

# Item 8

Purpose : For Information

Committee: **SOUTHERN COASTAL GROUP and SCOPAC**

Date: **FEBRUARY 2023**

Title : **RESEARCH PROGRAMME**

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

### 1 **CURRENT RESEARCH**

#### 1.1 RESEARCH PROGRAMME 2015 - 2020

The 2015 – 2020 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 programme is presented below with live projects being finalised in black text. All completed research has been uploaded onto the [www.southerncoastalgroup-scopac.org.uk](http://www.southerncoastalgroup-scopac.org.uk) website, with the historical photography scans being uploaded onto the CCO website <https://coastalmonitoring.org/>. We will be disseminating the tracer studies through a bite size webinar on the 16<sup>th</sup> March.

Annual expenditure	Carried over	£24,200	£8,100	£32,700	£15,741	£17,459	TOTAL project allocation
Research/project	Financial Yr						
	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021	
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
Landfill study							Levy funded
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 2015 - 2020

#### 1.2 RESEARCH PROGRAMME 2020 - 2025

The current 5-year SCOPAC Research Programme was prioritised by the SCOPAC Research sub-group at the meeting on the 18<sup>th</sup> October 2019 and endorsed by the SCG and SCOPAC at the meeting on the 2<sup>nd</sup> June 2020. The programme is presented in Figure 2 with some projects showing a carry over to 2022/23 and 2023/24.

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 - Now called, 'Challenges around using sheet piles for FCERM'	£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. Now called, 'SCOPAC wide numerical model'			£10,000	£5,000		£30,000	£15,000	N/A
Potential impacts of dredging in the SCOPAC region. Now called, 'Incorporating regional monitoring data into future dredging assessments'				£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 2: SCOPAC 5-year research programme 2020 - 2025

Recommendation: For information

### **1.3 RESEARCH UPDATE**

Figure 3 presents an overview of progress for each live project.

