Secretary: Havant Borough Council
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11 September 2017

Dear Sir or Madam

SOUTHERN COASTAL GROUP

Date: 15 September 2017

Time: 10.00 am

Place: Hollybank Room, Public Service Plaza, Civic Centre Road, Havant, Hants PO9 2AX

Please see the attached location map showing Havant Station, routes to Havant Public Service Plaza and location of car parks. If you are unable to attend please contact Nicholas Rogers as soon as possible by e-mail or telephone.

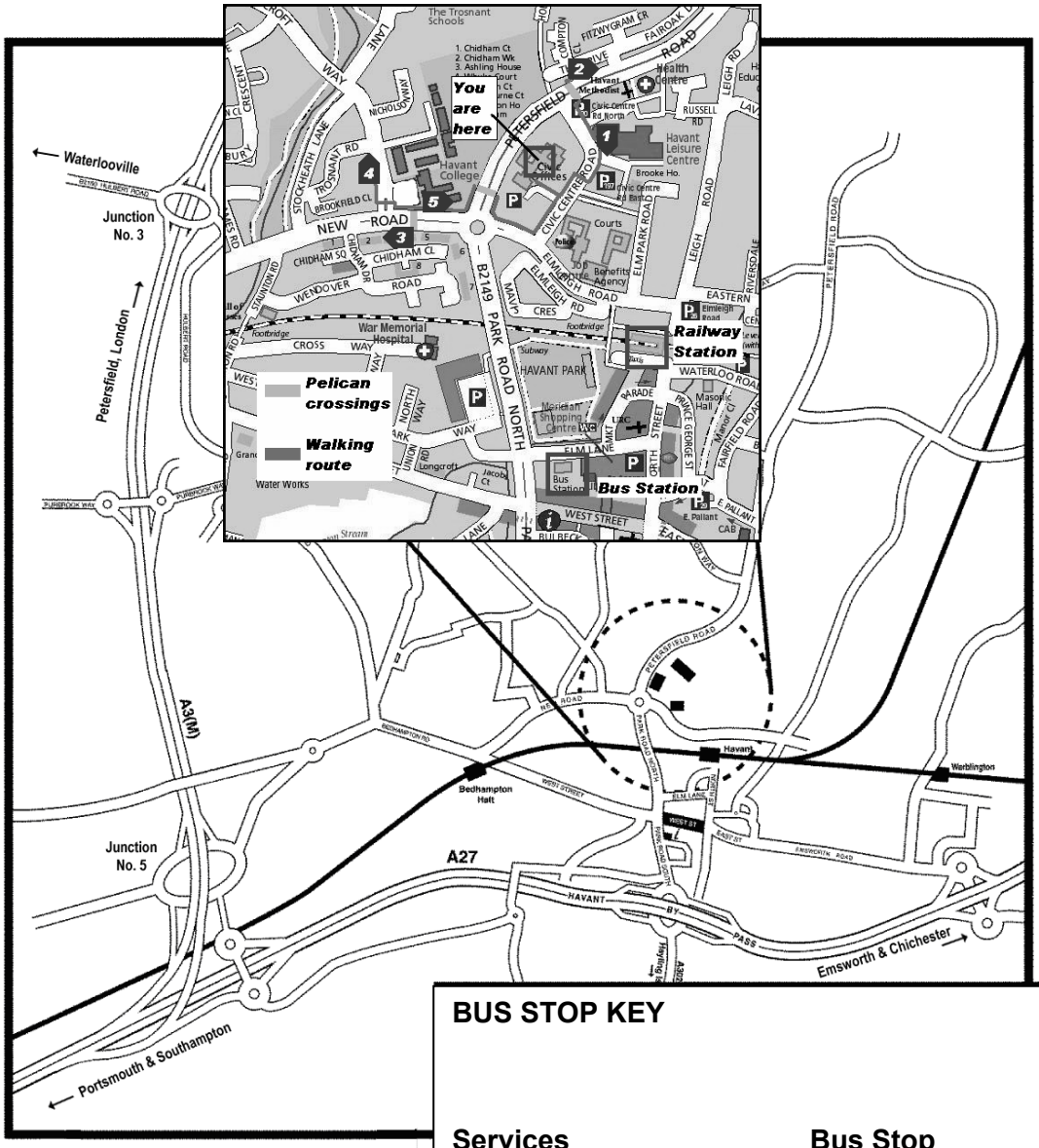
Yours faithfully

Nicholas Rogers
Havant Borough Council

AGENDA

4	**Habitat Creation Report (Nick Gray - Paper C)**	**19 - 44**
5	**Review of Finance and Services Plan (Lyall Cairns - Paper D)**	**45 - 56**
6	**Research Update (Sam Cope - Paper E)**	**57 - 62**
7	**Coastal Monitoring Report (Steve Cook - Paper F)**	**63 - 64**
8	**Coastal Asset Data Project (Dave Robson - Paper G)**	**65 - 66**
9	**Capital Programme Management Tool (Mark Stratton)**	
10	**AOB**	
11	**Date of Next Meeting**	

Friday 15 December, 10am



BUS STOP KEY

Services	Bus Stop
20, 21, 39, 63	1
20, 21,36**,39	2
23, 36**	3
23, 27**,37	4
23,27**,36**, 37	5

Havant BOROUGH COUNCIL

Public Service Plaza
Civic Centre Road
Havant
Hampshire PO9 2AX

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HAVANT BOROUGH COUNCIL

At a meeting of the Southern Coastal Group held on 9 June 2017

Present:

Ken Buchan, Dorset CC
Mr Lyall Cairns, Eastern Solent Coastal Partership
Dr Uwe Dornbusch, Environment Agency
Nick Gray, Environment Agency
Dr David Harlow, Bournemouth Borough Council
Dominic Henly, Chichester District Council
Mr Matt Hosey, Eastern Solent Coastal Partnership
Jenny Jakeways, Isle of Wight Council
Tim Kermode, TK Coastal
Mr David Lowsley, Chichester District Council
Angela Marlow, Natural England
Stuart McVey, Southeast Regional Coastal Monitoring Programme
Mr David Robson, Borough of Poole Council
Lamorna Taylor, Dorset Council Partnership
Mr Neil Watson, Environment Agency
Mr Gordon Wilkinson, Eastleigh Borough Council

125 Apologies

Apologies for absence were received from Bryan Curtis, David Jenkins, Vincent May, Stevyn Ricketts, Matthew Penny, Tim Adams, Steve Cook, Nick Hardiman and Samantha Cope.

126 Minutes of the Last Meeting (Paper A)

The Chairman encouraged members to respond to a request for completed returns of the SCG Programme Management Tool.

RESOLVED that the minutes of the meeting of the Southern Coastal Group held on 17 March 2017 be set as a correct record subject to the following amendments:

a) Reference to 'Dorset Coastal Partnership' be amended to read 'Dorset Council Partnership'; and

b) Minute 116 be amended to read 'In relation to SMP refresh, officers suggested using a dedicated individual consultant'

127 Request for Nominations for Vice Chair

Officers considered nominations for the position of Vice Chair, following the departure of Stuart Terry from Borough of Poole Council.

RESOLVED that Dave Robson be appointed as Vice-Chairman of the Southern Coastal Group.

128 Chairman's Update (Paper B)

The Chairman provided the Group with an update on activities since the previous meeting. The update included the following key points:

- Coastal Strategic Overview – Further to the presentation delivered to the Group by Nick Hardiman, work was continuing to ensure SMP action plans were consistent and fit for purpose.

- National Coastal Erosion Risk Mapping (NCERM) – The Group were disappointed to note that NCERM information had been removed from the “My Backyard” EA website, as there were concerns that this was a significant loss and locally held data would not be sufficient. Officers discussed a communications theme on creative solutions to convey messages on coastal erosion risk.

- Coastal SIG – Officers were pleased to note the growing influence of the Coastal SIG in recent years.

- Adaptation – A workshop has been held in April to discuss climate change, associated risk and coastal change, with breakout groups considering planning and funding.

- Maintenance and Funding – A meeting would be held in July to consider possible funding activities for coastal protection.

Members were reminded to contact the Chairman if they wished to have any further information on these topics.

129 FCERM Capital Programme - Nick Gray

The Chairman invited Nick Gray to update the Group on the NCERM Capital Programme. The update included the following key points:

- PAF Bidding - PAF was a new online tool used for the submission and updating of capital projects, and had received positive feedback sfrom users in the Hampshire, Sussex and Isle of Wight areas. Officers were encouraged to send any further feedback on the tool to Nick Gray.

- Programme Delivery Units – It was proposed that the tendering of projects in the areas of Hampshire, Sussex, Isle of Wight, Hertfordshire, West Thames and North London would be combined to form a ‘Programme Delivery Unit’, marking a change from the current system of several mini-tenders. This was aimed at providing efficiency savings, quicker project timescales and reducing concerns over disenfranchising bidders with numerous smaller bids.

Officers raised concerns however over value for money and a focus on outcomes over costs and legacy issues. It was agreed that Matt Hosey and Nick Gray would meet with the PDU co-ordinator at EA to discuss the procurement concerns.

- Programme expectations beyond 6 years – There was a desire to populate the 6 Year Plan beyond the current plan (to 2021), with no EA projects in the pipeline for submission. Officers were therefore asked to provide details on their projects to EA for submission to central government. The discussion covered concerns over lifespans of assets and the need to ensure outcome measures include legacy concerns, with these topics suggested as possible projects for submission.

130 Research Report - Sam Cope (Paper C)

The Chairman invited officers to provide updates on the progress of projects in the Research Programmes. These updates included details of ongoing research projects and those that had reached completion.

The following studies were discussed:

- Establishing shingle transport pathways – Church Norton Spit – Discussions were ongoing with students to undertake the second phase of the study.

- Beach response in front of structures in open coast – The recent mild winter had resulted in the inability to monitor scour. Further monitoring would be undertaken and supplement the draft report for the study.

- Monitoring of Poole Nearshore Replenishment Trials – The study had been completed and the final report was with the Environment Agency for sign-off. The Chairman would contact the relevant officer to provide the executive summary.

- Scanning of historical aerial photography – Flight paths would be added to the images compiled in Year 1 of the study prior to publication online. Year 2 of the study will be conducted by Dr David Harlow and continue the scanning of remaining photographs held by local authorities.

- Dismantling of Timber Groynes – Draft reports had been produced by Dr Williams and Dr Harlow, detailing their analysis of the study. The results had shown Greenheart timber had been extensively impacted by gribble, while Ekki timber had shown minimal signs of ware and were being prepared for re-deployment.

- CIRIA Groynes in Coastal Management Manual – Dr David Harlow and Peter Ferguson had attended a workshop to discuss the construction, design, maintenance and repair of groyne systems in relation to the project. A report from the session would be produced shortly.

131 Contaminated Land Study - Tim Kermode (Presentation)

The Chairman invited Tim Kermode to provide a presentation to the Group on the SCOPAC Contaminated Land Study.

The presentation detailed the progress of the study so far, the scale of the issue and possible sources of funding. Possible sources included NCERM – GIA, Local Levy funds or Waste Management Capital, but there was no obvious funding solution. The presentation also detailed the next steps for the study, including continuing investigations into funding solutions and raising the profile of the issue to elected members.

The Group considered the draft letter to the Environment Agency Area Teams, which would be escalated to a national level.

RESOLVED that the Group endorse the draft letter to the Environment Agency Area Teams.

132 SMP Action Plan Review - Tim Kermode

The Chairman invited Tim Kermode to update the Group on the SMP Action Plan Review.

The review aimed to provide consistent data across the SCOPAC region, with the aim of a complete dataset by the end of the summer. The next stage would include referring the spreadsheet back to local authorities for comment.

The Group also discussed the Terms of Reference Workshop on 4 July, and whether this would impact upon the review. Officers also raised the possibility of a SMP workshop following the SCG meeting in September.

It was agreed that the Chairman would circulate the SMP Delivery Risk spreadsheet to the Group.

133 Coastal Monitoring Report - Stuart McVey (Paper D)

The Chairman invited Stuart McVey to introduce the report on the progress of the Southeast Regional Coastal Monitoring Programme and update the Group on any further developments.

The update included the indication of good outcomes on the structure laser scan surveys undertaken of coastal structures at Totland Bay and Colwell Bay on the Isle of Wight.

Following a request from Dr David Harlow, it was agreed that Bournemouth City Council survey data could be made available through the Channel Coast Observatory website.

134 Coastal Asset Data Update - Neil Watson (Presentation)

The Chairman provided the Group with an update on the Coastal Asset Data Project.

The update included a report from the workshop held on 3 May to discuss the progress made to date and next steps for the project. The baseline laser survey was due to commence shortly and officers were in discussions to ascertain the best system to allow for consistent and compatible manipulation and storage of the survey data.

An invitation had been sent to a System Review workshop on 22 June to explore and discuss possible systems.

135 Coastal Yammer Experience to Date - Uwe Dornbusch

The Chairman invited Uwe Dornbusch to lead the discussion on officer's experience of using Yammer.

The Group were reminded that the social media tool allowed for officers to disseminate information to targeted audiences in a timely fashion. Officers mentioned the need for local authorities to check compliance with local IT policies.

Officers were again encouraged to use Yammer and it was agreed this would be raised at future meetings.

136 SCOPAC Visit

The Chairman confirmed that the SCOPAC Annual Site Visit would visit Highcliffe Bay, Christchurch on 28 June.

Officers were asked to encourage attendance among elected members. Further details on the site visit would be circulated prior to the date.

137 AOB

Lyall Cairns raised the issue of Local Levy Bids. Neil Watson and Nick Gray were requested to circulate guidance on the four levy principles to the Group. It was also agreed that Jo Matthews or Alastair Moody would contact Matt Hosey in relation to this, with a view to presenting an item at a future Group meeting.

Matt Hosey provided a brief update on procurement. The Professional Services Framework was working well, with seven local authorities signed up, while the tenders for the Minor Works Framework tenders had been returned and were currently being assessed.

The meeting commenced at 10.00 am and concluded at 12.57 pm

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SMP Futures

Summary workshop outputs

4th July 2017, Birmingham Repertory Theatre

Background and premise

The second generation of Shoreline Management Plans (SMPs) developed by Coastal Groups between 2006 and 2012 are an important reference point for coastal managers. In compiling SMPs the EA and coastal groups used public and professional consultation, a range of evidence and high level economic assessment to set out management approaches for the short (0-20 years), medium (20-50 years) and long term (50 – 100 years) for the whole coast of England. They can be found online at https://www.gov.uk/government/publications/shoreline-management-plans-smps/shoreline-management-plans-smps.

There is an agreed process for changing SMP policies, monitoring implementation of action plans and reporting this to the Environment Agency, who maintain an oversight of SMPs under its Coastal Strategic Overview role. This process can be obtained from Coastal Group Chairs.

It is increasingly recognised that simply reporting action delivery and applying bespoke changes to individual Policy Units is not enough if Risk Management Authorities are to maintain SMPs as 'living' documents – or rather to maintain shoreline management planning as an ongoing process. In some parts of England, SMPs are already being subject to a 'mid-term' or 'mid-epoch' review, with resource being applied to maintaining the SMP in the light of local physical or socio-economic change.

Current and future approaches to coastal planning and management has recently been discussed at the Environment Agency Directors Leadership Team (15/12/2017), Environment Agency FCRM Committee (19/01/2017) and RFCC Chairs (08/02/2017); in each case the above issue was presented and a 'light touch' review of the SMP suite was endorsed. Coastal Group Chairs discussed the principle of such a review (22/02/2017) and a standard presentation proposing a review was provided to Coastal Groups in Spring 2017.

In February-April 2017, the Environment Agency commissioned a high-level review of SMP management policies across England, which was undertaken by CH2M. This review uses a consistent methodology to identify where SMP management policies may be especially difficult to implement, and to flag where significant conditions are attached to them. This study has been circulated to Coastal Groups, with an opportunity for each Group to provide commentary on its findings. This information has been collated and will inform the approach to the light touch review of SMPs.

The workshop on 4th July 2017 provided an opportunity for coastal Risk Management Authorities, RFCC Coastal Leads, Natural England and other key

individuals involved in SMP development to be part of shaping the content and approach to taking the 'light touch review' of SMPs forward.

Workshop aims

1. To agree among coastal RMAs the need for the 'light touch review' of SMPs;
2. To understand what has been done so far around the country with regard to reviewing and updating SMPs, to avoid duplication of effort and learn from experience;
3. To agree the scope of such a review, what information/activities will help us do it and what the key priorities are.

