

PAPER B

Purpose : For Discussion

Committee: **SCOPAC**

Date: **FEBRUARY 2012**

Title : **RESEARCH PROGRAMME**

REPORT OF THE CHAIRPERSON OF THE SCOPAC RESEARCH SUB-GROUP

1 CURRENT RESEARCH PROGRAMMES

1.1 ACCESS' (ADAPTING TO COASTAL 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 launch took place at the National Oceanography Centre on the 18th November. There were approximately 60 delegates including Atkins, Scott Wilson, Royal Haskoning, Halcrow and Jacobs who paid to exhibit at the event. There were presentations from Professor Robin McInnes, Professor Roger Moore, Professor Andy Bradbury and Dr Samantha Cope. Following the event there was positive feedback from elected members and officers who thought the day offered a good forum for discussing coastal erosion issues. One outcome from the event was that it was suggested that a national coastal erosion peer review group should be set up to assess coastal erosion issues and methods for predicting erosion.

Recommendation: For information.

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

The following projects were awarded £4,000 each from the SCOPAC Minor Projects fund.

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

The project specification is currently being refined but will either;

- Develop the techniques for manufacturing smaller tracer pebbles using newly available 12mm RFID tags. This will improve the understanding of how finer fractions perform, particularly on nourished beaches in the East Solent.
- Focus on establishing the burial depths of existing tracer pebbles deployed along the Hayling Island and Portsmouth frontage.
- Develop antenna technology so the detection range of the tracer pebbles is increased.

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

The Borough of Poole, Bournemouth, Christchurch and the New Forest District Council have all built rock groynes which do not meet current design guidelines. Despite this, it would appear that the non-standard groynes have performed perfectly well.

The project will;

- Examine the reasons for adopting non-standard designs in Poole & Christchurch Bays;
- Check the validity of the non-standard designs
- Check the condition and performance of completed groynes (how have the groynes developed? Any re-builds?)
- Provide simple guidance to those designing, approving and building rock groynes in Poole & Christchurch Bays in the future.

The project will require the support of Poole, Bournemouth, Christchurch and New Forest Councils and the Environment Agency.”

Recommendation: For information

1.3 EVOLUTION OF COASTAL SEDIMENT STORES AND SINKS STUDY

Channel Coastal Observatory £25,000 (2011-2012)

The primary aim of the project is to identify sediment sinks and stores across the SCOPAC region for future recycling operations. There are large cost savings to be had by using locally sourced material for beach replenishment schemes.

The project will focus on active sediment stores and sinks, particularly those areas undergoing large changes in volume (i.e. Pagham Harbour spit, Hengistbury Head, North Point).

A key objective of the project is to understand why the sediment is building up.

More specifically the project will:

- Define sediment sinks, stores, throughputs (drawing on the SCOPAC Sediment Transport Study).
- Scope available information (literature review)
- Map location of sediment sinks and stores
- Map historical evolution (area change)
- Estimate historical and existing volumes
- Document any known sediment extractions and depositions
- Summarise environmental protection laws (MMO, Crown Estates etc)

Recommendation: For information

1.4 UPDATE OF SCOPAC BIBLIOGRAPHIC DATABASE AND REGIONAL SEDIMENT TRANSPORT STUDY DELIVERED VIA MTP

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 has earmarked £13,000 to update the Database and the New Forest District Council included the update of the Sediment Transport Study in their Medium Term Plan at an estimated cost of £150,000. The Sediment Transport Study has been short listed and is on the Environment Agency's sanctioned list. A business case will be compiled and submitted to the Environment Agency's Project Appraisal Board (PAB) in preparation for work to commence in the next financial year (2012/2013).

It is suggested that the Bibliographic Database update (£13k) and the new SCOPAC project on Sediment Stores and Sinks (£25k) can be used as contribution funding for the Sediment Transport Study.

Subject to SCOPAC approval, it is hoped that the Bibliographic Database update will commence before the new financial year (April 2012). It is proposed that the project will be delivered using in-house skills from member organisations, project managed by the Channel Coastal Observatory and with specialist input where possible from the original authors (Dr Malcolm Bray and David Carter from the University of Portsmouth).

Recommendation: For decision

Members to approve funding of £13,000 to update the SCOPAC Bibliographic Database.

1.5 REGIONAL EXTREME WAVE CONDITIONS STUDY DELIVERED VIA MTP

The New Forest District Council submitted a Medium Term Plan proposal to the value of £250,000 to investigate extreme wave conditions further along The English 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
- Bi-modal 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 Study has been short listed and is on the Environment Agency's sanctioned list. A business case will be compiled and submitted to the Environment Agency's Project Appraisal Board (PAB) in preparation for work to commence in the next financial year (2012/2013).

It is proposed that 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 English Channel coast
- Assess current standards of protection of sites at risk
- Identify additional measures required to improve standards of protection at key sites

Recommendation: For information

1.6 SOUTHERN COASTAL GROUP SEDIMENT RECYCLING WORKSHOP

The forthcoming officer workshop from the series, "A Problem Shared" is on "sediment recycling." It is being held on Friday 3rd February at the National Oceanography Centre. The aim of the workshop series is to share best practice and to assist operating authorities with basic skills development.

Recommendation: For information

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'.

2.1 CURRENT RESEARCH

- Adapting to Coastal Change Along England's Southern Shorelines (ACCESS): Channel Coastal Observatory £26,000, Halcrow £20,500, Coastal and Geotechnical Services £14,000, Management/Printing £5,725 (2008 – 2012). **Completed.**
- Extreme wave conditions study: Professor A Bradbury £18,000 (2008 - 2010). **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.**
- Minor funds (2010/2011): Havant, Portsmouth and Gosport Partnership, minor contribution of £1,500 to Sediment Tracer Studies. **Completed.**
- Minor funds (£4,000 for 2011/2012 and £4,000 for 2012/2013) **The following projects are in their inception phase:**
 - 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). **Started 2011.**

Completion of the following projects will be dependent on future funding availability.

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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