

Havant Climate Alliance

Preparing for a Climate Resilient Future

Wednesday 9th February 2022

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Running order

- Coastal Partners
- Sea Level Rise + Climate Change Risk
- FCERM links with Climate Change
- National FCERM Strategy
- Links with National Planning Policy
- Case Study - Hayling Island: Preparing for a Resilient Future
- Environmental initiatives:
 - Solent wide habitat creation
 - Integrating environmental features into our coastal defences
 - Working with partners to restore nature together

Partnership Working



Coastal Management Shared Service for 4 Local Authorities

Founded in 2012, Coastal Partners is a partnership between four councils who manage 162km of Hampshire's coastline.

Vision

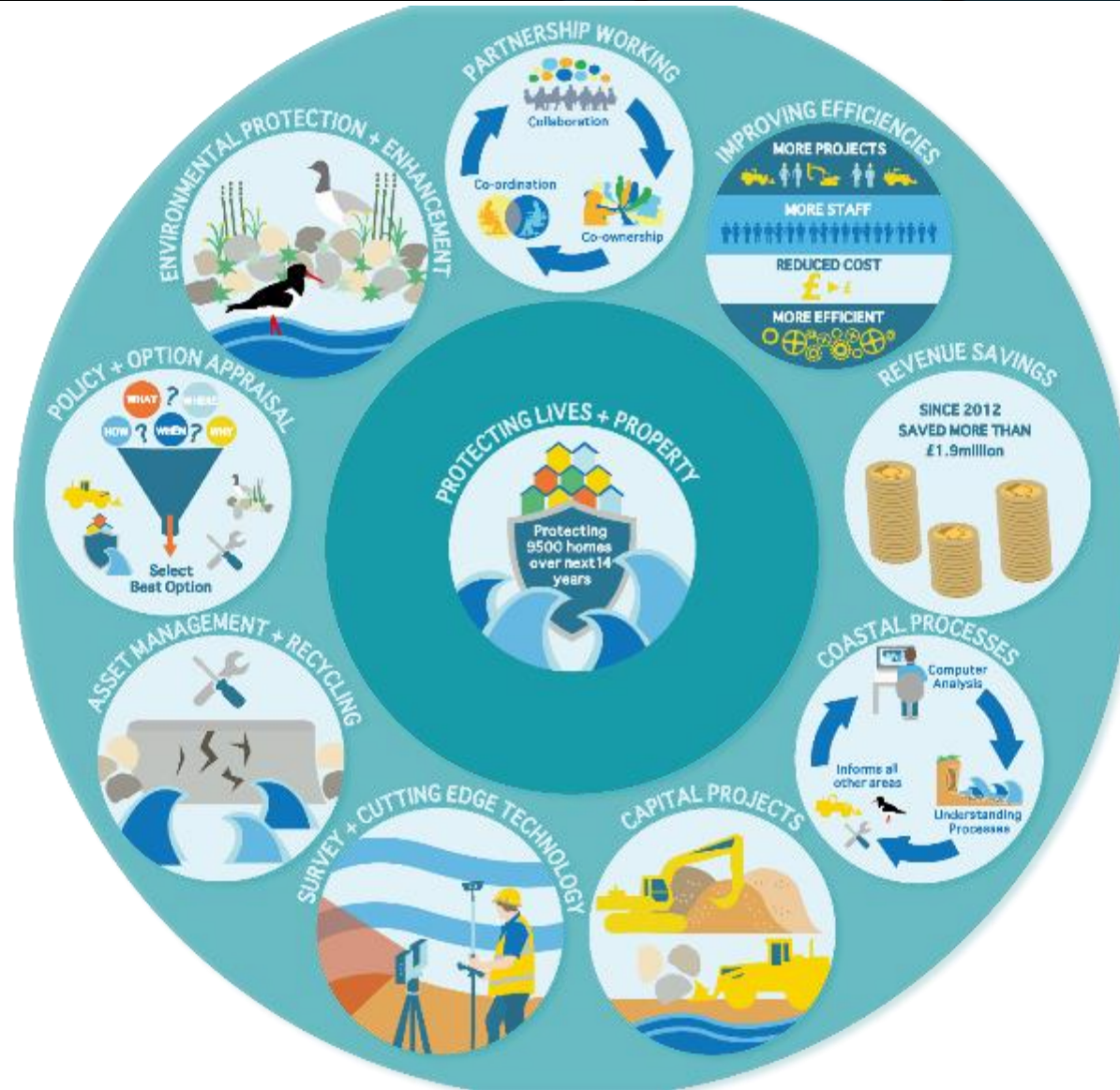
"To manage coastlines, improve community resilience and enhance the natural environment."



Our Service



- PROTECTING LIFE & PROPERTY
- PARTNERSHIP WORKING
- ENVIRONMENTAL PROTECTION & ENHANCEMENT
- POLICY & OPTION APPRAISAL
- NATIONAL & REGIONAL ADVICE



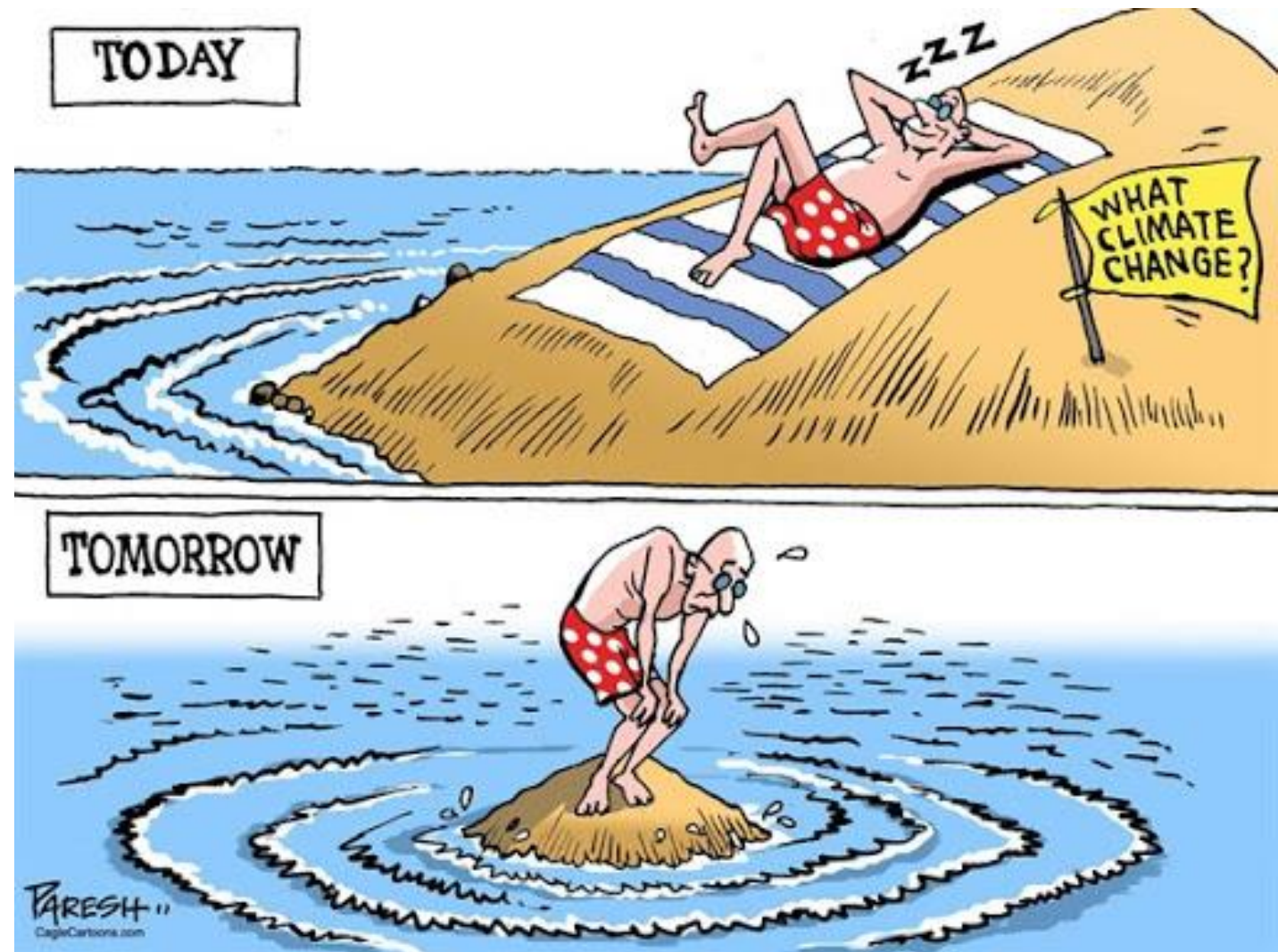
- SURVEY & CUTTING-EDGE TECHNOLOGY
- CAPITAL PROJECT DELIVERY
- COASTAL PROCESS SCIENCE
- LEADING EDGE RESEARCH
- ASSET MANAGEMENT & RECYCLING

“Climate change is making the UK warmer and wetter, and we will be visited by extreme weather more frequently in the future. So we need to shift gears, to ensure we adapt and become more resilient.”