Workshop outputs

Graeme Warren, Director of Business Implementation & Skills at the Environment Agency FCRM Directorate opened the day. He reflected upon the relationship between this work and wider EA work on integrated strategic planning, as well as the forthcoming update of the National FCRM Strategy. Nick Hardiman, Senior Coastal Adviser and Hannah Williamson, Adviser on coast and FRMPs at the FCRM Directorate compered the workshop and have produced these notes.

The workshop was divided into three breakout sessions aligned to the three aims set out above. Presentations were also provided to set the scene, and presenters are thanked for their input to the day. All the feedback from the workshop will be used to shape the approach to the light touch national review. The analysis below does not aim to be exhaustive and an opportunity is also provided to participants and those unable to attend, to add extra thoughts after the event.

Break out session 1

Each table was asked to consider the following 3 questions.

Qu 1 What are the current limitations to the effectiveness of SMPs?

Participants were asked to group their issues into themes where possible. The main discussion points below are grouped into the five themes most commonly used, and which formed the basis of the afternoon discussion:

Usability:

- **SMP management policies:** The headline policy categories (Hold the Line, etc) are powerful in their **simplicity** – they state what the basic intent is – but **also potentially misleading** unless SMP users understand the caveats, conditions and exceptions associated with them. Some considered them restrictive, insufficiently articulating the main coastal management responses available.

- **SMP epochs:** The planning horizons or 'epochs' in SMPs are a similarly useful packaging of overall intent that can pin down ambitions for coastal change and aid preparation, but they can also be a straightjacket. They can make coastal managers a 'hostage to fortune' should events overtake the direction of travel set out in the SMP. They can present an impression **of change to management approach**

happening 'overnight' between epochs. It was suggested SMPs might need a fourth epoch.

- **SMP implementation:** Defra's SMP guidance sets out how to develop a SMP, but says little about **how SMP policies might be implemented practically**. As a result, there are people living at the coast who remain **unprepared for changes to management scheduled for epoch 2,** and local authorities feel under-prepared with options to take to those people who will be affected. **How do we 'do' adaptation**? How do we decommission assets, or transfer their ownership and management (and liabilities) to others? How do we manage messages about coastal change when Partnership Funding keeps peoples 'hope alive' regarding protection possibilities? Partnership Funding could even undermine the sustainability of SMPs. **Should SMPs be statutory?** It is recognised they are advisory, but do they have enough 'bite' to ensure they actually do 'set the direction of travel'? Other thoughts about implementation are shown under 'Money' and 'Environment' below.

- **SMP governance:** There should be a '**line of sight' from SMPs to Coastal Strategies** to coastal schemes, but there probably isn't just now, painting a confusing picture and meaning **investment decisions may not be aligning with SMP policies**. The Change process should capture this but probably isn't yet. Resources around engagement, consultation and review means it can be difficult to make the Change Process as transparent and accountable as it might be. Apart from the Change Process, there's **no real governance structure** (Client Steering Groups, Lead Authorities etc) are SMPs anymore.

Accessibility:

- **Public access:** SMPs are online, but that doesn't mean many people know about their existence, or actually read them. They are **long technical documents with variable and limited public face**. Their online hosting doesn't lend itself to public engagement or communication of updates, or dynamic interface with other plans, data and resources.

- **Professional access:** SMPs involved lots of consultation but still have **not yet been well-enough embedded** elsewhere, **such as (but not only) Local Plans**. As a result, there is still not the political will to implement some policies or to face up the need for policy changes towards adaptation. Understanding of the SMPs amongst RFCCs is also variable.

Money:

- **Economic assessment:** High level economic analysis informing SMP policy decisions is underpinned by assessment of direct damages only, and **doesn't include indirect damages** further down the coast.

- **Funding for implementation:** Funding is tied to execution of schemes to maintain, build or improve coastal assets only. Funding other activity in the SMP action plans such as engagement or adaptation, which may be important for achieving the overall intent of the SMP, is usually less forthcoming. **Coastal local authorities themselves generally under-resourced** to deliver such elements of SMP action plans, and may lack skills and capacity to do so. More pressingly, they may lack the resource to

implement some SMP management policies at all – such as maintaining or decommissioning defences.

- **Partnership Funding:** SMPs were developed before Partnership Funding was implemented. The impacts on SMP management policies are uncertain and unquantified, but there will be impacts that need careful management.

Data and Evidence:

- **Use of evidence:** SMPs are 'evidence based' but are they sufficiently evidence-based, and is the audit trail of that evidence base good enough? There are no doubt **new data sets and studies that could be used to improve and expand the evidence base of SMPs** but we don't have a clear enough idea of what they are and their priority. SMP changes are in danger of being prompted more by changes in will than in evidence.

- **Quality of evidence:** Modelling of coastal processes that underpins SMPs is too simple, is **out of date and doesn't necessarily represent actual risk or coastal evolution.** Better dynamic linkage between SMPs and the outputs of the National Network of Regional Coastal Monitoring Programmes would help.

Environment:

- **Compliance:** Guidance on assessment of strategic plans against requirements of the Water Framework Directive only became available during the time SMPs were being developed, meaning some had to be retrospectively checked having been substantially approved. **Are we satisfied they are compliant**? Nature Directives compensation requirements are an evolving picture and SMP information in the **Habitats Regulations Assessments are out of date in some cases.**

- **Environmental delivery:** The only realistic mechanism to realign the coast and create habitat is the **Environment Agency Habitat Compensation Programme**. This is a proven mechanism for cost-effective compensation measures but re-alignment for FCRM or multiple benefits is **still very difficult to fund**, and SMPs are of mixed quality in identifying environmental opportunities alongside the management policy and delivery vehicle to realise them.

Qu 2 Is a light touch review of the SMP suite the right way to address these limitations?

Yes. There was unanimous agreement that a light touch review is required, and that a full 'root and branch' review of the SMPs (leading to 'SMP3') is not required or desired at this stage.

In addition to the reasons above, extra points were made about the potential to consider the implications of the UK leaving the EU in 2019, once these implications are clearer. Overall it was considered that, given the range of issues identified above, **the review needs to be light touch but not trivial**: it should be **comprehensive in scope, proportionate in effort** and provide a road map to full review in the future.

Qu 3 If so, where should we aim for more consistency across the SMPs?

Overall, there was **support for ensuring all SMPs work to consistent principles** whilst **not imposing consistency on their approach to implementation**. That said, many of the issues identified under Qu.1 pertain to SMP implementation, and there appeared to be an appetite for at least setting out supporting information – such as on adaptation - to enable Risk Management Authorities to deliver SMP policies.

There was not common agreement on consistency in relation to SMP presentation and parameters (epochs, policy definitions etc), with some favouring greater leeway for interpretation and others suggesting this could cause confusion among the public and professional users. A key message was that **there is no 'right' way to develop an SMP** and as advisory documents, **some flaws should accepted as inevitable.**

Some areas where more consistency might be desirable included:

- On how **management policies are interpreted** and applied;
- On greater transparency or **clarity about the 'deliverability'** of management policies;
- On key **evidence reference points** and linkages to provide a common baseline of information;
- On establishing clear **links to planning mechanisms** such as Coastal Change Management Areas;
- On key **elements of online 'front end' presentation**;
- On approaches to **economic assessment**;
- On embedding approaches to **policy implementation** within the SMP;
- On a **forward plan for SMP maintenance and review**.

It was agreed that national guidance to frame the SMP review would be required, but that this guidance should not be too lengthy or restrictive.

Break out session 2

Each table was asked to consider the following 3 questions.

Qu 1 What does your ideal SMP look like?

This question sparked some lively debate as participants discussed solutions to issues identified in session 1. There is, of course, no single ideal that will suit everyone, but this session encouraged broad thinking. The main discussions points were as follows:

- **Accessible** – A lot of discussion focussed on making SMPs more accessible. There was a consensus that an **ideal SMP would be easily accessible for all customers**. **Views on how to achieve this ranged** from **better signposting** of existing information, a **national hub webpage** and an **interactive map-based web interface** that people could interrogate. It was noted that whilst we need to make sure SMP information can be easily accessed, dif**ferent audiences may require different levels of detail.** The public may want only summary information on what

management they can expect, who will do it and why and approach is chosen, whilst practitioners will want more detailed information. Design on future online SMP hosting needs to reflect this, **perhaps using tiers of information and password-protected areas.**

- **Adaptable** – a continuing theme on many tables was **whether the current epoch system works effectively.** Most participants agreed that **in many instances epochs are not responsive and dynamic enough** to guide management of particular stretches of coast. However, **some participants were reluctant to abandon epochs altogethe**r, as they hold coastal decision makers to timescales for action and reduce the risk of unplanned change in response to coastal events. Some participants suggested **exploring whether specific trigger points could be used**, whereby a change in management approach would be initiated by a specific event or trigger.

- **'Living'** –Some participants were supportive of an **SMP suite containing 'real time' information,** constantly kept up to date on a 'rolling' basis. This would take the emphasis away from the plan itself and focus more on the ongoing process of planning the future**. Others felt strongly that SMPs should not be constantly updated**, due to the probable need for constant re-engaging with communities and stakeholders - which is resource intensive – and potential for inertia in implementation due to a constantly moving baseline or 'goalpost'.

- **Relevant** – There was a strong consensus that **SMPs need to be used in order to justify their existence** and the effort behind them. Better awareness and measures to target their contents towards decision makers, and spatial planners in particular, would help. More dialogue is needed with planners to understand the critical information they need from SMPs to help achieve this ideal. **SMPs and associated Strategies should also be the 'go to' sources of evidence** for coastal managers in Defra organisations.

- **Accountable** – As well as a desire for SMPs to be accessible and useable, participants wanted there to be **more transparency around our decisions**. For example, providing more information about funding decisions and sources to **make it clear to end users where there is uncertaint**y. This could take the form of standard information written nationally once. More information around who would deliver actions and policies would also be useful.

Qu 2, What do we need to realise that ideal?

Participants identified the following key elements:

- **Good data -** we need to continue to have solid evidence and data on which to base SMPs. The needs of the SMP should drive our data collection.
- **Clear communication** – to help us with transparency we must be able to communicate our aspirations, assumptions and caveats. This will help manage expectations**.**
- **Buy in and commitment –** we need our partners, stakeholder and practitioners to support the review. We also need political support.
- **Engagement** – we must engage with stakeholders, partners and communities. We need to understand the key groups to engage with and how it should be done.

- **Systems and IT** – If we want more accessible plans we need to ensure that we have the relevant systems and internet services.
- **Multiple outcomes** – We need to bring in other functions so that SMPs have a multifunction approach and audience.
- **Resources and funding**

Qu 3, Your experiences reviewing SMPs so far

In advance of presentations on the mid-term review of the Cornwall and Isles of Scilly SMP and SMP review work in the North West, a short time was dedicated to collating other existing SMP review work. This was so that we can understand what has been done, the approaches taken what worked and what didn't, and how work already done can fit into the forthcoming review.

Several pieces of ongoing work were identified already looking at reviewing SMPs locally:

- **The Essex and South Suffolk SMP** is undergoing a review of its action plan;
- Other **SMPs in the South West** are also undergoing review, triggered by the coastal storms in 2013/14;
- **Southern Coastal Group** is reviewing the action plans of SMPs on the south coast;
- **East Riding of Yorkshire Council** is reviewing SMP boundaries.

Some SMPs have only been adopted relatively recently, meaning 2018 would probably be the earliest that Coastal Groups would consider a review necessary anyway. It was also fed back that constant use of and monitoring of the SMP meant that a review had not yet been done.

Break out session 3

The grouping of themes identified from breakout session 1 formed the basis for the afternoon discussion on what should and should not be within the scope of a 'light touch review' of SMPs. The five tables at the workshop were each asked to focus on one theme in particular, but could then add thoughts on other themes if time allowed/they wished to. The themes were:

- Usability
- Accessibility
- Money
- Data and Evidence
- Environment

The detail of the discussion is included below. Throughout all of the discussions the need to adequately fund and resource the review was raised, as many elements of it will require manpower, time and expertise.

Issue	In scope	Out of scope	Challenges
Usability	**Policies:** We should consider definitions, interpretation, communication, whether the existing policies are sufficient or worded right. **Epochs:** We should consider applicability and effectiveness, and consider the role of triggers for policy change instead of, or as well as, existing epochs. **Governance and guidance –** Can information and guidance on SMP implementation mechanisms, funding and governance be developed nationally once, which can set out consistent principles across SMPs?	**Trying to make the SMP more than an advisory document -** They should remain non-statutory and remain fundamentally about coastal risk management.	**Scope creep-** There is a risk that once the review starts the scope could start to creep, resulting in a much larger piece of work being undertaken than initially intended. This will need to be managed carefully.
Accessibility	**User needs** – Seek to tailor different SMP outputs to different audiences and/or have different tiers of detail, perhaps in different formats. We need to understand who our audiences are, talk to them about what they want to see and how, and target our products accordingly. **Online interface -** Needed to allow improved navigation of information and evidence. Ideas included having a common front-end website to allow us to better signpost existing information, and having an inter-active map-based interface. **Transparency -** there is a need to effectively communicate policy changes to stakeholder, partners and communities so that there is transparency around our process. Is there a way to do this more effectively with a new online interface?	**Engagement on review methodology -** engaging on the process of the review should be out of scope. **Format -** changes to the fundamental format of the existing SMPs should be out of scope, although a new online interface will entail some presentational differences.	**Hosting -** need to explore whether the SMPs should be hosted centrally or by each Coastal Group. **Public interest -** generally the public are only interested where they are directly affected
Money	**Economic assessment –** Have SMPs currently got this right? Has infrastructure been properly recognised? Is the scale/extent of the assessment ambitious/realistic enough? Has the engagement required been factored into the assessment? Are the economic assessments in SMPs realistic? Assessment of affordability and what is technically feasible are separate albeit linked assessments. **SMP read-across to investment plan –** Does the existing investment plan read across to coastal strategies and SMPs well? What is the likely call on the investment plan in future (say, epoch 1) given the SMP policies? Where will funding for non-scheme actions come from? **Funding –** Partnership Funding brings opportunities and risks. What are the implications for SMP policies and how they might be implemented? How do we make options and risks clear to partners and communities on the coast?	**Detailed funding descriptions**, -details of partnership funding contributions for various SMP schemes should not be included. **Duplication** -should not duplicate or second guess information in other plans, i.e. Local Plans	**Flexibility -** how to accommodate changes to Local Plans and associated economic evidence **Balance of detail -** need to find the right balance of detail so that we can give meaningful figures, costs and benefits etc. but still have confidence. **Engagement -** how do we get the message out to the right people?
Data and Evidence	**Evidence review** - a review of evidence is needed to confirm if previous assumptions underpinning policies is still valid. This includes	**Extensive new data collection and R&D -** Many SMP policies	**Scope creep** – the potential for a light

Issue	In scope	Out of scope	Challenges
	academic/grey literature, legislation, and environmental data on coastal squeeze, and UKCP18 (at least for sensitivity-checking). Is new/ different evidence is needed to ensure SMPs are fit for purpose? What can different SMPs learn from each other? **SMP linkages** – explore improvements to linkage with NCERM, the Regional Coastal Monitoring Programmes and other resources which can help Coastal Groups to keep on top of SMP-relevant data.	require further studies to inform their implementation, but such studies are in themselves out of scope for this review. The review should highlight what is needed where, sensitivity-test where appropriate and incorporate new information where it can be done cost-effectively.	touch review to become embroiled in lengthy studies to support change. Definitions of how far the review should go need to be clear in the scope to manage costs.
Environment	**Habitat Regulations assessment –** in some cases the Habitats Regulations Assessments (and other environmental assessments) were done many years ago and the conclusions are not as robust as we would require now. We need to identify where this is the case and then update the HRAs. **Habitat creation -** consider how we can use SMPs to help the Habitat Compensation Programme identify large scale opportunities that compensate for losses but also provide multiple benefits for FCRM, amenity, and WFD. **Water Framework Directive –** SMPs need to be more thoroughly checked for WFD compliance. For example, where the WFD water body classification has changed we need to identify how this affects the SMP, and what further action is needed. Could we assess WFD at an SMP or Strategy level?		**Acceptance -** Communities find it hardtop accept managed realignment or no active intervention policies**.**

Conclusion

The SMP Futures workshop involved a wealth of expertise across the country and across different authorities and organisations. There was also a wealth of opinion, not all of which has been possible to capture here, but which will be considered as a more detailed specification for the SMP review is prepared. Each of the workshop's aims were met, and further comments to complement these notes from participants and from those who had to send their apologies are welcomed.

