What are the current challenges for coastal change in Dorset?

Dorset Coast Forum Annual Meeting 2024

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Overview

Flood and Coastal Erosion Risk Management (FCERM) challenges – my Top 10

1. Coastal Risk & Climate Change
2. Coastal Plans and Funding
3. Cliff Falls & Land Instability
4. Storm Impacts
5. Asset Management
6. Heritage Assets
7. Vanishing Beaches
8. Environment
9. Coastal Landfill
10. Engagement & Adaptation

Environment Agency

1. Coastal Risk & Climate Change

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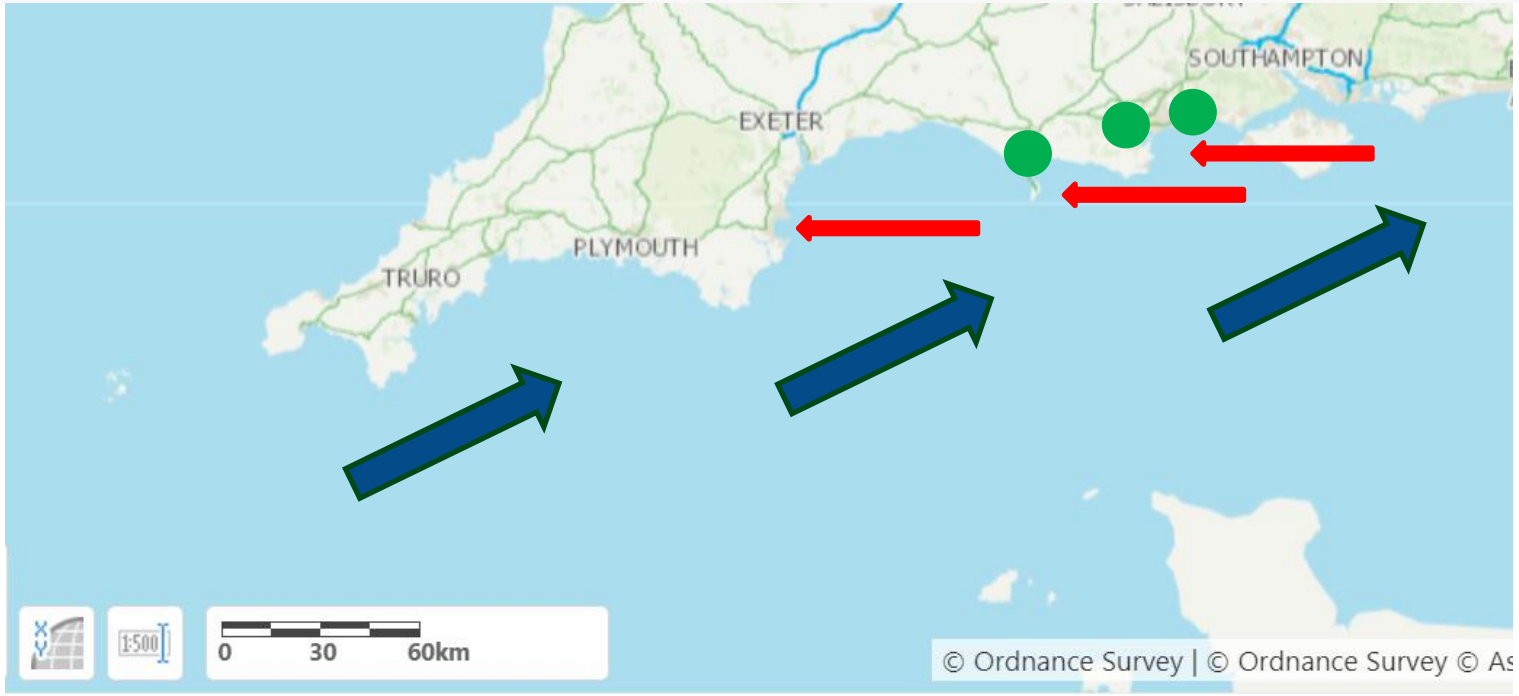
Coastal Risk – wind, waves, tides

Long period swell waves

Prolonged easterly winds

Surge / extreme sea levels



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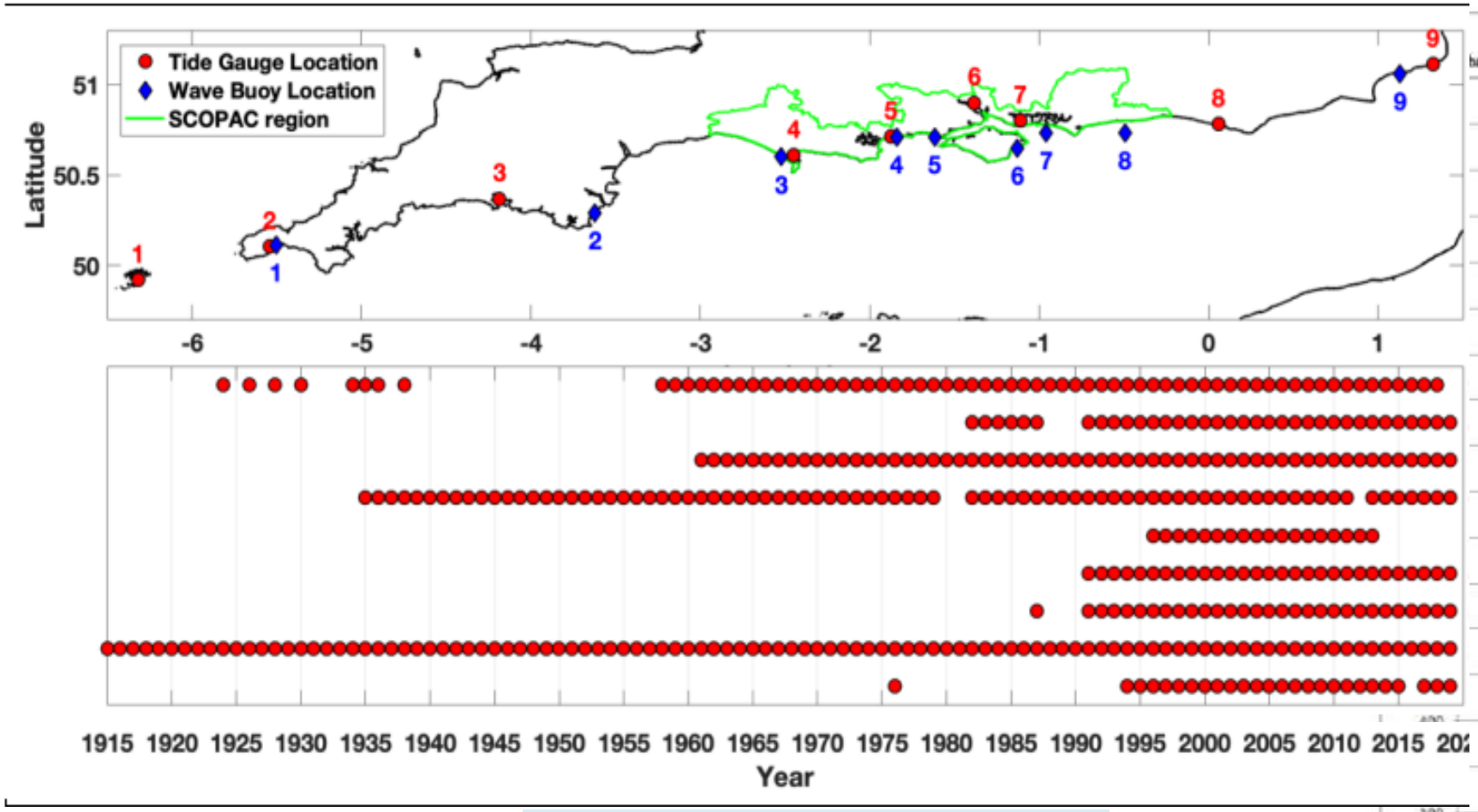
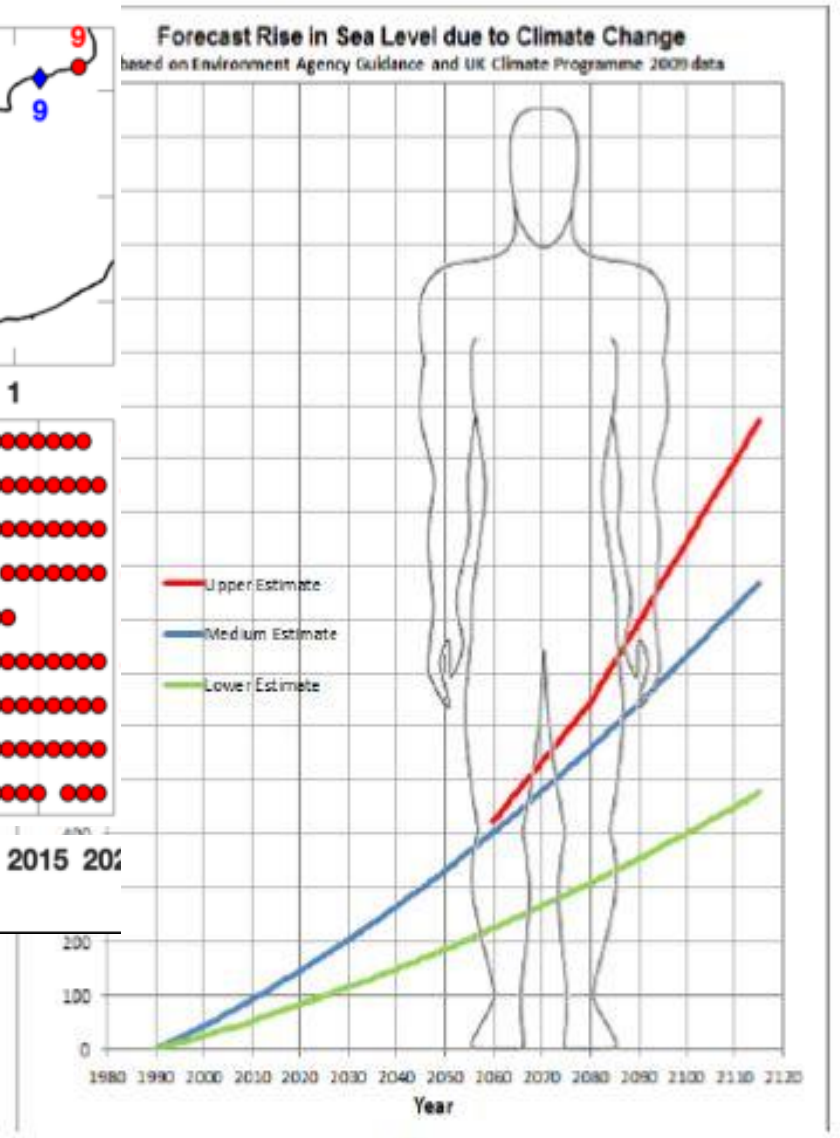
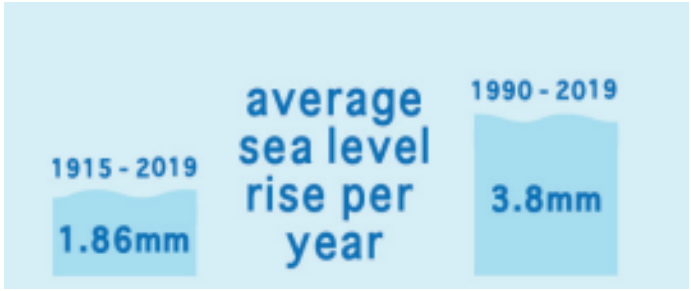
Sea level rise