(George Eustice, the secretary of State for the Environment, Food and Rural Affairs)

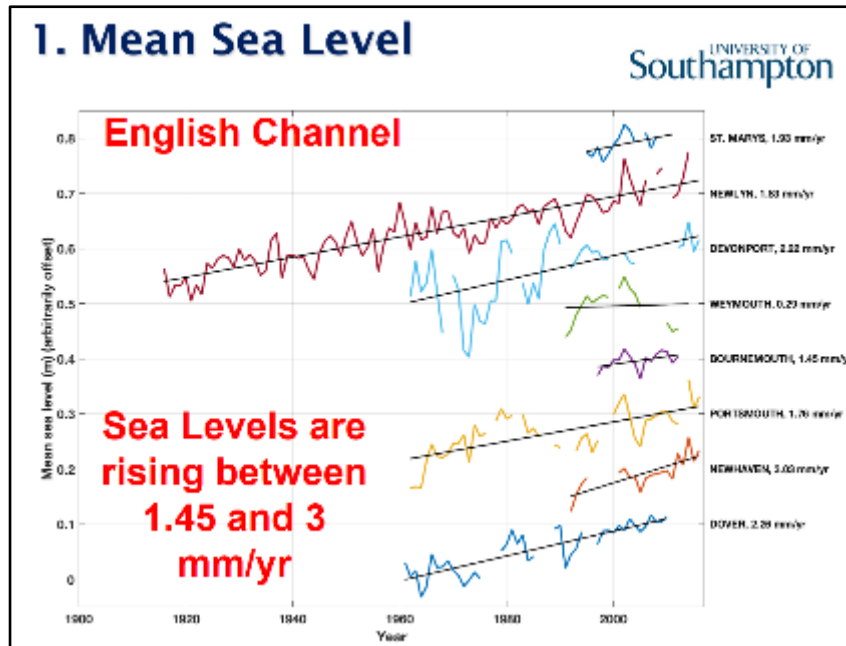
“Adapt or die”

“With the right approach we can be safer and more prosperous. So let’s prepare, act and survive”



Coastal Risk in England

- **Rising sea levels, increased storminess** and changing wave patterns will drive **accelerated coastal change**
- **1.8 million people** at coastal flood and erosion risk
- **With interventions** approaching **3000 properties** at risk from erosion over the **next 50 years**
- **Without intervention** this could increase to **28,000 properties in 50 years**

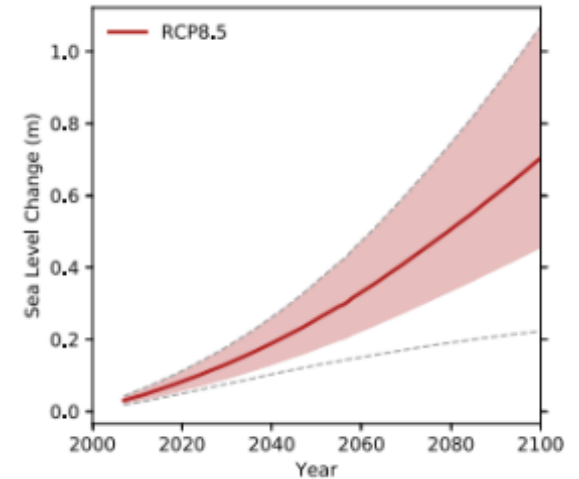


- IPCC (2018) projecting **sea level rise** of up to 0.77 m by 2100 for 1.5°C of global warming and **0.93 m for 2°C**.
- 2013/14 **stormiest winter on record**
- **Record-breaking wave heights** during Storm Katie and Angus (28 March and 20 November 2016) resulting in defence failures, flooding and erosion across the central south coast of England.

Climate change guidance incorporated into coastal management projects

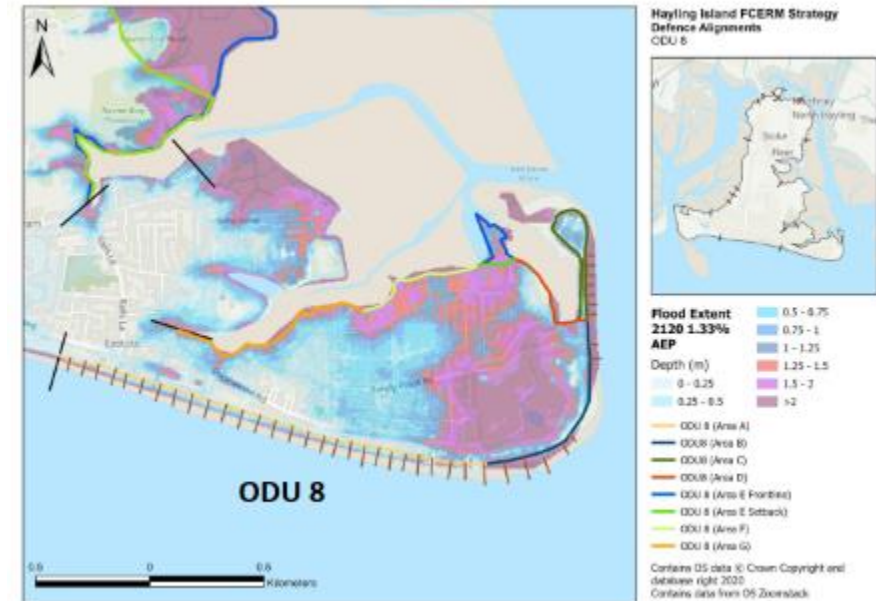
Sea level rise (SLR)

For estimates of future sea level rise the UK Climate Change Projections (UKCP18) is incorporated into the latest national EA guidance on sea level rise. All projects are to adopt the “*Representative Concentration Pathway 8.5 (RCP8.5) high emissions scenario 70th %ile (for design purposes) and 95th %ile (for sensitivity testing).*” **This equates to 1.03 m of sea level rise by 2120 and 1.4 m by 2120 respectively.**



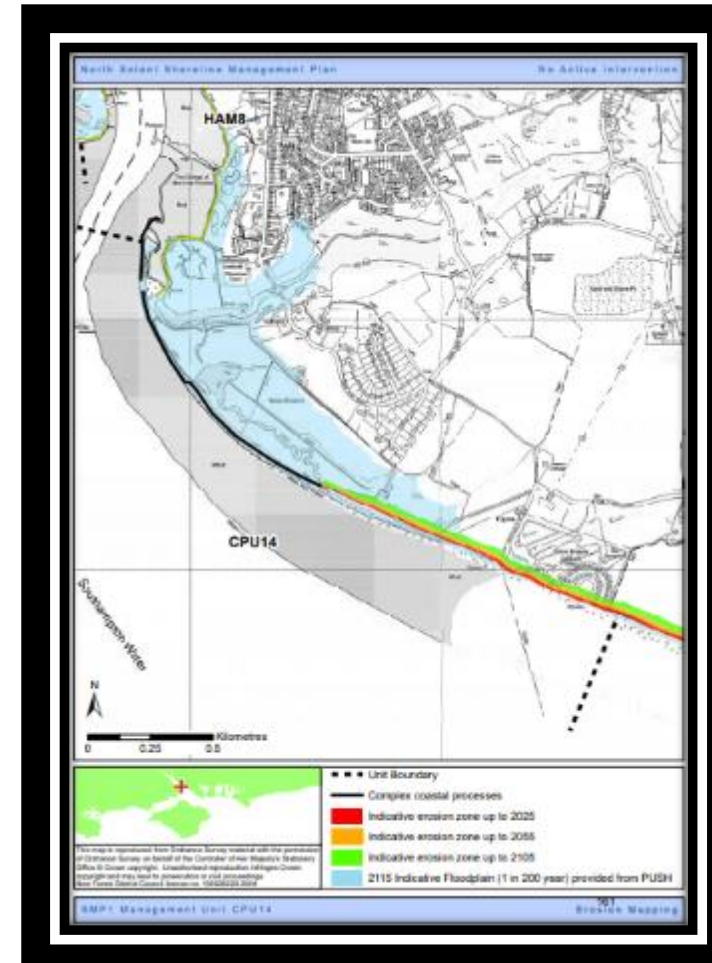
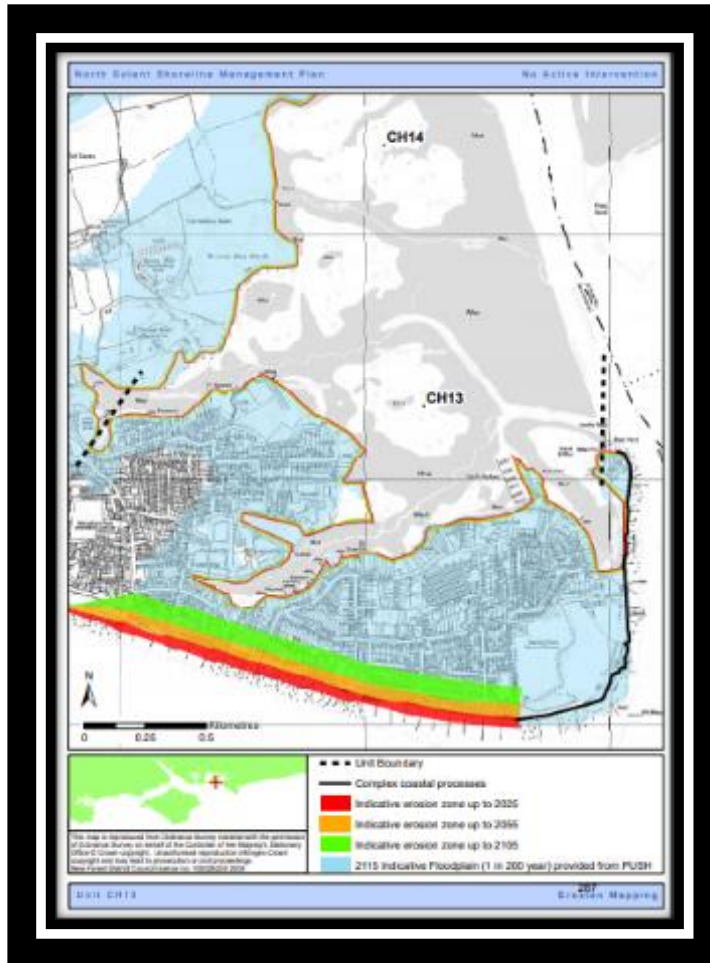
Extreme storm surge events