The time and contributions from all participants is greatly appreciated.

Nick Hardiman

Hannah Williamson

Attendees/ Apologies

Name	Organisation	Attending Conference?
Nick Hardiman	Environment Agency	Y
Hannah Williamson	Environment Agency	Y
Bryan Curtis	South East Coastal Group (chair)	Y
Carl Green	North West Coastal Group (chair)	Y
Phill Rees	South West Coastal Group (chair)	Y
Stewart Rowe	North East Coastal Group (chair)	N
Graham Lymbery	North West RFCC	Y
Peter Frew	RFCC Coastal Member – Anglian Central	Y
John Cocker	Teignbridge Council	Y
Richard Thomas	RFCC Coastal Member - East Anglia North	Y
Robbie Craig	Defra	Y
Clive Moon	Welsh coastal groups	T
Mark Johnson	East Anglian Coastal Group (chair)	Y
Neil Watson	Southern Coastal Group (chair)	Y
Emma Hawthorn	Natural England	Y
Jeremy Pickles	East Riding of Yorkshire council	Y
Jenifer Warner	Sefton Councill - NW RFCC funded post	Y
Mark Stratton	Havant Council	Y
Roger Spencer	Arun Council	Y
Greg Guthrie	Royal Haskoning	Y
Andy Smith	RFCC Coastal Member – Anglian Eastern	Y
Jim Hutchinson	RFCC coastal rep	N
Paul Paterson	East Suffolk Council	Y
Freddie Holland	North Somerset Council	Y
David Brain	Cardiff Council	
John Buttivant	Environment Agency	Y
Mark Adams	Environment Agency	Y
Andy Shaw	Environment Agency	Y
Steve Taylor	Environment Agency	Y
Guy Cooper	Environment Agency	Y
Chris smith (GC)	Environment Agency	Y
Chris Hayes	Environment Agency	Y
Nick Ely	Environment Agency	Y
Grant Moffatt	Environment Agency	Y
Sean Longford	Environment Agency	T
Graeme Warren	Environment Agency	Y
Graham Wilson	FCRM - Incident Management	Y
Karl Fuller	NEAS	Y
Doug Whitfield	Evidence S&I	Y

Name	Organisation	Attending Conference?
Helen Jay	CH2M	Y
Robin Siddle	Scarborough Council	Y
Emma Love	NEAS	Y

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National Review of Statutory Habitat Creation associated with Flood & Coastal Risk Management Activity

Progress Report

June 2017

We are the Environment Agency. We protect and improve the environment.

Acting to reduce the impacts of a changing climate on people and wildlife is at the heart of everything we do.

We reduce the risks to people, properties and businesses from flooding and coastal erosion.

We protect and improve the quality of water, making sure there is enough for people, businesses, agriculture and the environment. Our work helps to ensure people can enjoy the water environment through angling and navigation.

We look after land quality, promote sustainable land management and help protect and enhance wildlife habitats. And we work closely with businesses to help them comply with environmental regulations.

We can't do this alone. We work with government, local councils, businesses, civil society groups and communities to make our environment a better place for people and wildlife.

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Foreword

As well as seeking to enhance the natural environment as part of how we manage flood and erosion risk, the Environment Agency and its partners have a duty to conserve and improve wildlife and its habitats.

The Environment Agency established Habitat Creation Programmes in each of its Regions around England to ensure the flood and coastal risk management (FCRM) investment programme and the strategies and plans we approve meet with legal obligations arising from the EU Habitats and Birds Directives.

Regional Habitat Creation Programmes set out a strategic approach to ensuring the 'Natura 2000' network of sites protected under these Directives maintains ecological quality and coherence through the provision of compensatory habitat where unavoidable loss due to FCRM activity occurs. Ecologically functional compensatory habitat is required by law in advance of such loss.

The staff developing each Programme used the best available predictions of habitat loss in FCRM plans and strategies to identify compensatory requirements in their Region, to develop a portfolio of sites and set out a timetable for delivery of new habitat. They shared information on challenges and opportunities, and helped to co-ordinate habitat creation projects in partnership with others. Their progress was reported in 2013.

Since 2013, the Environment Agency has experienced changes to its structure which have removed the Regional tier of administration. Government has provided new policy direction, agreed new Outcome Measures for FCRM and committed to a new six year FCRM investment programme. Strategic FCRM plans and strategies have been updated, revised or progressed. However, FCRM activity and associated habitat creation requirements remain.

This report brings our national understanding of strategic compensatory habitat requirements up to date, and builds upon the 2013 report with further information. The Environment Agency will commit to reporting and publishing updates to this information every two years.

Catherine Wright, Director of Digital & Skills, Environment Agency

Catherine Wright, Head of Digital & Skills, Flood & Coastal Risk Management

April 2017

Executive summary

Write your introduction here

Start here – no more than two pages long.

Contents

1. Introduction

1.1. What this report is about

This report follows the *National Annual Review of Habitat Creation Programmes* (Environment Agency, March 2013), updating the information to outline our progress towards creating compensatory habitat for loss of internationally protected wildlife sites[i] resulting from flood and coastal risk management (FCRM) activity to April 2017.

There has been no annual review of FCRM-related strategic habitat creation since 2013 due to changes to Environment Agency structures and new policy steer from Government on habitat creation in relation to FCRM. There has been a subsequent need to re-design a national auditing system for habitat creation, and to re-convene the resources to maintain it. These changes are discussed in Section 2. However, work to create habitat has been ongoing during this period with outcomes recorded locally, and this report collates this local work into a national picture, summarising progress and highlighting operational challenges and opportunities.

The information within the report presents a snapshot in time, particularly in relation to the current understanding of future habitat compensation needs and the potential habitat creation opportunities identified around England. This understanding is constantly evolving with new evidence from monitoring and modelling, and with potential schemes progressing or being abandoned or revised. From April 2017, we have agreed with Defra that a national progress report will be supplied every two years to capture and explain this evolving picture.

1.2. Why this report is needed

FCRM Risk Management Authorities (RMAs), their partners and stakeholders, the Government and the public should have confidence that FCRM activity is not adversely affecting the ecological integrity of England's suite of internationally important wildlife sites, and should be able to understand the reasons why we create habitat and where.

The report is needed to demonstrate how we are working to remain compliant with UK legislation that transposes the Habitats and Birds Directives (referred to as the 'Nature Directives') and the UK's commitments under the Ramsar Convention (see endnote 1). It focusses upon the habitat creation arising from this legislation in relation to our own FCRM activity, and the FCRM activity of all RMAs[ii] we approve under our Strategic Overview for FCRM in large-scale plans and more localised strategies. These plans and strategies look long term and set the 'direction of travel' for FCRM investment: potential environmental risks associated with their delivery need to be identified, addressed and communicated - via this report - early.

1.3. The scope of the report

This analysis is restricted to our habitat creation work in relation to FCRM activity in England and the requirements of the Nature Directives as set out above. It does not, therefore, seek to reflect or monitor habitat creation by us, or other RMAs, arising from other drivers.

1.3.1. Integrating environmental delivery and reporting

For example, we may create, restore or otherwise modify habitat that performs a specific FCRM function as a means of 'working with nature' instead of interrupting or arresting natural processes. This is increasingly important in our portfolio of FCRM measures. FCRM schemes are also more likely to receive Government funding if they contribute towards achieving the suite of FCRM Outcome Measures set out by Defra, which include habitat restoration and creation measures that help achieve statutory requirements of the Water Framework Directive and other legislation, or other policy objectives such as the England Biodiversity Strategy. In addition, habitat may be created as an incidental by-product of a FCRM scheme at little or no extra cost, or as part of our wider work beyond FCRM.

These multiple drivers for creating habitat may coincide, and wherever possible we seek to identify opportunities to deliver habitat restoration, improvement and creation in an integrated way. This

approach reflects Government policy direction[iii], which has encouraged RMAs to focus upon integrating environmental delivery with FCRM work. Co-ordinating delivery in this way can lead to greater operational efficiency and better outcomes for people and the environment, and Regional Habitat Creation Programmes have traditionally sought to align their specific statutory objectives with this wider environmental work where possible. With increasing focus on such integration, and with increasing alignment of our recording mechanisms that capture delivery against these drivers, future reports may also reflect more widely on the bigger picture of our environmental delivery and how this integration is being achieved.

1.3.2. Habitat area and habitat quality

This document continues the emphasis of the 2013 report upon *area* of habitat created in response to compensatory requirements (the 'habitat account assessment'). However, the Nature Directives require us to maintain 'Favourable Conservation Status' of both the habitats and the species/assemblages using those habitats, for which the sites have been designated. Compensation sites must demonstrate this status prior to losses of designated areas. Behind the summary figures shown in Section 3 there is, therefore, a body of work to ensure the *quality* of habitat created is such that target species use it in stable or increasing numbers relative to the site of loss. The quality of habitat compensation sites is not the focus of this report, but is an important part of our work and has been the subject of a recent review by Natural England[iv].

1.3.3. Historic damage to SSSIs

As well as commitments towards compensating in advance towards projected habitat loss, the Environment Agency previously committed to undertaking habitat creation to address estimated historic losses from coastal squeeze across coastal Sites of Special Scientific Interest (SSSIs) (many of which fall within the boundaries of the same Natura 2000 sites projected to experience further loss into the future). Separate targets were established for each SSSI that were considered the minimum needed to enable site recovery - i.e. to progress from a SSSI classification of 'Unfavourable (UF) Condition' to 'Unfavourable - Recovering (UF-R) Condition' as part of meeting Defra's Public Service Agreement for all SSSIs to be in Favourable (F) or UF-R condition by 2010. We are currently discussing with Natural England the status and implications of these and future commitments for the 'habitat account balance' shown in Section 3.

2. The Habitat Compensation Programmes

2.1. Background to the Regional Habitat Creation Programmes

We established Regional Habitat Creation Programmes (RHCPs) using our Regional boundaries to embed a strategic and proactive approach to identifying and addressing habitat loss resulting from FCRM activity. Each RHCP was led by a staff member (RHCP Lead) drawn from the most suitable local team, who ensured a common understanding of habitat change for their Region and worked with colleagues and partners to deliver compensation schemes and share experiences.

This proactive approach may involve anticipatory land acquisition by us in advance of loss, to ensure we can accommodate the potentially long lead-in times for ecologically functional compensatory habitat to be established. The approach is supported by Government policy (*Managed Re-alignment: Purchase, Compensation and Payment for Alternative Beneficial Land Use,* Defra 2003), and the RHCP approach has been praised by the European Commission. We do, however, explore alternative approaches to secure land such as long term leasing or acquiring rights for habitat creation on third party land, to ensure the most cost-effective approach is taken. We regularly work in partnership both to acquire and manage sites into the future. Because of the greater certainty of ecological functionality the proactive approach supports, efficiencies can also be realised by lowering habitat compensation ratios in agreement with Natural England.

Further information on how the RHCPs worked can be found in the 2013 report, sections 2 and 3. Most elements of the RHCP system have been retained, notwithstanding certain changes to the FCRM landscape discussed below.

2.2. Government policy and habitat creation since 2013

In 2015, Defra provided a policy steer that challenges us to further integrate the environmental and FCRM work done by RMAs. Additionally, habitat creation using funding allocated to FCRM is to be explicitly linked to the scheme or strategic plan in the investment programme that is reducing flood or erosion risk. This improves the audit trail between FCRM outcomes and environmental maintenance and improvement. The habitat creation 'programme' has therefore become more integrated with the items in the wider FCRM investment programme. We are also re-casting this work as the **'Habitat Compensation Programme' (HCP)**: the hard work and complex partnerships involved to deliver the HCP simply maintains England's environmental quality by replacing that which is lost due to FCRM activity: it does not 'create' new areas that improve that quality *per se.*

The Outcome Measures set by Defra against which FCRM achievement is measured have also evolved since 2013. These Measures moderate FCRM investment profiles to include a mixture of social, environmental and economic benefits. Existing Outcome Measures 4a-c focus on FCRM's contribution to meeting the requirements of the Water Framework and Nature Directives - namely improving, creating and protecting designated freshwater, inter-tidal and river habitats respectively. New Outcome Measures (4d-h) fill in the 'gaps' on environmental performance, especially relating to the enhancement and creation of priority habitats beyond internationally protected networks.

Although Measures 4a-c will retain their payment rates in the FCRM Partnership Funding Calculator (the mechanism for deciding the level of central Government investment in a scheme), and therefore continue to drive FCRM investment, the focus of reporting Outcome Measures to Defra will shift to 4d-h. Appendix 1 of this report provides a summary diagram of how these new metrics relate to other aspects of our environmental reporting.

2.3. How the Programmes work after Environment Agency change

2.3.1. Habitat Compensation Programme areas

In 2013 we removed the Regional tier from our organisation structures in line with many other Government bodies. Whilst this removed the natural administrative unit for the RHCP, the principles of our approach remain and, following consultation, the Habitat Compensation Programmes have been only slightly re-constituted broadly along the boundaries of our operational Areas. In some cases, such as in the North West and East Anglia, these units match those of the previous Programmes and incorporate one or more Areas. Elsewhere, such as in Wessex and on the south coast, the administrative units have changed to discrete Area or even sub-Area teams. A map and written summary of the Habitat Creation Programmes is provided in Appendix 2.

The size of these new units maintains the ability to look at habitat creation opportunities across a suitably large area, whilst dividing Programmes up into logical geographical units. For example, the South Wessex Programme focusses upon the Poole and Wareham Strategy area, and the Severn, Thames and Humber each have a discrete Programme to match their respective FCRM Strategies. Other Programmes are driven by the requirements set out in the Habitats Regulations Assessments a series of Shoreline Management Plans (SMPs) - from which most of our habitat compensation needs arise. As these SMPs cross various administrative boundaries, HCP Leads work together to identify where work will take place for which driver, and avoid double counting of either requirements or delivery.

2.3.2. Administration

In other respects, the practical administration of the Habitat Compensation Programmes remains the same. Each Programme is managed by a HCP Lead according to local circumstances and priorities, in some cases drawing together a formal steering group with Natural England and other interested parties to share capacity, information and experience. Each Programme maintains a consistent data base for the purposes of recording and reporting progress, and digitises

compensation sites on a GIS layer supplied to Natural England and our internal audiences such as Environment Agency Permitting teams.

2.3.3. Funding

The work of the Programmes is primarily funded as part of the capital investment programme approved by Regional Flood and Coastal Committees (RFCCs), each of which has a Conservation Lead who reports progress to the RFCC. As with other elements of the investment programme, funding of new sites may be done in partnership, where other parties 'buy in' to our Programmes to achieve economies of scale. Other funds (such as Heritage Lottery Fund) may be sought to create habitat, and we may similarly seek to 'buy in' to third party schemes, such as our purchase of an 18.4ha interest in the DP World port compensation scheme at Saltfleet Flats on the Thames Estuary.

2.3.4. Accountability

However the Programmes are administered, our Area FCRM Partnership and Strategic Overview (PSO) teams will maintain an understanding of requirements and progress in their respective Areas, and Area FCRM Managers will be accountable for ensuring FCRM activity in their Area is compliant with the Habitats Regulations.

3. Habitat Account Assessment

3.1. Background to the figures

The summary assessment in **Table 1** below provides a snapshot of our current understanding of progress towards compensating for projected Natura 2000 habitat loss in England. Figures have been provided by HCP Leads and supported by analysis of the Environment Agency Conservation Projects Database and Project Performance Management Tool.

3.1.1. Projections of habitat change

The projected area of habitat loss associated with FCRM activity at the coast ('**Within-Epoch Change**') is usually found in the documents associated with the Habitats Regulations Assessment (HRA) of Shoreline Management Plans and/or coastal and estuary FCRM Strategies. The SMPs and Strategies that give rise to a habitat compensation need in a given HCP area are listed in bold type the second column of the table, although their individual requirements are not provided here, as these may overlap or otherwise inter-relate in ways that are too complex for the purposes of this summary report.

Instead, the total projected habitat change for each broad '**Habitat Type**' resulting from all of these SMPs and Strategies combined within a HCP area is shown. This change is set out for each of the three planning horizons, or 'epochs', typically considered by SMPs and FCRM Strategies at the coast. These epochs are denoted by the dates 2025 (epoch 1), 2050 (epoch 2) and 2100 (epoch 3), but they must be considered to be approximate guides rather than fixed dates due to the uncertainty surrounding projections of habitat loss (and coastal management policy), especially beyond epoch 2.

