

# PAPER B

Purpose : For Discussion

Committee : **SCOPAC**

Date : **December 2009**

Title : **RESEARCH PROGRAMME**

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

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### 1 **CURRENT RESEARCH PROGRAMMES**

#### 1.1 CIRIA Beach management manual

SCOPAC has agreed to provide co-funding with a 10K contribution to development of the new CIRIA beach management manual. The manual has now reached first draft phase and is subject to review by the project steering group over the next few months. It is proposed that a regional launch of the manual in summer/autumn 2010 would be held in the SCOPAC area and negotiations will follow with CIRIA on this.

Recommendation: For information

#### 1.2 ACCESS' (ADAPTING TO CLIMATE CHANGE ALONG ENGLAND'S SOUTHERN SHORELINES).

Following from the EU LIFE RESPONSE project in 2006, the Chairman of SCOPAC Officers' Working Group (Dr Robin McInnes), who then worked for the Isle of Wight Council, presented a report to SCOPAC on the need to identify more effectively 'Assets at risk along the SCOPAC coastline'. The need for this research was supported by SCOPAC and the Chairman prepared a research project called ACCESS.

Recent assessments of assets at risk from erosion and instability along the SCOPAC and South Downs coastlines together with the research into the impacts of climate change, have recognised the need for more refined assessments to be made of methodologies currently being used to ascertain coastal erosion risk, the values of assets at risk and opportunities for adaptation to the impacts of climate change, looking ahead over the next one hundred years. SCOPAC believes that with this additional information the Operating Authorities and related interests will be significantly better informed in terms of planning and managing coastal defence needs for the future.

In 2008 Halcrow, the Channel Coast Observatory and the Isle of Wight Centre for the Coastal Environment (IWCCE) were appointed to undertake the work. In the

approved SCOPAC Business Plan and following a tender process the budget allowed for work by the three teams (Halcrow, CCO and IWCCE) with the funding allocated in 2009/10 and 2010/11. The IWCCE advised that because of volume of work it is no longer able to undertake its £14,000 element of the ACCESS project. At the SCOPAC Research Sub-Group meeting in June and at the SCG meeting in July it was unanimously agreed that Coastal and Geotechnical Services, established by Dr Robin McInnes in 2007, would undertake the IWCCE work element given the specific requisite skills required to conduct the work and his appropriate involvement in the RESPONSE project.

Coastal and Geotechnical Services, Halcrow and the CCO met in September to discuss the project structure and content. The main bulk of work will commence in December but in the meantime, the CCO have been collating the South Devon and Dorset SMP, Hurst to Durlston SMP and North Solent SMP erosion zones. They are still waiting on the IOW SMP and Beachy Head SMP erosion zones. From this information they have identified "hotspots" of erosion for cliffs, landslides, saltmarshes and barrier beaches/beaches that could be used as case studies in the ACCESS project. They have tried to take a variety of examples from across the SCOPAC region; these will be emailed out to the Southern Coastal Group for comment. Halcrow have been influential in obtaining information quickly for those SMPs they have been involved in. Coastal and Geotechnical services have drafted a project structure and text for the report.

Recommendation: For information

#### 1.4 Sediment tracer studies East Solent

A proposal by Havant Borough Council was accepted by the Southern Coastal Group and SCOPAC to examine the use of a new shingle tracer study technique. PIT tags embedded in the native flint / chert pebbles will be used to confirm sediment transport pathways around Hayling and Portsea Island. The tags are remotely powered and have a theoretical life of fifty years, although abrasion will probably take its toll much sooner. £1500 has been provided by SCOPAC to assist with the preparation costs of the tracer pebbles. A more comprehensive proposal for further work may be prepared at a later stage following the initial trials.

Clive Moon reports.....

Equipment development:

Initial trials were carried out in August 2009 of two RFID antennas; one handheld & one towed. The trial identified a limited detection range using the large towed array and a 0.4m range on the handheld system. Further testing was undertaken at the RFID component supplier which identified potential improvements to the electronic and wiring set-up. The handheld antenna is currently being rewired to increase the detection range up to 1m. The single towed antenna is being redesigned and upgraded to an array of four smaller antennas capable of resolving more tracers per sweep with a detection range up to 1m. The target completion date for the RFID antennas is by the end of 2009.



Figure 1: First prototype antennas.

The large wooden tray is hopefully going to become wider and thinner.

#### Phase One Beach Trial - Langstone Entrance Channel:

500 tracer pebbles (d50 28 - 40mm) will be deployed at five locations around the Langstone entrance channel in mid November 2009. 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 a mixture of 23 & 32mm glass encapsulated RFID tags encapsulated within native beach clasts.

#### Further testing / trials:

Approximately 2,500 PIT tags are currently available for use on the Portsmouth and Havant coastline. 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.

Further testing is currently underway into the use of smaller 12mm wedge transponders in further studies. Particles with a d50 as low as 10mm could be tracked using resin particles weighted to match the specific gravity of the natural

beach material. This could reduce the tracer size down to the mean size of the coarse material in the bimodal sediment distribution.

Recommendation: For information

## 1.5 South-east Strategic Monitoring Programme Annual Partners Meeting

It was unanimously agreed at SCOPAC Full Conference in September that £1,000 would be paid for the 2009 South-east Strategic Monitoring Programme Annual Partners Meeting, held at Worthing on the 25<sup>th</sup> November.