Projects use the latest national EA guidance on extreme sea levels, in this case the Coastal Flood Boundary Dataset (CFBD2018). The extreme sea levels presented in the CFBD2018 include the effects of storm surges and astronomical tides. Localised changes in sea level induced by onshore wave action, orientation, or topography at the coastline are simulated within the EA flood modelling (see Eastoke example).



Climate change guidance incorporated into coastal management projects

The government guidance on climate change is then incorporated into risk mapping as part of Shoreline Management Plans, Strategies and Schemes (see examples below) to identify assets at risk in the short, medium and longer term.



SCOPAC Storm Analysis project (Wadey, Haigh and Innayatillah, 2020)



Recent SCOPAC research shows an increase in SLR since 1900s and wave height, period and bi-modality since 2013/14 on the south coast of England

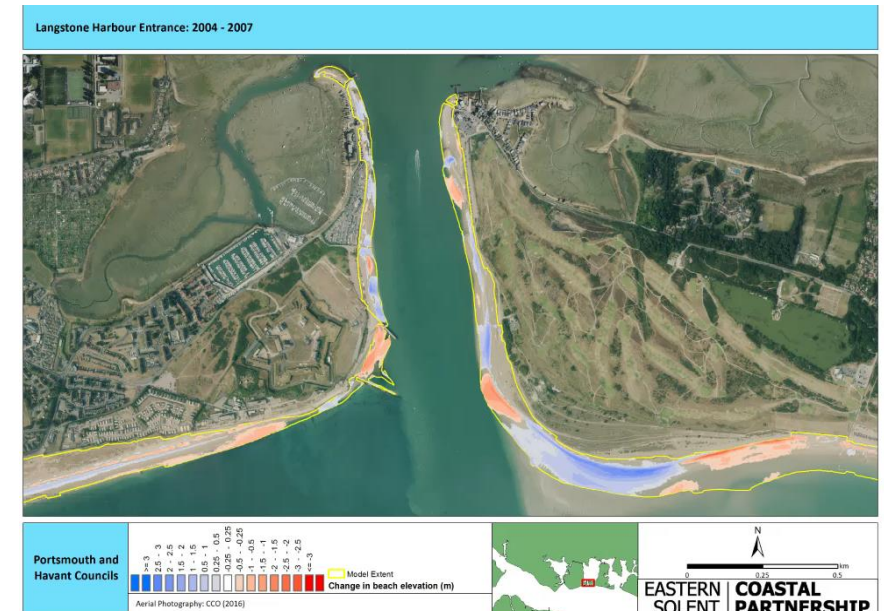
Consequence

1. More frequent and severe storm events (extreme storm events today could become an annual event in 100 years time)
2. Increase in run-up and overtopping resulting in more frequent flooding and erosion
3. Changing sediment transport patterns; sources and sinks; altering hotspots of erosion and accretion.

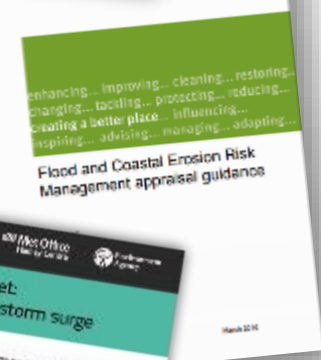
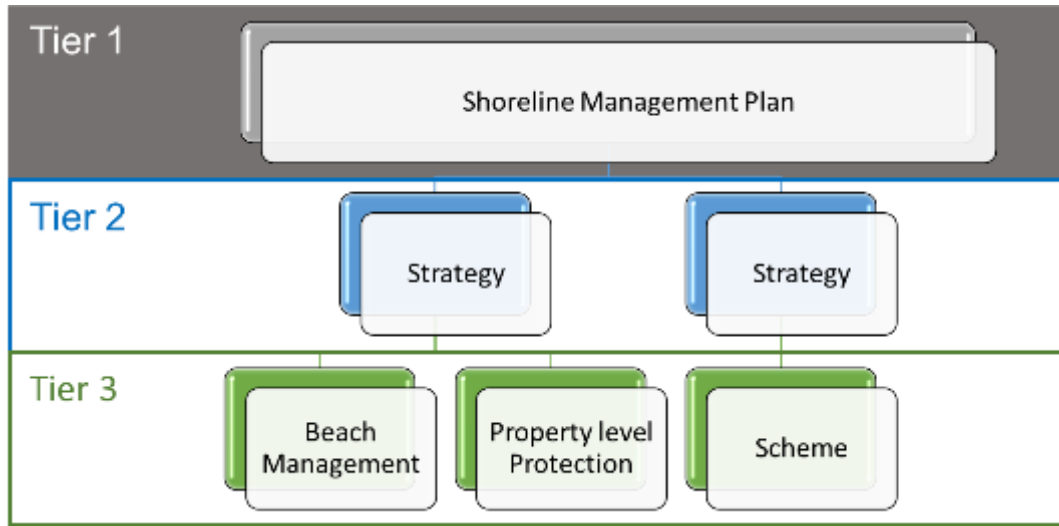


- + pressure on aging defences
- + new areas at risk from flood and coastal erosion
- + investment required for HTL frontages (public and private landowners)
- + pressure for adaptation measures

More information can be found here:
<https://southerncoastalgroup-scopac.org.uk/scopac-research/scopac-storm-analysis-study/>



Flood and Coastal Erosion Risk Management



SMPs account for climate change in defining long-term management planning, where the focus has generally been on the direction and order of magnitude of such change

Strategies need to identify and appraise options that enable adaptation to changing risk

Climate change and the impact that it has on future flooding and erosion risks needs to be taken into account during option appraisal.

