

PAPER B

Purpose : For Discussion

Committee : **SCOPAC**

Date : **December 2010**

Title : **RESEARCH PROGRAMME**

REPORT OF THE CHAIRPERSON OF THE SCOPAC RESEARCH SUB-GROUP

1 CURRENT RESEARCH PROGRAMMES

1.1 ACCESS' (ADAPTING TO CLIMATE CHANGE ALONG ENGLAND'S SOUTHERN SHORELINES')

The ACCESS project is essentially investigating methods associated with effectively quantifying 'Assets at risk along the SCOPAC coastline'. There is a need for more refined assessments to be made of methodologies currently being used in Shoreline Management Plans and Flood and Coastal Erosion Risk Management Strategies to ascertain coastal erosion risk and identify and value the assets at risk, looking ahead over the next one hundred years. The greater the erosion risk to property, the more likely the frontage will obtain the benefit-cost ratio required to achieve a Hold The Line policy, thereby potentially attracting funding for future works. Still, if methods are under or indeed over-predicting erosion then there could be significant implications for future policy setting and central government funding distribution.

Coastal and Geotechnical Services, Halcrow and the Channel Coastal Observatory (CCO) are undertaking the work for this project. As an introduction to the project, the CCO identified "hotspots" where more than 40 properties are at risk from erosion and/or flooding over the next 100 years across the SCOPAC region (see Figure 1).



Figure 1: Geomorphology and hazard hotspot map

With a focus on sites under threat from instability, erosion and erosion followed by flooding, case studies for each geomorphology type were selected from the list of hotspots, ensuring a variety of examples were taken from across the SCOPAC region. These include the following identified in Figure 2:



Figure 2: Case study map

Each case study details historical and predicted future geomorphological evolution, coastal monitoring, coastal management, adaptation of the shoreline and lessons learnt. A critique of Shoreline Management Plan erosion methods and national methods of erosion prediction was also undertaken for a selection of sites, as will the data used for assessing assets at risk and the monetary values applied to the assets at risk.

The Southern Coastal Group agreed that publication of the ACCESS project will be delayed until the Shoreline Management Plans and the National Coastal Erosion Risk Mapping Programme are in the public domain. The ACCESS project team are planning to print the document in the Spring of 2011 and hold a launch event at the National Oceanography Centre involving Councillors, planners, and consultants.

The next project steering group meeting will be held in December 2010.

Recommendation: For information

1.2 SEDIMENT TRACER STUDIES EAST SOLENT

Havant Borough Council are developing a new shingle tracer study technique whereby PIT tags, used for animal identification, are embedded into the native flint / chert pebbles of Hayling Island and Portsea Island to confirm sediment transport pathways around the south side of the islands. £1500 was provided by SCOPAC to assist with the preparation costs of the tracer pebbles.

Clive Moon reports.....

Phase One Beach Trial:

In September 2010 an initial trial of 300 pebbles were deployed between two groyne bays on the nourished beach frontage at Eastoke, over a two to three week period (Figure 3). Initial recovery rates were very good, averaging 71%, with the majority of pebbles remaining in their initial deployment groyne bay. 300 tracer pebbles remain deployed at Eastoke and in the next couple of weeks the towed antenna array will be used to sweep the beach more rapidly.



Figure 3: Hayling Island

Provided the trial runs smoothly, 500 pebbles out of the 2,500 tracer pebbles available are planned to be deployed later in the year at Gunner Point, Langstone Harbour entrance (Figure 3).

The study is being carried out to supplement the South West Hayling Island Beach Management Study. There is uncertainty in the understanding of the flow of coarse beach material around Gunner Point & Fort Cumberland as the coast changes from swash to drift aligned. A better understanding is required of the direction of transport for 'pulses' of material which move gradually around the coastline. On the Portsmouth side of the channel there is uncertainty over the present location of a drift divide adjacent to Fort Cumberland, and whether transport still occurs past the outfall constructed across the active beach. The study aims to identify the rate and direction of coarse sediment transport using the tracer pebbles.

Further testing / trials:

