Managed Realignment of Coastal Defences in England and Germany

Susanne Rupp
sgr@soton.ac.uk
Robert J. Nicholls

Background: aerial view of Tollesbury managed realignment site, Essex

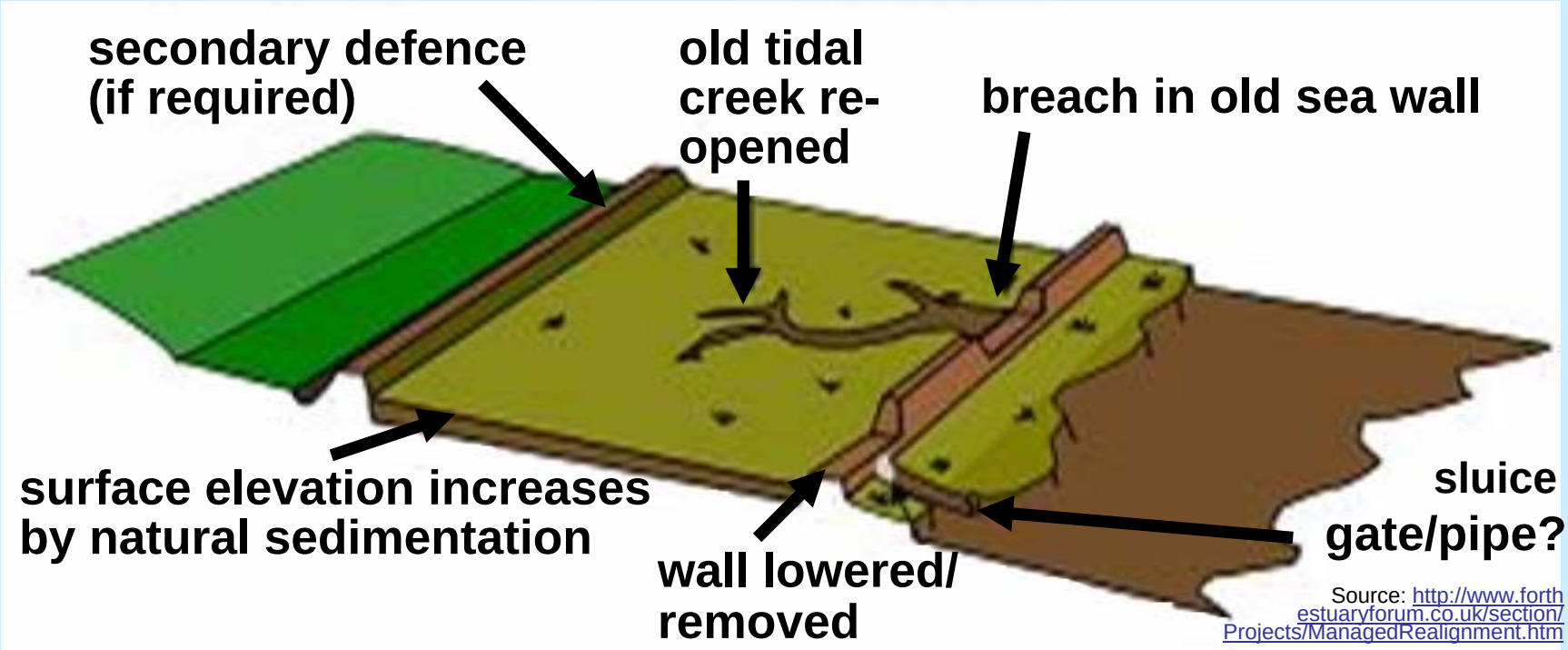
Methodology

- Qualitative interviews,
- Literature review,
- Communication with practitioners

- Extended by quantitative survey, GIS analysis, and case studies for PhD project

Background: Managed realignment

Managed realignment (MR) = the set back of coastal defences whilst creating new intertidal habitat between the old and new defences



Source: http://www.forthestuaryforum.co.uk/section/Projects/ManagedRealignment.htm

Intertidal habitats …

- fulfil important functions
  (e.g. bird roosting & feeding areas, fish nurseries, pollution sinks, coastal defence)
- are threatened
  (through land claim, sea level rise & coastal squeeze)