National FCERM Strategy



We need to be **Climate Resilient, Plan & Adapt** and become a **Better Prepared Society**

Ambitions	 Climate resilient places	 Today's growth and infrastructure resilient in tomorrow's climate	 A nation of climate champions
	Working with partners to explore and develop standards for flood and coastal resilience as well as a suite of tools that can be used to deliver resilience in places	Getting the right kind of development in the right places to deliver sustainable growth and infrastructure resilient to flooding and coastal change	Better preparing society through education and accessible digital information as well as being a world leader in flood and coastal resilience
Cross cutting themes	<p>Putting people and places at the heart of decision making</p> <p>Moving from the narrow concept of protection to the broader one of resilience</p> <p>Everyone has a role to play – widening the ownership of flooding and coastal change management</p> <p>Helping places plan and adapt to flooding and coastal change for a range of climate futures</p> <p>Ensuring flood and coastal erosion risk management protects and enhances the environment</p> <p>Better aligning strategic planning – improving resilience to both floods and droughts</p> <p>Ensuring we build back better and in better places</p>		



Climate Resilient Places

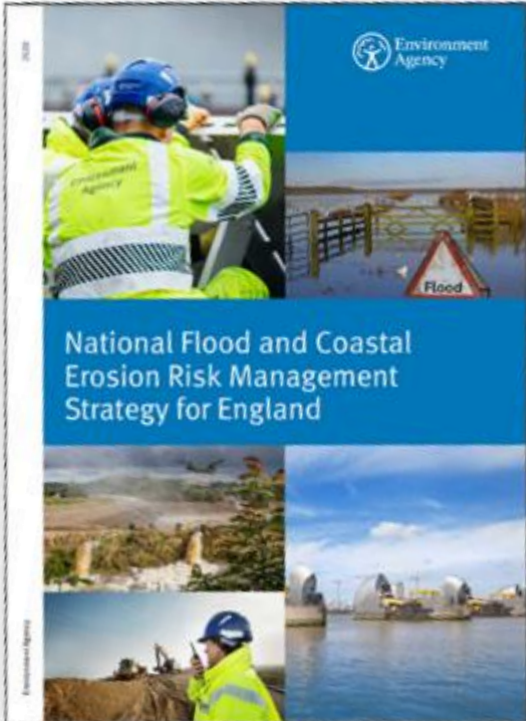
Strategic objective 1.1: Between now and 2050 the nation will bolster its resilience to flooding and coastal change.

Strategic objective 1.2: Between now and 2050 risk management authorities will help places plan and adapt to flooding and coastal change for a range of climate scenarios.

Strategic objective 1.3: Between now and 2050 risk management authorities will help coastal communities transition and adapt to a changing climate.

Strategic objective 1.4: Between now and 2030 risk management authorities will use nature based solutions and improve the environment through their investments in flood and coastal resilience.

Strategic objective 1.5: By 2030 risk management authorities will work with farmers and landowners to help them adapt their businesses and practices to be resilient to flooding and coastal change.



National Planning Policy Framework



Planning for Climate Change

Plans should take a proactive approach to mitigating and adapting to climate change, taking into account the long-term implications for flood risk, coastal change, water supply, biodiversity and landscapes, and the risk of overheating from rising temperatures.

Planning and Flood Risk

Inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk (whether existing or future). Where development is necessary in such areas, the development should be made safe for its lifetime without increasing flood risk elsewhere.

Coastal Change

Plans should reduce risk from coastal change by avoiding inappropriate development in vulnerable areas and not exacerbating the impacts of physical changes to the coast. They should identify as a **Coastal Change Management Area** any area likely to be affected by physical changes to the coast.



Hayling Island Coastal Management Strategy 2121

Preparing for a resilient future

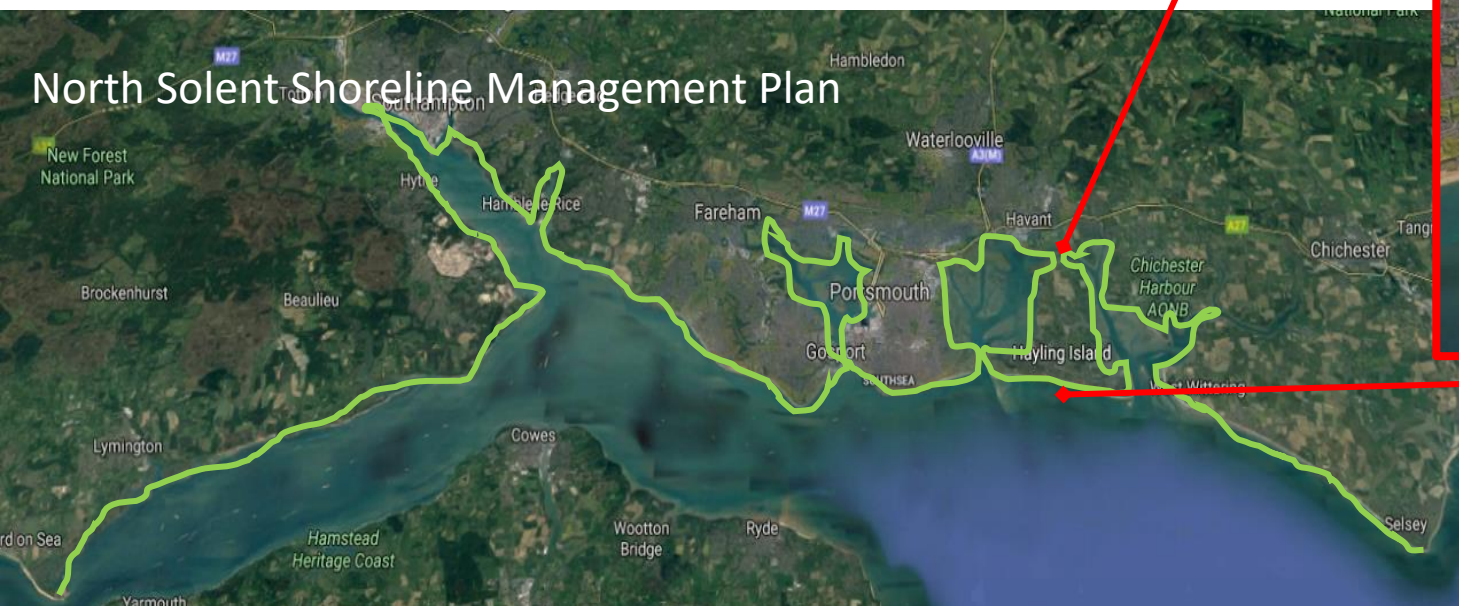
HICMS - How did we get here?

- 2010 - North Solent Shoreline Management Plan approved by the Environment Agency & adopted by HBC
 - Action Plan recommended the need for a Coastal Strategy for Hayling Island
- 2019 – Hayling Island Funding and Implementation Strategy [HIFIS] completed
 - Recommended to progress to a full strategy for the island
- 2020 – Hayling Island Coastal Management Strategy [HICMS] began.



KEY

- HTL - Hold the line
- NAI - No active intervention
- * - There is currently no public funding available for continued maintenance of defences by private owners



Coastal Management Strategy for Hayling Island – Why?

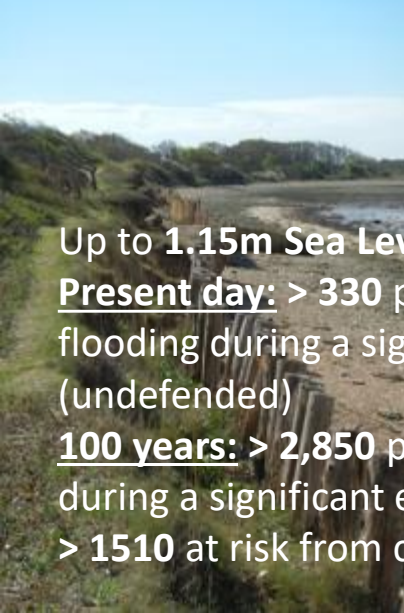


Flood & Erosion Risk



Wider opportunities & funding

Defence Condition



Environment



Up to 1.15m Sea Level Rise by 2100
Present day: > 330 properties are at risk of flooding during a significant event (undefended)
100 years: > 2,850 properties at flood risk during a significant event (undefended)
> 1510 at risk from coastal erosion.

AIM....“To produce a sustainable cohesive strategy for managing flood and coastal erosion risk for Hayling Island for the next 100 years.”

.... the next step in planning the short and long term management of coastal risks on Hayling Island

- Won't focus solely on individual locations ...
 - ✓ ...Will provide a **Island wide plan of action for coastal management over the next 100 years**
- Won't recommend defences everywhere ...
 - ✓ ...Will recommend a suite of **coastal management approaches** for Hayling Island that respond to future climate changes, reduce risk to residents and their homes, enhances the environment and supports wellbeing and sustainable living on the island
- Won't guarantee that the recommendations will be funded or future defence works progressed ...
 - ✓ ...Will provide a **road map to seek and source funding for the short term programme of works**

Hayling Island Coastal Management Strategy 2121

Preparing for a resilient future



Key Outcomes

- Short term programme of works / action plan
- Long term vision for the coast
- Planned response to future coastal change
- Funding and wider opportunities route map
- Politically endorsed mandate for future coastal management
- Environment Agency approved Strategy
- Better prepared, better informed residents.



Key Milestones

- December 2019 - funding secured to deliver the strategy
- July 2020 - Launched project
- Nov 20 to Oct 21 – virtual public engagement at key stages
- May 2021 - Update flood modelling & economics
- Feb 2022 - developed & appraised management approaches.