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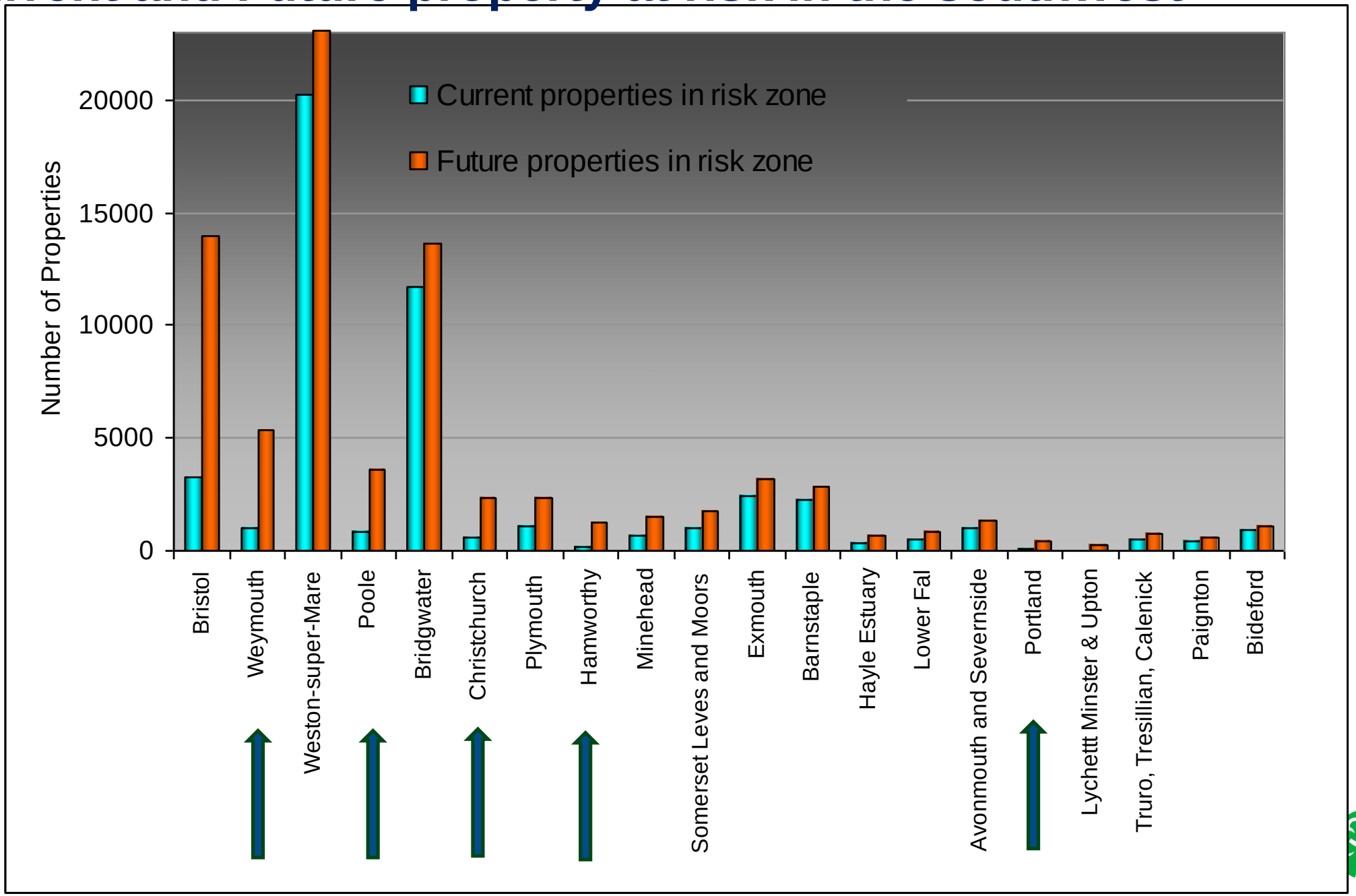
Current and Future property at risk in the southwest