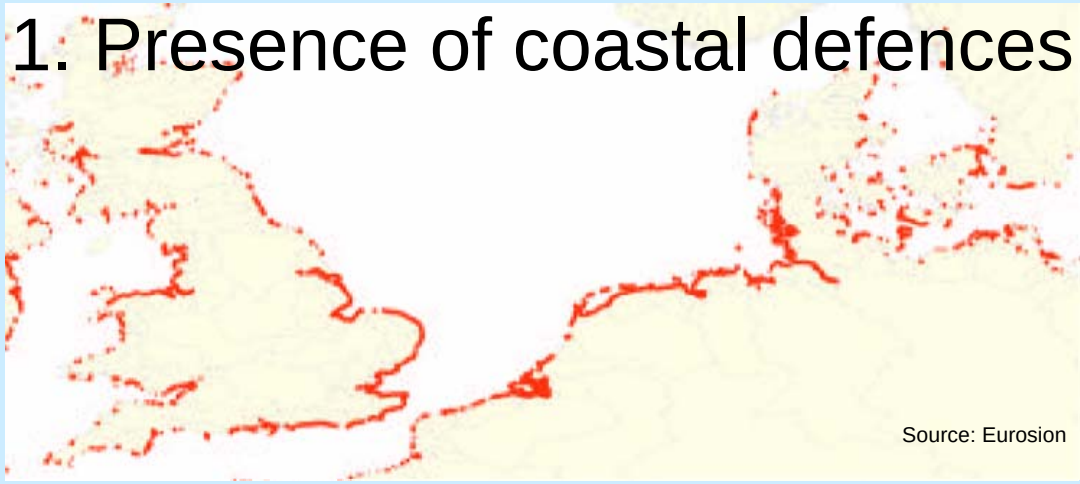
Managed realignment purpose

- Improved coastal defence
- Reduced coastal defence costs
- Extra accommodation space for natural change
- Increased intertidal habitat area - conservation
- Replaced intertidal habitat area - compensation
- Altered estuary/coastal hydrodynamics
- Improved water quality

Background: Study area

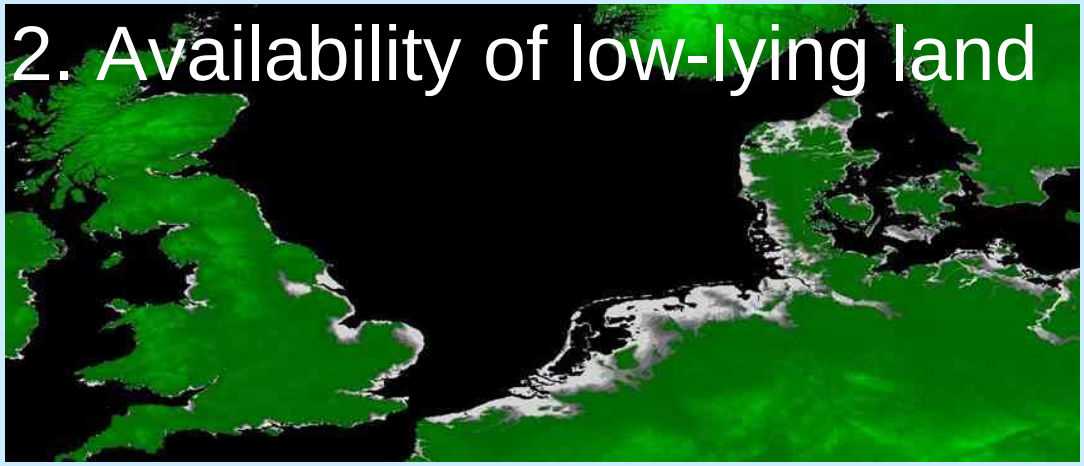
Factors determining managed realignment potential