Next Steps

- Mar 22 to Apr 22 – Key stakeholder / landowner engagement
- June 22 to Sep 22 – Public consultation
- ~April 23 - Approval of final strategy.



Hayling Island Coastal Management Strategy:

<https://coastalpartners.org.uk/project/hayling-island-coastal-management-strategy-2120/>



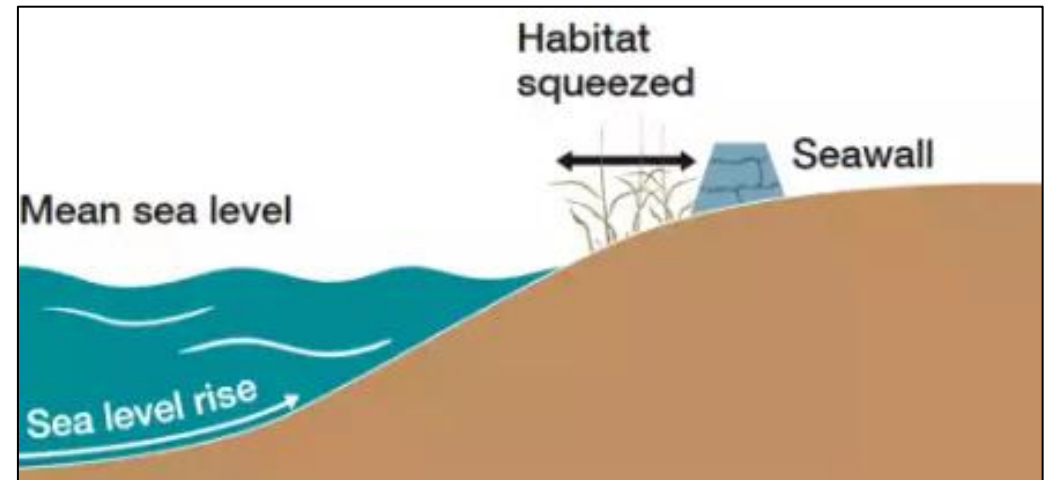
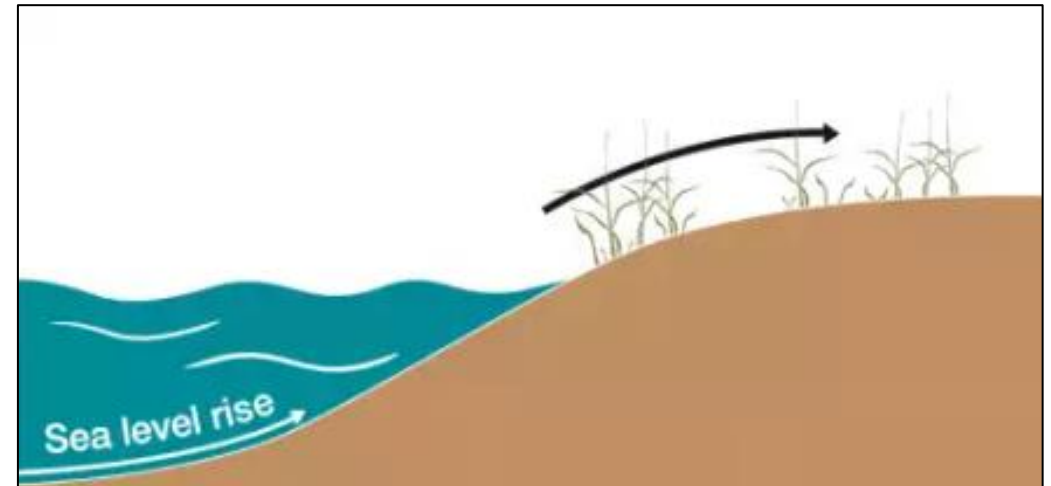
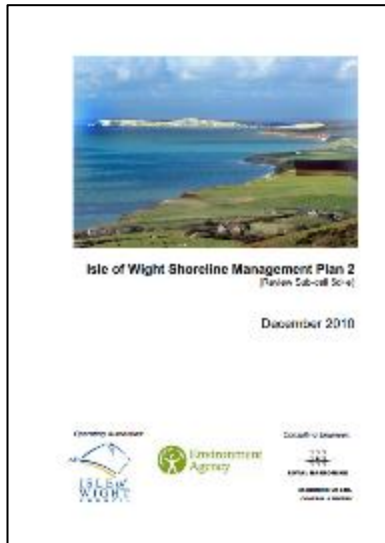
- Solent wide habitat creation
- Integrating environmental features into our coastal defences
- Working with partners to restore nature together



Regional Habitat Compensation Programme (RHCP)



The RHCP is our strategic mechanism for offsetting habitat losses from Shoreline Management Plan (SMP) policies within our region (Solent and South Downs). These habitat losses (predominantly saltmarsh) are caused by coastal squeeze resulting from sea level rise against fixed coastal defences.



Three stage process to delivering the RHCP

SMP Habitat Group	Habitat Balance (Ha)			
	Epoch 1 (2005 - 2025)	Epoch 2 (2026 - 2055)	Epoch 3 (2056 - 2105)	Total
Intertidal Mudflats	43	72	-72	43
Saltmarsh	-124	-149	-163	-435
Coastal Grazing Marsh	0	-70	-6	-76
Freshwater Habitats	0	-4	0	-4
Saline Lagoons	0	0	0	0

2. Tactical Work

Prioritisation, Programming, Analysis & Funding.
This stage identified opportunities in the region to create habitats to offset losses identified above - and then prioritised them.



1. Strategic Update

Where are we? Where do we go from here?
This stage quantified habitat gains and losses in the region over the next 100 years resulting from SMP policy adoption.



3. Operational Phase

Site implementation - Schemes delivered and habitat created.



RHCP strategic update: progress to date

Under the RHCP, **new habitats have been created** at:

- **Medmerry:** nearly met the saltmarsh target for Epoch 1.
- **Manor House Farm:** freshwater and coastal grazing marsh habitat creation.

Coastal Partners is maintaining a **live habitat balance sheet** and producing **annual review reports** to track habitat creation progress and needs.

<https://southerncoastalgroup-scopac.org.uk/rhcp/>

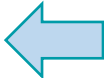
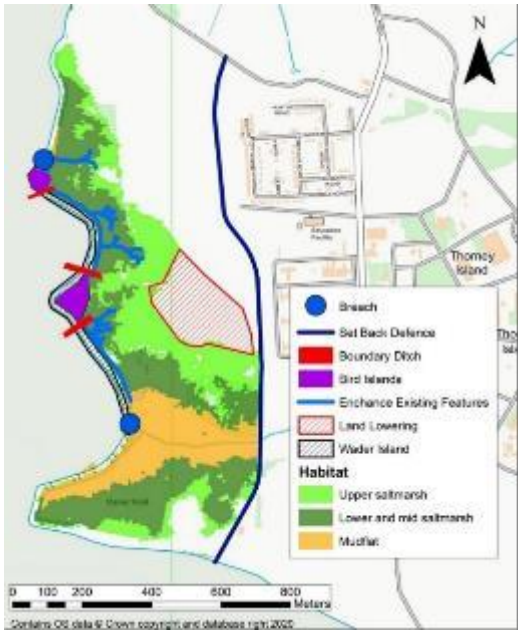
Current habitat balance (2021):

SMP Habitat Group	Cumulative Habitat Balance (Ha)		
	Epoch 1 (2005 - 2025)	Epoch 2 (2026 - 2055)	Epoch 3 (2056 - 2105)
Intertidal Mudflats	43	75	-32
Saltmarsh	-20	-208	-392
Coastal Grazing Marsh	69	69	69
Freshwater Habitats	17	17	17
Saline Lagoons	0	0	0

Our efforts are currently focused on finding **saltmarsh** in the short to medium term. However, creation of saltmarsh usually leads to the loss of **coastal grazing marsh** as habitats transition. Therefore, we also need to find additional coastal grazing marsh as a result.

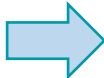


Operational Phase – developing habitat creation schemes



[Marker Point, Thorney Island](#) - partnership project between the Environment Agency, the Ministry of Defence and Chichester Harbour Conservancy. Currently in the options appraisal / outline design stage and ground investigations were completed in winter 2020. <https://consult.environment-agency.gov.uk/solent-and-south-downs/thorney-island-habitat-creation-scheme-information/>

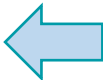
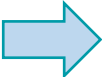
[Hook Lake, Warsash](#) - Coastal Partners working with Hampshire County Council, River Hamble Harbour Authority and Environment Agency. Seeking multiple benefits in addition to habitat creation – access & visitor improvements, flood protection, community engagement etc. Currently in options appraisal / outline design stage. <https://coastalpartners.org.uk/project/hook-lake-coastal-management-study/>



Operational Phase – developing habitat creation schemes



Southmoor, Havant - existing defences breached naturally during Storm Ellen on 21st August 2020. Further breaching (at the same location) and large tidal inundation of the site occurred during stormy weather on 13-15th November 2020. A potential SMP policy change may be reviewed as part of the SMP Refresh.



