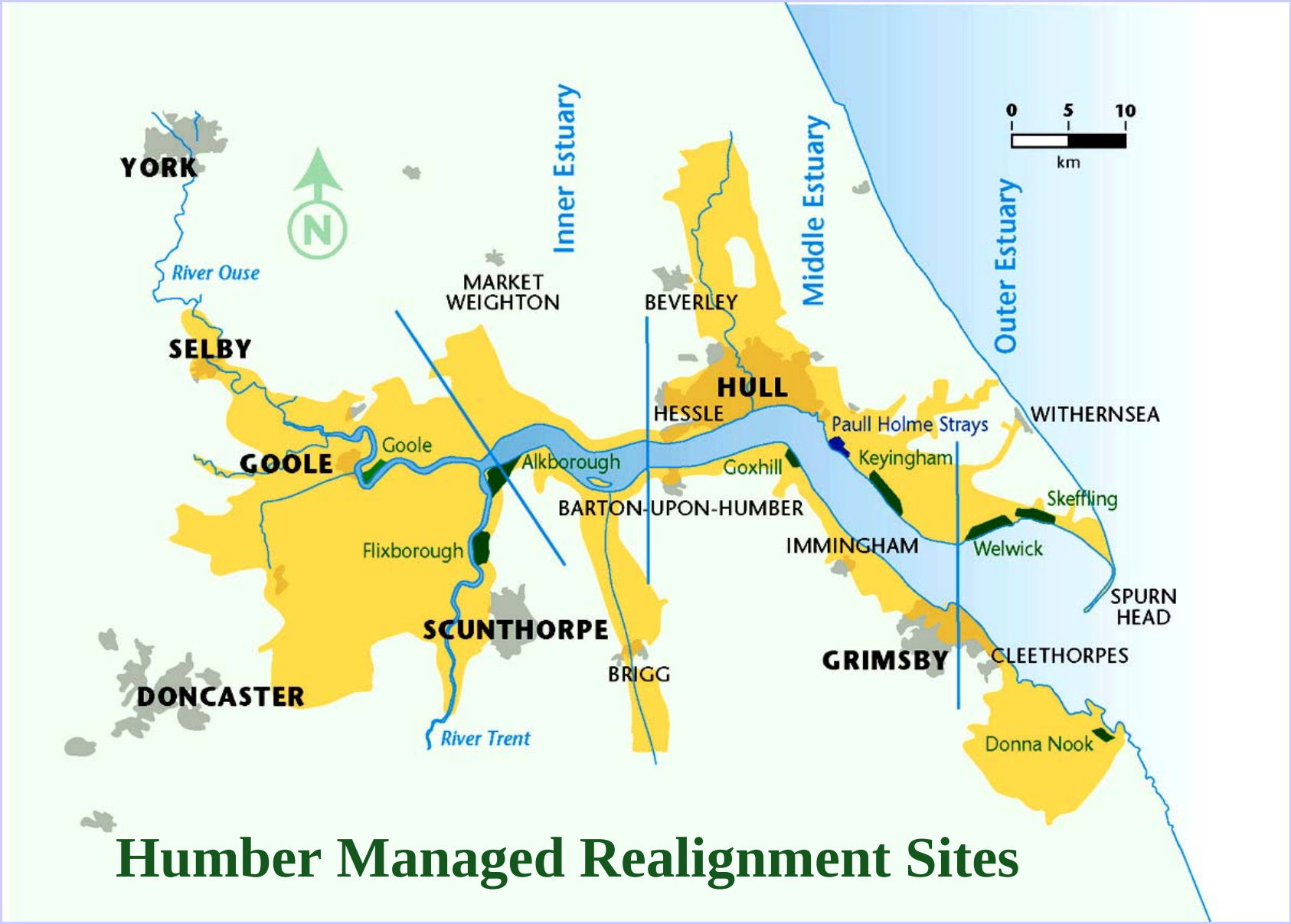
- Work with natural processes - build on good knowledge and sound science
- Work within legal (UK and EU), policy and financial frameworks
- Economic, Environmental and Sustainability assessment
- Involve stakeholders and the community
- Join up with other plans & initiatives, eg Humber Trade Zone

Reasons for Realignment

- Greater floodbank stability
- Reduce capital and maintenance costs
- Lower surge tide levels (inner estuary)
- Compensate for habitat losses caused by engineering works
- Replace coastal squeeze habitat losses
- (Enhance nature conservation)
- (Sink for nutrients, metals, carbon)

Humber CHAMP: Habitat Losses

Allowances	Location in estuary				Total
	Rivers	Inner	Middle	Outer	
Predicted loss					450
Uncertainty					150
TOTAL (Coastal squeeze)	**0**	**60**	**360**	**180**	**600**
Alkborough	-15	15	20	10	30
Works (3 to 1)	15	15	15	15	60
Disturbance	5	5	5	5	20
TOTAL (All losses)	**5**	**95**	**400**	**210**	**710**



Humber Managed Realignment Sites

Paull Holme Strays

Paull Holme Strays: Achievements

- Improved standard of defence
- 80ha of new mudflat and saltmarsh:
  - Compensation for habitat loss as a result of flood defence schemes on the South Humber Bank
  - Replacement habitat for “coastal squeeze” losses
- Lighthouses & historic features safeguarded
- New footpaths, bird hide & visitor information
- Monitoring and research programme will help plan future Humber projects
- The Birds love it!

Immingham Outer Harbour

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- Location – within the existing port estate covering an area of 25ha
- Provide 24hr access for larger new generation ferries
- Compensation package
  - Environmental Steering Committee
  - 2 managed realignments and 1 habitat enhancement scheme
  - Extensive management and monitoring programme

Conclusions

- Build on sound science and good knowledge of natural processes
- Over-arching influence of Habitat Regulations
- Rigorous but streamlined assessment
- Involve stakeholders and the community
- Need to ‘join up’ plans and strategies
- Making Space for Water