

# Paper G

Purpose : For Information

Committee: **SOUTHERN COASTAL GROUP**

Date: Minor amendments to postponed **MARCH 2020** paper.

Title : **RESEARCH PROGRAMME**

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

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### 1 CURRENT RESEARCH

#### 1.1 RESEARCH PROGRAMME

The 5-year SCOPAC Research Programme was prioritised by the Southern Coastal Group at the meeting on the 4<sup>th</sup> September 2015 and approved by SCOPAC at the meeting on the 18<sup>th</sup> September 2015. It was amended to reflect changing priorities and was endorsed by SCOPAC on the 27<sup>th</sup> January 2017. The live programme is presented below with actual annual expenditure up to 2018/19 and forecast annual expenditure for 2019/20 (Figure 1).

Annual expenditure	Carried over	£24,200	£8,100	£32,700	£33,200	TOTAL project allocation
Research/project	Financial Yr					
	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	
Dismantling Timber Groynes						£10,000
Scour project (minor fund 2015-2017)						£4,000
Pagham tracer minor project (minor fund 2015-2017)						£2,000
Historical photography scanning						£13,000
Vegetated shingle project						£5,000
Preston tracer study						£7,000
CIRIA Groynes in Coastal Management						£5,000
SURGEWATCH						£2,000
Tracer study co-ordination						£2,700
Storm analysis						£25,000
Minor fund projects (2018 - 2020)						£17,000
Bradbury's bursary						£1,500
Improved utilisation of data						£4,000

Figure 1: SCOPAC 5-year research programme

Recommendation: For information

#### 1.2 RESEARCH UPDATE

Figure 2 presents an overview of progress for each live project for 2019/20.

Ref.	Priority	Progress	Action	Why is this needed?	What will success look like?	Lead Officer	Critical Support	Start Date	Target Completion Date	2019/20 Resource £	Update
<b>Coastal Research &amp; Monitoring</b>										<b>£41,680</b>	
	High	On Target	To oversee and co-ordinate SCOPAC research	To co-ordinate the SCOPAC 5-year research programme and ensure SCOPAC have the ability to assess and investigate research issues of relevance to the region	Research delivered to time and cost. Best value for money realised (i.e. contributions to national research).	Sam Cope	RSG	Ongoing	Ongoing	<b>£8,500</b>	RSG held 24th April 2020. Research leads presented on remaining live projects from 2015 – 2020 research programme. The group discussed new projects starting in 2020/21 from the new 2020 – 2025 research programme (Figure 3), focusing on any impacts from lock down measures. There will be a delay to the acoustic tag work starting as well as scanning old paper copies of the Bibliographic Database.
Research Chair	Low	On Target	Grants and bursaries	To award a Bradbury bursary every year to support a master's student	Good research findings of benefit to SCOPAC	Sam Cope	Ivan Haigh	Ongoing	Ongoing	<b>£500</b>	2019/20 bursary awarded to Xue Ting, Ong (Gladys). ECE Master's thesis title: 'Hydrodynamics controls on nearshore sediment sizes in Poole Bay'. Gladys's thesis is now on the SCOPAC website ( <a href="https://scopac.org.uk/research/bradburys-bursary/">https://scopac.org.uk/research/bradburys-bursary/</a> ) and a presentation of results will be given at a future meeting.
	Low	On Target	Improved utilisation of data	To make best use of regional monitoring data and other data available to SCOPAC officers	Increased understanding of coastal processes demonstrating importance of data	Charlie Thompson/ Dave Picksley Dom Henley	RSG	Ongoing	Mar-20	<b>£2,000</b>	Two projects awarded for 2018/19 and 2019/20 funds: 1. Swanage Pier Wave Rex analysis (Dave Picksley, Charlie Thompson) - ECE Masters student, Toby Miller, has made good progress analysing hydrodynamic impacts on Swanage beach. In particular, what combination of factors causes rapid loss of material during storm events. Toby's thesis has been uploaded here <a href="https://scopac.org.uk/wp-content/uploads/2020/01/Swanage-Pier-Wave-Rex-327801462_Miller_01_0000485854_Final-Report.pdf">https://scopac.org.uk/wp-content/uploads/2020/01/Swanage-Pier-Wave-Rex-327801462_Miller_01_0000485854_Final-Report.pdf</a> with a summary to follow from Dr Charlie Thompson,  2. Kirk Arrow Spit, Selsey evolution (Dom Henley, Andy Pearce) - Alex Hillawi of the ESCP is undertaking a morphological study of Kirk Arrow Spit using regional monitoring programme data. The first draft of the report has been reviewed. A UAV survey of the nearshore feature is planned once lockdown restrictions lift.
Major Projects	Medium	On Target	CIRIA Groynes in Coastal Management Manual	To share best practice on Groyne Design, Construction and Management	A comprehensive update incorporating Andy Bradbury's SCOPAC work	Peter Ferguson	Sam Cope	Ongoing	Mar-20	<b>£3,031</b>	A fourth draft of the report has been reviewed by Peter Ferguson on behalf of SCG/SCOPAC.