In some areas such as the Humber, no estimates of habitat change have been attempted beyond epoch 2 for this reason, and all figures for habitat change so far in advance must be considered highly conjectural and subject to potentially significant change. In many areas fresh analysis of habitat change is being done and the Environment Agency and Natural England are in the process of commissioning a general review of where projections may be based upon calculations that are too simplistic in their assumptions, which may revise the need for habitat creation up or down.

As such, our report in 2013 did not consider beyond epoch 1, but acknowledged that given the long lead-in times for creating habitat and the need for a more strategic understanding of the task ahead, figures beyond epoch 1 should be considered. This report addresses that recommendation, with the caveat that longer term figures should be treated with caution.

It is important to note that in some areas there is an overall projected *increase* in the amount of habitat, due to the processes of natural accretion of sediment for example. The figures of 'Within-

Epoch Change' are therefore given a + or - to denote the discrete estimates of gain or loss in habitat area within each epoch.

3.1.2. Reporting habitat creation

Our past and current compensation work ('**Habitat Compensation'**) is monitored by HCP Leads. We have been creating compensatory habitat to address projected losses associated with SMPs and FCRM Strategies for some years, in some areas before the most recent iteration of a strategic plan was adopted. We are also progressing habitat creation schemes now, with a high degree of confidence in their completion. Work done or being done with high confidence is denoted '**H'**. In some cases of current work, some uncertainty remains about completion date and the precise area of different habitat types that will be created - this is denoted '**M'**.

3.1.3. Habitat account balance and potential future work

The '**Cumulative Balance'** is simply the difference between the projected loss and the habitat compensation done or underway - i.e. what our 'habitat account balance' would progressively look like if we completed all current work but did nothing more between now and c.2100. However, in each HCP area there is a pipeline of potential habitat compensation sites that may address any deficit. The total area of sites identified within this pipeline is provided under '**P'**. Beneath these totals lies a broad spectrum of delivery confidence, ranging from defined areas where landowner discussions are already underway, partnerships are being established and permissions or purchase sought, to a greater body of sites where we are exploring potential or reserving for future negotiation depending upon the actual scale of need over time.

These figures reflect discussions with HCP Leads. However, because in many cases the site locations or the negotiations surrounding them are sensitive in nature, this report does not generally detail the location of pipeline sites.

3.1.4. Further detail

Clearly, the figures presented in Tables 1-10 are summary reflections of a complex picture that is being continuously refined - even, in some cases, as this report is being written. For each HCP area, some further detail is provided with these tables. Any discrepancies between the figures used in this report and our report from 2013 are explained.

The nature of habitat creation schemes is such that we should not expect an exact 'match' between loss and gain. In most cases, unless otherwise stated, the expectation from Natural England is that strategic compensation in advance of losses of Natura 2000 sites due to coastal squeeze is provided at a ratio of 1:1. Our minimum requirement is therefore to create at least as much habitat as has been lost, unless Natural England specifically agrees a lower amount is acceptable due to, for example, the enhanced ecological characteristics of the compensation site. However, extra habitat may be 'incidentally' created either because the land parcel purchased/leased enables it, or the topography/hydrology favours it. This extra delivery may help deliver our other environmental objectives, provide a 'buffer' for the compensatory habitat or otherwise enhance its ecological functionality, or attract funding from external parties wishing to buy into or co-deliver the scheme. Where extra habitat is created as part of a Natura 2000 compensation site, this is also reflected below.

Table 1: Habitat compensation to compensate for projected losses: North West area HCP

Plans/Strategies in HCP area	Habitat Type	Within Epoch Change (+/-)			Habitat Creation			Cumulative Balance			P
		c.2025	c.2050	c.2100	H	M	Total	c.2025	c.2050	c.2100	
North West and North Wales SMP	-	-	-	-	-	-	-	-	-	-	-

The North West and North Wales SMP does not identify any compensatory requirements arising from FCRM activity, so whilst habitat creation in relation to 'natural flood management' and other drivers continues, there are no statutory drivers relating to the Habitats Regulations. This is in part because the coast in the North West is generally accreting sediment, reducing issues of inter-tidal habitat loss. The Cumbria Coastal Strategy is in development and when completed (c.2019) further information on coastal habitat behaviour may cause the HCP in the North West to evolve. Managed realignment at Hesketh Out Marsh west now complements the eastern site, compensating for losses identified for Lancaster City Council.

Table 2: Habitat compensation to compensate for projected losses: Severn Estuary area HCP

Plans/Strategies in HCP area	Habitat Type	Within Epoch Change (+/-)			Habitat Creation			Cumulative Balance			P
		c.2025	c.2050	c.2100	H	M	Total	c.2025	c.2050	c.2100	
Severn Estuary SMP, Severn Estuary Strategy	Saltmarsh/Mudflat	-300	-318	-765	288	0	288	-12	-330	-1095	1697

The Severn Estuary European Marine Site (EMS) comprises the Natura 2000 designations and Ramsar site. It is affected by the FCRM activity set out in the Severn Estuary Flood Risk Management Strategy which is at the stage of “working draft” after a second consultation in 2013: in fact most actions in the Strategy are already underway or completed. The current figures for habitat loss due to coastal squeeze are therefore taken from the

HRA of this draft Strategy. These figures have reduced from those calculated in the SMPs that underpin the strategy (note the geographic coverage of the Severn SMP and Strategy is not the same). The SMPs will be updated with new evidence from the Strategy once it has been approved.

The habitat losses identified in this HRA are all inter-tidal saltmarsh and mudflat, which are combined for the purposes of compensation needs due to the uncertainty around relative proportions of each habitat as the estuary develops. The extent to which some habitat loss, especially in the outer estuary, is caused by FCRM activity is also uncertain: natural estuary dynamics cause the loss, gain and movement of mudflats in particular, and the effects of historic or new defences can be difficult to disentangle. Using the 50 percentile range estimate for sea level rise, approximately 300ha of habitat is predicted to be lost in epoch 1 (note in the Severn Plans and Strategies this is taken to lead up to 2030), although this could rise to approximately 500ha under the 95 percentile range estimate. These figures may be revised over time, in particular with the release of revised UK Climate Projections in 2018.

Of the 300ha required for epoch 1, 288ha has been delivered, largely at the Steart Peninsula (237ha) in Bridgewater Bay, Somerset, which has also created 127ha of freshwater and grazing marsh although this does not form Natura 2000 compensation. Steart is now being managed by the Wildfowl and Wetlands Trust. Schemes at Congresbury (11ha) near Weston-Super-Mare, Somerset, and Plusterwine/Alvington (39ha) near Lydney, Gloucestershire, have also contributed. This leaves a 12ha deficit, which we are looking either to deliver through revisions to the existing FCRM capital investment programme, or through a bespoke scheme, or as part of future work in epoch 2, depending on the opportunities that arise.

Because the Severn Estuary EMS borders our Midlands Area and Wales as well as Wessex Area, habitat creation is being co-ordinated with Natural Resources Wales to understand respective responsibilities and future contributions. The HRA of the draft Strategy identified a shortlist of candidate sites for future habitat creation, with a long list developed locally to supplement this ('P' in Table 2 represents their total projected area). This long list originally contained 57 sites - 12 in Wales, 21 in Midlands and 24 in Wessex. However, all of these potential sites are currently under review and their feasibility being tested against various scenarios of estuary evolution and management.

A key element of strategic habitat creation in the Severn will be the possible evolution of tidal lagoon power and the potential for a large and more immediate compensation need arising, potentially competing for many of the pipeline sites currently in the HCP. Given the finite reserve of potential compensation sites along the Severn, this may entail more detailed work to assess options further afield, subject to the tests within the Habitats Regulations being met and agreement with Natural England.

Table 3: Habitat compensation to compensate for projected losses: Devon and Cornwall HCP

Plans/Strategies in HCP area	Habitat Type	Within Epoch Change (+/-)			Habitat Creation			Cumulative Balance			P
		c.2025	c.2050	c.2100	H	M	Total	c.2025	c.2050	c.2100	
North Devon & Somerset SMP (part), Cornwall & Is of Scilly SMP,	Saltmarsh/Mudflat	-25	0	0	0	44	44	+19	+19	+19	26
	Grazing Marsh	-13.5	0	0	0	45	45	+31	+31	+31	0

South Devon & Dorset SMP (part), Exe Estuary Strategy											

The requirement for compensatory habitat in Devon and Cornwall is considered to be low. The main requirements arise from the South Devon and Dorset SMP which includes the Tamar and Exe estuaries. The potential need for 38ha arising from the Exe Estuary Strategy highlighted in our 2013 report has since been revised down to 15ha, as much of the cause of projected saltmarsh loss is uncertain. A managed re-alignment scheme in the Otter Estuary near Budleigh Salterton, Devon will meet this need (and provide c.35ha of brackish and fresh water habitat), once funding allocation is resolved. Recent analysis of predicted losses within the Tamar estuary in the first epoch indicate losses of 13.5 ha of grazing marsh and reedbed in the upper estuary , and 10 ha of intertidal habitat important for SPA features. Two potential sites for managed realignment are being investigated, and one has been included in the FCRM investment programme.

The Cornwall and Isles of Scilly SMP identified coastal squeeze losses within the Fal/ Helford estuary; these have not been quantified but three potential managed realignment sites have been identified.

Table 4: Habitat compensation to compensate for projected losses: South Wessex HCP

Plans/Strategies in HCP area	Habitat Type	Within Epoch Change (+/-)			Habitat Creation			Cumulative Balance			P
		c.2025	c.2050	c.2100	H	M	Total	c.2025	c.2050	c.2100	
South Devon & Dorset SMP (part), Poole & Christchurch Bays SMP (part), Poole & Wareham Strategy	Saltmarsh	+7	-9	-234	0	0	0	+7	-2	-236	} 92
	Mudflat	-44	-77	-79	0	0	0	-44	-121	-200	
	Grazing Marsh	-2	-3	-4	0	0	0	-2	-5	-9	12
	Freshwater &	-6	-11	-30	0	0	0	-6	-17	-47	27
	Saline lagoon	-15	0	0	0	0	0	-15	-15	-15	35
	Woodland-Scrub										

The Poole and Wareham Strategy is the main driver for compensatory habitat in South Wessex. Potential sites have been identified with a relatively high degree of confidence in delivery, although they have not yet started so are included under 'P' in Table 4. The Environment Agency, RSPB and Natural England are working together on the appraisal stage of a landscape scale partnership project on the Arne Moors, near Wareham, Dorset. Delivery is planned c.2023 and may comprise up to 92ha of intertidal mudflats and saltmarsh, with 35ha of additional saline lagoons, of which 15ha will be compensatory habitat and 20ha as mitigation for onsite impacts on the RAMSAR bird interest features. There is potential for 12ha of grazing marsh creation at East Stoke, and the Forestry Commission has committed to creating 27ha of new heathland, *Molinia* meadows and woodland scrub as it clears existing plantations at Rempstone. Through partnership working and contributing to these initiatives we will be able to meet our statutory requirements associated with the Strategy.

Note that the epochs worked to in the Poole and Wareham Strategy run to 2030, 2060 and 2110.

Table 5: Habitat compensation to compensate for projected losses: Solent and South Downs HCP

Plans/Strategies in HCP area	Habitat Type	Within Epoch Change (+/-)			Habitat Creation			Cumulative Balance			P
		c.2025	c.2050	c.2100	H	M	Total	c.2025	c.2050	c.2100	
Poole & Christchurch Bays SMP (part), North Solent SMP, Isle of Wight SMP, South Downs SMP (part)	Saltmarsh	-124	-148	-145	158	0	158	+34	-114	-259	194
	Mudflat	+44	+60	-62	25	0	25	+69	+129	+67	46
	Grazing Marsh	0	-76	0	69	0	69	+69	-7	-7	-45
	Freshwater	0	-4	0	0	0	0	0	-4	-4	0

Our Solent and South Downs Area incorporates a dynamic and varied coast which experiences an overall accretion of mudflat and erosion of saltmarsh area. The managed re-alignment at Medmerry, near Chichester, West Sussex has been instrumental in creating space for compensatory inter-tidal habitat, although this habitat may not all be ecologically functional until epoch 2. This site is managed by the RSPB. As with East Anglia in particular, there may be further work required to address habitat condition as well as extent in the Solent area. A range of sites have been identified that compensate for saltmarsh loss during epoch 2. Although the mudflat area is not under threat overall, much of the inter-tidal habitat creation is expected to include an element of mudflat as well.

The amount and location of grazing marsh in the area is related to managed re-alignment activity. The schemes currently proposed to compensate for saltmarsh in epoch 2 involve realigning over grazing marsh in the hinterland to a total of 45ha.This needs to be considered in addition to the existing 'baseline' loss from current SMP policies of 76ha in epoch 2, making the identification of further grazing marsh creation sites a priority for this HCP

despite the 69ha habitat creation at Manor House. Although not included in Table 5, there is a possible loss of c.14ha saline lagoon involved in one proposed epoch 1 managed realignment, although this is uncertain at present.

Table 6: Habitat compensation to compensate for projected losses: South East HCP

Plans/Strategies in HCP area	Habitat Type	Within Epoch Change (+/-)			Habitat Creation			Cumulative Balance			P
		c.2025	c.2050	c.2100	H	M	Total	c.2025	c.2050	c.2100	
South Downs SMP (part), South Foreland to Beachy Head SMP, Folkstone to Cliff End Strategy, Isle of Grain to South Foreland SMP, Medway & Swale SMP, Medway Estuary & Swale Strategy, TE2100 (part)	Saltmarsh	-78	-140	-308	0	0	0	-78	-218	-526	(TBC)
	Mudflat	+19	+51	+160	0	0	0	+19	+70	+230	
	Vegetated shingle	-10 /10km	-	-	0	0	0	-10	-	-	
	Freshwater/grazing marsh	0	0	0	160	0	160	160	160	160	-160

Since our 2013 report we have split out the Solent and South Downs HCP from the South East, which leads to some differences in how the figures are presented. However, except for in the Medway and Swale, there has been no change to estimations of habitat change in real terms across this area. There has, however, been significant discussion since 2013 about the use of habitat loss figures in the Medway and Swale SMP, which do not provide inter-tidal coastal squeeze figures. More recent studies associated with the Medway Estuary and Swale Strategy, whilst subject to final agreement with Natural England, are the most likely trajectory to inform our habitat creation goals and are used here.

The Medway and Swale is expected to lose saltmarsh and gain mudflat (through lowering of saltmarsh) over the next 100 years, although the former will outpace the latter roughly threefold such that the overall inter-tidal balance will be -59ha, -89ha and -148ha in epochs 1, 2 and 3 respectively.

There are considerable opportunities to create habitat in the Medway and Swale, with potential for saltmarsh creation within epoch 1, depending on whether Great Bells Farm is agreed to provide equivalent habitat to that lost in the identified scheme. Either way, the scheme at Great Bells provides a head start on addressing grazing marsh losses associated with future realignments that proceed as a common understanding of estuary development develops.

The Folkestone to Cliff End Strategy (FoCES), which lies within the South Foreland-Beachy Head SMP, has stated an expected impact of 10.4km loss of annually vegetated driftlines and 10ha loss of perennially vegetated stony banks (grouped as 'vegetated shingle' above). As we develop options further in FoCES, we will gain a clearer understanding of the amount and timing of losses. For now, the 10.4km and 10ha is expected to be a maximum, and some of it may be replacement of deteriorating habitat rather than compensation for loss.

The areas of the South Downs SMP, Isle of Grain to South Foreland SMP and TE2100 sitting within the South East HCP require no compensation.

Table 6: Habitat compensation to compensate for projected losses: Thames HCP

Plans/Strategies in HCP area	Habitat Type	Within Epoch Change (+/-)			Habitat Creation			Cumulative Balance			P
		c.2025	c.2050	c.2100	H	M	Total	c.2025	c.2050	c.2100	
TE2100, Isle of Grain to South Foreland SMP	Saltmarsh	-18	-65	-185	6	12	18	0	-65	-185	} 976
	Mudflat	-40	-40	-430	12	44	56	+16	-24	-454	
	Grazing Marsh	0	0	0	0	0	0	0	0	0	-779

As with the Severn Estuary, the projected habitat change in the Thames is complex and uncertain, and will depend upon sea level rise scenarios being tested in the TE2100 Strategy. In addition, habitat change to date has been the subject of a review currently being discussed by the Environment Agency and Natural England, which indicates that projections of future loss of inter-tidal habitat may be substantial over-estimates, at least in the short to medium term. Notwithstanding the precautionary approach of the HCP, habitat creation for Natura 2000 compensation will clearly need to be responsive to monitoring, although managed realignment may still occur where it is considered to lead to a more sustainable FCRM approach for the estuary.

