

## Planning for coastal climate change around the Severn Estuary

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### Introduction

Climate change impacts present many challenges for the communities around the Severn Estuary (Figure 1). The estuary's low-lying coastal plains include significant urban conurbations and major industries (e.g. ports and nuclear power stations). The estuary also has value for conservation and potential for renewable energy. In addition, extensive coastal defences have been constructed, providing protection from flooding and erosion to communities, property and infrastructure. However under recent climate projections, coastal hazards and associated risks are also likely to get worse in many locations over the next few decades.

Local government bodies around the estuary have a key role in adapting to climate change. Local planning authorities, guiding the location of future development, are 'gatekeepers' of coastal change, sharing responsibilities for safeguarding people and property from risk with coastal engineers.

This research aimed:

- to explore how local government bodies around the Severn Estuary are embedding climate change considerations into corporate plans and strategies.
- to evaluate the extent to which development planning policies are addressing climate and coastal change impacts.

The survey reviewed corporate responses to climate change, including an assessment of the extent to which local authorities had signed up to relevant national climate change commitments. Analysis of each authority's climate change strategy included the extent to which it addressed mitigation and adaptation. Additionally, a review of development plan policies, analysed policy from twenty planning bodies and thirty-three planning documents. Policies were assessed under a range of themes: climate change, flood and coastal erosion risk management and estuary management. Policies within both adopted (existing) plans and 'emerging'