	Medium	On Target	Historical aerial photography scanning	To retrieve as many historical aerial photographs from LA offices within SCOPAC budget	Images scanned and uploaded onto CCO website	Alex Hillawi	Uwe Dornbusch	2015	Mar-20	£831	The second order of aerial photography has been received back from NCAP. Flight lines have been created and scans are being uploaded onto the map viewer and data catalogue page of the CCO website pending copyright ( <a href="http://www.channelcoast.org">www.channelcoast.org</a> ). 1974, 1975, 1976, 1977 and 1978 Poole and Christchurch Bays scans uploaded to date.
	High	On Target	SCOPAC Storm Analysis	To investigate the recent stormy winters and put into context with longer datasets - analyse tide gauge and wave buoy data	Analysis, report and infographics to be delivered	Matt Wadey	Sam Cope	Aug-18	Mar-20	£18,568	This project has moved with Matt Wadey to BCP and will continue to be delivered by the original consortium of University of Southampton with support from ESCP. The project has made good progress with detailed analysis of wave and water levels across the SCOPAC region. A draft report is being prepared along with key findings to be presented as an infographic and presentation. This research will continue into 2020/21.
	Low	On Target	Tracer study co-ordination	A co-ordinated approach to tracer studies across the region	A page on the SCOPAC website collating findings across the region. A prioritised and consistent approach to tracer studies.	Sam Cope	Sacha Neill	Ongoing	Mar-20	£1,000	The text and figures have been drafted and a new page has been created on the SCOPAC website ( <a href="https://scopac.org.uk/research/tracer-pebble-studies/">https://scopac.org.uk/research/tracer-pebble-studies/</a> ), signposting readers to completed and ongoing tracer studies across the region (Hayling, Portsmouth, Gosport, Fareham, Hurst Spit, Weymouth).
	Medium	On Target	Ebb delta study	One of the biggest unknowns resulting from the Update of the SCOPAC STS is the sediment budget at harbour and estuary mouths given the diverse wave approach across ebb deltas and possible sediment drift divides on the adjacent beaches.	Quantify sediment budgets for the harbour and estuary mouths across the SCOPAC region.	Sam Cope	TBC	Apr-20	Mar-21	£0	Deferred until 2020/21 to avoid overspend in 2018/19. Scoping to be undertaken in 2020/21 to check for information already available.
	Low	On Target	SURGEWATCH contribution	To ensure website is maintained and members and officers are updated annually	Fully functional, up to date website with an update to the group from Dr Ivan Haigh	Sam Cope	Ivan Haigh	Ongoing	Ongoing	£500	Dr Ivan Haigh provided a presentation to SCOPAC in January 2019 which has been uploaded onto the SCOPAC website <a href="https://scopac.org.uk/research/surgewatch/">https://scopac.org.uk/research/surgewatch/</a> .

Minor projects	Low	On Target	EA Preston tracer study	To establish sediment transport pathways for Preston Beach	A comprehensive tracer study to inform future beach management practices	Dave Picksley	Sam Cope	Oct-17	Mar - 21	£1,550	Tracer pebbles were deployed January 2019. Follow up surveys still have a 20% retrieval rate for larger pebbles. The tracers are following the SCOPAC STS suggested direction of transport apart from at the north of Preston Beach where material is moving south. Following signal issues with the smaller tracers, these were re-made and deployed November 2019. They are now providing interesting results, showing no southern movement of material over SW rock groyne. A final report will be produced winter 2020.
	Low	On Target	2018 - 2020 Minor Projects - x3	A contribution towards three wider research projects	Three individual projects delivered by March 2020, meeting project scope	Sam Cope to report	Alex Hillawi, Ivan Haigh, Jo Brooksbank	Apr-18	Mar-21	£5,200	Three projects are ongoing: 1. Poole Harbour tide gauge digitising (Ivan Haigh) - Good progress made. Assessing outputs for any recording error. Draft report has been submitted with final report being finalised. 2. Langstone Harbour tracer study (Alex Hillawi) - Tracers pebbles were deployed in April 2019 and still have a 20% retrieval rate for larger pebbles. The tracers are generally following the SCOPAC STS suggested direction of transport, although the location of the drift divide at Eastney looks to have moved to the east. There is currently no evidence of material moving from Eastney Beach around Fort Cumberland towards the Spit. Surveys will continue following lockdown with a write up of results to follow. 3. Healthy Estuaries 2020 (Jo Brooksbank) – Review of historical and current evidence and data on habitat and estuary morphology in Chichester Harbour which is being used to help further refine and validate the Healthy Estuary Modelling Tool. Draft report has been submitted with final report being finalised. A presentation of results will follow in 2020/21.

Figure 2: SCOPAC research update 2019/20

### 1.3 NEW SCOPAC RESEARCH PROGRAMME 2020 - 2025

Following the call for new research issued in early September 2019 and a SCOPAC Research sub-group (RSG) meeting on the 18<sup>th</sup> October 2019, the research programme presented in Figure 3 has been compiled and endorsed by the SCOPAC RSG (see members listed below).

