

# PAPER B

Purpose : For Discussion

Committee: **SCOPAC**

Date: **SEPTEMBER 2011**

Title : **RESEARCH PROGRAMME**

## **REPORT OF THE CHAIRPERSON OF THE SCOPAC RESEARCH SUB-GROUP**

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### **1 CURRENT RESEARCH PROGRAMMES**

**1.1 ACCESS' (ADAPTING TO CLIMATE CHANGE ALONG ENGLAND'S SOUTHERN SHORELINES')**. Channel Coast Observatory £26,000, Halcrow £20,500, Coastal and Geotechnical Services £14,000, Management/Printing £5,725 (2008 – 2012)

The ACCESS project team are planning to have the document printed by October 2011 and hold a launch event at the National Oceanography Centre involving Councillors, planners, and consultants on the morning of the 18<sup>th</sup> November 2011. Further details to be distributed.

Recommendation: For information.

### **1.2 SCOPAC MINOR PROJECTS FUND (2011/2012 AND 2012/2013)**

*Havant, Portsmouth and Gosport Partnership undertaking Sediment Tracer Studies. Minor contribution of £2,000 (2011/2012) and £2,000 (2012/2013)*

*Bournemouth Borough Council undertaking Non-standard Rock Groynes Project. Minor contribution of £2,000 (2011/2012) and £2,000 (2012/2013)*

Each financial year the Southern Coastal Group has delegated powers to award up to £4,000 as a contribution to research benefitting the SCOPAC region. A call for proposed projects was sent out to the Southern Coastal Group for which there were five suggestions. These are summarised as follows (for a full explanation of the proposed projects please see

<http://www.southerncoastalgroup.org.uk/SCGMeeting22.07.11/Paper%20B.pdf>:

1. Hampshire and Wight Trust for Maritime Archaeology (HWTMA) proposal, **"Thousands of years of sea level rise," Cost £4,000**
2. Bournemouth Borough Council (Dave Harlow) proposal, **"Performance of Poole & Christchurch Bays non-standard rock groynes," Cost £4,000**
3. Environment Agency (Uwe Dornbusch) proposal, **"Contribution to South-east Beach management Plan," Cost £4,000**

4. Havant, Portsmouth and Gosport Group proposal **“Beach Tracer Studies – East Solent,” Various projects ranging in cost from £2,600 - £4,700**
5. Poole Borough Council (Dave Robson) proposal, **“Contribution to Whitley Lake Feasibility Study,” £4,000 towards monitoring and analysis**

Following the Southern Coastal Group meeting in July it was agreed that officers who were Full SCOPAC members would cast one vote each for their preferred project, taking into consideration the following criteria. Does the project

- Develop a scientific tool?
- Have a wider benefit to SCOPAC?
- Advance the understanding of coastal processes?
- Have any relevance to engineering?
- Have any relevance to coastal decision making?
- Assist in developing best practice?
- Educate elected members?
- Educate officers?
- Would the study commence if SCOPAC did not make a contribution?

Given that funding is being awarded so late in the financial year, the Southern Coastal Group agreed that the two projects receiving the majority of votes would be awarded £4,000 each using the 2011/2012 and 2012/2013 budget.

The project with the most votes was the BBC, “Performance of Poole and Christchurch Bays non-standard rock groynes” (6 votes), followed by the Havant, Portsmouth and Gosport Group, “East Solent Beach Tracer Studies” (4 votes).

The SCOPAC Research sub-group will meet in October to scope the two projects

		Response Percent	Response Count
HWTMA - "Thousands of years of sea level rise"		0.0%	0
BBC - "Performance of Poole and Christchurch Bays non-standard rock groynes"		54.5%	6
EA - "Contribution to South-east Beach Management Plan"		9.1%	1
H,P&G group - "Beach Tracer Studies, East Solent"		36.4%	4
PBC - "Contribution to Whitley Lake Feasibility Study"		0.0%	0
		answered question	11
		skipped question	0

and report back to SCOPAC in December.

Recommendation: For information

### 1.3 UPDATE OF SCOPAC SEDIMENT TRANSPORT DATABASE AND SEDIMENT TRANSPORT STUDY

The SCOPAC Sediment Transport Database was last updated in 2002 and underpins the Sediment Transport Study which was last updated in 2004. The Sediment Transport Study was widely used in the second round of Shoreline Management Plans for the coastal processes literature review and baseline scenario assessments. It would be timely to update both the Bibliographic Database and the Sediment Transport Study with Regional Monitoring data and new publications, to feed into ongoing Strategy Studies and the next round of Shoreline Management Plans.

