

UPDATE ON COASTAL EROSION MAPPING NOTE 1: JUNE 2009

1.0 BACKGROUND

- 1.1 In March 2005, the Government made a commitment through *Making Space for Water* "...to widen publicly available risk mapping to include coastal erosion probabilities and risk...". The Welsh Assembly Government agreed that this also complemented the Environment Strategy Outcome 5: "...good quality information is available at the point where people make decisions" and has supported the project to include Wales. These statements recognised that whilst erosion information is already available and many communities have been dealing with erosion for years, the information has been locally produced using different approaches.
- 1.2 The National Coastal Erosion Risk Mapping project (NCERM) is improving this existing information by using the latest scientific modelling approach (RACE), taking account of the latest climate change data, and being nationally consistent. We had anticipated that the erosion data would be ready in 2008. However acquiring a consistent data set has been time-consuming and we have allowed extra time to undertake desk studies to clean up the information held on defences. In addition we will now be incorporating information from the United Kingdom Climate Projections 2009 (UKCP09).
- 1.3 This revision to the timetable means that we have an opportunity to present the new coastal erosion information in the context of the second generation Shoreline Management Plans, which will be published between summer 2009 and 2011.

2.0 PROJECT AIMS

- 2.1 Our aims in delivering the erosion maps, as agreed with Ministers are that:
- i. The information is based on the best science;
 - ii. Defra's coastal adaptation policy package, now called 'coastal change policy' is available either before or with publication of the erosion information;
 - iii. Engagement with the public will have been well established prior to the information being published;
 - iv. The format of the information will be easily accessible for the public;
 - v. The publication of the maps is harmonised with the publication of the 2nd generation of the shoreline management plans.

Delivery of these aims is discussed in the following paragraphs.

3.0 DATA

- 3.1 The programme to input and validate the data has been lengthy, but we now have over 95% data captured. This has been a big task and we are very grateful for the effort by so many to ensure the data is the best available.

3.2 UKCP09 was published on 18th June and we will review NCERM in light of UKCP science. We intend to take a pragmatic approach to scrutinise several key locations round the country to identify the impact and then review whole data set in the light of the impact on those key locations. Defra and the Environment Agency intend to publish guidance on the use of UKCP09 in SMPs, strategies etc. A second update note will outline this.

4.0 FORMAT OF MAP PRESENTATION

4.1 The original driver for the project was to provide information to the public, however it was always clear that professional partners would also use the information.

4.2 We used market research to shape the likely presentation and content of the information for the public. Our research suggested that the public is keen to see local information in a pictorial format, but does not favour 'lines on a map'. Erosion information is more complex than flood information and is difficult to present clearly. The concerns about lines / bands include:

- they cannot clearly show all the elements on one layer:
 - range of erosion rates / confidence bands (5%, 50% & 95%)
 - epochs (20, 50 & 100), and
 - scenarios (no active intervention and SMP2 policy)
- they give an unrealistic impression of certainty, i.e.
 - everything within the band or seaward of the line will be lost (rather than being at risk), and
 - everything landward of the line or band is safe
- they imply that the coast erodes linearly which is not the case. In the short term, erosion lines are more semi-circular, although in the longer term, the coast does become more linear,
- they do not meet the needs of planners who define planning zones that work with community lines,
- they are likely to give rise to blight.

4.3 We have therefore decided to present the erosion information for the public in an interactive web-based format, which uses a map to provide the context, but displays the erosion information in a text format activated by the user with the mouse. We have referred to this as 'abstract' format. This format offers the opportunity to show defences and policies as well as erosion rates. It also provides help and more detailed information in the same place. This has tested well with users and could have wider application in the presentation of complex risk information to the public. An example of this format is shown in Appendix A

4.4 We recognise that professional partners will be using the erosion information in a very different way to the public. Professional partners understand the context and the limitations of lines or bands on maps but find them useful to inform their work, e.g. to assess areas at risk as part of the appraisal of benefits and cost when developing strategies and schemes. The expectation is to use erosion maps similar to the examples shown in Appendix B. Planners however do not find this linear format appropriate as the erosion lines cut through properties which make it difficult to determine planning guidance.