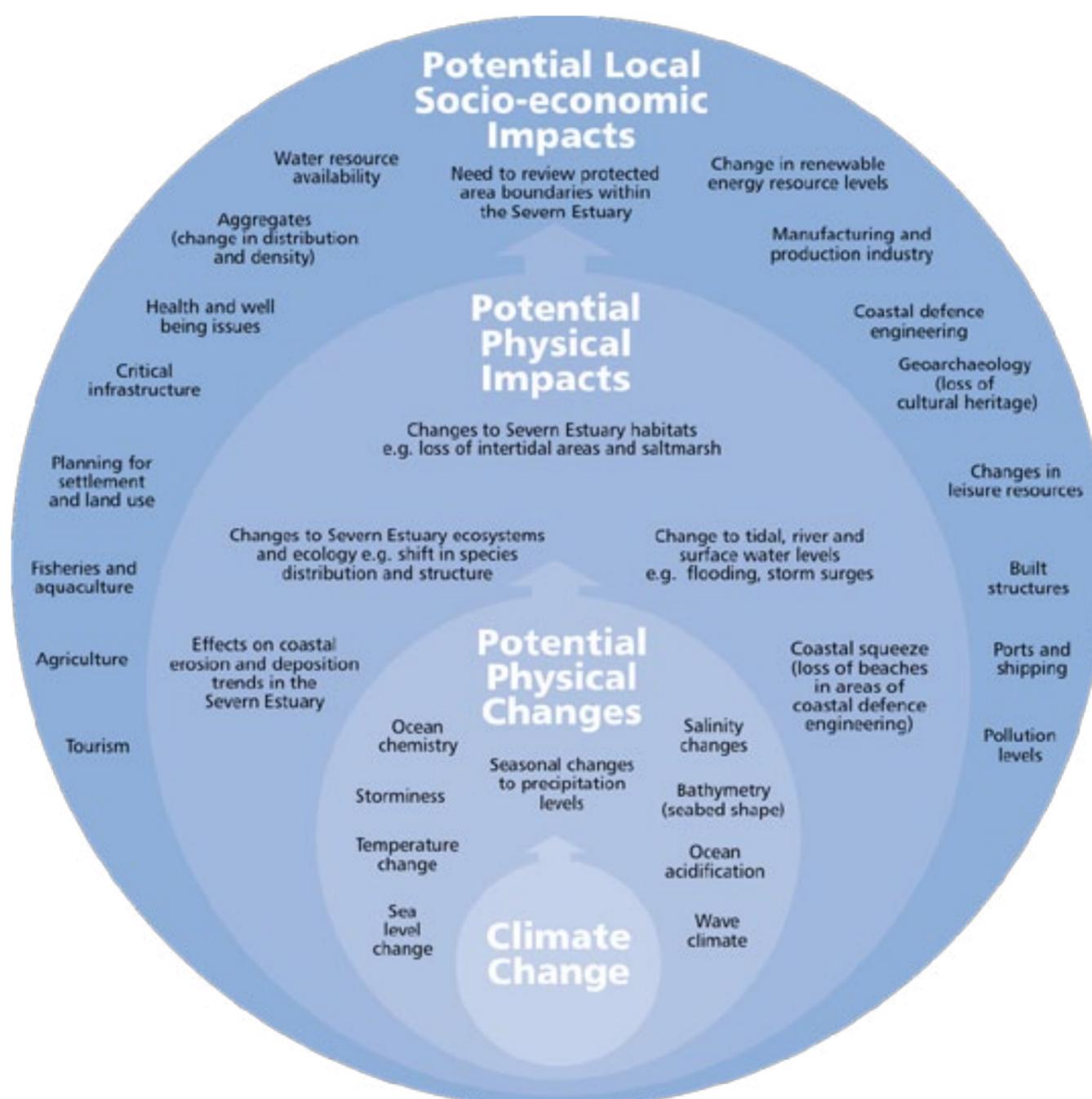


Figure 1: Potential impacts of climate change on the Severn Estuary

planning documents (prepared to comply with new planning requirements), were assessed on the basis of policy occurrence; policy content and geographical coverage.

## Findings

### Strong local Government commitment to climate change, but mitigation focused

All local authorities showed political commitment to climate change, signing up to relevant national declarations. However, only half the authorities at the time of the survey (2010) had completed climate change-specific strategies. Within these, actions were proposed relating to land-based renewable energy, travel and transport, housing, waste and water. However, most actions focused on mitigation (Figure 2). Any reference to the science of climate change was also limited:

many contrasting parameters and timescales were used to describe future change, even for adjacent areas.

### Emerging policies on climate change adaptation in local plans

Despite a strong commitment to climate change by local government bodies around the estuary, research revealed few 'emerging' development plans had begun to address climate change adaptation (Figure 2). Key measures including the need for new development to:

- incorporate high standards and principles of sustainable design and construction (including Sustainable Urban Drainage Systems - SUDS).