The Statement of Case for the assessment of Imperative Reasons of Over-riding Public Interest (IROPI) within the current HRA of TE2100 serves as the source for the current projected habitat change in Table 6. Two SPAs - the Thames Estuary and Benfleet-Southend Marshes - are affected. Note that any habitat loss (of saltmarsh or grazing marsh) described in the Statement of Case resulting from planned managed re-alignment schemes has been incorporated as a net figure within column 'P' denoting the future habitat creation pipeline, to ensure 'within epoch change' represents the baseline estimate of habitat loss due to coastal squeeze. Note the saltmarsh figures for coastal squeeze are also corrected for predictions that at Holehaven and Easthaven Creeks (Canvey, Essex), sea level change will result in inundation and saltmarsh development totalling c.17ha over epochs 1 and 2. The habitat change figures shown in Table 6 also correct an error within our 2013 report which gave epoch 1 inter-tidal loss as 314ha.

Compensation for intertidal loss in the Thames has been addressed in part by our purchase of an 18ha interest in the port company DP World's managed re-alignment at Saltfleet Flats, near Cliffe, Kent. Compensation for the remaining intertidal habitat has provisionally been provided by 56ha of the Wallasea Island managed realignment in Essex - however, this requires further discussion with Natural England. As such, we only have medium confidence that the mudflat losses in the Thames have been addressed at the time of writing. The interplay between uncertainty of delivery and uncertainty of habitat loss figures is therefore a current focus of effort in the Thames HCP.

As with the Severn and the Medway and Swale, a significant number of potential habitat creation sites exist in the Thames, although all are likely to be expensive to deliver compared, for example, with schemes in Essex, Suffolk and Norfolk (see Appendix 1 of our 2013 report for a review of relative scheme costs). The key inter-tidal creation sites outlined in the Statement of Case are St. Mary's Marsh, Grain Marsh and Allhallows Marsh, complemented by a range of smaller sites, to be delivered within and beyond epoch 1. However, for the reasons set out above, we are approaching habitat creation cautiously in the Thames, especially where creating inter-tidal habitat will involve substantial losses of internationally designated grazing marsh - 779ha in total associated with the potential realignments at Grain and Allhallows proposed for epochs 2 and 3 respectively.

Table 7: Habitat compensation to compensate for projected losses: East Anglia HCP

Plans/Strategies in HCP area	Habitat Type	Within Epoch Change (+/-)			Habitat Creation			Cumulative Balance			P
		c.2025	c.2050	c.2100	H	M	Total	c.2025	c.2050	c.2100	
Essex & South Suffolk SMP, Lowestoft to Felixtowe SMP, Kelling to Lowestoft SMP, North Norfolk SMP, The Wash SMP, Ouse Washes HCP, Flamborough Head to Gibraltar Point SMP	Saltmarsh	-18	-	-	18	0	18	0	-	-	50
	Grazing Marsh	-91	-	-	150	20	170	+79	-	-	100
	Reedbed	-212	-32	-	216	35	251	+39	+7	-	32

Saltmarsh loss in East Anglia to c.2025, primarily within the Essex and South Suffolk SMP, has been compensated for at the RSPB Wallasea Island site on the Crouch Estuary in Essex, which provides a total of 155ha of compensatory inter-tidal habitat in which we have purchased an interest. The HRA for the Essex and South Suffolk SMP, and subsequent reviews of habitat loss experienced in the area, suggest that the requirement in Essex for inter-tidal (mainly saltmarsh) compensation in epoch 1 is low, at 18ha (note that a further 9ha highlighted in our 2013 report arising from the Boston Waterways Link scheme is no longer required, further to analysis related to the HRA of that scheme). Currently, 18ha of Wallasea's saltmarsh has

been 'allocated' within the HCP to addressing this epoch 1 requirement. On the basis that further (currently unquantified) saltmarsh loss in the Essex estuaries is expected beyond 2025, a potential site at Brightlingsea on the Colne Estuary, Essex, is also being explored that would provide approximately 50ha of saltmarsh.

A further 56ha of Wallasea is currently apportioned to inter-tidal compensation in the Thames estuary (see Table 6 above), although this is subject to final agreement with Natural England. 6ha at Wallasea has also been used by Southend Borough Council to compensate for losses in the Foulness SPA, and a further 75ha addresses our commitment to compensate 112ha of historic losses in Essex and Suffolk estuaries since 1992, as agreed with the SMP's approval in 2011. Further sites at Devereaux Farm near Hamford Water**,** Essex (15ha) and Fingringhoe**,** also on the Colne (22ha) have also been allocated to addressing these historic losses. Note these historic losses are not represented in Table 7.

The SMP HRA specifically guarded against presenting estimates of habitat change beyond epoch 1 due to the lack of confidence in them. The scale of historic losses in the area, and the evidence base to inform earlier estimates of habitat creation required to bring SSSIs in Essex and South Suffolk in UF-R condition (totalling 210ha rather than 112ha) is currently being discussed with Natural England to ensure a common understanding of how current managed realignments in this area can be allocated. There has also been some 'unmanaged realignment' in East Anglia in the wake of significant storm events such as the tidal surge of 2013. In particular, a 95ha area of grazing marsh at Hazlewood Marshes near Aldeborough, Suffolk breached in 2011, leading to a gradual conversion to inter-tidal habitat, although this has not yet reached equilibrium. A breach at Tinkers Marsh**,** Walberswick, Suffolk has also opened up approximately 60ha to inter-tidal habitat development, and research by ABPMer in the Stour & Orwell associated with port development has noted saltmarsh accretion rather than loss. Clearly the need for further habitat creation will, as in the Thames and the Severn, need careful monitoring and the HCP must be agile enough to respond to new evidence by maintaining a portfolio of options.

Habitat change across the Essex, Suffolk and Norfolk coasts incorporates more impacts upon freshwater elements of Natura 2000 sites than many other HCP areas. Significant amounts of grazing marsh and reedbed are at risk throughout East Anglia as sea level rise places pressure upon foreshore features, such as the shingle ridge at Walberswick, that currently protect them. Decisions are required on a case by case basis as to how to balance encouraging dynamic coastal processes that maintain ecological interest with protecting the features of lost freshwater sites within the wider Natura 2000 network. In epoch 1 it is the coastal reedbed habitat that is most at risk, largely in Suffolk from Benacre through Easton Broad to Minsmere, although 40ha at Cley in Norfolk is also affected. As such, this has been the focus of our habitat compensation efforts, with sites at Hilgay, Methwold and Hickling Broad in Norfolk, and Ouse Fen and Snape in Suffolk all complete or nearing completion totalling 251ha of reedbed. A further 41ha of reedbed creation is now progressing at RSPB land at the large (over 700ha) Ouse Fen site at Needingworth, Cambridgeshire, with approvals in place and legal agreements being finalised: depending on future requirements for reedbed compensation this presents additional potential resource, although projected reedbed loss in epoch 2 has recently been revised down.

In epoch 2, the focus of risk is on coastal grazing marsh, particularly at Blakeney Freshes in Norfolk, but also at various sites on the Stour and Orwell, and the Crouch and Roach estuaries, totalling well over 400ha. Broad estimates suggest even higher figures could be lost in epoch 3. However, these figures are not included in Table 7 as they are significantly contingent on managed re-alignment over grazing marsh going ahead, and our understanding of the scale of the need for this work is evolving. Completed schemes at Snape in Suffolk and Lady Fen in Norfolk, as well as the older Frampton Marsh site, contribute 170ha towards addressing grazing marsh losses in epoch 1 at Hen Reedbed (23ha), the Stour & Orwell (20ha), Minsmere (28ha) and the Middle Level Barrier Banks (20ha). Further potential exists at Hedleigh Marshes in Essex (60ha), Hillhouse Farm in Suffolk (20ha) and at Hickling, Norfolk (20ha), and there is a general openness towards creating grazing marsh in East Anglia among landowners. Together, the work done to date provides a useful 'buffer' for the as yet unknown requirements of future epochs.

The Ouse Washes:

East Anglia HCP also oversees the Ouse Washes Habitat Creation Project (OWHCP). It is important to note this project is not providing compensatory habitat but rather through the requirements of the Birds Directive, 'replacement habitat' needed to maintain populations of wild birds. As a consequence the figures relating to the OWHCP are not included in Table 7, which only shows compensatory habitat.

The Ouse Washes is one of the largest areas of lowland wet grassland in the UK and is designated as SPA and Ramsar site. In recent decades the populations of certain bird species have declined due to the changing flooding regime, hence the need for replacement habitat. A minimum of 500ha of grazing marsh creation was previously agreed as a success criteria for this project but increasing land prices since the start of the project in 2007, combined with a protracted acquisition process and higher habitat creation costs means less habitat is being created than originally planned. With the agreement of Defra and Natural England we have completed 92ha of new wet grassland at Coveney, with a further 83ha anticipated to be secured within the next year. A second site at Sutton is also planned, which is anticipated to provide approximately 130ha of habitat within the next five years. Therefore in total the OWHCP will create around 300ha of replacement wet grassland habitat.

Table 8: Habitat compensation to compensate for projected losses: Humber HCP

Plans/Strategies in HCP area	Habitat Type	Within Epoch Change (+/-)			Habitat Creation			Cumulative Balance			P
		c.2025	c.2050	c.2100	H	M	Total	c.2025	c.2050	c.2100	
Humber Strategy	Saltmarsh/Mudflat	-254	-159	-	272	359	631	+377	+218	-	496
	Inner Estuary	+89	+153	-	171	20	191	+280	+433	-	0
	Middle Estuary	-263	-257	-	80	250	330	+67	-190	-	335.5
	Outer North	+13	+22	-	0	0	0	+13	+35	-	160.5
	Outer South	-93	-77	-	21	89	110	+17	-60	-	0

The Humber Estuary Strategy has taken a detailed overview of inter-tidal habitat change over the next 50 years to c.2056, with modelled estuary dynamics giving precise projections of habitat change in this dynamic and complex environment. These projections have been reviewed since 2015. The inner, middle and outer portions of the estuary experience different rates of sedimentation and loss of mudflat and saltmarsh, so as with our 2013 report, figures for each portion are shown separately in Table 8 in addition to the total although note that estimates have evolved slightly.

The inner estuary is accreting sediment at the fastest rate of any section of the Humber, and also benefits from the 171ha Alkborough tidal flats scheme, which is perhaps the only managed re-alignment in England to date where the habitat itself performs a defined FCRM function as well as

contributing towards the habitat balance of the estuary. Reads Island is adding a small amount of further inter-tidal habitat in this area. The middle estuary is losing habitat but, thanks to the large habitat creation scheme identified for Skeffling (250ha) - which will add to the well-established 80ha

Plans/Strategies in HCP area	Habitat Type	Within Epoch Change (+/-)			Habitat Creation			Cumulative Balance			P
		c.2025	c.2050	c.2100	H	M	Total	c.2025	c.2050	c.2100	
North East SMP, Northumberland & North Tyneside SMP, Tees Tidal Strategy	Saltmarsh/Mudflat	-20	-	-	22	-	22	+2	+2	+2	-

site at Paull Holme Strays - this area should not experience net habitat loss until well into epoch 2. Note that the benefits of the Skeffling site, which in fact lies in the outer north portion of the estuary, are being used for the middle estuary compensation. The outer south portion is also losing habitat, and is dependent upon the second (89ha) phase of the Donna Nook scheme progressing.

As with the other major estuaries, habitat management on the Humber will need to respond to evidence gleaned from monitoring data. Large potential sites at Sunk Island and Goxhill have the potential to address further losses in the middle and outer estuary.

The Humber Estuary Strategy is about to embark on a comprehensive review, which will re-examine coastal squeeze losses, renew the HRA and steer the HCP in this area. The new Strategy boundary may incorporate further Natura 2000 sites associated with estuary tributaries, which may further affect the statistics for this HCP in future.

Table 9: Habitat compensation to compensate for projected losses: North East area HCP

As with the North West of England, little habitat compensation need has been identified in the North East. The main driver has been the Tees Tidal Strategy, published in 2009 and setting out the need for 20ha of inter-tidal habitat. This has been supplied at the Greatham North site near Hartlepool, alongside extra areas of grazing marsh and freshwater habitat totalling 15ha.

4. Assessment of progress

4.1. Inter-tidal habitats

Total epoch 1 predicted balance (∑cumulative balance, epoch 1 Tables 1a-1j) in England: **+440ha.**

Clearly, large schemes such as Steart, Wallasea and Medmerry have been instrumental in meeting our statutory requirements, but much of this positive balance is provided by the Humber Estuary, which benefits from a series of large historic and ongoing managed re-alignment schemes**,** including Alkborough Flats in the heavily accreting inner estuary. Elsewhere in the Humber, and elsewhere in the country, there is a closer alignment between projected loss and expected compensation. In some areas such as the Severn, there is a minor shortfall to be addressed as we prepare for epoch 2. Such minor under- or (more commonly) over- delivery should be expected given the unpredictable parcels of opportunity to be found through the HCP**,** and the uncertainty surrounding compensation need. However, we adopt a precautionary principle in line with the guidance associated with the Nature Directives.

This +440ha balance is a work in progress. Ongoing work at the Humber (principally Donna Nook Phase 2 and Skeffling) and the Exe and Tamar in Devon is to be completed. Not included in the figure is the 92ha scheme at Arne Moors, in its early though promising stages. The balance is, however, to some extent dependent upon further analysis and agreement with Natural England for our intended use of Wallasea Island for compensation in the Thames, and of Great Bells Farm for grazing marsh compensation enabling a realignment in the Medway and Swale Strategy.

The interplay between mudflat and saltmarsh is also complex, and experience has shown that tight management of their relative extent is difficult to realise, despite appreciation of the different niches they provide in the coastal ecosystem. On the south and south-east coasts, the two habitats have been explicitly separated with an attempt to account for each discretely (note Defra's Outcome Measures combined the two for reporting purposes). Poole and Wareham in particular will require a focus on mudflat alongside saltmarsh compensation over time, whilst elsewhere mudlfat is either naturally accreting through sediment deposition (as in some parts of the Humber) or otherwise extending through saltmarsh lowering (e.g. in the Medway and Swale).

Beyond epoch 1, the behaviour and evolution of inter-tidal habitats across England's estuaries is unpredictable, and our understanding of it is constantly evolving. This makes projections beyond the first planning horizon to approximately 2025 provisional and**,** in some cases such as the Thames, highly uncertain and likely to change. Even current assessments of annual saltmarsh loss vary: those in Essex and South Suffolk associated with the SMP were in the order of 44ha per year, but these were revised down in subsequent analysis to less than 1ha/year. Such margins of error threaten to undermine confidence in our delivery model which can clearly have significant implications for maintaining the quality and resilience of the Natura 2000 network, the demands upon the FCRM investment programme, and its environmental performance well into the future.

This highlights the importance of monitoring inter-tidal habitat extent (as a minimum) to a consistent methodology aligned to the baseline information in the 2010 Environment Agency Saltmarsh Survey, to supply a more robust evidence base on which to make decisions. This is especially important in locations such as Essex and South Suffolk where no working predictions for potential requirements beyond epoch 1 exist. Tables 2-8 suggest there is potentially significant work to do to establish compensatory inter-tidal habitats for the longer term, for which preparation should start soon.

4.2. Grazing Marsh

Total epoch 1 predicted balance (∑cumulative balance, epoch 1 Tables 1a-1j) in England: **+239ha.**

The compensatory requirement for freshwater habitat, especially coastal floodplain grazing marsh (broadly defined), is in most cases directly dependent upon the management decisions relating to

the adjacent inter-tidal area. The Ouse Washes grazing marsh habitats have not been included in the account balance figures in this report, on the basis that they constitute replacement habitat for deterioration in quality rather than compensation for loss - although a paragraph detailing progress has been included under Table 7.

In particular, grazing marsh requirements are strongly influenced by the site of managed re-alignment schemes, which may create compensatory inter-tidal habitat in place of the existing Natura 2000 grazing marsh - which will, in turn, need to be compensated for if the integrity of our Natura 2000 sites is to be maintained. In Tables 1-9, any grazing marsh already lost and compensated for in this way has been incorporated to provide a 'net' balance.