- 4.5 The department for Communities and Local Government (CLG) is currently revising PPG20 (coastal planning) to produce new planning guidance for coastal zones. The guidance is likely to include planning maps to show the different coastal zones. The boundaries of these zones will be based on the NCERM erosion risk information, however they are unlikely to follow linear erosion lines as they will be drawn to complement community features.
- 4.6 The NCERM project can present the erosion rate data in several different ways such as a database, a PDF map, GIS layers or the interactive web format described above. Each of these is appropriate for different uses but needs to be set in the right context so that the information is not misinterpreted. After some discussion we have received clear direction from Directors in the Environment Agency and supported by those in Defra and CLG that the NCERM project should produce data in a flexible format to allow professional partners to use it in the way that best suits their work rather than simply maps with erosion lines or bands.
- 4.7 We propose therefore to provide professional partners and the Coastal Groups producing the SMP2s with three products:
1. High level erosion statistics based on Local Authority boundaries
 2. The detailed erosion rate data in a geospatial database format plus guidance on how to produce maps from the data, and
 3. An SMP2 addendum comprising an assessment of how the NCERM maps compare with the maps used in the SMP2 and analysis of whether there are any implications for the SMP policies identified.
- These products will enable the Coastal Groups producing the SMP2s to review the policies and then present the data in map form as appropriate with the SMP providing the context such as example 2 in Appendix B. This approach also applies where the Environment Agency is leading on the production of the SMP for the Coastal Group.
- 4.8 The strong link to the SMPs supports phased publication. This approach was endorsed by Environment Agency Board, Defra and CLG Directors as the phased publication would reduce the political impact a national map and enable lessons to be learnt from early phases.

5.0 TIMING AND LAUNCH OF MAP PUBLICATION

- 5.1 The two elements that determine the timing of the publication of the erosion maps are UKCP09 and the programme of SMP2s. The erosion rate data will reflect the latest science from UKCP09 and will present two scenarios: no active intervention and the relevant SMP2 policy. We can therefore only publish the map once the SMP2 policies have been determined. This means that the first maps can be available from November 09. We intend to produce the maps to match SMP2 boundaries firstly for the completed SMPs and then phase them to complement the SMP2 programme of publication.
- 5.2 The current programme for delivery of SMPs shows completion of all English and cross-border SMPs by December 2010. This is in accordance with Outcome

Measure 9 and the Environment Agency's Corporate Plan (page 23) which is at: <http://publications.environment-agency.gov.uk/pdf/GEHO0408BOGI-e-e.pdf>. The Corporate Plan is approved by Defra and supersedes the original High Level Target 3 deadline of March 2010.

- 5.3 The SMP2s have used the best currently available information to form the policies for each management unit. Each SMP2 will have an Action Plan, as outlined in the Guidance¹. There is no strict format to the Action Plan but they are all likely to include an action to review the policies in light of UKCP09 and NCERM data at an appropriate time.
- 5.4 Table 1 outlines the proposed timing for launching the maps. It is based on the current publication dates for the SMP2s with some modifications so that publication can be grouped within regions where practicable. By producing the maps in batches it means the maps are produced soon after the SMPs are published and the phased approach enables us to identify and learn lessons from the early batches to help in the roll out of subsequent batches.
- 5.5 These are generally the earliest dates the maps could be made available, but other factors may affect them e.g. timing of a General Election or when the coastal engagement posts (see paragraph 6.1) will be in place.

Table 1: Proposed batch dates for launching the erosion information on the Environment Agency's web-site and supplying the data to professional partners

SMP	Batch and SMP2	Region	Provisional Date
	Batch 1		Nov 09
9	River Medway & Swale Estuary	SO	
10	Isle of Grain to South Foreland	SO	
11	South Foreland to Beachy Head	SO	
12	Beachy Head to Selsey Bill	SO	
	Batch 2		Jan 10
1	St Abbs Head to the Tyne	NE	
2	The Tyne to Flamborough Head	NE	
	Batch 3		June 10²
4	2d Gibraltar Point to Hunstanton (The Wash)	ANG	
5	3a Hunstanton to Kelling Hard (North Norfolk)	ANG	
6	3b Kelling Hard to Lowestoft (North Norfolk)	ANG	
7	3c Lowestoft to Felixstowe (Suffolk)	ANG	
	Batch 4		July 10
3	Flamborough Head to Gibraltar Point (HECAG)	NE/ANG	
22	Great Orme's Head to Scotland	NW / W	
13	North Solent Shoreline: Selsey Bill to Hurst Spit	SO	
	Batch 5		Sept 10³