1. Presence of coastal defences



Red = artificial coastline / hard defence works

2. Availability of low-lying land



Elevation

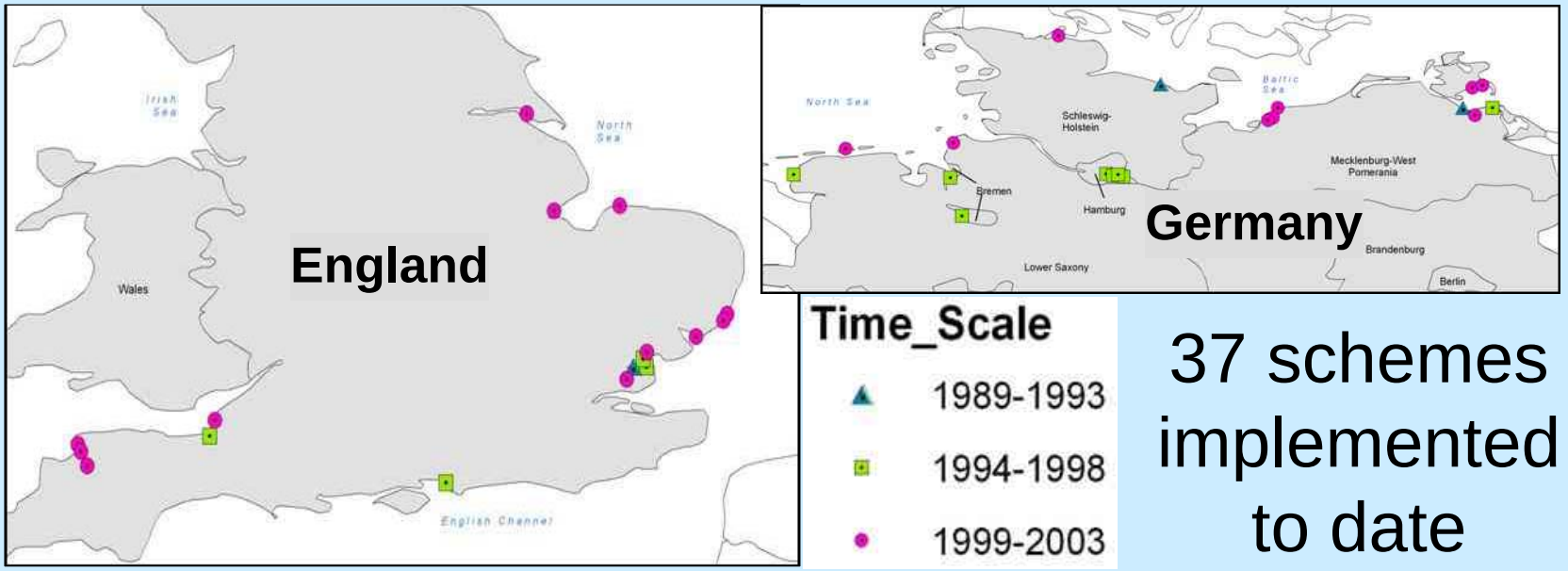
- 0-3
- 4-6
- 7-10
- 11-20
- 21-30

Green = 31+

Factors determining managed realignment potential - continued

3. Desire to embrace sustainable development
4. Need to create intertidal habitats
5. Need to improve defence systems
6. Willingness to entertain the notion of MR