The following criteria were considered when prioritising research submissions. Does the research:

- *Have a wider benefit to SCOPAC?*
- *Advance the understanding of coastal processes or environmental issues?*
- *Help our sector build resilience and adapt to climate change?*
- *Develop new or alternative engineering design/construction techniques?*
- *Improve coastal management/policy decision making?*
- *Assist in developing best practice?*
- *Develop a scientific tool?*
- *Educate elected members and officers?*
- *Raise the profile of flood and coastal erosion risk challenges?*
- *Would the study commence if SCOPAC did not contribute?*

The new research programme is based on an average annual expenditure of £20,000 of SCOPAC funds per year. The programme is live and will be reviewed periodically by the SCOPAC RSG where priorities change, or alternative funding sources are secured.

Successful proposals will provide quarterly updates to the SCOPAC Research Chair, produce a written report and provide a presentation to SCOPAC once the research is complete. Outputs will be made available on the SCOPAC website.

A SCOPAC Research sub-group meeting will be held Spring 2020 to finalise any outstanding items from the 2015 – 2020 programme and discuss new projects commencing 2020/21.

#### **SCOPAC Research sub-group members:**

Neil Watson (Environment Agency)  
Uwe Dornbusch (Environment Agency)  
Dave Picksley (Environment Agency)  
Jenny Jakeways (IOW)  
Peter Ferguson (NFDC)  
Charlie Thompson (CCO)  
Alan Frampton (BCP and Dorset)  
Matt Wadey (BCP and Dorset)  
Andy Pearce/Sacha Neill (ESCP)  
Ivan Haigh (University of Southampton)

Annual expenditure	£20,000	£20,000	£20,000	£20,000	£20,000	Project cost	SCOPAC contribution	Other potential contributions/funding sources
Research/project	Financial Year							
	2020/2021	2021/2022	2022/2023	2023/2024	2024/2025			
Bradbury's bursary	£500	£500	£500	£500	£500	£2,500	£2,500	N/A
Improved utilisation of data	Sand dunes	Remote sensing	Dependent on released funds			£5,000	See below	N/A
SURGEWATCH contribution	£500	£500	£500	Dependent on released funds		£1,500	£1,500	N/A
<b>Minor projects</b>								
Ebb deltas Phase I - scoping	£4,000					£5,000	£4,000	BMP
Cathodic Protection Performance	£4,000					£7,500	£4,000	ICE or CIRIA
Acoustic tag trial	£4,000					£12,000	£4,000	BMP
Remote Sensing	£1,000					£4,500	£1,000	CCO
Sand Dune Development	£1,000					£5,000	£1,000	BMP
West Bay Sediment Transport		£4,000				£20,000	£4,000	BMP
Removing Assets			£4,000			£5,000	£4,000	ICE or FCERM R+D
Medmerry Managed Re-alignment				£4,000		£25,000	£4,000	FCERM GiA/FCERM R+D
Vegetated Shingle study Phase II	Dependent on released funds from Protecting Heritage, Ebb delta II or Storm Analysis II					£7,000	TBC	BMP
SCOPAC Landfill champion	Dependent on released funds from Protecting Heritage, Ebb delta II or Storm Analysis II					£5,000	TBC	N/A
<b>Major projects</b>								
Bibliographic database - scanning and update	£5,000	£3,000	£2,000			£10,000	£10,000	N/A
Protecting heritage		£12,000	£3,000			£75,000	£15,000	Local Levy
Ebb deltas Phase II - analysis			£10,000	£5,000		£30,000	£15,000	N/A
Potential impacts of dredging in the SCOPAC region				£10,500	£4,500	£30,000	£15,000	Crown Estate/Local Levy
Storm analysis Phase II - Impacts					£15,000	£30,000	£15,000	Local Levy or FCERM R+D
SE Regional Monitoring Programme - where are we now ~20 years on?				Dependent on released funds from Protecting Heritage, Ebb delta II or Storm Analysis II		£50,000	TBC	Combination of SCOPAC and CCO?
<b>Major major!</b>								
SCOPAC wide numerical model				FCERM GiA?		200000?		FCERM GiA?
SCOPAC STS update (2012 - 2022)				FCERM GiA?		150000?		FCERM GiA?
<b>Other ideas</b>								
Testing alternative timber species for sustainable groyne construction in the UK	Dependent on released funds from Protecting Heritage, Ebb delta II or Storm Analysis II					£50,000	TBC	ICE fund, FCERM R+D or GiA
Are 'catch up' rates in RACE method appropriate given we have ~15 years SE monitoring data plus SCAPE research.	Dependent on released funds from Protecting Heritage, Ebb delta II or Storm Analysis II					TBC		FCERM R+D?
Use of USV for collection of nearshore bathymetry	Additional information required.							
SCOPAC Historical photography geo-rectification	Additional information required.							
<b>TOTAL COST PER YEAR</b>	<b>£20,000</b>	<b>£20,000</b>	<b>£20,000</b>	<b>£20,000</b>	<b>£20,000</b>		<b>£100,000</b>	

Figure 3: SCOPAC research programme 2020 - 2025

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