¹ Shoreline Management Plan Guidance, March 2006

² Batch 3 SMPs are scheduled to be published between April & June 2010

³ Batch 5 SMPs: Durlston Head to Rame Head Dec 09 & the others between June & Sept 2010

8	3d Felixstowe to Two Tree Island (Essex)	ANG	
15	Hurst Spit to Durlston Head	SW	
16	Durlston Head to Rame Head	SW	
17	Rame Head to Hartland Point	SW	
18	Hartland Point to Anchor Head	SW	
19	Anchor Head to (Sharpness) + (Wellhouse) to Lavernock	SW / Wales	
	Batch 6		Jan 11
14	Isle of Wight	SO	
	Batch 7		2011
20	Lavernock Point to St Ann's Head	Wales	
21	St Ann's Head to Great Orme's Head	Wales	

5.6 The recommendation for launching / publicising the maps is a partnership approach with Local Authorities through the SMP / Coastal Groups as encouraged by Defra through its additional engagement funding (paragraph 6.1). This has the benefit of linking them to the SMP2 policies giving an opportunity to raise the profile of the recently formed Coastal Groups and emphasising the role of Local Authorities in coastal erosion. While the maps will be on the Environment Agency website, the Environment Agency wants to encourage and support Coastal Groups and Local Authorities engagement with the public. The community engagement officers appointed by Environment Agency and working alongside Local Authorities partners, will aid this partnership approach.

6.0 COMMUNICATION, ENGAGEMENT & BUSINESS TRANSITION

6.1 Defra has funded additional communication and engagement activities to support the launch of the erosion maps and the coastal change policy consultation. The funding is for short-term additional posts and consultancy input to develop and deliver innovative & creative engagement. The Environment Agency is leading this project but delivery is to be in close collaboration with Local Authorities.

6.2 We have a Business User Group comprising key operations staff to support delivery of the business transition action plan and to provide base data required as context for the erosion map. Lessons identified and processes developed for the roll out of the flood maps are informing the business transition action plan.

6.3 The Communications strategy has strong links with Defra. Key elements include:

- Development of key messages to support for Coastal Groups and Environment Agency Regional and Areas teams that can be tailored for local use,
- Development of web pages to support the online maps with links to Defra's coastal change consultation and CLG's planning consultation, and
- Community led engagement plans developed jointly with LAs and other partners and identification of local case studies.

7.0 NEXT STEPS

- 7.1 The NCERM project team is working with Defra, WAG and Coastal Authorities to finalise the programme for coastal erosion data publication and the supporting engagement activities. The Environment Agency does not have a coastal overview in Wales and we are discussing with WAG how best to publish the data.
- 7.2 Our Communications team is determining the final look and wording for interactive web-based presentation of coastal erosion data with input from the Business User Group. Launch details will be discussed with Coastal Groups with the aim to have consistent national messages whilst enabling local perspective.

8.0 SUMMARY

- 8.1 This note outlines the current status of coastal erosion maps and SMPs. A second note will follow to give more information on the impact of UKCP and the Planning Policy Guidance 20 consultation.
- 8.2 The Coastal Group Chairmen are meeting the National Coastal Policy Team in June and July and details will be discussed further then. If you have any comments to contribute to those discussions please contact your Coastal Group Chairman or Nick Hardiman in the National Coastal Policy Team on 01733-464203 or nick.hardiman@environment-agency.gov.uk. For SMP queries please contact Jenny Buffrey on 01733-464489 or jenny.buffrey@environment-agency.gov.uk.

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June 2009

APPENDIX A

This is a 'mock-up' of the likely public-facing access tool. Only the local area will be viewable and information box will 'pop up' when cursor hovers over the area.

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28 September 2009

Home

At home & leisure

Coastal defence & erosion

Defence & Erosion map

▶ About the map

Coastal Erosion & Defence Map

Instructions for using map and additional main caveats in this paragraph. Mention page resizing and instructions on viewing your area. Allow for paragraph to flow onto two lines.