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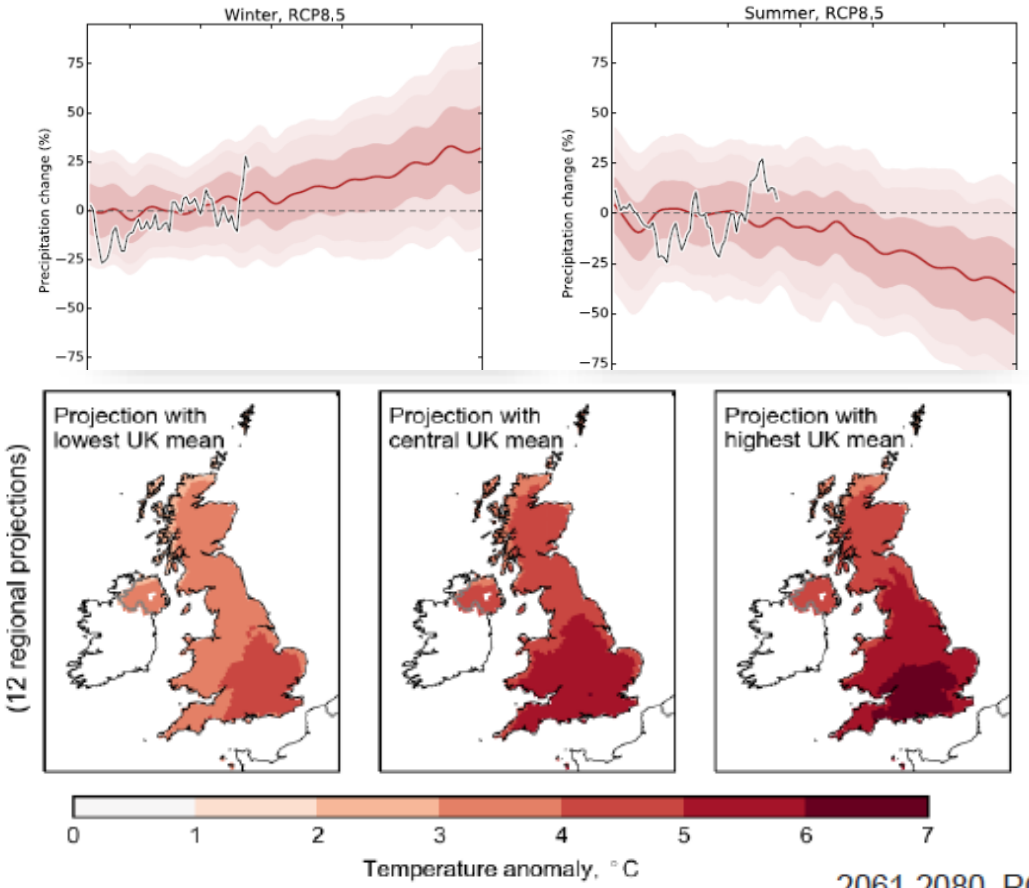
Climate change is not just effecting sea levels..

Applies around all the English coast	2000 to 2055	2056 to 2125	
Offshore wind speed allowance	5%	10%	***Wind speed***
Offshore wind speed sensitivity test	10%	10%	
Extreme wave height allowance	5%	10%	***Wave heights***
Extreme wave height sensitivity test	10%	10%	

Table 2: peak rainfall intensity allowance in small catchments and urb catchments (based on a 1961 to 1990 baseline)

Applies across all of England	Total potential change anticipated for the '2020s' (2015 to 2039)	Total potential change anticipated for the '2050s' (2040 to 2069)	Total potential change anticipated for the '2080s' (2070 to 2115)	
Upper end	10%	20%	40%	***Rainfall intensity***
Central	5%	10%	20%	

Future UK precipitation



2061-2080, RCP8.5

"a greater chance of warmer, wetter winters and hotter, drier summers"

2. Coastal Plans and Funding

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Coastal Plans

South Devon & Dorset
Shoreline Management Plan Review

www.sdadcag.org

Shoreline Management Plans

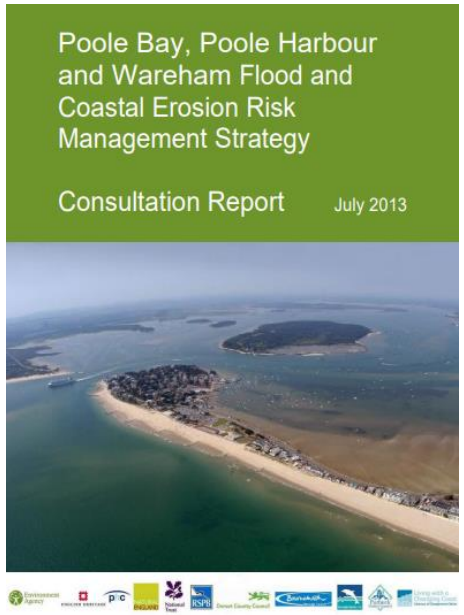
(Long term management intent)

FCERM Strategies

(Preferred approach to manage risk)

FCERM Schemes

(Works on ground – subject to funding)