Results: Managed realignment schemes



37 schemes implemented to date

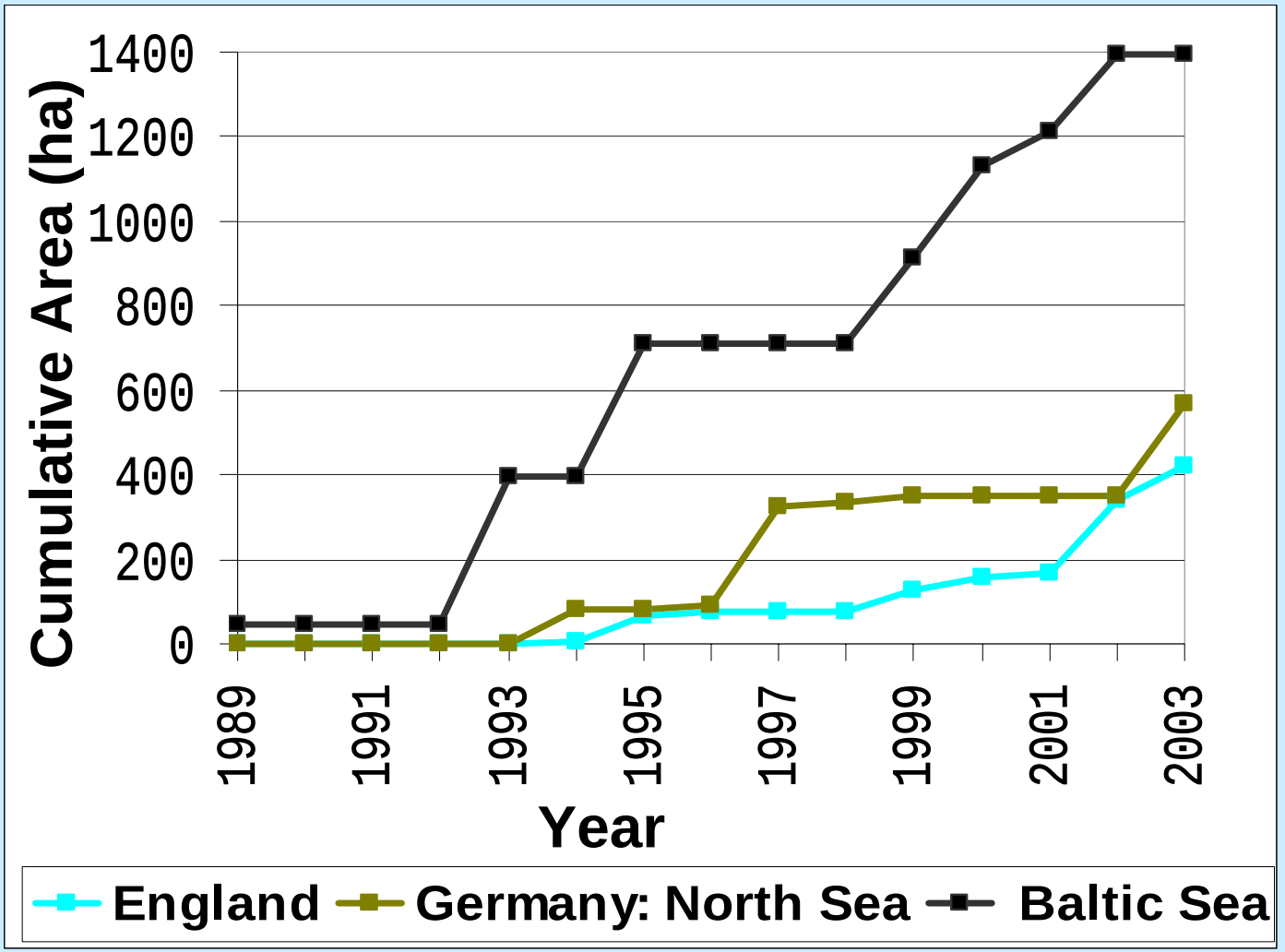
Motivation

England: conservation, mitigation, cost savings

Germany: North Sea: mitigation;

Baltic Sea: conservation, cost savings

Managed Realignment Area



marked increase in MR activity over the past 5-6 years

Barriers to managed realignment

- Lack of support from public opinion
- Landowner opposition
- Political constraints
- Conservatism in shoreline management
- Potential high cost

Thornham Point, Chichester Harbour, England

Discussion

MR will be increasingly practised in England and on Germany's Baltic sea coast, where …

- the morphology often favours MR
- many defences need replacing
- intertidal habitat loss is perceived as more severe
- intertidal habitats are valued more
- major barriers can be more easily overcome

Conclusion

- The suitability of MR as an option depends on a wide range of factors
- In England and on Germany's Baltic Sea coast, the objectives and priorities of conservation and coastal defence bodies frequently coincide and create a situation conducive to MR
- On Germany's North Sea coast, MR is more costly than maintaining the status quo

Acknowledgements

- Thank you to all interviewees and ‘informants’
- Special thanks to Prof. Sterr of the University of Kiel, Germany