UK ~ Southern England ~ West Sussex ~ Pagham to East Head ~ Selsey
▶ About the map

New search: Place

Area policy: No intervention [What's this?](#) Close X

Coastal erosion (in years)

20 yr: 2 - 4 metres

50 yr: 4 - 10 metres

100 yr: 10 - 20 metres

▶ View all details for your local area

Selsey

Key to symbols

Managed realignment

No intervention

Flooding

Flooding from rivers or the sea, please visit our [Flooding pages](#).

▶ Flooding pages

Your questions answered

Does dredging cause coastal erosion?

What affect does dredging have on our coast? Why do companies dredge the sea and what happens to the profits?

[Learn about the affects of dredging](#)

Our other main learning areas

What is coastal erosion?

Natural, Prediction, Rates, History, Dredging, Climate.

Defending erosion

Methods, Assessing, Managing, Surrounding areas, Wildlife, Defence in action, World-wide, Budgets, History.

How erosion affects you

Homeowners, property value, Insurance, Mortgages, Planning permission.

National helpline

Your coastal helpline

0??? ???? ???

Monday to Saturday
8.00 am – 9.00 pm

▶ View all contacts

The scientific approach to sea defence

Learn how a scientific break through in sea defence made a significant change to the newly completed seafront at Hastings.

▶ View all national coastal projects

How we can help

▶ **Community action plans**
Money is available to help communities deal with the effects of coastal erosion.

▶ **Help for businesses**
Your business could benefit from legal and financial help if affected from erosion.

▶ **Abandoning 'at risk' properties'**
Procedures, compensation and advice.

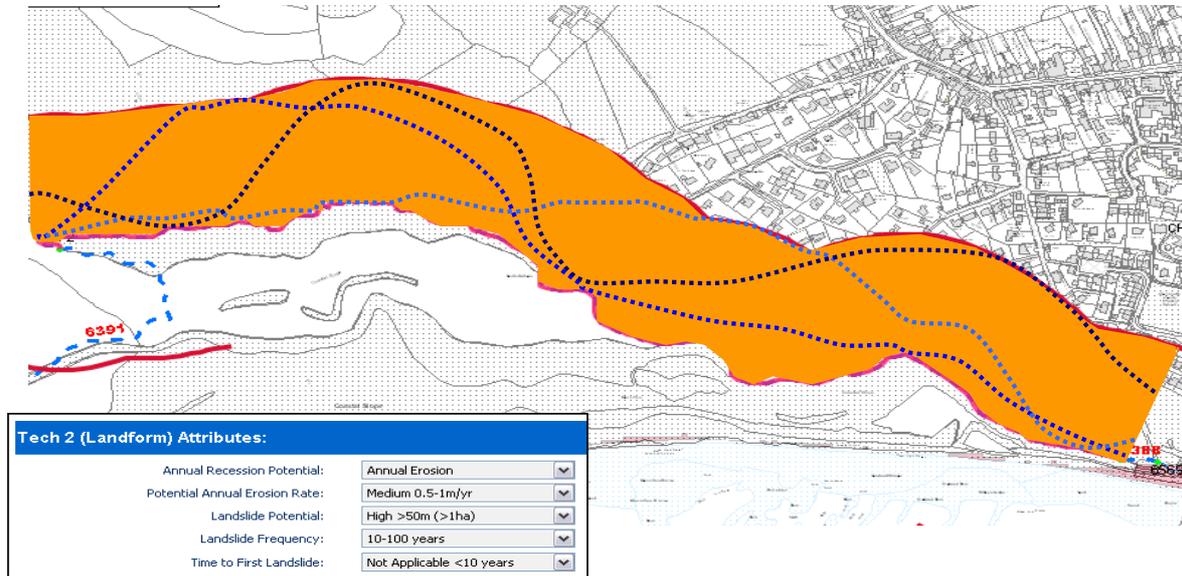
creating a better place

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APPENDIX B

Example 1

This shows the area at risk from erosion and possible erosion lines. This shows the land that is at risk, but it does not mean that all the land in the shaded area will be lost.



Example 2

This map section is taken from current Kelling to Lowestoft SMP.