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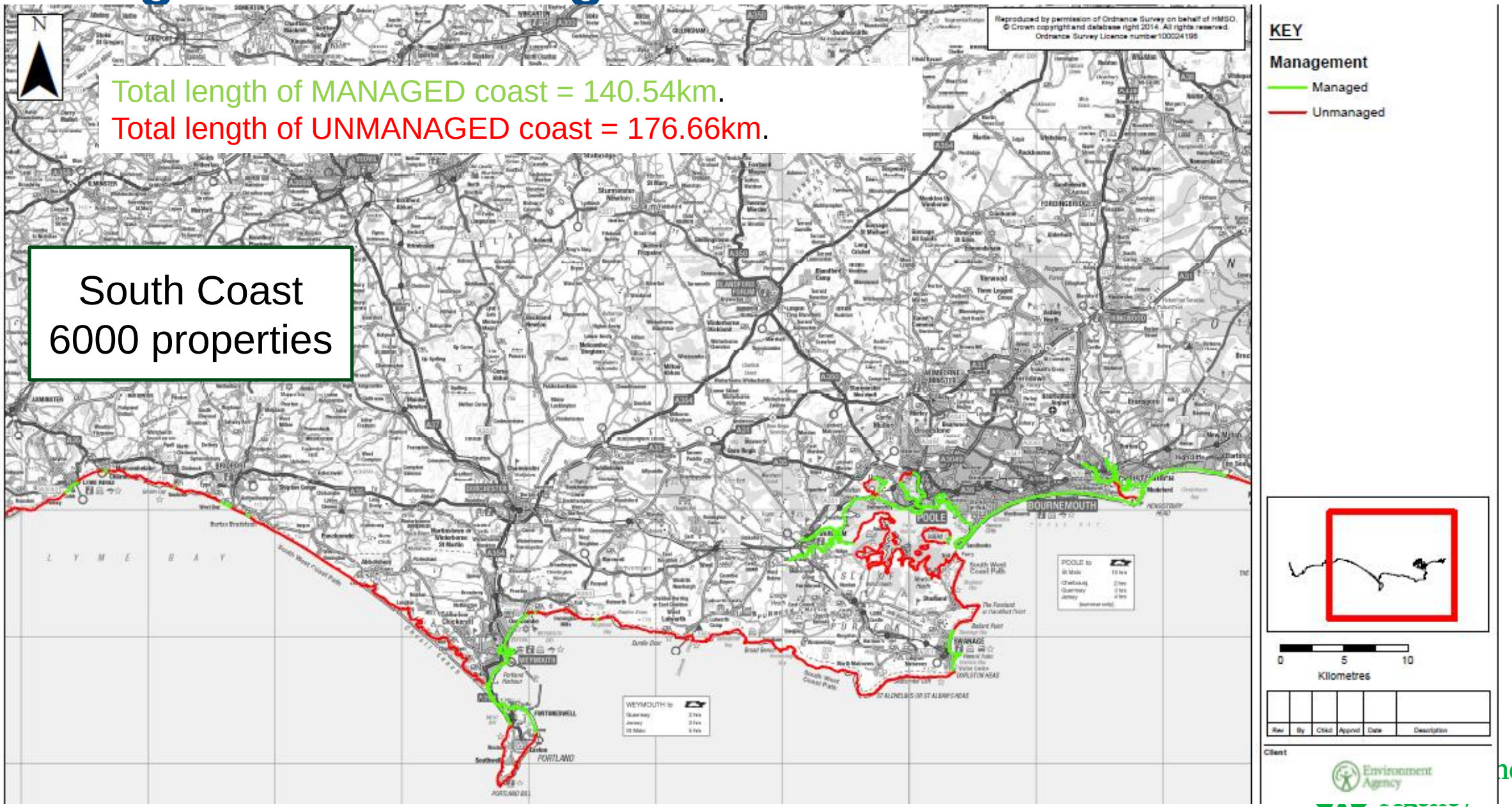
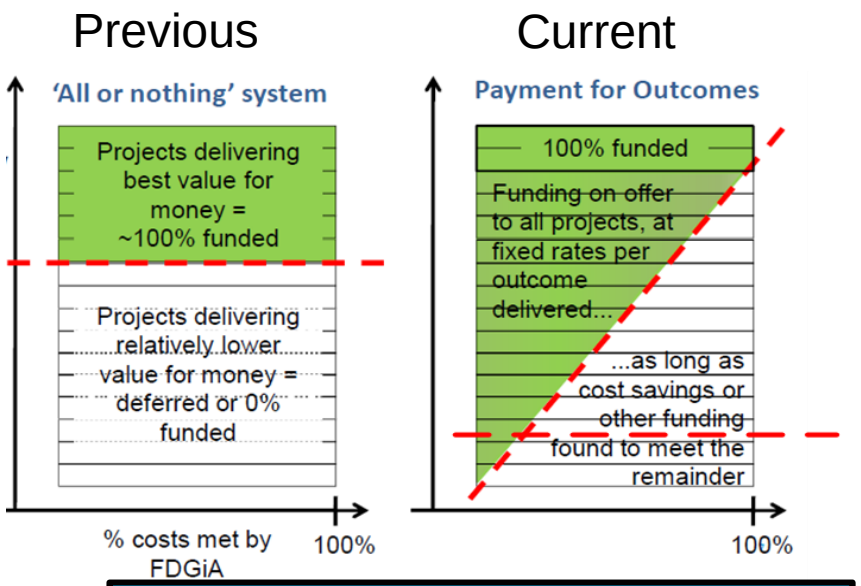
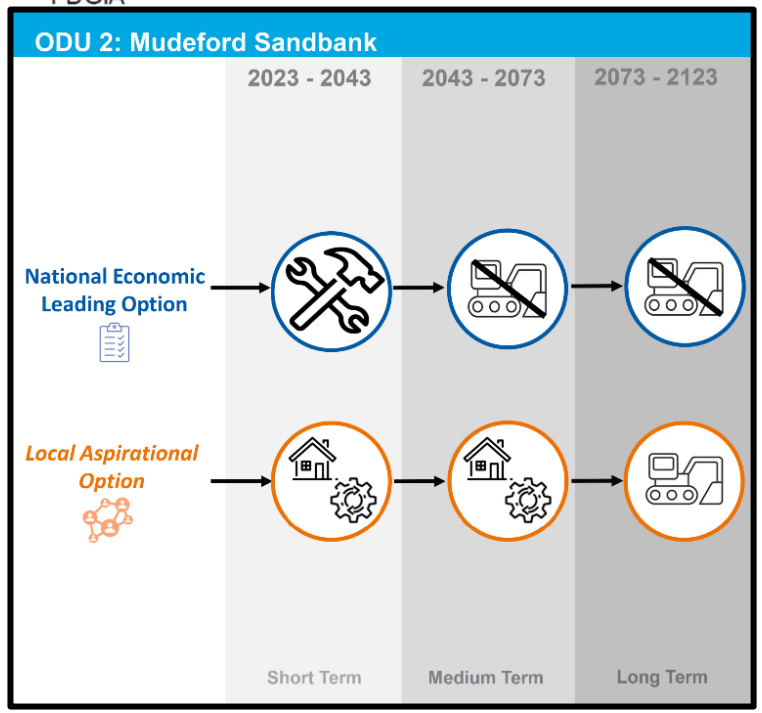
Managed & Unmanaged risk



Funding





- Flood Defence Grant in Aid (FDGiA) allocated on a partnership funding approach
- Often requires multiple sources of funding partners
- Capital projects – no revenue funding for LA's asset maintenance

The current funding (and FCERM appraisal) arrangements focus on a narrow band of FCERM outcome measures are not designed to consider the needs of place-based resilience.

It means central government funding is not always available to allow communities to adapt and improve resilience

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3. Cliff Falls & Land Instability

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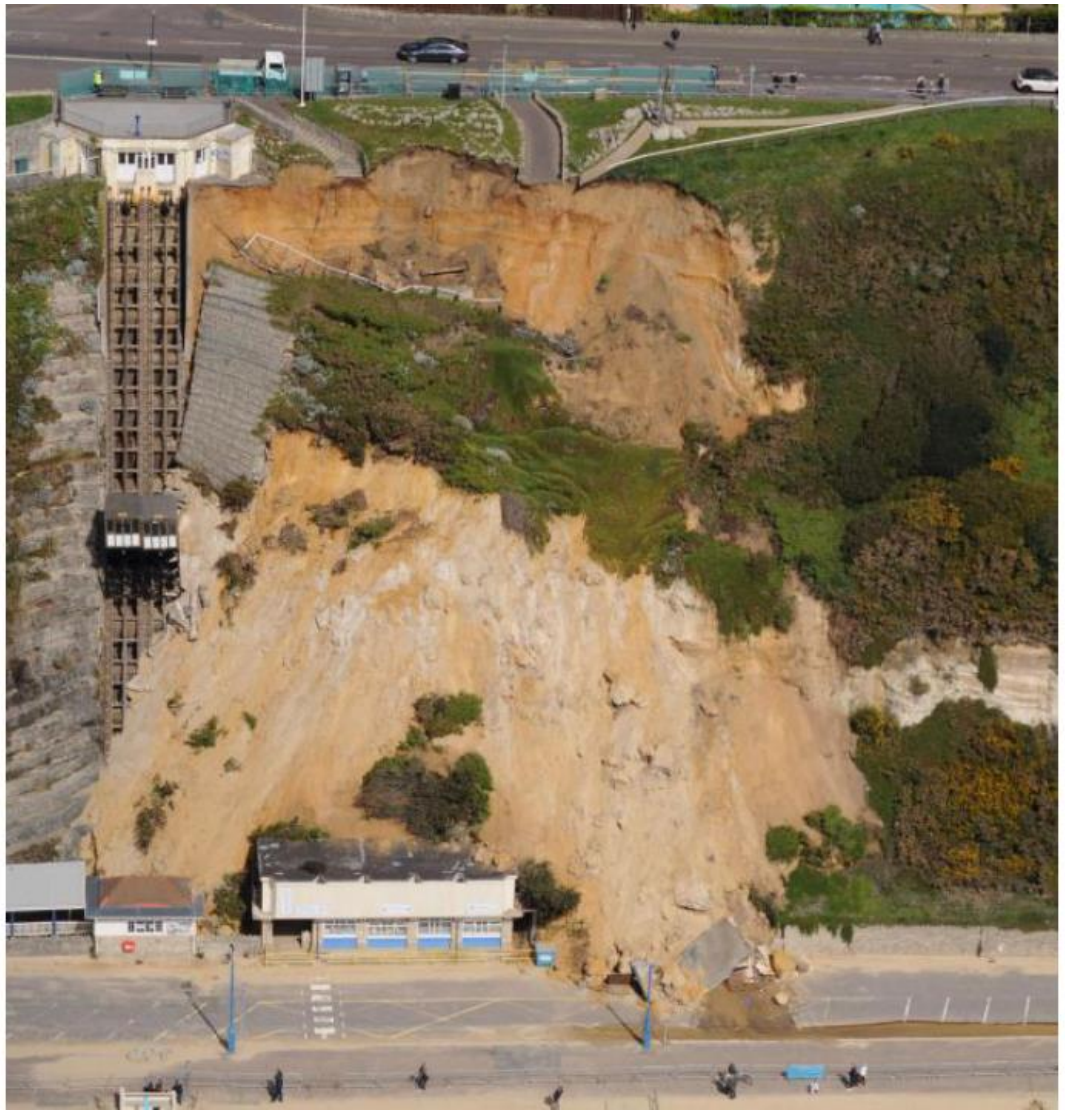
Cliff falls & Land Instability

Cliff instability at Bournemouth



Before and after photographs of the East Cliff Lift slip in 2016 (images courtesy of Andrew Emery, 2016).