The Sediment Transport Study would be a much larger undertaking than the Bibliographic Database. In terms of funding, SCOPAC could potentially find the budget to update the Database but more substantial funds from the Shoreline Management Plan action plan would be required to update the Sediment Transport Study.

The New Forest District Council have included the following in their Medium Term Plan at an estimated cost of £150k,

“Region-wide sediment transport for management of flood and coastal erosion risks.”

It was agreed at the last Southern Coastal Group meeting in April 2011 that updating the Bibliographic Database prior to the Sediment Transport Study would be a sensible option given that the cost of updating the Transport Study will be easier to calculate once the amount of new literature and data is known. It is proposed to wait for confirmation of funding of the Sediment Transport Study update through the Medium Term Plan before starting an update of the Bibliographic Database.

It was recommended at the Southern Coastal group meeting in April 2011 that the case for moderation be approved and the scheme included in the Medium Term Plan sanctioned list.

Recommendation: For information

### 1.4 EXTREME WAVE CONDITIONS

The New Forest District Council have submitted a Medium Term Plan proposal to the value of £250,000 to investigate extreme wave conditions further along The Channel Coast (Wessex and Southern region) following preliminary investigations by Andy Bradbury across the SCOPAC region which concluded that;

- the central south coast is regularly subject to conditions that are not generally considered in scheme design
- current scheme design does not account for bi-modal conditions, where there is a combination of not only **wind waves** but **swell waves** also
- bimodal events with a return period of 1:1 year do far more damage than might be expected from a traditional 1:10 year storm event.

implications include, greater overtopping and wave run-up on beaches than traditional design advice might suggest.

- defences in most of the SCOPAC region (apart from the area between Hurst Spit to Portsmouth which is protected by the Isle of Wight) are not designed to a high enough standard

The extreme wave conditions project is highlighted as a high priority in the action plans of the North Solent Shoreline Management Plan and the Poole and Christchurch Bays Shoreline Management Plan. It is relevant also to delivery of action plans for all Shoreline Management Plans on the English Channel Coast (total 7 SMPs).

The work will be led by the New Forest District Council and will involve various Environment Agency, Local Authority and Consultant teams to research and develop joint probability assessments and modify design approaches for sites that are subject to combined swell and windwave (bimodal) conditions. Work will involve analysis of field wave and beach data and physical modelling of beaches under bimodal conditions.

The submission is being made to secure funding for urgent investigations to develop improved design and forecasting wave conditions and associated management techniques for beaches on the English Channel Coast. The project will deliver;

- Improved triggers for coastal wave forecasting
- Identify sites at risk on the Channel Coast
- Assess current standards of protection of sites at risk
- Identify additional measures required to improve standards of protection at key sites

It was recommended at the Southern Coastal Group meeting in April 2011 that the case for moderation be approved and the scheme included in the Medium Term Plan sanctioned list.