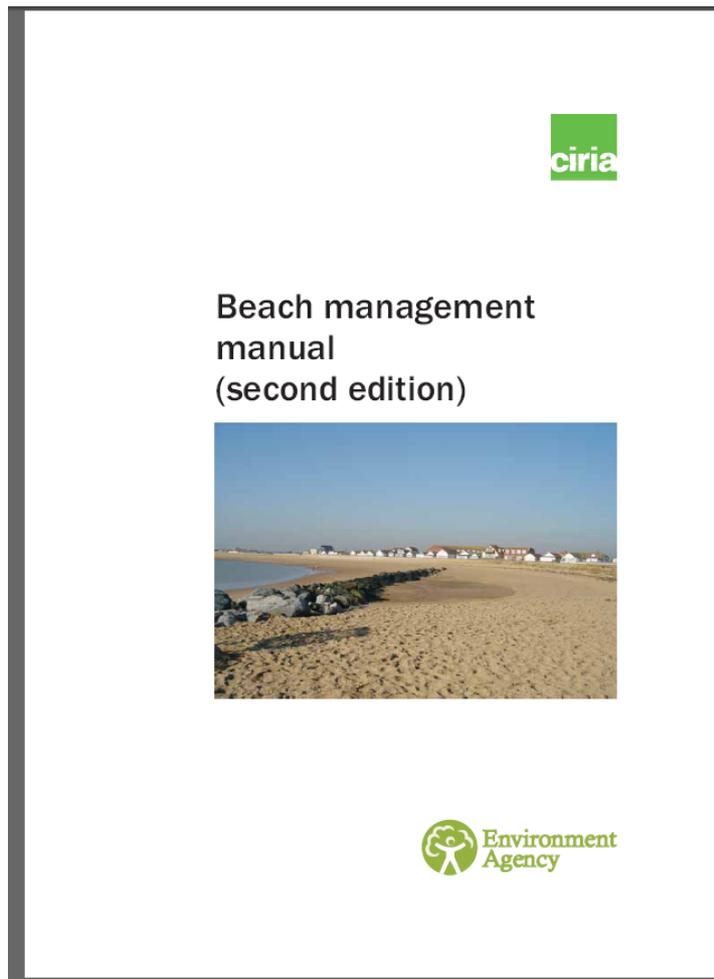
Once phase one has started to return data, and the methodologies for detection are fine-tuned, further deployments are planned for Eastoke and Southsea. At Eastoke the tracers will be used in conjunction with volumetric analysis to improve the understanding of losses from the nourished frontage. At Southsea Memorial the tracers would be used to confirm the path taken by material placed on the upper beach to counter coastal erosion. Interest has also been expressed for studies looking at the nourished material placed at Lee-on-the-Solent and the storm beach at East Head / West Wittering and to investigate the drift divide at Selsey.

Recommendation: For information

1.3 CIRIA BEACH MANAGEMENT MANUAL LAUNCH

SCOPAC hosted the CIRIA Beach Management Manual launch on the 15th October at the National Oceanography Centre. The morning was attended by approximately 50 people, including coastal engineers and scientists. The speakers included Stefan Laeger from the Environment Agency and Andy Bradbury from the New Forest District Council who summarised the key aspects of the manual. A special thank you goes to the Channel Coastal Observatory who provided the venue at no cost. The Southern Coastal Group has a complimentary hard copy of the Beach Management Manual, alternatively it can be downloaded from the CIRIA website

http://www.ciria.org/service/free_publications/AM/ContentManager/Net/ContentDisplay.aspx?Section=free_publications&NoTemplate=1&ContentID=17783).



The image shows the cover of the 'Beach management manual (second edition)'. At the top right is the CIRIA logo, which consists of the word 'ciria' in white lowercase letters on a green square background. Below the title is a photograph of a sandy beach with a rocky shoreline and buildings in the distance under a clear blue sky. At the bottom right is the Environment Agency logo, which features a stylized green tree icon next to the words 'Environment Agency' in green.

2 **NEW RESEARCH**

The following programme of work was extracted from the Southern Coastal Group Business Plan (2009) as a reminder of the priorities for research approved by SCOPAC at its meeting on 15th February 2008, Item 28 (ii), following completion of the 'Research Review'. Completion of these projects will be dependent on future funding availability.

- Adapting to Coastal Change Along England's Southern Shorelines (ACCESS): Channel Coast Observatory £26,000, Halcrow £17,500, Coastal and Geotechnical Services £14,000, Management/Printing £11,100, Contingencies £3,000. 2008/09-2009/10-2010/2011-2011/2012. **Ongoing**
- Extreme wave conditions study: Professor A Bradbury £10,000 (2008/09), £8,000 (2009/10). **Near completion**
- Contribution to CIRIA Beach management manual £10,000 (2008/09). **Completed**
- Maintenance of coastal structures Phase 1 Timber groynes – Professor A Bradbury/CCO £2,500 (2010/11) and £15,500 (2011/2012). **Workshop undertaken to start project**
- Contributions to minor studies: £1,500 Sediment Tracer Study (2010/2011) **Ongoing**. £2,500 unallocated for 2010/2011 – budget delegated to Southern Coastal Group
- Evolution of coastal sediment sinks: Southampton University/CCO - £25,000 (2011/12).
- Validation of new Met office wave data: CCO/Southampton University £15,000 (2010/11), £10,000 (2011/12).
- Climate change local scenarios study: External consultants £35,000(2011/12), £35,000 (2012/13).
- Saltmarsh evolution study: CCO - £15,000 (2012/13), £10,000 (2013/14).
- Design guidance for mixed beaches - £30,000 (2013/14), £30,000 (2014/15).

Recommendation: For information

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