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4. Storm Impacts

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Storm impacts

Storm Ciaran 4-5m of erosion

Communities cut off

Vulnerable residents and tourists

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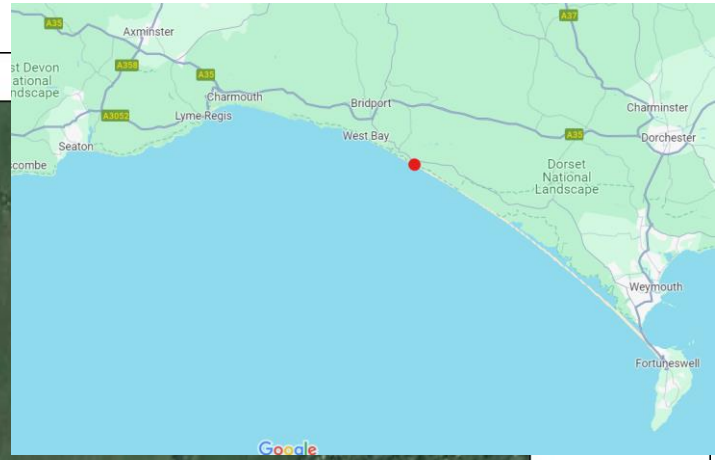
Breach

- Breach post storm Ciaran
- Over washing and rollback
- Consequences at other locations?



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5. Asset Management

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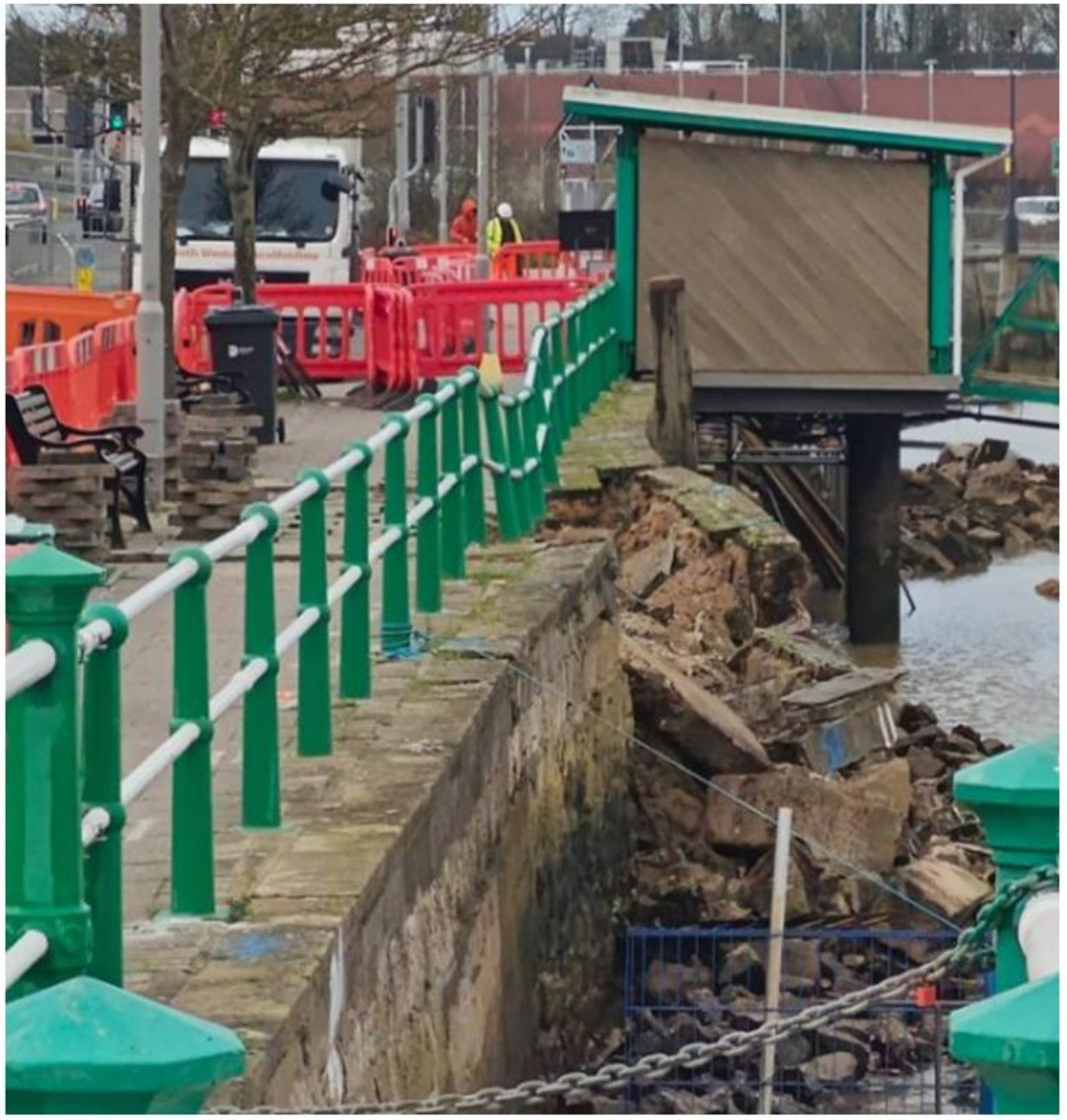
Asset Management



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- Lack of funding for maintenance
- No warning of sudden failure
- High repair costs

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6. Heritage Assets

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Heritage Assets

Lose or protect?

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7. Vanishing Beaches

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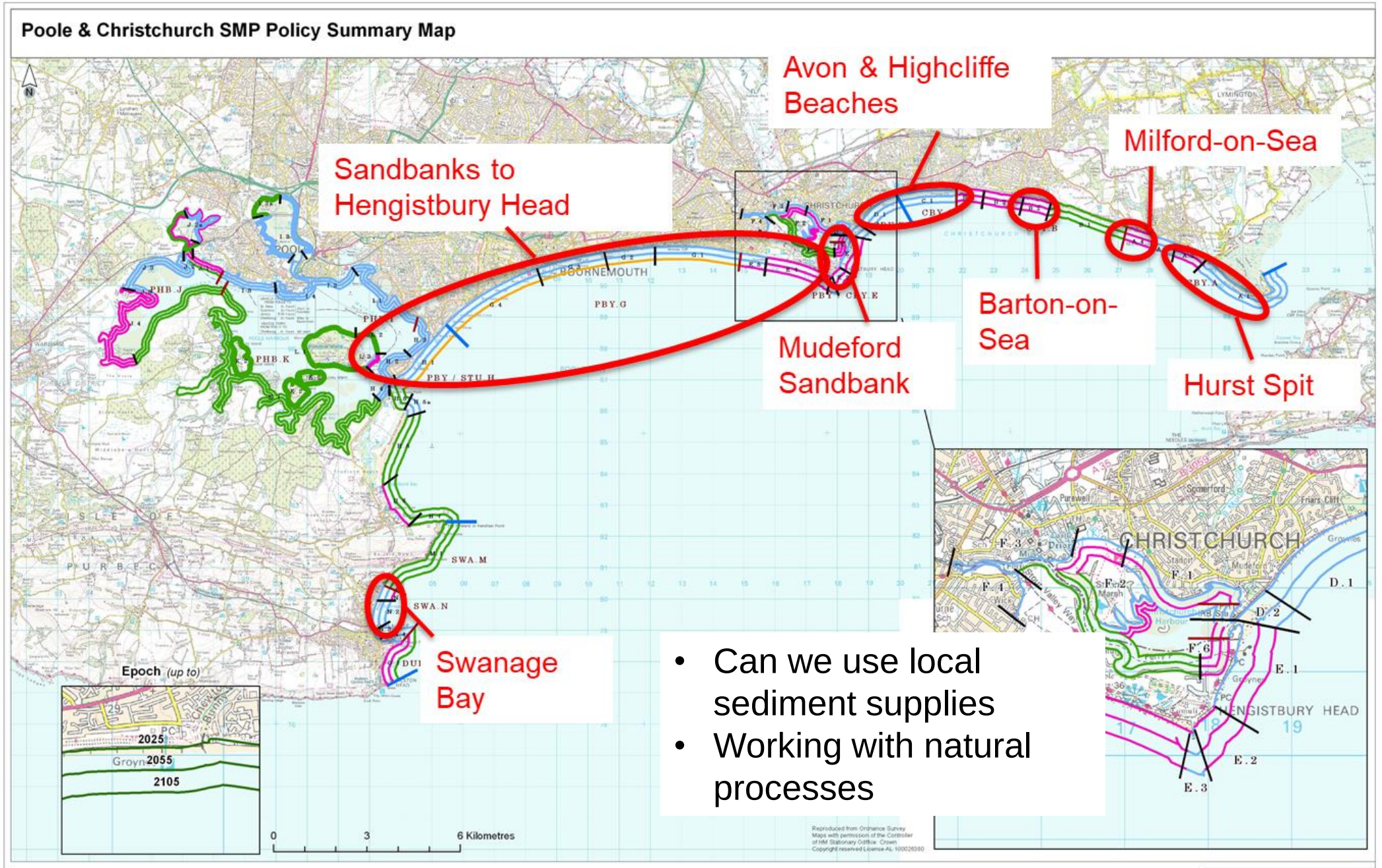
Vanishing beaches – beach management