Hurst Spit to Lymington, New Forest - Work has started on a partnership project by the Environment Agency, New Forest District Council, Hampshire County Council and Natural England to explore a sustainable future for the management of the coastal frontage between Hurst Spit and Lymington in the New Forest National Park.

<https://consult.environment-agency.gov.uk/solent-and-south-downs/hurst-spit-to-lymington-project/>

Environmental enhancements - Why?

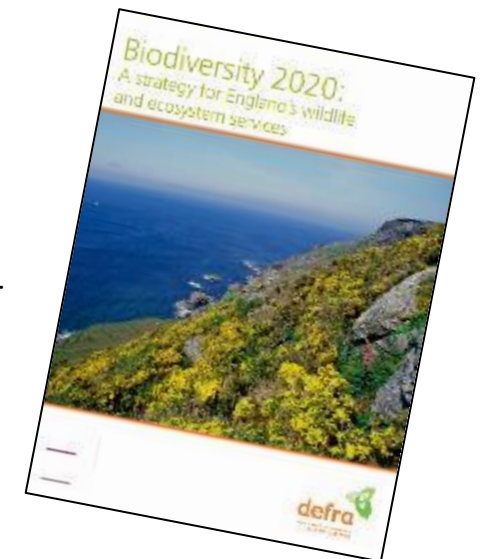
Why do we need ecological enhancements

- Significant habitat losses
- Climate and Biodiversity emergency:
 - 25 Year Environment Plan
 - Biodiversity 2020
- Key Government Driver - **Biodiversity Net Gain**
- Lots of other Government Drivers
- Sea level rise and coastal squeeze
- Competition for space people and nature
- Ecological deserts: we need to give nature a chance



Become the first generation to leave that environment in a better state than we found it and pass on to the next generation a natural environment protected and enhanced for the future.

The mission for this strategy, for the next decade, is: to halt overall biodiversity loss, support healthy well-functioning ecosystems and establish coherent ecological networks, with more and better places for nature for the benefit of wildlife and people.



Creating new habitats and recycling materials



Chalk fill and sheet piles removed from quay
~2,500m² new mud flat created

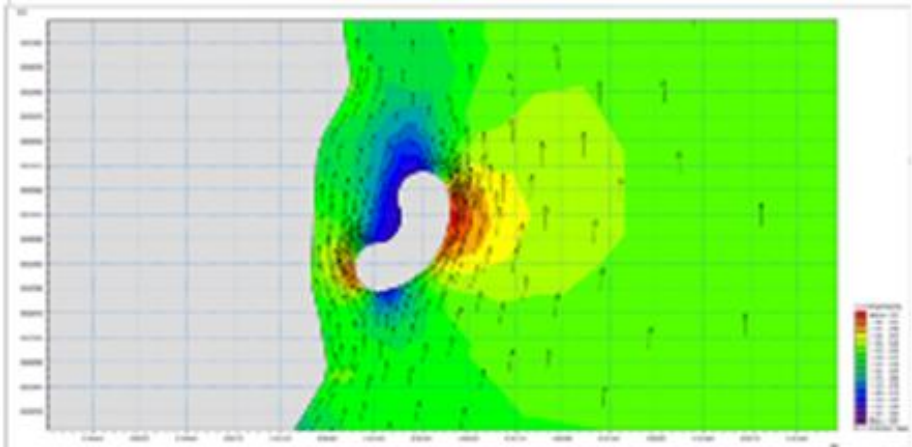


5,500m³ chalk reused in the bunds
£1.1million saved from reuse of material.

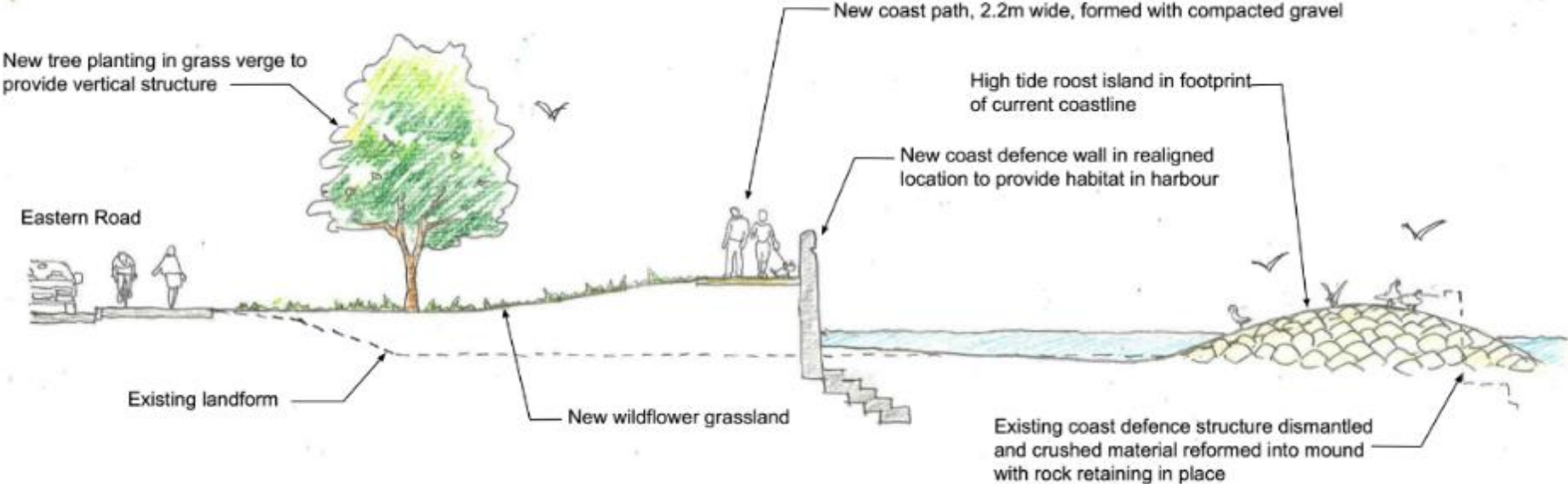


Creating new opportunities for birds

Bird Islands / wider habitat creation

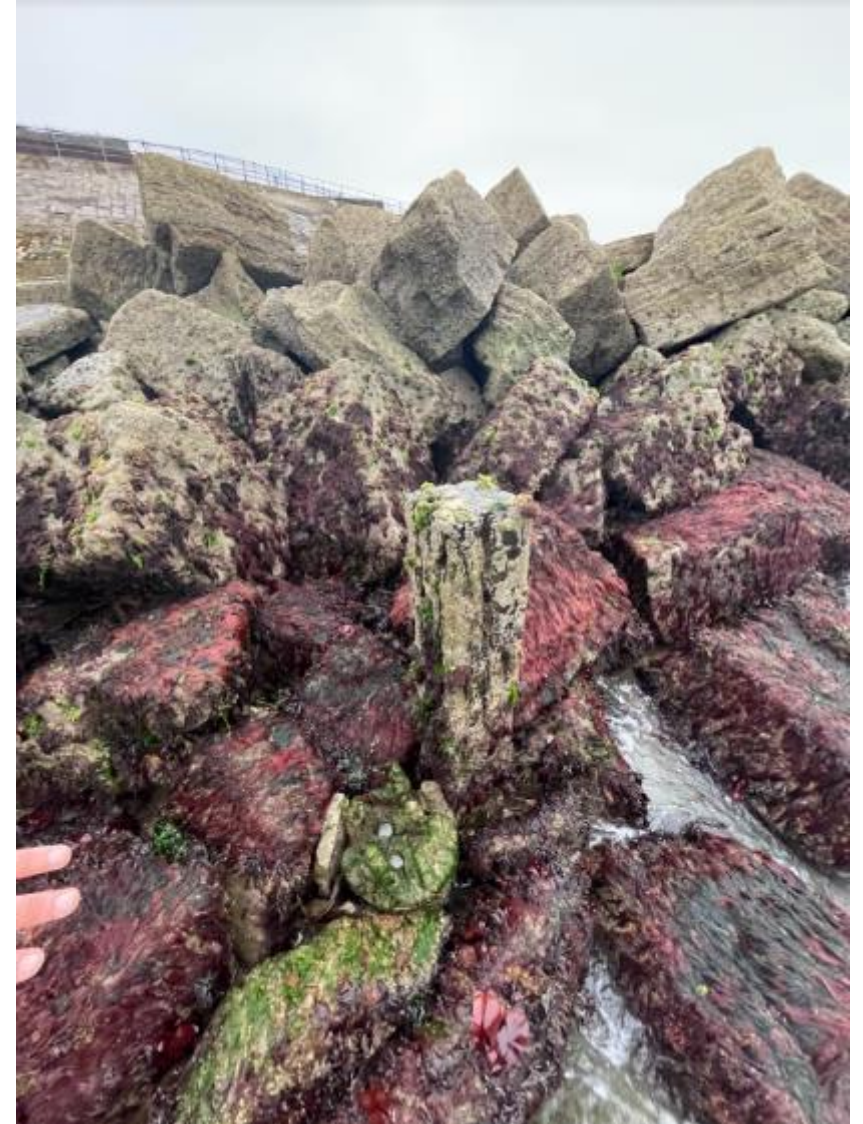


Landward realignment (south of Great Salterns Quay car park)