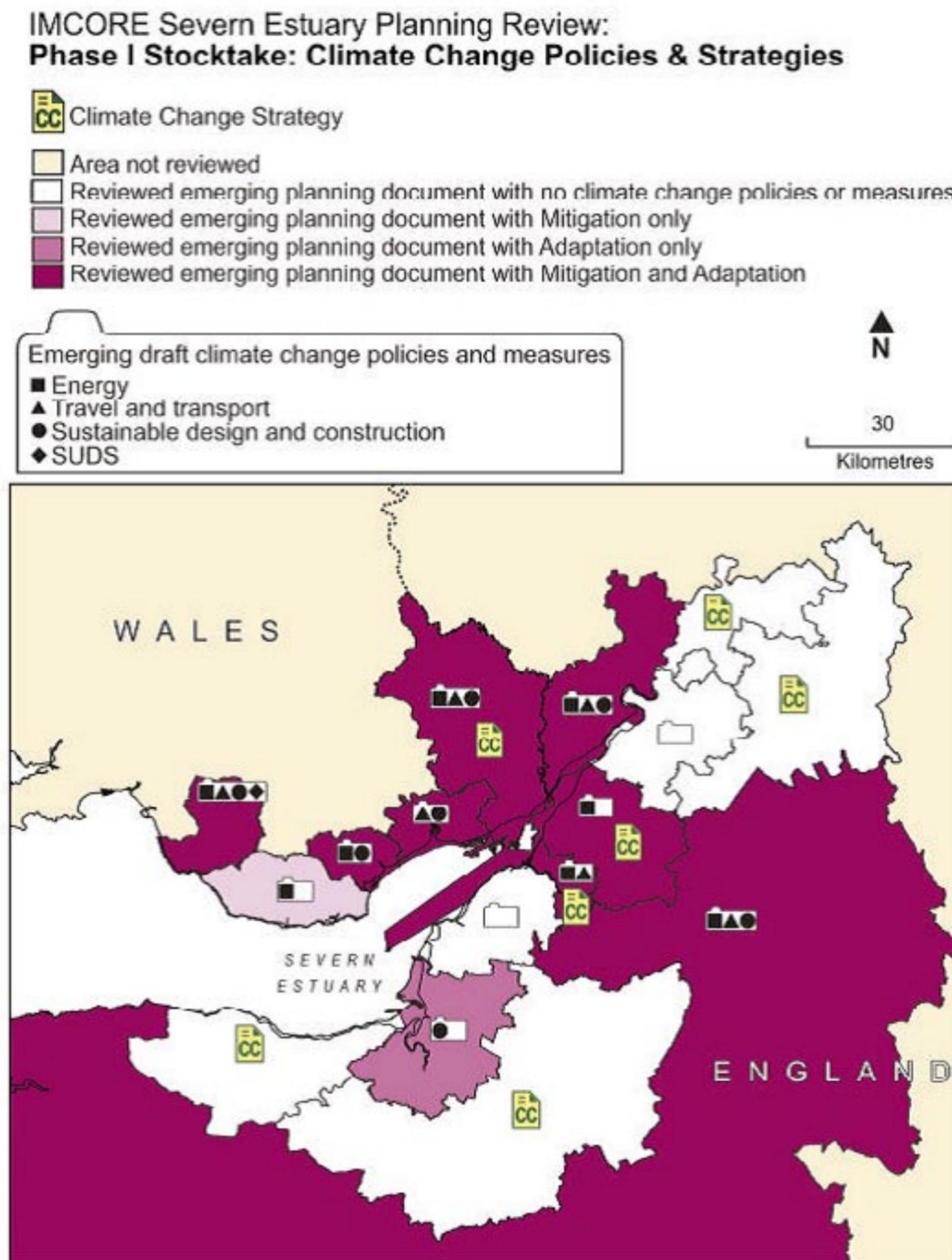


Figure 2: Climate change strategies and climate change policies within local plans

- be 'future proofed' so that it can withstand future climate change impacts.

Some plans also required Sustainability Statements for all new developments. These set out how development can contribute to mitigation and adaptation.

### Strong policies on flood risk in most plans

There were strong policies related to development and flood risk in most plans, a known key concern of planners around the estuary. Many included detailed requirements of future developments, including the need for detailed Flood Risk Assessments. A few, such as the following one, provided details of building standards:

"Any new properties built within a floodplain (including areas of floodplain protected by flood defence schemes) should have finished floor levels set at least 0.5 metres above surrounding ground levels and any other necessary additional flood mitigation measures".

### Weak reference to shoreline management in plans

There were very few policies or even references to the estuary's Shoreline Management Plan (SMP). This document (<http://www.severnestuary.net/secg/smpr.html>), produced under government guidance, is designed to provide a strategic context to coastal flood and erosion risk management, and is, consequently, supposed to inform appropriate development plan policy.

### Conclusions

There is a growing commitment to climate change within local government bodies around the Severn Estuary. However, there is a greater need for local planning authorities to:

- improve their understanding of complex climate change impacts in coastal areas.
- address and embed climate change adaptation policies within relevant plans, building on best practice across the estuary.
- work together in a co-ordinated approach to address coastal issues, given that coastal processes and indeed

climate change does not respect political or administrative boundaries. Adherence to the estuary's shoreline management plan could help address this.

### Suggestions for further work

Visit your local planning authority's website and check out the local planning documents for your area. Using an electronic version of the current plan for your area, find policies related to climate change and flood risk.

### Questions:

- How many of the impacts shown in Figure 1 are acknowledged in the plan? Try to consider a reason for your finding.
- How similar/different are the policies you find to those in the Severn Estuary case study?
- How could you refine these key words, to provide more specific criteria for analysing your plan?
- Visit the 'What's in your backyard?' website (<http://www.environment-agency.gov.uk/homeandleisure/37793.aspx>) and check out the following aspects for your area:
  - Flood and coastal erosion risk management schemes
  - Coastal erosion maps
  - Flood maps
- Which areas are at risk from flooding and erosion, and what are the levels of risk associated with these areas? Go back to the development plan for your area.
  - Are these high risk areas recognised on the plan?
  - Is developed planned for any of these areas? If so, what, if any precautions are being suggested?

### References

- Dodds, W. (2010) Severn Estuary Planning Review: Phase One Report, IMCORE Project Report, 05pp. Available from: <http://www.severnestuary.net/sep/partnership/docs/IMCORE%20Corporate%20Planning%20Review%20-%20Phase%20I%20Report.pdf>
- Few, R., Brown, K and Tompkins, EL (2007) Climate Change and Coastal Management Decisions: Insights from Christchurch Bay, UK, Coastal Management, 35 (2 -3), 255 - 270
- Winn, PJS, Young, RM and Edwards, AMC (2003) Planning for the rising tides: the Humber Estuary Shoreline Management Plan, The Science of the Total Environment, Volumes 314 - 316, 13 - 30

### Further information

- The Severn Estuary Partnership's climate change pages: <http://www.severnestuary.net/sep/imcore/>
- Severn Estuary climate change report cards -scientific information on climate change for a non-specialist audience: <http://www.severnestuary.net/sep/imcore/CCSsms.html>