- Can we use local sediment supplies
- Working with natural processes

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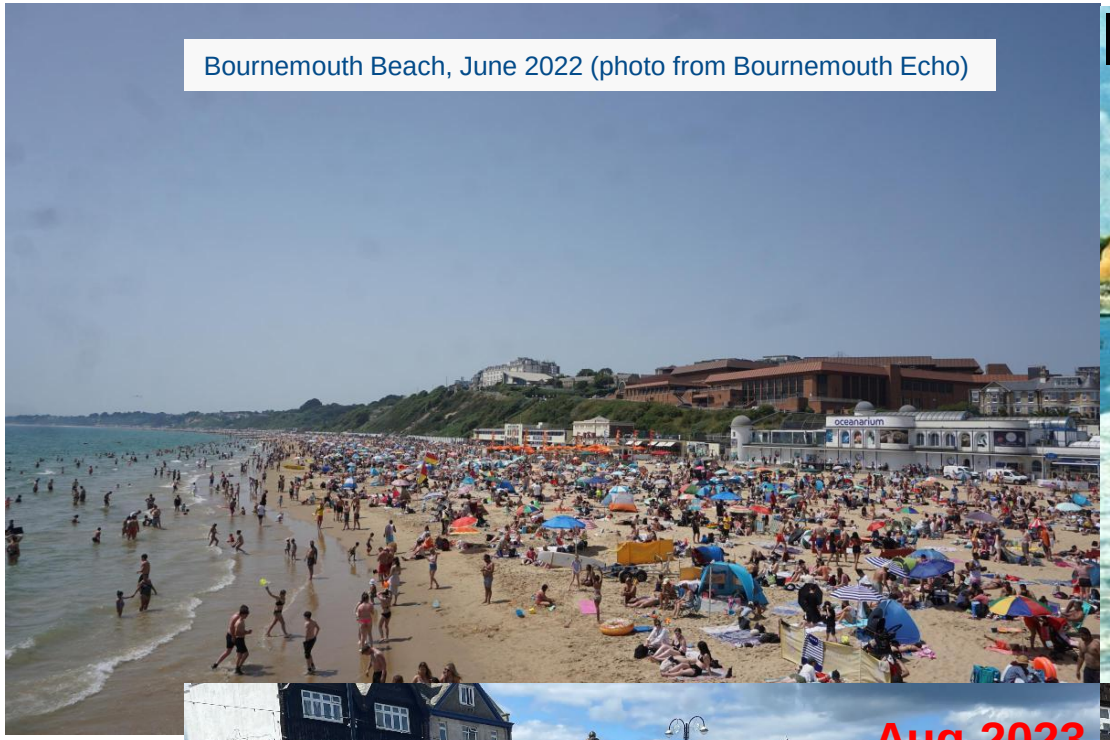
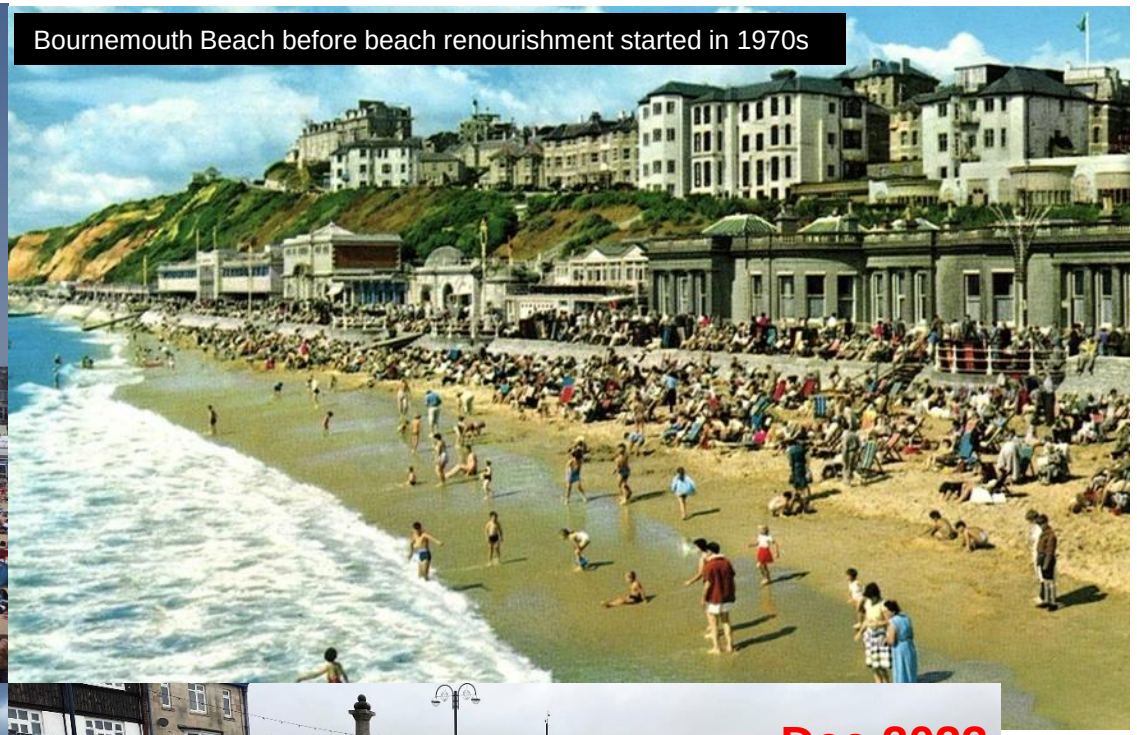
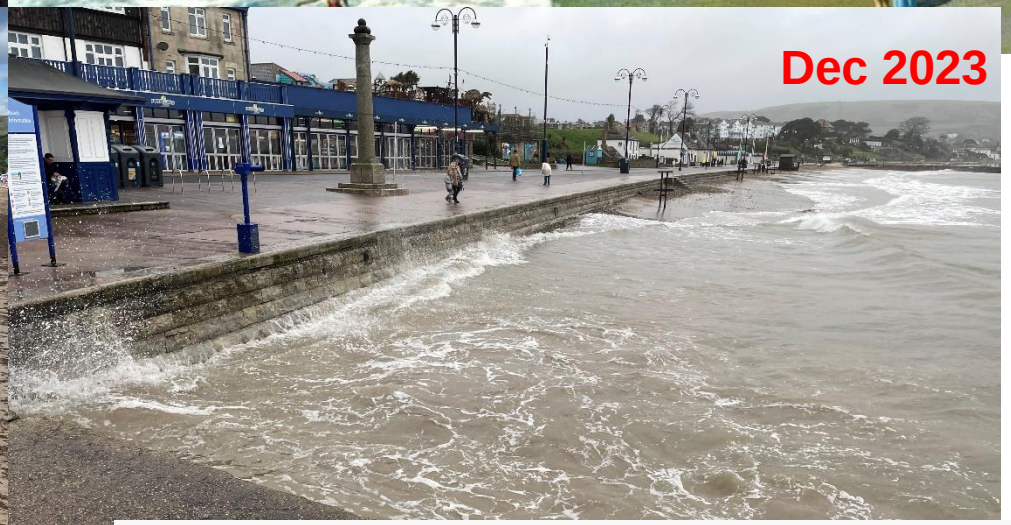
Beach loss







Increased wave overtopping and defence failure
Beach amenity loss

Future management choices

- Available sediment? Move to shingle beaches?
- Timber supply for groynes? Rock?
- Management costs? - wind blown sand, sea weed removal.