Reducing our impacts on species / providing new opportunities

Seed rock – Purple Sandpiper



Southsea Castle

Trailing localised saltmarsh creation

Trials of BESE Grid



BESE – elements to aid sediment stabilisation



Increasing the biodiversity of our sea walls

Ensuring environmental improvements are built into projects so that projects not only protect people but create a better environment for people and wildlife



Increasing the biodiversity of our sea walls

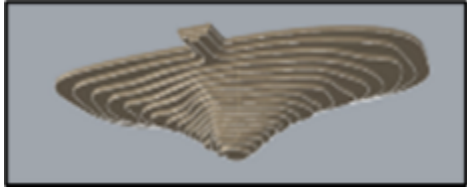


EcoFormliner

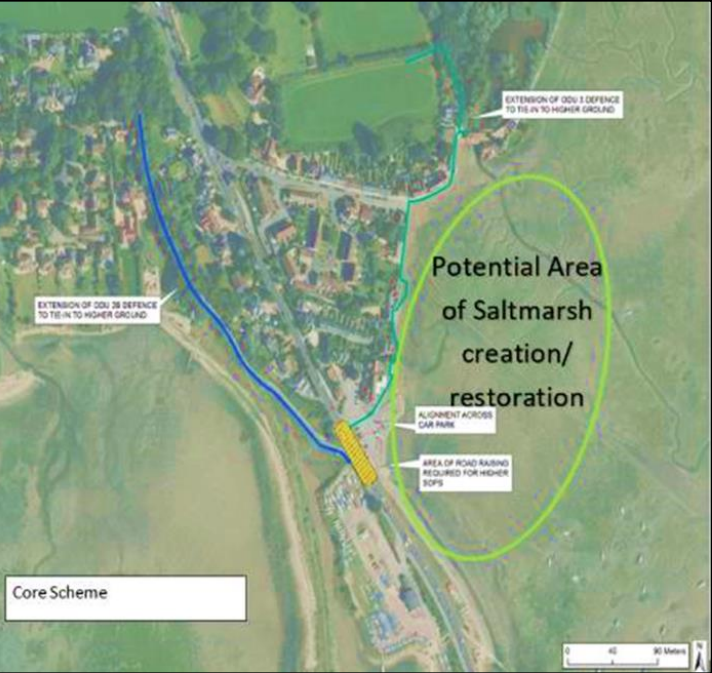


Incorporating rockpools into our coastal defences

Tidepools



Investigating saltmarsh restoration opportunities



Saltmarsh Feasibility Study



Wider Benefits including Biodiversity Net Gain



Wildflower Meadows

National Pollinator Strategy



Bee Posts



Vertipools



Better Ways of Working



Saltmarsh Translocation



Oyster Feasibility Trials Southsea



Public realm improvements



Public realm improvements



Public realm improvements



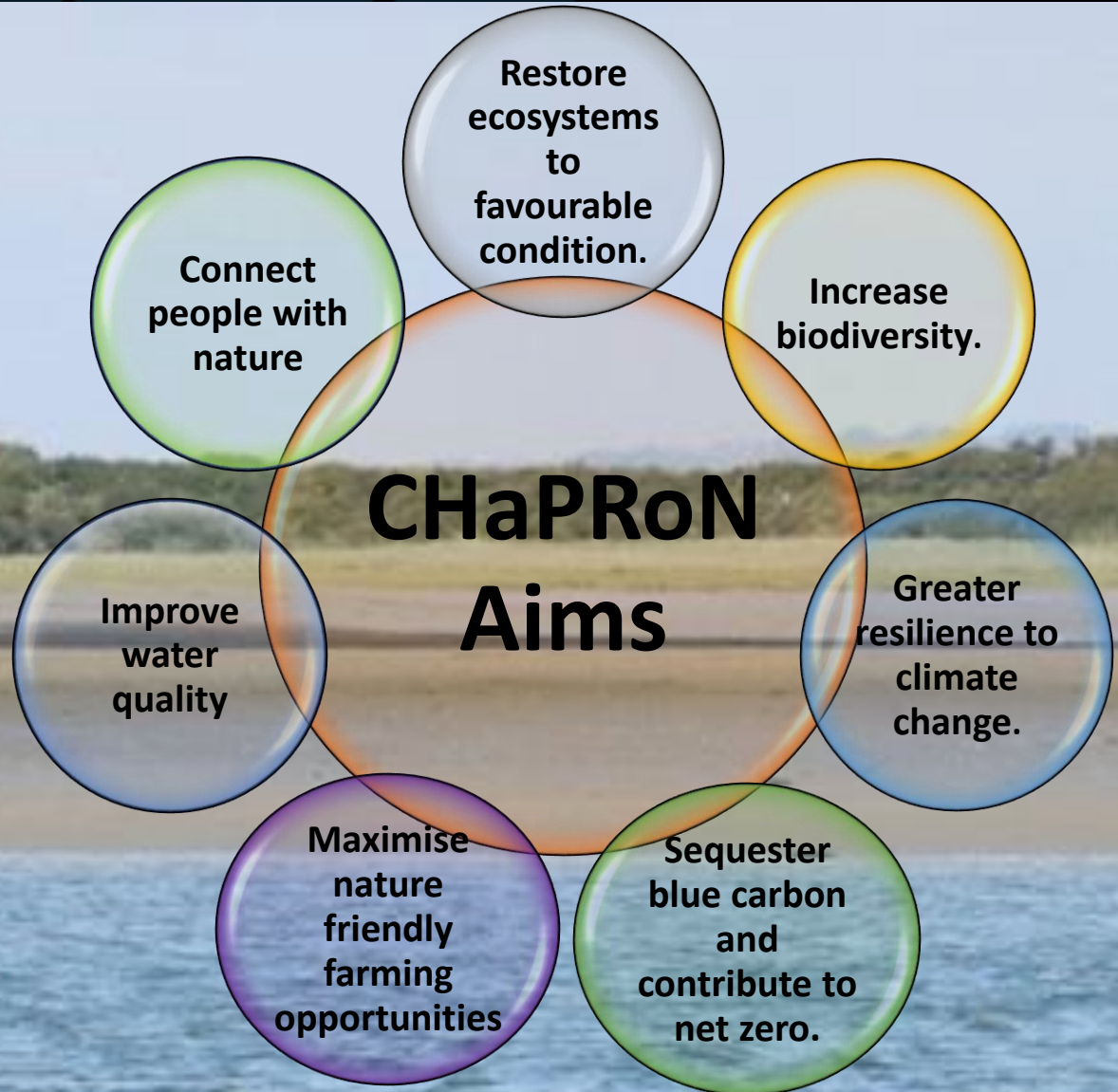
Working with partners: Chichester Harbour Protection and Recovery of Nature



“Our vision for Chichester Harbour in 2050, is a harbour that is **functioning naturally as a healthy and thriving ecosystem**, with its network of diverse coastal habitats rich in wildlife, increasing biodiversity that is **resilient to environmental and anthropogenic pressures**, maximising ecosystem services benefits and **supporting nature recovery** for generations to come”.

Aim: To protect, enhance and drive recovery of the natural environment within Chichester Harbour and help it adapt to climate change.