Where the direct grazing marsh 'cost' of *potential* pipeline managed realignment sites is known, such as in the Thames and the Solent & South Downs, this is expressed as a negative figure under column 'P'. The Severn has a high number of potential managed re-alignment sites in column 'P' but they have a high degree of uncertainty attached**,** and the grazing marsh cost has not been calculated. In East Anglia, most potential pipeline sites have yet to be defined more closely and are not included in the analysis, but many are likely to involve loss of grazing marsh leading to significant future compensation needs not shown in Table 7 but totalling hundreds of hectares. Equally, this area is currently well-provisioned for grazing marsh**,** as the Frampton Marsh site (92ha) was not required for compensation it was originally intended for: it now therefore anticipates the likely need in epoch 2. In the Medway & Swale, 160ha of grazing Marsh at Great Bells Farm has essentially been 'allocated' as compensation for a potential managed re-alignment scheme**,** but this has yet to be agreed with Natural England and so currently forms part of our positive balance. Similarly, the 69ha so far created in the Solent & South Downs anticipates greater losses in epoch 2, so in summary the current positive balance of grazing marsh should be considered a temporary surplus prior to a future spike in need.

4.3. Reedbed

Total epoch 1 predicted balance (cumulative balance, epoch 1 Table 1h) in England: **+39ha**

East Anglia is the focus for reedbed habitat losses, most of which is already being experienced behind the natural shoreline barriers of Suffolk and Norfolk. Progress towards compensating for these losses has been strong since our 2013 report, with 251ha now created or in progress close to the sites of loss.

4.4. Other habitats

Despite the focus on compensation for loss of inter-tidal and freshwater marsh within the HCP, other habitat both at the coast and inland is also identified, some of which presents unique challenges for re-creation elsewhere. Saline lagoons and shingle features can be especially difficult to reproduce artificially elsewhere without the specific conditions that nurtured them at the site of loss. Scrub and open freshwater features are easier but may still have specific management needs relative to the features of interest, so location is still important.

35ha of potential saline lagoon habitat has been found as part of the Poole and Wareham Strategy. A maximum of 10km of vegetated shingle being lost as part of the Folkstone to Cliff End Strategy is yet to be re-created. Losses to other habitat types within England's Natura 2000 network resulting from FCRM are small.

Note that in our 2013 report, we highlighted 450ha of other habitat types being created, most of which was not strictly speaking compensatory habitat for Natura 2000 sites and is consequently not included in this analysis.

5. Conclusion and priorities

The Environment Agency is on track to deliver its epoch 1 statutory obligations towards compensating ecologically functional habitat in advance of loss across the Natura 2000 network arising from the strategic FCRM plans and strategies we approve. Current shortfalls are generally minor, have been recognised and are expected to be addressed prior to loss at the existing designated sites.

However, this assessment is subject to further exploration with Natural England as to the evidence base relating to historic habitat loss that has driven the suite of SSSI's into Unfavourable condition in the past, and the remedial measures associated with that historic loss prior to compensation for losses anticipated in the future (see section 1.3.3 of this report).

Priority: Agree scale of commitment required to address historic losses to nationally and internationally designated sites with Natural England.

Significant uncertainty surrounds the scale of the task in epoch 2 to maintain network integrity. Some HCPs have working projections for epoch 2 and even epoch 3 losses, but a stronger monitoring base coupled with R&D outputs such as from Natural England's Improvement Programme for England's Natura 2000 Sites (IPENS) should, over the next five years or so, refine our understanding with an evidence base that can be better used to justify development of future habitat compensation schemes. Every HCP area has a short and long list of potential pipeline schemes, which can be mobilised according to the evidence base for future need.

Priority: Use SMP and Strategy reviews to incorporate the latest research and monitoring into projections of habitat loss associated with long term FCRM management policies.

This report represents a step forward in our understanding of the status of our delivery of habitat quantity against statutory obligations. It has focussed upon the habitat account balance, with little or no content on the quality of compensation sites and the extent to which they are successfully replacing the various features for which the original sites were designated. Neither does the report seek to appraise the overall delivery of FCRM-related statutory obligations relating to the Nature Directives - i.e. compensation for direct losses incurred by all FCRM Risk Management Authorities as part of their works. As we better capture this fuller picture of Natura 2000 compensation we can also set out this statutory delivery in the context of our wider environmental work within FCRM, which we will from 2017 be reporting to Defra using the FCRM Outcome Measure system.

Priority: Once a uniform system of reporting our Natura 2000 compensation has been developed with HCP leads, focus upon auditing the quality of compensation sites and setting our delivery in the context of other RMAs and our wider environmental metrics.

We constantly seek to improve how we operate the HCP, to ensure fairness and transparency, and to avoid double counting or omission. With a strong history of partnership working in the RHCP, we will explore how the Partnership Funding model can be applied to habitat scheme delivery, and where partnership working can ensure compensation schemes can be integrated into our other environmental work. We will aspire to reflect this in future reports.

Specific priorities associated with different HCPs are as follows, many of which are already being addressed locally:

Severn Estuary HCP:

1) Agree the contribution of Welsh Government to compensation efforts on the Severn through loss/benefits apportionment, in order to finalise the SMP Strategy and associated IROPI case;

2) Review the potential for managed realignment in the Severn Estuary and test scenarios associated with potential need arising from tidal lagoon power developments.

Devon & Cornwall HCP:

1) Resolve funding barriers to take forward identified managed realignment sites;

2) Quantify Natura 2000 habitat losses in the Cornwall & Isles of Scilly SMP in order to justify any necessary compensation schemes.

South Wessex HCP:

Progression of the Arne Moors partnership project.

Solent & South Downs HCP:

1) Agree with Natural England work to be done to address historic losses of inter-tidal habitat affecting SSSI condition;

2) Identify potential grazing marsh compensation >50ha to accommodate potential losses arising from future realignments.

South East HCP:

Completion of the MEASS and FOCES strategies that will refine understanding of the scale of losses and potential measures to address them.

Thames HCP:

1) Agreement with Natural England about projected losses of inter-tidal habitat in the Thames Estuary, considering new analysis associated with TE2100;

2) Depending on the outcome of 1), identify major grazing marsh creation sites to compensate for losses associated with potential realignments in the Thames Estuary**,** and agree the potential for Great Bells Farm in meeting this need.

East Anglia HCP:

1) Agree with Natural England work to be done to address historic losses of inter-tidal habitat affecting SSSI condition;

2) Quantify projected losses of inter-tidal habitat in epoch 2 in order to justify any necessary compensation schemes.

3) Depending on the outcome of 2), identify major grazing marsh creation sites to compensate for losses associated with potential realignments in East Anglia.

4) Monitor the habitat replacement requirements of the Ouse Washes with reference to the Ouse Washes Habitat Creation Project.

Humber HCP:

Completion of the Donna Nook phase 2 and Skeffling managed realignment schemes.

6. List of abbreviations

7. Appendix - boundaries/map of HCPs

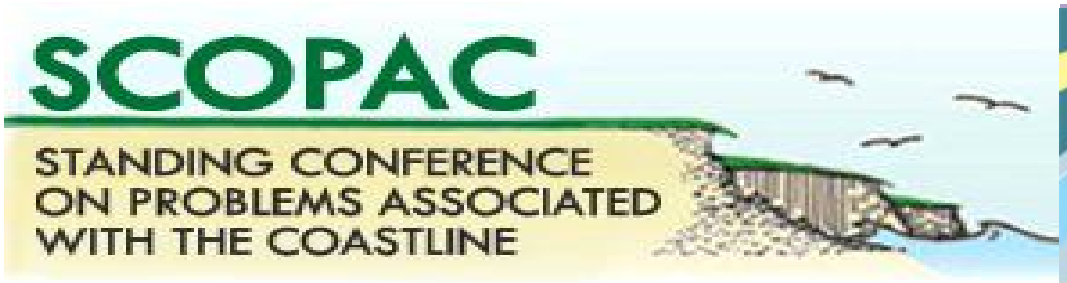
8. Appendix - digitised map of compensation sites (to be added later)

Optional – delete if not needed.

[i] Sites protected under the European Commission Council's Directives on the conservation of wild birds (2009/147/EC - the 'Birds' Directive) as Special Protection Areas (SPAs) and on the conservation of natural habitats and of wild fauna and flora (79/409/EEC - the 'Habitats' Directive) as Special Areas for Conservation (SACs), and proposed SPAs (pSPA) and candidate SACs (cSAC), and sites designated under the Ramsar Convention on wetlands of international importance.

The Birds and Habitats Directives (the 'Nature Directives') are transposed in UK law through the Wildlife & Countryside Act (WCA) 1981 (as amended) and the Conservation of Habitats and Species Regulations 2010 (the 'Habitats Regulations'). The 2010 regulations update and consolidate amendments made since the original transposition into UK law of the Habitats Directive in 1994. The Ramsar Convention was adopted in the UK in 1976 and sites designated using the mechanism of Sites of Special Scientific Interest. The Ramsar Sites are therefore given legal protection under the WCA 1981 (as amended), and Government policy since has afforded them the same level of protection in practice as those designated under the Habitats Regulations, with which there is considerable overlap of boundaries

[ii] As defined in [s xxx of the Floods and Water Management Act 2010]
[iii] [Defra Steer]
[iv] [NE report on quality of hab comp]



Income	Budget 2016/17 (Income) Expenditure	Actuals 2016/17 (Income) Expenditure	Variances (Surplus) Deficit	Notes	Actuals 2015/16 (Income) Expenditure
Full Membership Subscription	(48,876)	(48,834)	42		(48,834)
Associated Membership Subscription	(3,719)	(3,928)	(209)		(3,928)
Mailing List Membership Subscription	(531)	(291)	240		(437)
Conference Income	(1,700)	(700)	1,000		(400)
Income Total	**(54,826)**	**(53,753)**	**1,073**		**(53,599)**
Shoreline Management Plans					
Shoreline Management Plans	2,000	2,854	854		0
Coastal Research & Monitoring					
Research Chair	8,000	8,171	171		7,122
Major Projects	35,000	19,527	(15,473)	Underspend allocated in research programme in 2017/18	0
Minor Projects	8,000	6,000	(2,000)	Underspend allocated in research programme in 2017/18	0
Grants & Bursaries	500	500	0		0
Improved Utilisation of Data	1,000	183	(817)		850
Sharing Good Practice					
Workshops	2,000	(103)	(2,103)		1,423
Site visits	2,000	1,583	(417)		0
Supporting Delivery					
Supporting Delivery	27,000	22,439	(4,561)		224
Influencing Coastal Policies					

Influencing Coastal Policies	2,000	0	(2,000)		713

Communications

Website Management	3,000	1,455	(1,545)		1,344
Publications	500	0	(500)		0
Artwork & Graphics	500	45	(455)		128

Leadership/Management

Leadership/Management	8,000	2,068	(5,932)		1,150
HBC Coastal recharges	0	0	0		631

Adminstration

Secretariat	9,700	11,640	1,940		9,700
Accountancy	2,100	2,520	420		2,100
Insurance	1,500	1,387	(113)		1,279
SCOPAC Bad Debt	0	0	0		0

Expenditure Total	**112,800**	**80,269**	**(32,531)**		**26,664**
(Surplus)/Deficit Before Interest	**57,974**	**26,516**	**(31,458)**		**(26,935)**
Interest Received	**0**	(85)	(85)		(281)
(Surplus)/Deficit After Interest	**57,974**	**26,431**	**(31,543)**		**(27,216)**

The General Fund balance representing resources available is held by Havant Borough Council

Opening Balance	**(69,896)**	**(42,680)**
Surplus/Defict for Year	**26,431**	**(27,216)**
Closing Balance	**(43,465)**	**(69,896)**

Income	Revised Budget 2016/17 (Income) Expenditure	Actuals 2016/17 (Income) Expenditure	Variances (Surplus) Deficit	Notes	Actuals 2015/16 (Income) Expenditure
Contribution from SCOPAC	(35,500)	(35,500)	0		(12,500)
Income Total	**(35,500)**	**(35,500)**	**0**		**(12,500)**
Shoreline Management Plans					
Shoreline Management Plans	2,000	2,854	854		0
Coastal Research & Monitoring					
Research Chair	0	0	0		0
Major Projects	0	0	0		0
Minor Projects	0	0	0		0
Grants & Bursaries	0	0	0		0
Improved Utilisation of Data	1,000	165	(835)		850
Sharing Good Practice					
Workshops	0	0	0		286
site visits	0	0	0		0
Supporting Delivery					
Supporting Delivery	27,000	22,439	(4,561)		0
Influencing Coastal Policies					

Influencing Coastal Policies	1,000	0	(1,000)		0

Communications

Website Management	1,500	1,110	(390)		657
Publications	250	0	(250)		0
Artwork & Graphics	250	0	(250)		0

Leadership/Management

Leadership/Management	7,000	2,068	(4,932)		995
HBC Coastal recharges	0	0	0	The budget for this is included in Leadership/Management	631

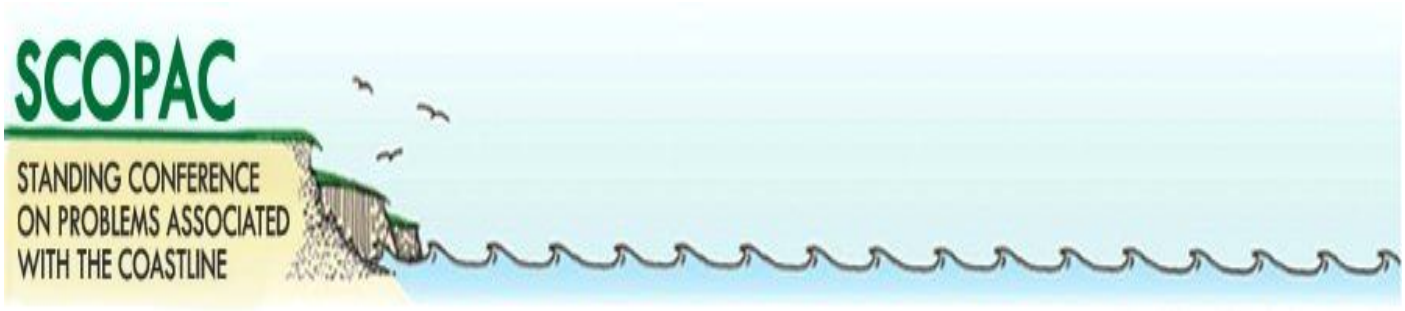
Adminstration

Secretariat	4,850	5,820	970		4,850
Accountancy	1,050	1,260	210		1,050
Insurance	750	693	(57)		639

Expenditure Total	**46,650**	**36,410**	**(10,240)**		**9,958**
Total	**11,150**	**910**	**(10,240)**		**(2,542)**

The General Fund balance representing resources available is held by Havant Borough Council

Opening Balance	**(11,763)**	**(9,221)**
Surplus/Defict for Year	**910**	**(2,542)**
Closing Balance	**(10,852)**	**(11,763)**



Income	Revised Budget 2016/17 (Income) Expenditure	Actuals 2016/17 (Income) Expenditure	Variances (Surplus) Deficit	Notes		Actuals 2015/16 (Income) Expenditure
Full Membership Subscription	(48,876)	(48,834)	42			(48,834)
Associated Membership Subscription	(3,719)	(3,928)	(209)			(3,928)
Mailing List Membership Subscription	(531)	(291)	240			(437)
Conference Income	(1,700)	(700)	1,000			(400)
Interest	0	(85)	(85)			(281)
Income Total	**(54,826)**	**(53,838)**	**988**			**(53,879)**
Shoreline Management Plans						
Shoreline Management Plans		0	0			0
Coastal Research & Monitoring						
Research Chair	8,000	8,171	171			7,122
Major Projects	35,000	19,527	(15,473)			0
Minor Projects	8,000	6,000	(2,000)			0
Grants & Bursaries	500	500	0			0
Improved Utilisation of Data	0	17	17			0
Sharing Good Practice						
Workshops	2,000	(103)	(2,103)			1,137
Site visits	2,000	1,583	(417)			0
Supporting Delivery						
Supporting Delivery	0	0	0			224
Influencing Coastal Policies						
Influencing Coastal Policies	1,000	0	(1,000)			713

Communications						
Website Management	1,500	345	(1,155)			687
Publications	250	0	(250)			0
Artwork & Graphics	250	45	(205)			128
Leadership/Management						
Leadership/Management	1,000	0	(1,000)			155
HBC Coastal recharges		0	0			0
Adminstration						
Secretariat	4,850	5,820	970			4,850
Accountancy	1,050	1,260	210			1,050
Insurance	750	693	(57)			639
Contribution to SCG	35,500	35,500	0			12,500
SCOPAC Bad Debt	0	0	0			0
Expenditure Total	**101,650**	**79,358**	**(22,292)**			**29,205**
Total	**46,824**	**25,520**	**(21,304)**			**(24,674)**