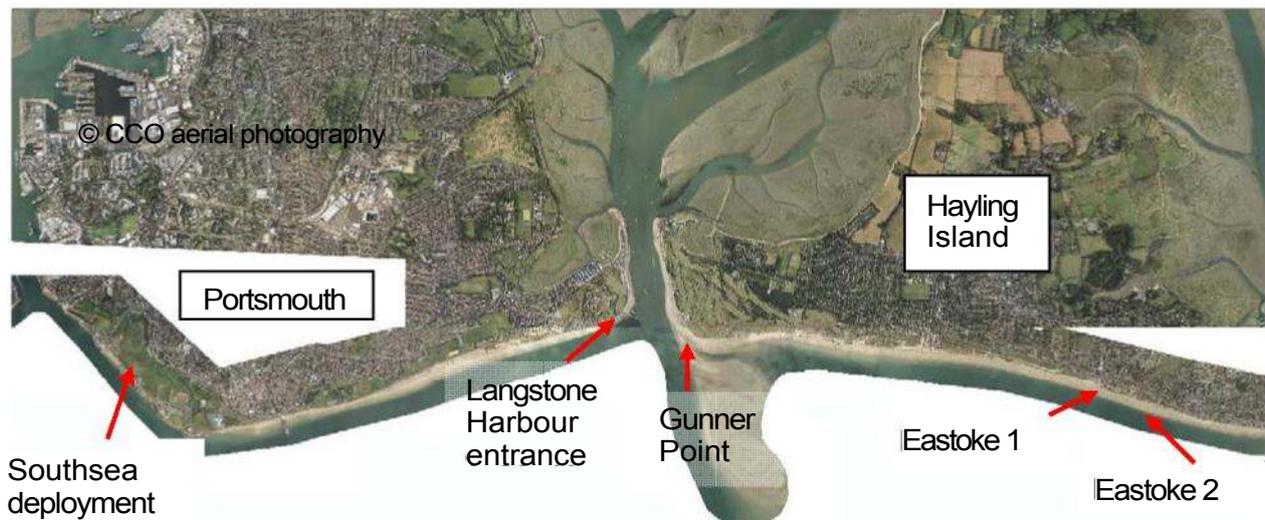
Recommendation: For discussion

## 1.5 SEDIMENT TRACER STUDIES EAST SOLENT

*Havant, Portsmouth and Gosport Partnership, minor contribution of £1,500 (2010/2011)*

Clive Moon reports

A total of 2,300 tracer pebbles have now been deployed around the Hayling and Portsea Island open coast as part of an ongoing study to confirm the long-term sediment pathways in the East Solent. The deployment locations include the nourished beach at Eastoke, either side of the Langstone Entrance Channel and the Southsea frontage (Figure 1).



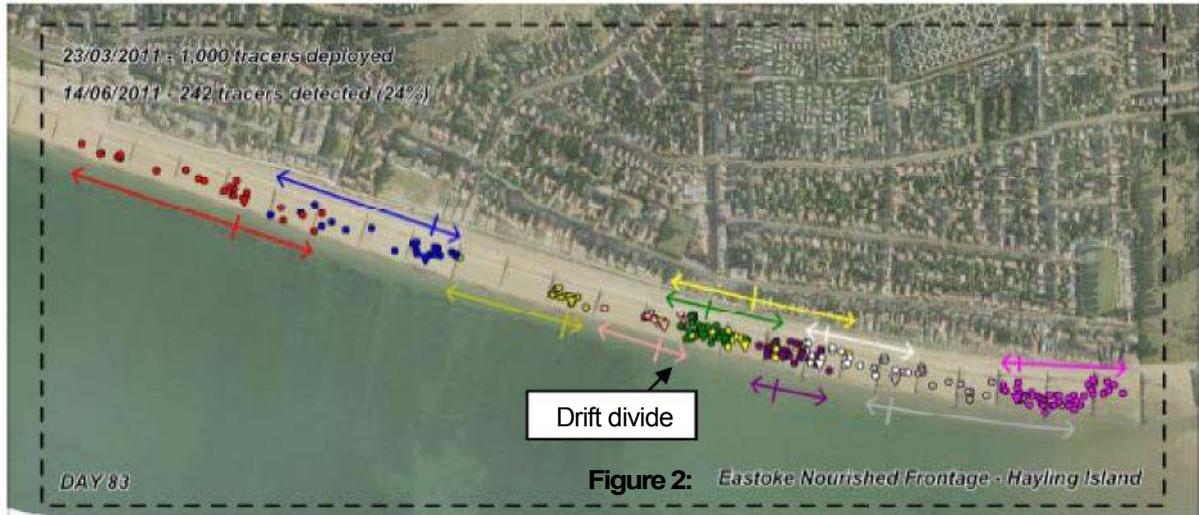
**Figure 1:** Location of tracer pebble deployments