- **Reduce pressures**
- **Restore Habitats**
- **Realise benefits**



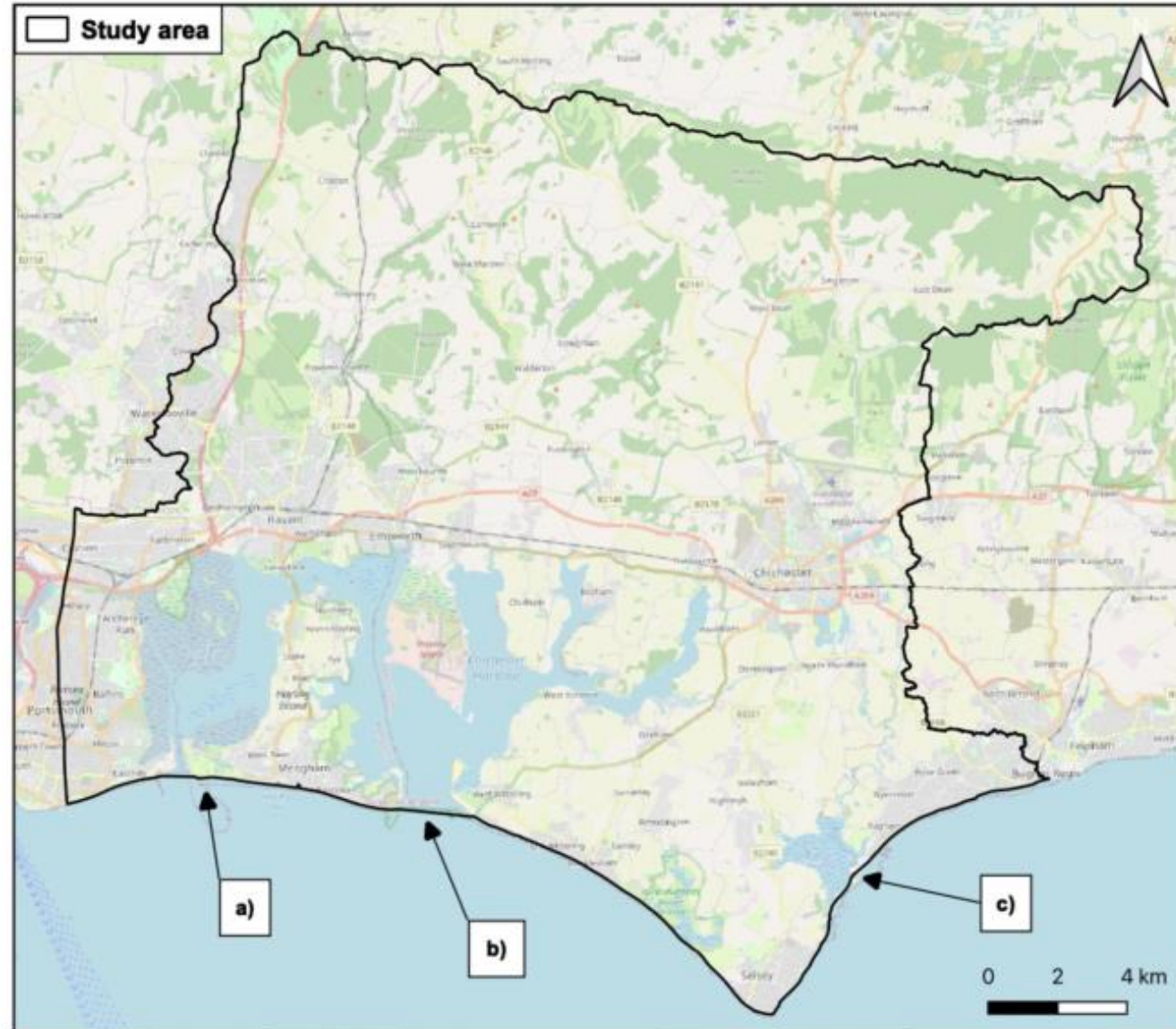
Leaders Summit

- Senior leaders to agree a shared **Action Plan** for improving water quality & natural habitats.
- Regular forum to ensure **progress & accountability**.
- Striving to make the whole much **greater than the sum of it's parts**.
- **Stop decline**, before **enhancing** harbours and catchment.

Technical Working Group

- Technical leads to come together to address specific issues and **inform the production of an Integrated Plan**.
- Integrated Plan will set out a **shared vision to reverse the deterioration and restore nature** across all three harbours and their catchments.
- Seek to deliver **more than the sum of our parts** through **collaboration and partnership** working.
- **Vision** to look forward to 2030, then on to 2050.
- Will collectively agree how to **measure success**.

Individual Partners, forums & projects.



Blue Marine Endangered Landscapes Programme



Cambridge
Conservation
Initiative



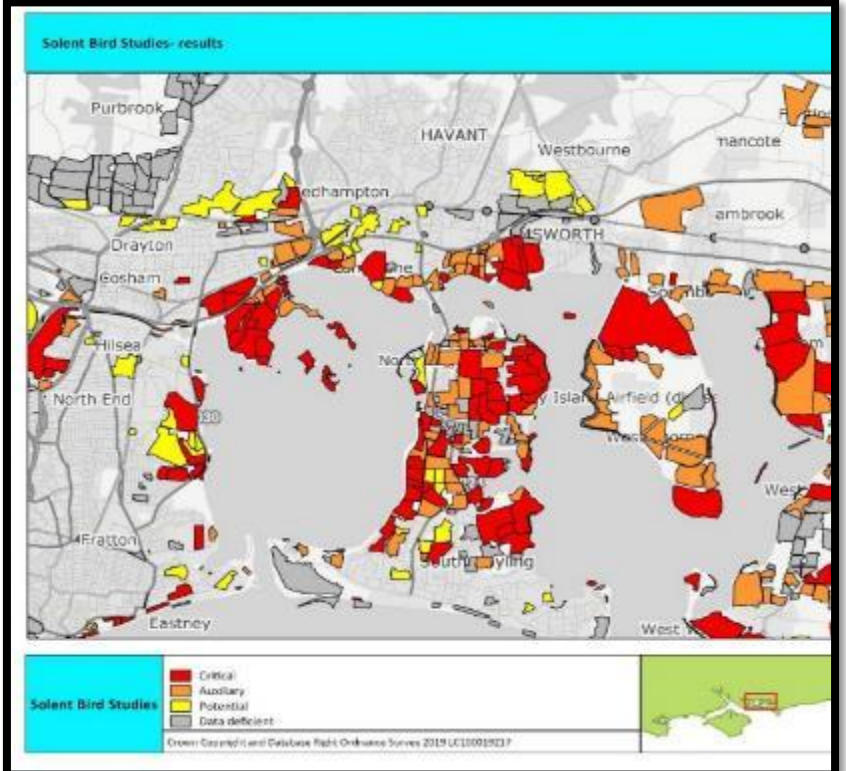
The endangered landscape programme is building a future in which landscapes are enriched with biodiversity, establishing resilient, more self-sustaining ecosystems that benefit both nature and people

Eol to the Endangered Landscape Programme for Pioneering seascape restoration in the Solent – restoring seagrass, saltmarsh and oysters through an integrated approach.



Linked Initiatives

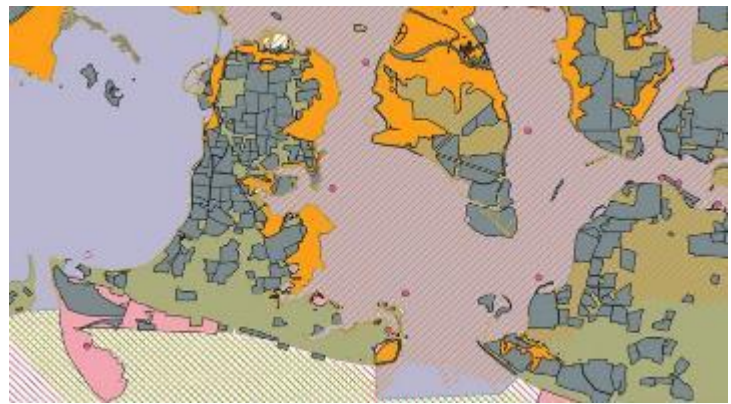
- RSPB - West Hayling Local Nature Reserve – Shingle Shores
- Solent Bird Studies
- Solent Waders and Brent Goose strategy
- Bird Aware Solent
- Net Gain
- Carbon Sequestration and Storage – Natural Capital
- Beneficial use of Dredging (BUDs)
- Reach and ReMeMaRe
- Local Nature Recovery Strategies
- LIFE Recreation ReMEDIES project
- Net Zero
- Nitrates



Linking partners and initiatives for collaboration and mutual benefit (testing as part of Hayling Island Strategy):



STACK BENEFITS	BLEND FUNDING
Create new intertidal habitats and mosaics	I.e. for delivery of RHCP targets
Reduce disturbance to birds and improve networks	I.e. via Bird Aware initiatives
Deliver nitrate mitigation schemes	I.e. PfSH nutrient neutrality
Improve water quality	I.e. working with water companies
Carbon sequestration	I.e. through carbon codes, etc
General environmental enhancements	I.e. through FCERM delivery, wildlife groups, etc



TOGETHER, WE CAN DELIVER SOMETHING GREATER THAN THE SUM OF IT'S PARTS



Thank you for listening



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w: Coastalpartners.org.uk

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