Visitors complained about wading through seaweed to reach the water

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8. Environment

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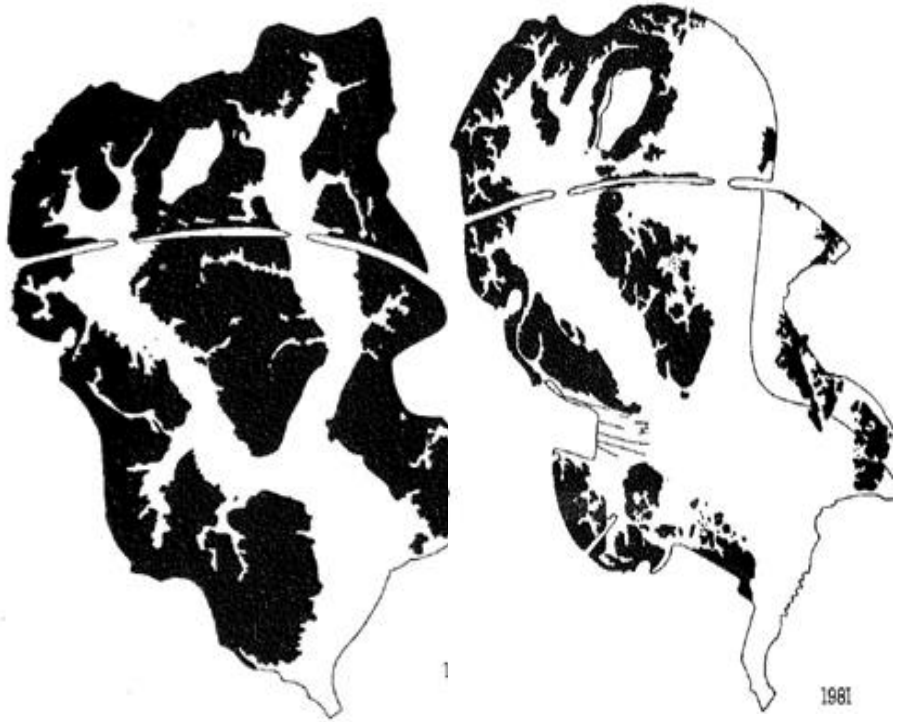
Habitat loss



Saltmarsh loss, Holes Bay, Poole Harbour

Coastal squeeze
Compensatory habitat
Archaeology

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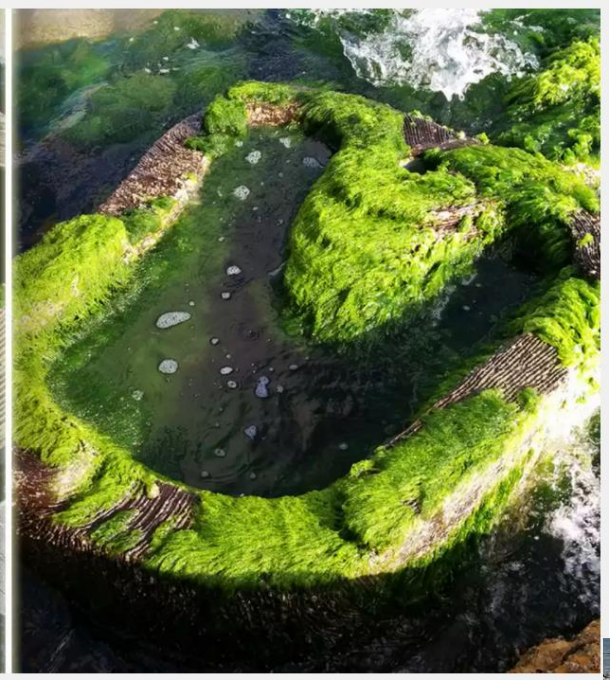
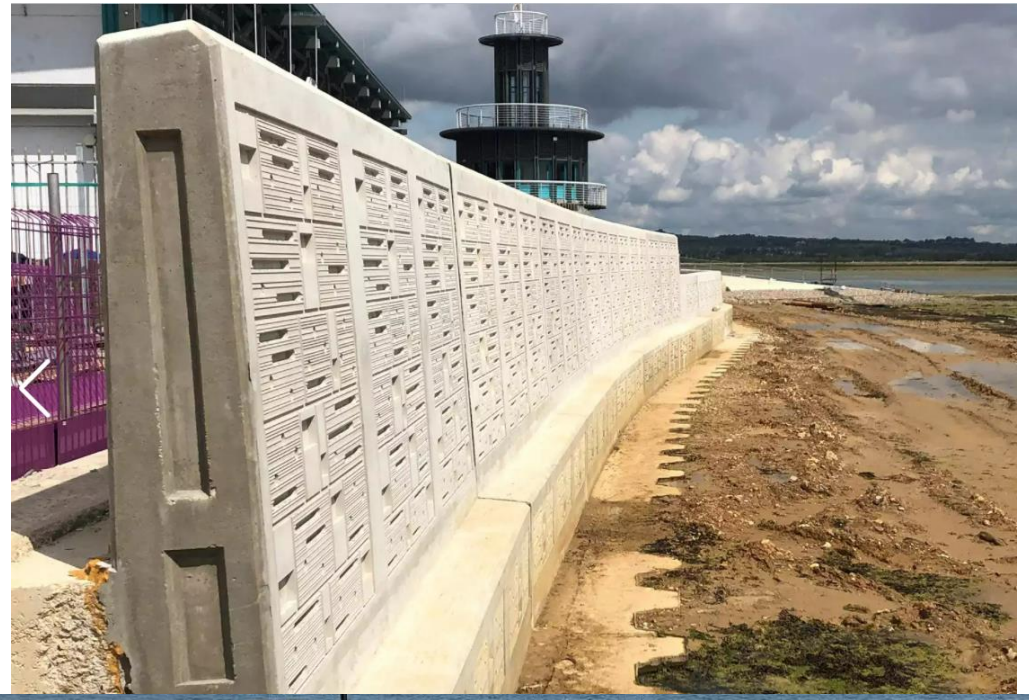
Biodiversity Net Gain





9. Coastal Landfill

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Coastal Landfill

SCOPAC HISTORIC LANDFILLS PROJECT

BACKGROUND

Around **1200** historic landfills in England are at risk of coastal flooding and erosion