	Priority	Progress	Action	Why is this needed?	What will success look like?	Lead Officer/s	Critical Support	Start Date	Target Completion Date	2022/23 Funding Allocation	2023/24 Funding Allocation	Comments + Outcomes Actually Delivered?
Coastal Research & Monitoring										£47,131	£57,217	Notes
Research Chair	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	£8,500	£8,500	£5000 from SCOPAC subscriptions, £3,500 from Levy bid. The Research chair continues to co-ordinate the current 5 year research programme, organising a spring and autumn Research sub-group meeting, disseminating updates on research at coastal group meetings, reviewing completed research, ready to be disseminated on the coastal group website and via research webinars. There are currently eight live projects, two of which are soon to be finalised (Historical Photography scanning and Cathodic Protection Study now called, 'Challenges around using sheet piles for FCERM'). The spring RSG meeting was held in May at Havant and the autumn meeting held on the 29th September at Upton Hse. A SCOPAC tracer webinar is being planned for March.
	Medium	On Target	Grants and bursaries	To award a Bradbury bursary every year to support a masters student	Research findings of benefit to SCOPAC in terms of enhancing coastal processes, engineering or environmental understanding.	Sam Cope	Ivan Haigh	Ongoing	Ongoing	£500	£500	Awaiting student submissions.
	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 to report	Ivan Haigh	Ongoing	Ongoing	£500	£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/surveillance/">https://scopac.org.uk/research/surveillance/</a> . Dr Haigh presented his latest findings on sea level rise as part of the SCOPAC Storm Analysis project ( <a href="https://southerncoastalgroup-scopac.org.uk/scopac-research/scopac-storm-analysis-study/">https://southerncoastalgroup-scopac.org.uk/scopac-research/scopac-storm-analysis-study/</a> ) and provided another excellent update in January 2022 ( <a href="https://southerncoastalgroup-scopac.org.uk/conferences/january-2022-research-webinar/">https://southerncoastalgroup-scopac.org.uk/conferences/january-2022-research-webinar/</a> ). The SCOPAC RSG recommend continuing the £500 sponsorship until the end of this 5 year research programme.
	Medium	On Target	Improved utilisation of data x2 projects 2020-2022: Sand dune project (BCP); Remote sensing project (CCO)	To make best use of regional monitoring data and other data available to SCOPAC officers	Increased understanding of coastal processes demonstrating importance of regional monitoring programme data	Charlie Thompson and Lia Bennett	RSG	May-20	Mar-22	£0	£0	Two projects awarded for 2020/21 and 2021/22 funds. 1. Sand Dune Study (Lia Bennett/Alan Frampton/Matt Wadey) COMPLETE  Comment from AF 25th Jan 2021 - Sand dune study is complete. Report added to coastal group website ( <a href="https://southerncoastalgroup-scopac.org.uk/scopac-research/using-remote-sensing/">https://southerncoastalgroup-scopac.org.uk/scopac-research/using-remote-sensing/</a> ). Findings presented to SERCMP AGM and SCOPAC RSG meetings in Autumn 2020. This work was invoiced at end of last FY 2019/20; BCP has already received payment.  2. Remote Sensing study (Charlie Thompson) - To assess whether remote sensing data are of sufficient resolution to allow calculation of beach volume or morphology to sufficient certainty that they be used in conjunction with CCO monitoring data to allow higher temporal resolution beach volume calculations. The wider project is ongoing.
Major projects	High	On Target	Bibliographic database scanning	To scan valuable papers and documents held at the University of Portsmouth from previous updates of the SCOPAC BD and STS.	To 'scan' as many of the valuable paper copies of historical coastal management papers and documents before they are discarded.	Emma Harris	David Carter/Malcolm Bray	Aug-20	Mar-23	£7,022	£0	Delay starting due to COVID-19. Total for the project is £10,000. Surplus funds carried over to 2021/22 and to 2022/23. The documents were retrieved from Portsmouth University, have been sorted by Dave Carter, Emma Harris/Sam Cope and Uwe Dornbusch as to which documents should be scanned. The majority of scanning is now completed. SCG/SCOPAC officers have been invited to sort through documents for their jurisdiction as to those extra documents that require scanning. The scanned documents will have a keyword search function applied to them in Adobe. There may be a later phase of the project down the line to disseminate the scanned documents. This money has focused on saving (through scanning) the old documents as there was more than first anticipated.
	High	On Target	Protecting Heritage	There are a significant number of designated heritage assets within the SCOPAC region that have historically benefitted from flood and erosion protection or themselves directly perform a coastal defence function. Many of these nationally significant assets are at direct risk of flooding and erosion, with potential for loss or damage to irreplaceable Scheduled Ancient Monuments, listed buildings / structures and conservation areas. As far as protection of heritage assets is concerned, SMPs are aspirational as there is no appropriate funding mechanism specific to protecting heritage assets or responding to the increased costs associated with works to / adjacent to them.	The project primarily aims to raise the profile of this issue, particularly the apparent lack of funding and/or strategy to deal with the problem. The scope of the project is to identify heritage assets at risk of flooding/erosion in the region, as well as the possible funding sources. The project is engaged in communicating this issue to the coastal engineering and flood management community, as well as politicians and other decision-makers. A series of case studies will be investigated to draw out site specific issues and lessons learned.	Alex Hillawi	Sacha Neill	Oct-22	Mar-24	£10,781	£5,000	Approximately £4,000/£15,000 of SCOPAC funds were used to develop a scope and submit a joint Southern and Wessex RFCC levy bid Jan 2022. The £90k levy bid was successful and approved by both Wessex RFCC and the Southern RFCC. SCOPAC will be contributing a further £5k to the project (£9k in total) in 2023/24. Alex Hillawi from Coastal Partners is the project manager for this work. The GIS database is underway, as is identifying the case studies across the region. The remaining £5,781 from the original SCOPAC research allocation will be used as a contribution towards scoping and writing the business cases for the SCOPAC Sediment Transport Study suite of studies.
	Medium	On Target	Ebb deltas (Phase II). Now called, 'SCOPAC wide numerical model'	One of the biggest unknowns resulting from the Update of the SCOPAC STS is the sediment budget at harbour and estuary mouths. There are often difficulties quantifying the sediment budget at these locations given the diverse wave approach across ebb deltas and possible sediment drift divides on the adjacent beaches.	Recommendations from Phase I will be delivered through the project to inform the update of the SCOPAC STS.	Matt Wadey	Alex Hillawi	Aug-22	Aug-23	£10,363	£10,363	Following recommendations from the Ebb deltas scoping study Phase I, £5000/£15,000 will be used from the Ebb deltas Phase II project to write a business case to access FCERM GIA to rollout the BCP Council MIKE 21 model. The remaining £5,362.50 from 2022/23 and £5,000 allocated for 2023/24 through SCOPAC membership will be used as a contribution to the rollout. The outcome from the modelling will confirm sediment transport pathways from ebb deltas and offshore shoals back onto the beach and vice versa. This project will inform the next update of the SCOPAC Sediment Transport Study and forms part of the suite of studies.
	High	Action Required	SCOPAC Sediment Transport Study suite of studies scoping study	The SCOPAC STS is the most heavily used piece of SCOPAC research, informing baseline coastal processes for SMPs, Strategies and schemes across the region. The last update was in 2012, funded by £150k FCERM GIA with SCOPAC contributions. Since then, we have a further 10 years of regional monitoring data and literature to incorporate, along with the SCOPAC Storm Analysis research, as well as experiencing much higher sediment transport rates during and possibly since the 2013/14 storms.	Forming a steering group; scoping the various studies feeding into the update; liaising with the EA area teams and FCERM R+D programme about best approach and possible SW and SE regional structure; confirming approach and governance; a successful funding application to the Environment Agency to update the STS.	Sam Cope	Matthew Wadey	Apr-23	Mar-24	£0	£9,855	NEW PROJECT: The £10,000 is comprised of the remaining £5,635.80 from the original SCOPAC research allocation for Protecting Heritage 2022/23 and £4219 from SCOPAC research carry over.
	Medium	On Target	Medmerry managed re-alignment project	Managed Realignment is a coastal management option which can be considered as adaptation to increasing coastal flooding and erosion risk. Carried out to make coastlines more flood resilient, and restore or protect coastal habitat, they are increasingly being implemented in the UK. However, monitoring of these systems tends to be limited to 5 years of funding, which is insufficient to capture the full evolution of these schemes to equilibrium and falls significantly short of the schemes achieving a 'natural' marsh character.  In the SCOPAC region, Medmerry Managed Realignment is unique, as the largest open-coast realignment in Europe and benefited from intense monitoring in the 5 year post-breach period. However, from a physical standpoint, the scheme is still undergoing significant morphological change, including the formation of a new breach channel in the time since monitoring was stopped. Given the likelihood of similar schemes in the future, an understanding of the medium-long term evolution of these schemes is essential.	TBC at next Research sub-group meeting. Original aim was to assess the morphological evolution of Medmerry managed realignment site beyond 5 years, and develop a conceptual model for open coastal managed realignment sites.	Charlie Thompson	CCO	Apr-23	Mar-24	£0	£4,000	NEW PROJECT: £4000 assigned for 2023/24.