The General Fund balance representing resources available is held by Havant Borough Council

Opening Balance	**(58,132)**	**(33,458)**
Surplus/Defict for Year	**25,520**	**(24,674)**
Closing Balance	**(32,612)**	**(58,132)**

Code	Description	Budget 2017/18	Actuals	Budget Remaining	Forecast expenditure	Comments
HBSCP 97006	INCOME B/F	-43,464.00	0.00	-43,464.00	-43,464.00	
HBSCP 97016	CONFERENCE INCOME	-1,700.00	0.00	-1,700.00	-1,700.00	
HBSCP 97017	Membership fees	-53,126.00	0.00	-53,126.00	-53,126.00	
	Total Income	-98,290.00	0.00	-98,290.00	-98,290.00	
	Shoreline Management Plans					
HBSCP 97018	Shoreline Management Plans	6,000.00	0.00	6,000.00	6,000.00	
	Coastal Research & Monitoring					
HBSCP 97007	Research Chair	8,500.00	0.00	8,500.00	8,500.00	
HBSCP 97010	Major Projects	44,000.00	0.00	44,000.00	44,000.00	
HBSCP 97011	Minor Projects	7,000.00	0.00	7,000.00	7,000.00	
HBSCP 97014	Grants & Bursaries	500.00	0.00	500.00	500.00	
HBSCP 97015	Improved Utilisation of Data	1,000.00	0.00	1,000.00	1,000.00	
	Sharing Good Practice					
HBSCP 97009	Workshops	1,000.00	0.00	1,000.00	1,000.00	
HBSCP 97013	Site visits	1,000.00	0.00	1,000.00	1,000.00	
	Supporting Delivery					
HBSCP/97025		8,600.00	0.00	8,600.00	8,600.00	
	Influencing Coastal Policies					
HBSCP/97026		500.00	0.00	500.00	500.00	
	Communications					
HBSCP 97004	WEBSITE MANAGEMENT	3,000.00	0.00	3,000.00	3,000.00	
HBSCP 97012	Publications	100.00	0.00	100.00	100.00	
HBSCP 97008	ARTWORK & GRAPHICS	100.00	0.00	100.00	100.00	
	Leadership/Management					
HBSCP/97024	HBC Coastal recharges	5,000.00	0.00	5,000.00	5,000.00	
	Administration					
HBSCP 97000	Secretariat	8,350.00	0.00	8,350.00	8,350.00	
HBSCP 97001	Accountancy	2,100.00	0.00	2,100.00	2,100.00	
HBSCP 97003	Insurance	1,433.10	0.00	1,433.10	1,433.10	
	Total Expenditure	98,183.10	0.00	98,183.10		
	Net Income/Deficit	-106.90	0.00			

n.b Supporting Delivery includes:
Capital Investment Programme maximising investment
Maintenance sharing experiences
Developing efficiency register
Promoting partnership funding opportunities
Procurement - Extending Framework Contract

Code	Description	Budget 2017/18	Actuals	Budget Remaining	Forecast expenditure
HBSCG/97005	Contribution to SCG/from SCOPAC	-15,700.00		-15,700.00	-15,700.00
HBSCG/97006	INCOME B/F	-10,852.00		-10,852.00	-10,852.00
HBSCG/97016	CONFERENCE INCOME	0.00		0.00	0
HBSCG/97017	Membership fees	0.00		0.00	0
	Total Income	**-26,552.00**	**0.00**	**-26,552.00**	**-26,552.00**
	Shoreline Management Plans				
HBSCG/97018	Shoreline Management Plans	6,000.00		6,000.00	6,000.00
	Coastal Research & Monitoring				
HBSCG/97007	Research Chair	0.00		0.00	0.00
HBSCG/97010	Major Projects	0.00		0.00	0.00
HBSCG/97011	Minor Projects	0.00		0.00	0.00
HBSCG/97014	Grants & Bursaries	0.00		0.00	0.00
HBSCG/97015	Improved Utilisation of Data	1,000.00		1,000.00	1,000.00
	Sharing Good Practice				
HBSCG/97013	Workshops	0.00		0.00	0.00
HBSCG/97009	site visits	0.00		0.00	0.00
	Supporting Delivery				
HBSCP/97025		8,600.00		8,600.00	8,600.00
	Influencing Coastal Policies				
HBSCP/97026		500.00		500.00	500.00
	Communications				
HBSCG/97004	WEBSITE MANAGEMENT	1,500.00		1,500.00	1,500.00
HBSCG/97012	Publications	50.00		50.00	50.00
HBSCG/97008	ARTWORK & GRAPHICS	50.00		50.00	50.00
	Leadership/Management				
HBSCP/97002	Leadership/Management	3,500.00		3,500.00	3,500.00
	Adminstration				
HBSCG/97000	Secretariat	3,500.00		3,500.00	3,500.00
HBSCG/97001	Accountancy	1,050.00		1,050.00	1,050.00
HBSCG/97003	Insurance	716.55		716.55	716.55
	Total Expenditure	**26,466.55**	**0.00**	**26,466.55**	
	Net Income/Deficit	-85.45	0.00	-85.45	

n.b Supporting Delivery includes:

Capital Investment Programme maximising investment
Maintenance sharing experiences
Developing efficiency register
Promoting partnership funding opportunities
Procurement - Extending Framework Contract

SCOPAC
STANDING CONFERENCE ON PROBLEMS ASSOCIATED WITH THE COASTLINE

	Description	Budget 2017/18	Actuals	Budget Remaining	Forecast expenditure	Comments
4	Contribution to SCG from SCOPAC	15,700.00		15,700.00	15700	
5	INCOME B/F	-32,612.00		-32,612.00	-32612.00	
6	CONFERENCE INCOME	-1,700.00		-1,700.00	-1700.00	
7	Membership fees	-53,126.00		-53,126.00	-53126.00	
8						
9	**Total Income**	**-71,738.00**		**-71,738.00**	-71738.00	
10						
11	**Shoreline Management Plans**					
12	Shoreline Management Plans	0.00		0.00	0.00	
13						
14	**Coastal Research & Monitoring**					
15	Research Chair	8,500.00		8,500.00	8500	
16	Major Projects	44,000.00		44,000.00	44000	
17	Minor Projects	7,000.00		7,000.00	7000	
18	Grants & Bursaries	500.00		500.00	500	
19	Improved Utilisation of Data	0.00		0.00	0.00	
20						
21	**Sharing Good Practice**					
22	Workshops	1,000.00		1,000.00	1000	
23	Site visits	1,000.00		1,000.00	1000	
24						
25	**Supporting Delivery**					
26		0.00		0.00	0.00	
27						
28	**Influencing Coastal Policies**					
29						
30						
31	**Communications**					
32	WEBSITE MANAGEMENT	1,500.00		1,500.00	1500	
33	Publications	50.00		50.00	50	
34	ARTWORK & GRAPHICS	50.00		50.00	50	
35						
36	**Leadership/Management**					
37	HBC Coastal recharges	1,500.00		1,500.00	1500.00	
38						
39	**Adminstration**					
40	Secretariat	4,850.00		4,850.00	4850.00	
41	Accountancy	1,050.00		1,050.00	1050.00	
42	Insurance	716.55		716.55	716.55	
43						
44	**Total Expenditure**	**71,716.55**	**0.00**	**71,716.55**		
45						
46	**Net Income/Deficit**	-21.45	0.00	-21.45		

The Southern Coastal Group

Last Update: September 2017

Key: *Priority* — *High*; *Medium*; *Low*

Progress — *Green - On Target.*; *Amber - Early Warning needsof Partnership may not be met.*; *Red - Action Required, needs of Partnership will NOT be met.*

	Ref.	Priority	Progress	Action	Why is this needed?	What will success look like?	Lead Officer	Critical Support	Start Date	Target Completion Date	2017/18 Resource £	2018/19 Resource £	Notes
Shoreline Management Plans											**£6,000**	**£2,000**	
SMP		High	On Target	Update SMP Action Plans	Out of date action plans and lack of clarity over progress of implementation.	Up to date and accurate SMP actions plans to guide the delivery of FCERM for SCG.	Mark Stratton	Tim Kermode + David Lowsley	Dec-16	Jun-17	**£6,000**	**£2,000**	
Coastal Research & Monitoring											**£61,000**	**£30,500**	
Research Chair		High	On Target	To oversee and co-ordinate SCOPAC research	To 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		Ongoing	Ongoing	**£8,500**	**£8,500**	
		Low	On Target	Grants and busaries	To award a Bradbury bursary every year to support a masters student	Good research findings delivered by student	Sam Cope		Ongoing	Ongoing	**£500**	**£500**	
		Low	Early Warning	Improved utilisation of data	To make best use of regional monitoring data and other data available to SCOPAC officers	Increased understanding of coastal processes	Sam Cope		Ongoing	Ongoing	**£1,000**	**£1,000**	
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/Dave Harlow	Sam Cope	Ongoing	Ongoing	**£5,000**	**£0**	
		Medium	Early Warning	Historical aerial photography scanning	To preserve historcial aerial photography from LA offices	Images scanned and uploaded onto CCO website	Dave Harlow	Uwe Dornbusch	2015	Mar-17	**£6,800**	**£0**	Monies carried over from last financial year (£13k project in total)
		High	On Target	Contaminated land project	To raise awareness of lack of funding for protecting sites from flood and coatsal erosion risk	Awareness raised to central government	Matt Wadey	Sam Cope	Feb-17	Mar-18	**£21,700**	**£0**	Monies carried over from last financial year (£25k project in total)
		Low	On Target	Tracer study co-ordination	For a co-ordinated approach to tracer studies across the region	A page on the SCOPAC website collating findings across the region. A proritised and consistent approach to tracer studies.	Sam Cope	Sacha Neill	Ongoing	Ongoing	**£5,000**	**£5,000**	
		Medium	On Target	NFDC Vegetated Shingle project	To assess the impact of Beach Management Activities on vegetated shingle species	A comprehensive report summarising the findings from Hurst Spit.	Lauren Burt	Sam Cope	Apr-17	Mar-18	**£5,000**	**£0**	
		Medium	On Target	Low height seawalls	Current guidance are biased towards the design of large reinforced concrete or pre-cast open coast seawalls etc. A range of small scale pre-cast retaining wall technologies now exist which could be more efficient and cost effective for low height seawalls across the SCOPAC region.	Review available proprietary technologies for low height retaining seawalls and establish best practice guidance on the design of low height seawalls	Andy Pearce		Apr-18	Mar-20	**£0**	**£11,000**	
		Low	On Target	SURGEWATCH contribution	To ensure valuable resource proceeds and to update members and officers	Fully functional, up to date website with an update to the group from Dr Ivan Haigh	Sam Cope		Ongoing	Ongoing	**£500**	**£500**	
Minor Projects		Low	Early Warning	Pagham nearshore bar study	To understand sediment transport pathways feeding Pagham spit	Prove or disprove that nearshore bars are acting as sediment transport corridors	Uwe Dornbusch	Sam Cope	Apr-15	Mar-17	**£2,000**	**£0**	Monies carried over from last financial year (£4k project in total)
		Low	Early Warning	EA Preston tracer study	To establish sediment transport pathways for Preston Beach	To inform future beach management practices	Dave Picksley	Sam Cope	Oct-17	Oct-19	**£5,000**	**£0**	This may get pushed back a year - TBC at RSG meeting on 8th September 2017
		Low	On Target	2018/19 Minor Project - topic TBC	TBC	TBC	TBC	TBC	Apr-18	Mar-19	**£0**	**£4,000**	This may get pushed back a year - TBC at RSG meeting on 8th September 2017
Supporting Delivery, Influencing Policy and Sharing Good Practice											**£11,100**	**£8,500**	
Capital Investment Programme		Low	On Target	Development and implementation of SCG Programme Management Tool	Coordinate SCG MTP Progreamme to look for project efficiencies and identify collaboration opportunities.	Project savings and efficiences and improved oversight of programme in SCG region.	Mark Stratton	Tim Kermode	Apr-15	Ongoing	**£2,000**	**£500**	
		Medium	On Target	Investigate and analyse National MTP programme to understand how coastal schemes fit in and compare to equivalent non tidal schemes.	To ensure that coastal schemes and LA are fully represented and understand how they fit into the national programme.	Briefing note to help shape and influnce future policy on MTP and funding. Shared with coastal group and coastal SIG.	Mark Stratton	Matt Wadey	Nov-16	Apr-17	**£600**	**£0**	

Maintenance sharing experience		Medium	On Target				Pete Ferguson	Steve Cook			**£1,000**	**£1,000**	
Efficiencies		Medium	On Target	Seek feedback from EA National on CERT outputs and key findings			Nick Gray	Matt Hosey		Spring 2017	**£0**	**£0**	
Partnership Funding		High	Early Warning				Neil Watson	Sarah Cairns					
Procurement		High	On Target				Matt Hosey				**£4,000**	**£4,000**	
Environment & RHCP		Medium	Action Required	To update the group on SSD RHCP progress	To ensure SCOPAC understand the programme priorities and deliverables	Update the group twice a year	Gavin Holder	Nick Gray			**£500**	**£500**	
Influencing Policies		Medium	Action Required	Review and respond to Draft South Marine Plan Consultation	To ensure draft policies take acount of FCERM policy and support FCERM delivery	Consultation response submitted to the MMO	Gavin Holder		19th Dec '16	27th Jan '16	**£500**		
Influencing Policies		Medium	Early Warning	Review latest policies and report to SCG			Dave Picksley				**£500**	**£500**	
Education		Low	On Target	Review / update members induction pack			Neil Watson						
Education		High	On Target	Annual Site Vist			Neil Watson	Sam Cope			**£1,000**	**£1,000**	1000
Education		Medium	On Target	Workshop Efficenices			Neil Watson	Sam Cope			**£1,000**	**£1,000**	
Leadership & Management											**£5,000**	**£5,000**	
Leadership		High	On Target	Attend Coastal Chairs							**£2,000**	**£2,000**	
		High	On Target	Lead on Budget Position							**£2,000**	**£2,000**	
		High	Action Required	Engage RFCC's			Matt Hosey				**£1,000**	**£1,000**	
									TOTAL		**£83,100**	**£46,000**	

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PAPER E

Purpose : For Discussion

Committee: **SOUTHERN COASTAL GROUP**

Date: **SEPTEMBER 2017**

Title : **RESEARCH PROGRAMME**

REPORT OF THE CHAIRPERSON OF THE SCOPAC RESEARCH SUB-GROUP

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1 CURRENT RESEARCH PROGRAMMES

1.1 RESEARCH PROGRAMME

The 5 year SCOPAC Research Programme was prioritised by the Southern Coastal Group at the meeting on the 4th September 2015 and approved by SCOPAC at the meeting on the 18th September 2015. It was amended to reflect changing priorities and was endorsed by SCOPAC on the 27th January 2017. The live programme is presented below (Figure 1).

Annual allocation	£21.5 k	£22 k	£27 k	£27 k	£27 k	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)						£4,000
Historical photography scanning						£13,000
Contaminated land						£25,000
Vegetated shingle project						£5,000
Preston tracer study (minor fund 2017/18)						£5,000
CIRIA Groynes in Coastal Management						£5,000
SURGEWATCH						£2,000
Tracer study co-ordination						£15,000
Storm analysis			Dependent on surplus funds			
Low height seawalls						£13,500
Ebb deltas						£15,000
Minor fund projects (2018 - 2020)						£8,000
Design guidance for mixed sand and shingle beaches						N/A

Figure 1: SCOPAC 5 year research programme

Recommendation: For information

1.2 SCOPAC MINOR PROJECTS FUND (2015/2016 AND 2016/2017)

Following the Southern Coastal Group meeting in December 2014 it was agreed that SCOPAC would benefit from funding the following two Minor Projects for 2015/2016 and 2016/2017.

Dr Uwe Dornbusch (Environment Agency): Establishing shingle transport pathways from the sub-tidal to the beach: Church Norton Spit
Minor contribution of £4,000

Church Norton Spit at Pagham Harbour, West Sussex has accreted by approximately 100,000m^3 of material in the past 10 years, making it one of the largest accreting features across the SCOPAC region.

The origin of the material is unknown; therefore this study will investigate whether the material is transported from the sub-tidal across the nearshore bedforms to the shore. The sub-tidal area fronting the Pagham frontage is very shallow and covered with gravel. Some of this is visibly moving onshore as landforms (Inner Owers) but there are some peculiar shingle features at right angles to the beach that are thought to act as transport corridors.