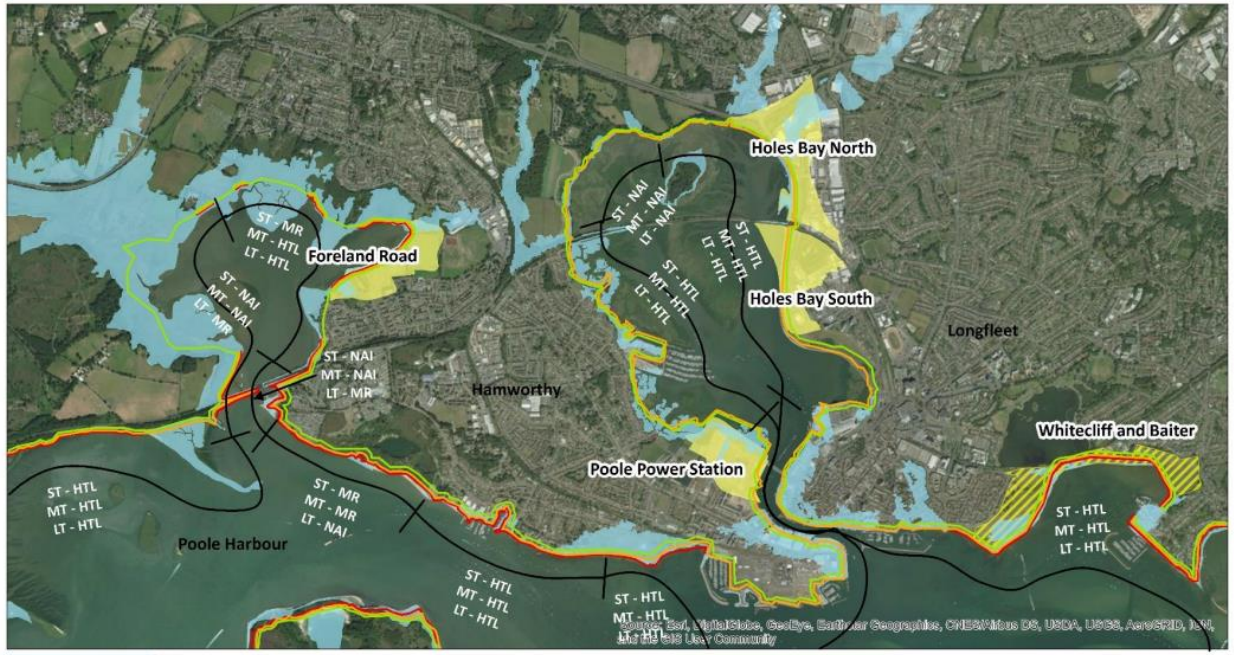
When most sites were filled there weren't strict regulations in place

Their contents are largely unknown

Many landfills were put on saltmarshes and are now close to environmentally designated areas

This waste could be hazardous to people and wildlife

CASE STUDY SITE - POOLE HARBOUR



POOLE HARBOUR	SMP Erosion Limits & Policy	
	NAI 0 - 20 years	EA Flood Zone 3 (0.5% AEP)
	NAI 20 - 50 years	Landfill Sites (EA Database)
	NAI 50 - 100 years	Landfill Site (ESCP / PBC data 2018)
Aerial Photography: ESRI (2017)	**ST** Short term (0 - 20 yrs) **MT** Medium term (20 - 50 yrs) **LT** Long term (50 - 100 yrs)	
	HTL/ATL Hold/Advance the line **MR** Managed realignment **NAI** No active intervention	

N

0 0.75 1.5 km

EASTERN SOLENT | COASTAL PARTNERSHIP

CASE STUDY SITE - LYME REGIS

10. Engagement & Adaptation

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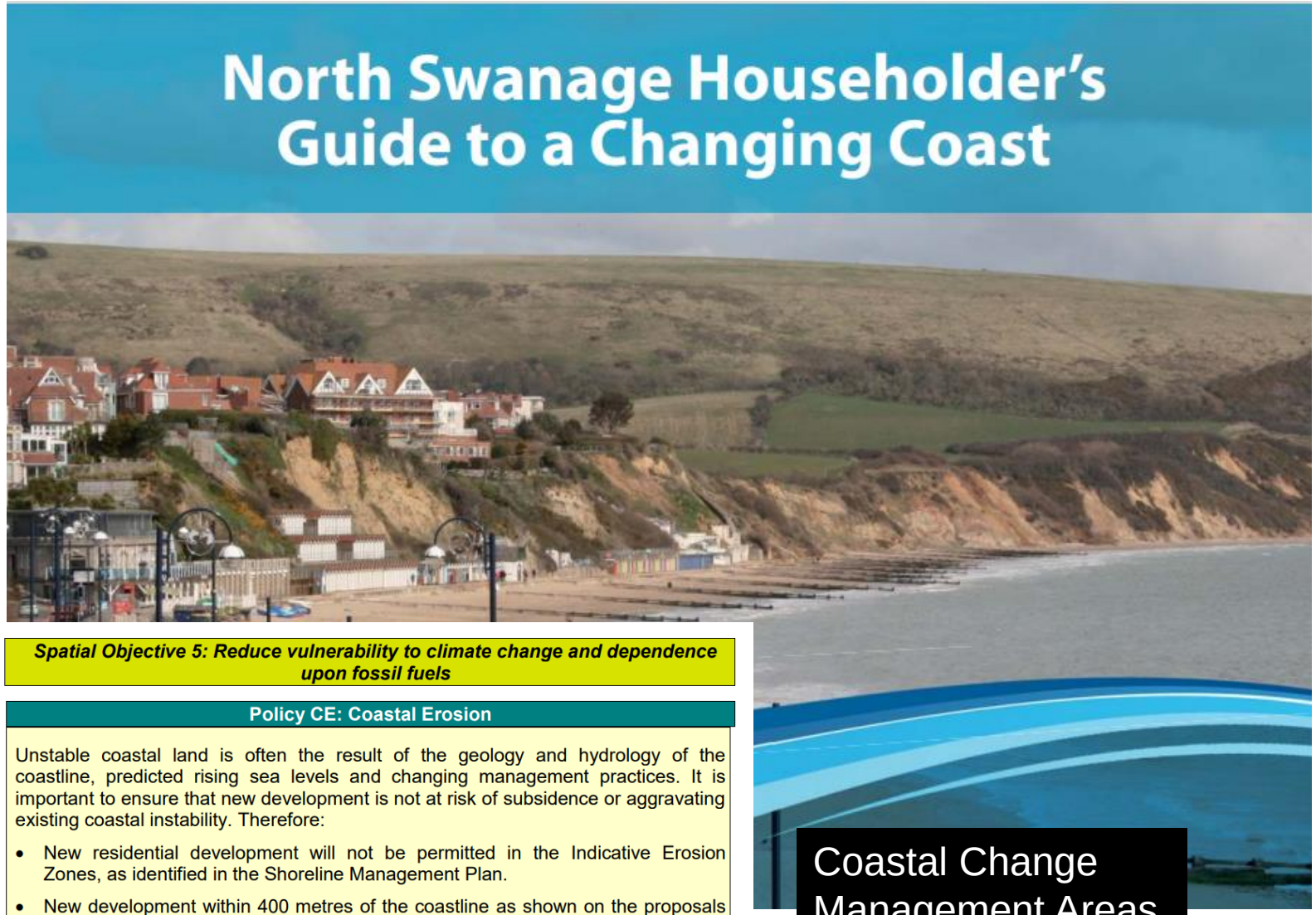
Engagement and adaptation



Spatial Objective 5: Reduce vulnerability to climate change and dependence upon fossil fuels

Policy CE: Coastal Erosion

Unstable coastal land is often the result of the geology and hydrology of the coastline, predicted rising sea levels and changing management practices. It is important to ensure that new development is not at risk of subsidence or aggravating existing coastal instability. Therefore:

- New residential development will not be permitted in the Indicative Erosion Zones, as identified in the Shoreline Management Plan.
- New development within 400 metres of the coastline as shown on the proposals map, known as the 400m No-water Discharge Consultation Zone, that has the potential to impact upon surface water and/or groundwater drainage, should demonstrate how water can be discharged without having an adverse effect upon the stability of nearby cliffs. This may preclude the use of soakaways.

Identification of Coastal Change Management Areas (CCMAs) will require further geological investigation and consideration through the Swanage Local Plan, neighbourhood plans, or the Site Allocations Plan. CCMAs will be a material

Coastal Change Management Areas (CCMAs)

Partnerships and groups

SOUTH WEST
Flood & Coastal

Dorset CAN
Climate Action Network

Dorset
Coast Forum

Southern
Coastal Group
and SCOPAC

STUDLAND BAY
MARINE
PARTNERSHIP

Mission Statement

To manage Studland Bay in a collaborative and su
onservation Zone (MCZ) objectives are met, nature co
thout seriously impacting the environment. Ensuring r
of this environmental initiative to restore seagrass meadows

The pessimist sees difficulty in every opportunity.
The optimist sees the opportunity in every difficulty.
Winston Churchill