Recommendation: For information

## 2 **NEW RESEARCH**

### 2.1 Income generation opportunities and funding of research

The former Chairman of SCOPAC and the Southern Coastal group, Dr Robin McInnes, prepared a report on income generation, identifying opportunities of at least £80k for future SCOPAC research into adaptation measures. Following from this, two bids were written by the former Chairman as follows.

### 2.2 Joseph Rowntree bid

The Joseph Rowntree bid, titled "Social Justice and Climate Change Risks" was submitted by Dr Robin McInnes in July. The basis of the bid was that, "*Research indicates that many British coastal communities are vulnerable to the impacts of climate change including sea level rise, increased storminess and erosion; UKCP09 reinforces this. Defra states that not all existing defences can be maintained in the future thus increasing risks for some communities; furthermore, some populated stretches of coastline will not achieve priority for new defences. This has serious consequences for affected property-owners, communities and businesses, with some poorly equipped to counter this predicament. In the context of current policy debate it is vital that social justice issues be recognised so that mechanisms generating equitable management can be identified. In fact coastal communities have already invoked charges of unfairness in coastal policy implementation as well being actively involved in political lobbying in an attempt to redress their perceived problems; the call for proposals is, therefore, most timely.*"

The main aims of the project were to .....

1. *Highlight the socio-economic characteristics of those coastal communities which are most vulnerable to the impacts of climate change because of policy decisions to stop defending the coast.*
2. *Use social impact assessments to establish the resulting social justice implications for residents, communities and economies.*
3. *Identify the likely scale of resulting deprivation and injustice in selected study sites.*

4. *Use participatory research techniques to identify and mitigate social justice impacts and options.*
5. *Raise the profile of social justice issues in the coastal risk management debate.*
6. *Influence emerging policy-making.*
7. *Provide explanation of how these issues may be taken into account in policy formulation.*

The £75,000 project was estimated to take 12 months starting at the end of 2009. Project partners involved with the bid were to be Cardiff University, Coastal and Geotechnical Services and the CCO.

Unfortunately the bid was not approved. There were 68 bids in total.

Recommendation: for information

### 2.3 Rural Pathfinder bid

*“The SCOPAC coastline contains a significant number of sites where adaptation measures are likely to be required in order to meet the challenges of climate change; these include developments that are likely to be affected by coastal erosion and coastal/cliff instability. The members of the study team, led by SCOPAC, include the Universities of Portsmouth and Cardiff who can draw upon their extensive experience in this area following the completion of the Defra research project ‘Adapting to changing coastlines and rivers’ (Making space for water – Strand SD2, July 2006) and current work on coastal climate change adaptation within the Interreg IVb IMCORE project for North West Europe (<http://www.imcore.eu/>). SCOPAC and Coastal Geotechnical Services will use example study sites from the EU LIFE Environment projects research whilst the resources of the Channel Coast Observatory will be available to assist with selecting and refining site selection taking account of processes knowledge and climate change scenarios.”*

*“Based on previous research experience the team believe that there is a relatively small number of sites in England where adaptation measures have been introduced successfully already. It is proposed, therefore, to produce practical guidance, drawing on examples and relevant experience from the SCOPAC coastline of southern England as well as sites elsewhere in England and internationally. Although a review of international examples is proposed, the project’s focus will be research on sites along the English coastline.”*

It is estimated to be a 12 month project starting at the end of 2009, worth £96,493. Project partners are Cardiff University, Coastal and Geotechnical Services, Portsmouth University and the CCO.

Katy Parish from Defra replied to Dr Robin McInnes’s bid with the following, “We will be assessing bids against the criteria provided in the Coastal Change Policy consultation that we published in June 2009 (available at <http://www.defra.gov.uk/corporate/consult/coastal-change/index.htm>), and intend to announce the results of the pathfinder competition later in the autumn.” SCOPAC is one of 20 submissions bidding for £11 million of funds.

Recommendation: for information

## 2.4 Research group structure

With the retirement of David Green and Dr Robin McInnes from the Research sub-group and the appointment of new Chairpersons' it is a pertinent time to refresh the Research sub-group. Current Research sub-group attendees include:

- Prof Andrew Bradbury (Chairman of SCOPAC and the SCG)
- Lyall Cairns (HBC) and Tim Kermode (EA) (Vice-chairmen of SCOPAC and the SCG)
- Bryan Curtis (Chairman of the Coastal Groups)
- Dr Samantha Cope (Chairperson of the Research sub-group)
- Dr Uwe Dornbusch (EA)
- Neil Watson (EA)
- Clive Moon (HBC)

Recommendation: for decision. Southern Coastal Group officers were invited to join the research group. So far, Dr K Buchan (Dorset County Council) has expressed interest.

## 2.5 Date of next SCOPAC Research sub-group

Friday 8<sup>th</sup> January, 10:00 – 12:00am is proposed for the next research sub-group meeting.

Contact : Dr Samantha Cope, Channel Coastal Observatory,  
[Samantha.cope@noc.soton.ac.uk](mailto:Samantha.cope@noc.soton.ac.uk), tel 02380 598469

SAMANTHA COPE  
Chairperson of the Research Sub-Group