SCOPAC has awarded £4,000 as a contribution towards the project to establish offshore to onshore shingle transport pathways at Church Norton Spit. Investigation of the nearshore bedforms will be achieved using two approaches:

1) A desktop GIS approach using South-east Regional Monitoring Programme data to capture changes over the last 10 to 15 years.
2) Sediment tracing using the methods developed by the Eastern Solent Coastal Partnership to document shingle movement under different conditions.

The project was instigated by Dr Uwe Dornbusch of the Environment Agency, Arun DC and Chichester DC. The first phase of the tracer study element was undertaken by Lucy White from the University of Sussex under the supervision of Dr Cherith Moses from the University of Sussex. The Eastern Solent Coastal Partnership provided the tracer study retrieval equipment.

Lucy White from the University of Sussex has completed her part of the research at a cost of £2,000 and a summary of her results was prepared by Dr Uwe Dornbusch for the SCOPAC and SCG websites. Dr Dornbusch is sourcing a second student to undertake further tracer studies and analysis using monitoring data with the remaining £2,000.

Dr Andy Pearce (Eastern Solent Coastal Partnership): Beach response in front of structures in open coast
Minor contribution of £4,000

Lowering of beaches in front of coastal structures is widely accepted as a leading cause of failure. Beach lowering and toe scour is difficult to detect as the receding tide and storm waves tend to bury this evidence and any damage to structure foundations. The SCOPAC region includes numerous beach structures at risk of scour, with foundations of poorly known depth and condition. Improved

understanding of the scour risk at these structures will help SCOPAC members to better manage the scour risk and to design scour resistant replacements.

The Eastern Solent Coastal Partnership (ESCP) deployed scour monitors onto seawalls at Stokes Bay in Gosport and Southsea in Portsmouth. These sites currently suffer with historically low beach levels and are at risk of toe scour. The deployment team also took the opportunity to deploy additional monitors onto nearby timber groynes at Stokes Bay and some rock armour in Southsea, allowing the effectiveness of the scour monitors to be tested on other structures.

Routine inspections of the monitors has confirmed they are able to detect beach level change, however the magnitude of change has been smaller than expected, and it is thought this is a result of the relatively mild 2016/17 winter. The ESCP are continuing to monitor changes in beach levels and maximum scour depth at these sites. A draft report has been prepared covering site selection, monitor set up / deployment and observations to date; this will be supplemented with further observations over the coming winter.

Recommendation: For information

1.3 MONITORING OF POOLE NEARSHORE REPLENISHMENT TRIALS
Channel Coastal Observatory: £15,000 from SCOPAC and £116,000 from EA R+D fund (2015 – 2016)

SCOPAC contributed £15,000 towards the monitoring of a trial which placed 30,000 m^3 of sand on the seabed, allowing natural processes to push the material onshore to replenish the beaches in Poole Bay. This technique has not been tested in the United Kingdom to date.

The project commenced in February 2015, and involved the Borough of Poole working in partnership with Poole Harbour Commissioners, the Environment Agency, University of Southampton and the Channel Coastal Observatory. Poole Harbour Commissioners provided the sand from maintenance dredging of Poole Harbour entrance, thereby recycling the sand back into the system, rather than dumping it offshore.

The works were undertaken between the 9th and 14th February 2015, when 30,000m^3 of sand was placed on the sea bed approximately 450m offshore at Canford Cliffs Chine in Poole Bay. Seven survey sets have been collected by the Channel Coastal Observatory (CCO) since the material was placed on the sea bed. Each set consists of a topographic survey of the beach and a bathymetric survey of the sea bed. In addition, fluorescent tracer studies were undertaken to establish a link between the sediment deposited on the seabed and the beach.

The Acoustic Doppler Current Profiler (ADCP) is still in position. This measures the speed, direction and turbidity of water currents using sound waves. With the ADCP installed, any turbidity difference between the trial and conventional beach recharge can be assessed.

The final report was prepared by the CCO, reviewed by the steering group and is currently awaiting Environment Agency sign off. A 'lessons learned' leaflet has also been prepared by the steering group for practitioners and regulators.

Funding provided is as follows:

* Environment Agency: £130,000 for the placing of sand on the seabed
* Environment Agency Research & Development Fund: £116,000 for monitoring
* SCOPAC: a further £15,000 towards monitoring costs

Recommendation: For information

1.4 SCANNING OF HISTORICAL AERIAL PHOTORGAPHY
Environment Agency/Bournemouth Borough Council: £13,000 (2015 - 2017)

Analysis of historical aerial photography is fundamental to understanding coastal evolution and change. The Environment Agency has now scanned almost all Annual Beach Monitoring Survey aerial photography negatives in collaboration with the National Collection of Aerial Photography and Blom. A number of Local Authorities hold historical aerial photography from the 1960's, 1970's, 1980's, 1990's and the millennium. Post 2002, aerial photography is captured across the SCOPAC region as part of the South-east and South-west Regional Coastal Monitoring Programme for 2002, 2008, 2013 and 2016.

This project has produced a record of the historical aerial photography held by the councils within the SCOPAC region. Scanning of films by the National Collection of Aerial Photography (NCAP) commenced for year 1 of the project, focussing on images not previously held in digital format by the councils. These images were delivered and will be made freely available where copyright permits. The Environment Agency and the Eastern Solent Coastal Partnership supervised students' who have digitised the flight paths of the images in preparation for website delivery.

Year 2 of the project will be managed by Dr David Harlow who will organise scanning of the remaining aerial photographs held by the Local Authorities.

Recommendation: For information

1.5 BOURNEMOUTH BOROUGH COUNCIL: DISMANTLING OF TIMBER GROYNES
Bournemouth Borough Council: £10,000 (2015 - 2017)

Bournemouth Borough Council have deconstructed timber groynes which were built between 1985 to 1987. These included groynes constructed of Greenheart, Ekki, Balau, Jarrah and Opepe.

This is a golden opportunity to assess the relative merits of 5 timber types after a 29-year field test. Bournemouth Borough Council have been carefully dismantling each groyne, numbering each plank to record its original location in terms of distance from seaward end & level. Any planks that are "unworn" are set aside for re-use in new groynes and are not assessed further.

Any “worn” planks are being assessed as to the degree of Gribble infestation and the degree of abrasion. The SCOPAC funds are being used for the scientific analysis undertaken by Jon Williams of TRADA. So far, 3 of the 5 types of wood have been inspected.

Recommendation: For information

1.6 CIRIA GROYNES IN COASTAL MANAGEMENT MANUAL

Bournemouth Borough Council and New Forest District Council: £5,000

The current CIRIA Guide on the uses of Groynes in Coastal Engineering (1990) will be updated and called, ‘CIRIA Groynes in Coastal Management manual’ and will include other materials being used in the field such as plastic and rock.

There will be a new maintenance section covering the whole country, which the FCERM Asset Management Theme Advisory Group thought could build upon Andy Bradbury’s SCOPAC work.

A scoping questionnaire was emailed out to Local Authority and Environment Agency engineers to investigate what information exists on various groyne fields. There was a national workshop held on the 24th March 2017 to discuss the main topics relevant to the design and management of groyne systems and deliverables of the project, which Dr David Harlow and Peter Ferguson attended/presented at.

Peter Ferguson will be the lead SCOPAC representative on the steering group with Dr David Harlow disseminating information to SCOPAC officers.

Recommendation: For information

1.7 UPDATE OF THE SCOPAC SEDIMENT TRANSPORT STUDY

Channel Coastal Observatory: £150,000 (2013 - 2016) – funded by the Environment Agency with contributions from SCOPAC

The SCOPAC Sediment Transport Study (2004) has been updated by the Channel Coastal Observatory. The last update was undertaken in 2004 by the original authors, Dr Malcolm Bray, Dave Carter and Prof Janet Hooke. Since 2004 a wealth of data has been collected by the South-east and South-west Regional Coastal Monitoring Programmes. This data, along with new literature was incorporated into the update which can be found on the SCOPAC website http://www.scopac.org.uk/sts-2012.html.

Recommendation: For information

1.8 SCOPAC Contaminated Land Study

Eastern Solent Coastal Partnership: £25,000 (2016 - 2018)

There are a number of old landfill sites across the SCOPAC region that have previously been protected from the sea, but are now eroding due to the age of the original protection and sea level rise. A large number of these are owned by the

Local Authorities and are public open space. The nature of the problem is long-term as it is likely that the landfill sites contain some of the early plastics. Given that these can take hundreds of years to biodegrade, it will be necessary to continue to contain the sites for the foreseeable future, as removal is very unlikely to be a feasible option. There is therefore a need for a long-term plan that is technically feasible and affordable. The Shoreline Management Plans and Coastal Strategies form the basis of this plan, however at present, as far as protection of landfill is concerned, they are aspirational as there is no appropriate funding mechanism. Given that the landfill sites are often undeveloped, they do not qualify for FCERM-GiA funding.

This desktop study builds upon a project undertaken by the Eastern Solent Coastal Partnership in conjunction Tim Kermode. Possible funding streams to reduce flood and coastal erosion risk to landfill sites have been explored, with the main aim of the study being to raise the profile of the issue to the politicians. This SCOPAC study is working in parallel with the NERC Contaminated Land study led by the University of Southampton, which is investigating the practicalities of moving or defending landfill in the face of climate change. The LGA Coastal SiG is contributing to the SCOPAC project to assist in raising the profile of the issue on a national level. In addition, a local levy bid has been submitted to the Southern Regional Flood Defence Committee and has so far gained approval at the officers working group.

At the last Southern Coastal Group meeting on the 9th June, Tim Kermode introduced the background to the project, funding mechanisms explored and the proposed draft letter to be sent to the Environment Agency *Wessex* and *Solent and South Downs* area teams. Since the meeting, the Environment Agency area teams have responded and;

- agree that protection of landfill is important
- confirm the current funding process through FCERM-GiA does not give Risk Management Authorities (RMAs) access to specific funds to protect these assets and
- have therefore agreed to take the issue to the next national EA meeting of Area Flood & Coastal Risk Managers (scheduled for early September 2017) to gauge the position across the country as a whole, with a view to escalating the concerns raised, with the national FCRM Directorate.

Recommendation: For information

Contact: **Dr Samantha Cope** (Chairperson of the Research Sub-Group),
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Report to Southern Coastal Group

September 2017

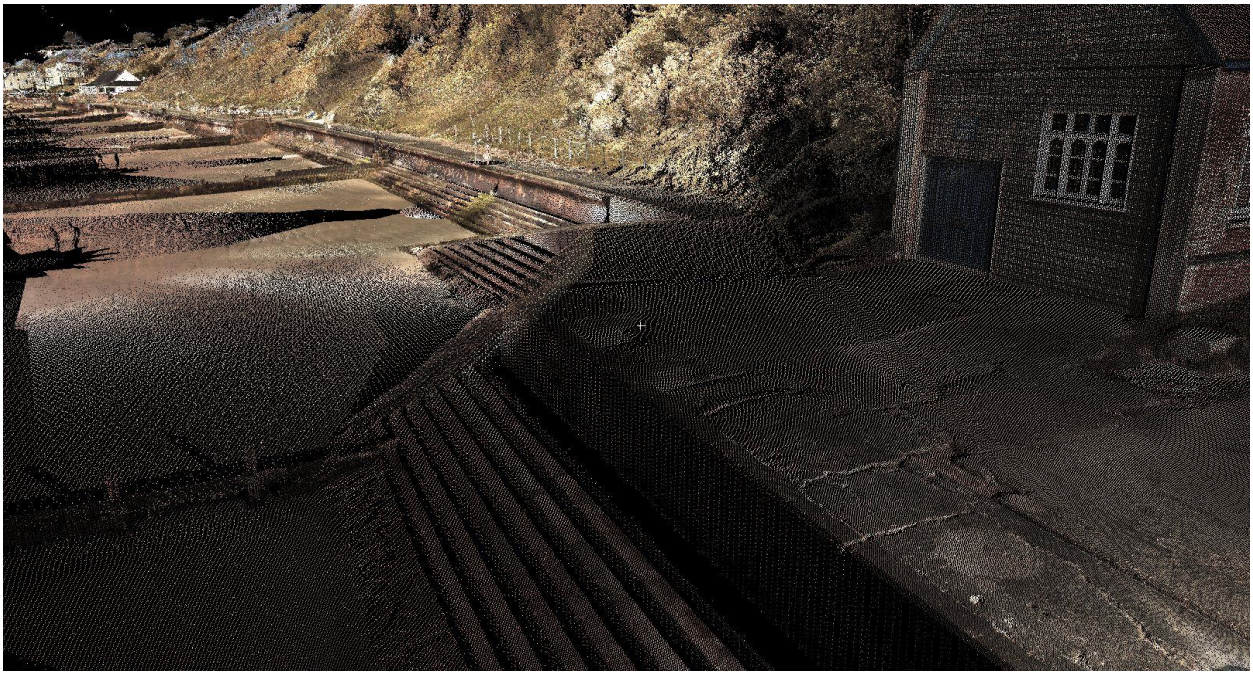
1. SURVEYS

1.1 Topographic Surveys

Autumn surveys are now underway.

1.2 Structure Laser Scan Surveys

Laser scans have been undertaken of coastal structures at Totland Bay and Colwell Bay on the Isle of Wight, image below, with data resolution exceeding 50mm. Surveys for other sites are now underway.



2. HYDRODYNAMICS

All wave buoys operational, no issues to report.

3. WEBSITE

A new Resources button has been added and covers Shingle-B, Quality Control, Specifications and Procurement to name a few. Dorset Coast Digital Archive has been added in the Resources section (linked to Gallery) which contains historic photos. A search tool has been added to the Map Viewer whereby the user can specify a location or X and Y coordinates to zoom straight to an area of interest.

4. GENERAL

The UAV tender has been awarded to Topcon GB Ltd for two Mavinci SiriusPro drones, one to be operated by New Forest DC the other by Worthing BC. Once training and operational procedures are in place these UAVs will be put to use taking aerial imagery at coastal sites from which 3D point cloud data will be derived.

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Local Authority Coastal Asset data

Meeting 5th July 2017

Overview

Understanding what coastal assets exist and their condition is a fundamental aspect of managing coastal risks. However, many local authorities have limited or no data about their assets, and others have the data but to varying specifications stored in various formats. Coastal Groups and local authorities have agreed that there is a need to better understand these coastal assets, and for the capability to draw this data together to develop a national overview. There are two main strands to this work:

- **Collection of asset data** – Some local authorities collect coastal asset data through the Regional Coastal Monitoring Programmes (North East and North West). The aspiration is that the rest of the country follows this example and includes asset monitoring in the other regional programmes. Anticipated costs to do this total around £3.5m over the next 6 years. This figure is within the headroom of the National Coastal Monitoring Programme (contingency deducted) approval of £26.7 million
    - **Data standards** – a critical aspect of this is to identify key data fields to standardise so that data collected by different authorities can be aggregated.

- **Asset data systems** – Procurement of systems for local authorities to store their data. It will be up to each regional programme/ local authority to decide which system is suitable.

Meeting with Jim Barlow 5th July

Some work has already been undertaken in 16/17 to begin to set out the approach and to estimate costs. However, due to resource pressures we have not been able to progress the business case to secure funding for this work.

A meeting between the Environment Agency, LGA and key coastal group members was held on the 5th July to discuss this issue and identify a way forward. At this meeting we were able to agree next steps and governance structures to help facilitate the production of a business case. The key outcomes were:

- One business case should be prepared to cover the collection of the asset data and the costs to procure and set up a system across England.
- The business case should include an implementation/action plan for each regional monitoring programme, setting out their detailed requirements.
- The Business case must be produced and led by the local authorities.
- The business case would seek approval to draw down the money from the capital programme as an extension to the current National Coastal Monitoring Programme of £23 million.
- EA would support this process: in particular, Hannah Williamson (overall co-ordination), Nick Hardiman (strategic co-ordination with National Coastal Monitoring Programme), Richard Williams (business case support), Karen Alford and Sally Williams (data standards, inspection standards), Mark Franklin and Mark Russell (data standards in relation to modelling and forecasting needs).
- A project steering group will be set up to support this work. This will include members from the LGA, Coastal Groups, National monitoring programme, EA.

Next Steps

- Planning and coordination call – September 2017
- Initial project steering group meeting – September 2017
- Produce comms and engagement materials to share with Coastal Groups and LGA.