Minor projects	Low	On Target	Cathodic Protection - Now called, 'Challenges around using sheet piles for FCERM'	If steel sheet piles are to continue to be the preferred way of managing coastal flood risk in these areas into the longer-term, then there is a need to understand how the scheme design life of these assets can be extended beyond current day levels using cathodic protection so as to maximise investments.	The output of this research will be a technical report that shares the findings and lessons learnt from achieving the research aim and objectives in a way that can be used to inform future decisions by RMAs when considering future wall replacement options and ongoing maintenance levels. It will also identify current gaps in knowledge where further research would be helpful.	Alan Frampton	RSG	Apr-20	Mar-22	£1,466	£0	Surplus funds were carried over to 2021/22. Draft report has been reviewed, with final report and webinar dissemination autumn 2023.
	Low	Early Warning	Acoustic tags	To better understand the interaction between the nearshore zone and adjacent beaches.	The aim of this proposal is to create a novel acoustic tagging method to allow for direct measurement of the movement of subsea sediment within the nearshore zone. If successful, this technique could be applied to provide certainty on movement between the nearshore zone and adjacent beaches for Beach Management Plans. There will be an ESCP trial, followed by a SCOPAC contribution towards a pilot study.	Sacha Neill	Alex Hillawi	Aug-20	Aug-23	£4,000	£4,000	Surplus funds carried over to 2021/22. The Coastal Partners in-house trial took place down at Eastney beach in August 2021. Initial results show a successful trial. The SCOPAC and Haying BMP pilot will now take place which will involve deploying the equipment in deeper water for a much longer duration. £4,000 to be carried over to 2023/24.
	Medium	On Target	West Bay sediment transport study	Maintenance activities at West Bay, Dorset, currently involve periodic beach recycling at both West Beach and East Beach, as well as annual dredging of sediment from the outer West Bay Harbour (which is deposited on West Beach). These activities are guided by beach management plans for each site, both of which are in the process of being updated to reflect changes to the coastal defences as a result of the 2019 West Bay Coastal Improvements Scheme.	The output from this study will be an improved understanding of sediment transport pathways along the West Bay shoreline to inform future sediment recycling operations using tracer pebble techniques.	Emma Harris	Alan Frampton	Jul-21	Jul-23	£0	£0	Dorset Council and BCP have been awarded a levy bid to undertake a study to better understand sediment transport at West Bay. Coastal Partners will undertake a tracer study, which in conjunction with analysis of regional monitoring data will examine patterns of littoral drift over the course of a year. The tracer pebbles were prepared and deployed in May 2022 using the SCOPAC contribution. There have been 10 surveys to date which are showing much higher rates of transport than expected between the harbour and Freshwater (~1,400m). Once the surveys are completed and analysed, a report will be produced summer 2023 and the results disseminated. Local levy funding accompanied by Dorset Council and Environment Agency contributions will deliver the remainder of the study. £4k contribution from SCOPAC spent on pebble prep in 2021, remainder of study funding by local levy.
	Medium	On Target	Removing assets	The aim of this study is to seek to apply the new PATDA Guidance (due to be published in 2020) to assess the feasibility of removing (decommissioning) the gabion wall at Hive Beach, Burton Bradstock.	The output from this study will be a report on the practicalities of progressing removal of FCERM assets at the coast in a cliff erosion risk area, providing evidence to inform future decisions on whether to proceed with removal. This would include detailed beach monitoring and survey data analysis around the removal site. This would also add to the currently limited evidence base nationally about how to undertake asset decommissioning (by way of removal of assets), supporting ongoing research in this area that is being progressed via the Defra/EA R&D Programme.	Alan Frampton	TBC	Apr-22	Mar-23	£4,000	£4,000	£4000 carried over from 22/23. Research to commence once the EA guidance on decommissioning of assets guidance has been released.

Figure 3: SCOPAC research update 2022/23