### *Eastoke deployment 1*

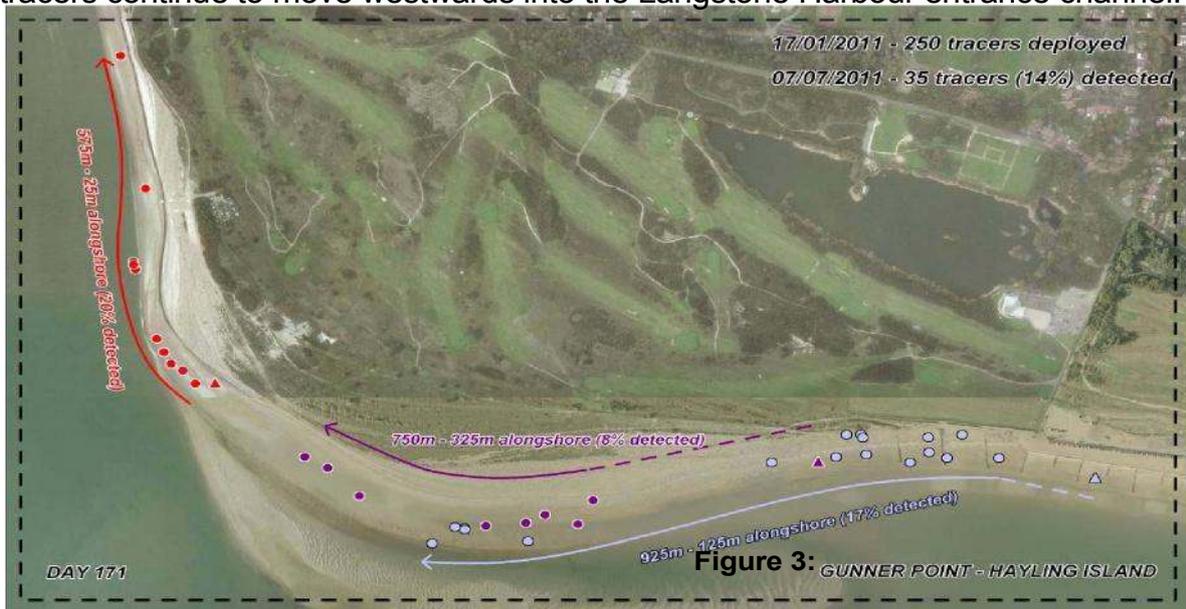
On Hayling Island, 10% of the original batch of 300 tracers deployed in September 2010 were detected in June 2011 after 9 months active in the beach. The tracers have moved west between 25 and 1900 metres and continue to move in a westerly direction towards the Langstone Harbour entrance channel.

### *Eastoke deployment 2*

Of the 1,000 tracers deployed immediately after the 2011 beach recycling operation at Eastoke, 24% were detected after nearly three months active in the beach. The tracers remain largely on the nourished frontage, and are following the anticipated pattern of sediment transport. The tracers deployed at the drift divide have dispersed in both directions along the nourished frontage but the centre of the mass of tracers remains near the deployment location, whereas the batches placed further away from the drift divide show a clearer pattern of movement downdrift in both directions.



On the Hayling Island side of the Langstone Harbour channel, 14% of the 250 tracers deployed in January at Gunner Point were detected in the latest sweep. The tracers continue to move westwards into the Langstone Harbour entrance channel.



The latest sweep of tracer pebbles was undertaken in July 2011.

Recommendation: Clive Moon to provide further information as a presentation

## 2 SUMMARY OF CURRENT AND 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). The list of prioritised work was formalised following a 'Research Review'. Completion of these projects will be dependent on future funding availability.

### 2.1 CURRENT RESEARCH

- Adapting to Coastal Change Along England's Southern Shorelines (ACCESS): *Channel Coast Observatory £26,000, Halcrow £20,500, Coastal and Geotechnical Services £14,000, Management/Printing £5,725 (2008 – 2012). Near completion - awaiting launch.*
- Extreme wave conditions study: Professor A Bradbury £18,000 (2008 - 2010). *Completed – awaiting short summary.*
- 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.*
- Minor funds (2010/2011): *Havant, Portsmouth and Gosport Partnership, minor contribution of £1,500 to Sediment Tracer Studies. Near completion.*
- Minor funds (£4,000 for 2011/2012 and £4,000 for 2012/2013) *Budget delegated to Southern Coastal Group. The following projects are scheduled to start 2011/2012:*
  - *Havant, Portsmouth and Gosport Partnership, minor contribution of £2,000 (2011/2012) and £2,000 (2012/2013) to Sediment Tracer Studies*
  - *Bournemouth Borough Council, minor contribution of £2,000 (2011/2012) and £2,000 (2012/2013) to Non-standard Rock Groynes Project*
- Evolution of coastal sediment sinks: Southampton University/CCO - £25,000 (2011/12). *Scheduled to start 2011/2012.*

### 2.2 NEW RESEARCH

- Validation of new Met office wave data: CCO/Southampton University £15,000 (Year 1), £10,000 (Year 2).
- Climate change local scenarios study: External consultants £35,000 (Year 1), £35,000 (Year 2).
- Saltmarsh evolution study: CCO - £15,000 (Year 1), £10,000 (Year 2).
- Design guidance for mixed beaches - £30,000 (Year 1), £30,000 (Year 2).

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