CHaPRoN

Chichester Harbour Protection & Recovery of Nature

Chichester Harbour AONB

51% designated SSSI – 3,965 **hectares**

Ramsar, SAC, SPA, AONB, and locally important designations.

2 internationally, and 9 nationally important bird species

The State of Nature Today

...across the globe

68% of **global populations of monitored creatures** have declined between 1970 and 2016 (LPI)

1.9 million km² of **natural habitat lost** since 2000

1 million **wildlife species threatened** by extinction (WWF)

...in England's Coastal Environments

85% of historic **saltmarsh lost**

95% of **native oyster populations lost**

100% of **seagrass lost** in **more than 50% of English waters**

...in Chichester Harbour

58% of **saltmarsh lost since 1946**

2.54 ha of **saltmarsh continues to be lost** per year

Native oysters have **dramatically declined**

Seagrass meadows have **significantly declined**

Numbers of many wintering bird species have **declined** some **more than 70%**

Nesting Sandwich tern numbers have **declined to zero**

Up to **42%** of **intertidal habitat smothered by macroalgae**

Natural England SSSI Condition Review: • **Main intertidal habitats** are in **'unfavourable declining'** condition • **Main bird features** are in **'unfavourable declining'** condition

...Climate Change

Global Mean Surface Temperature (GMST) now **1.2 °C warmer** than pre-industrial times

Earth's average temperature increasing by **0.18°C per decade**

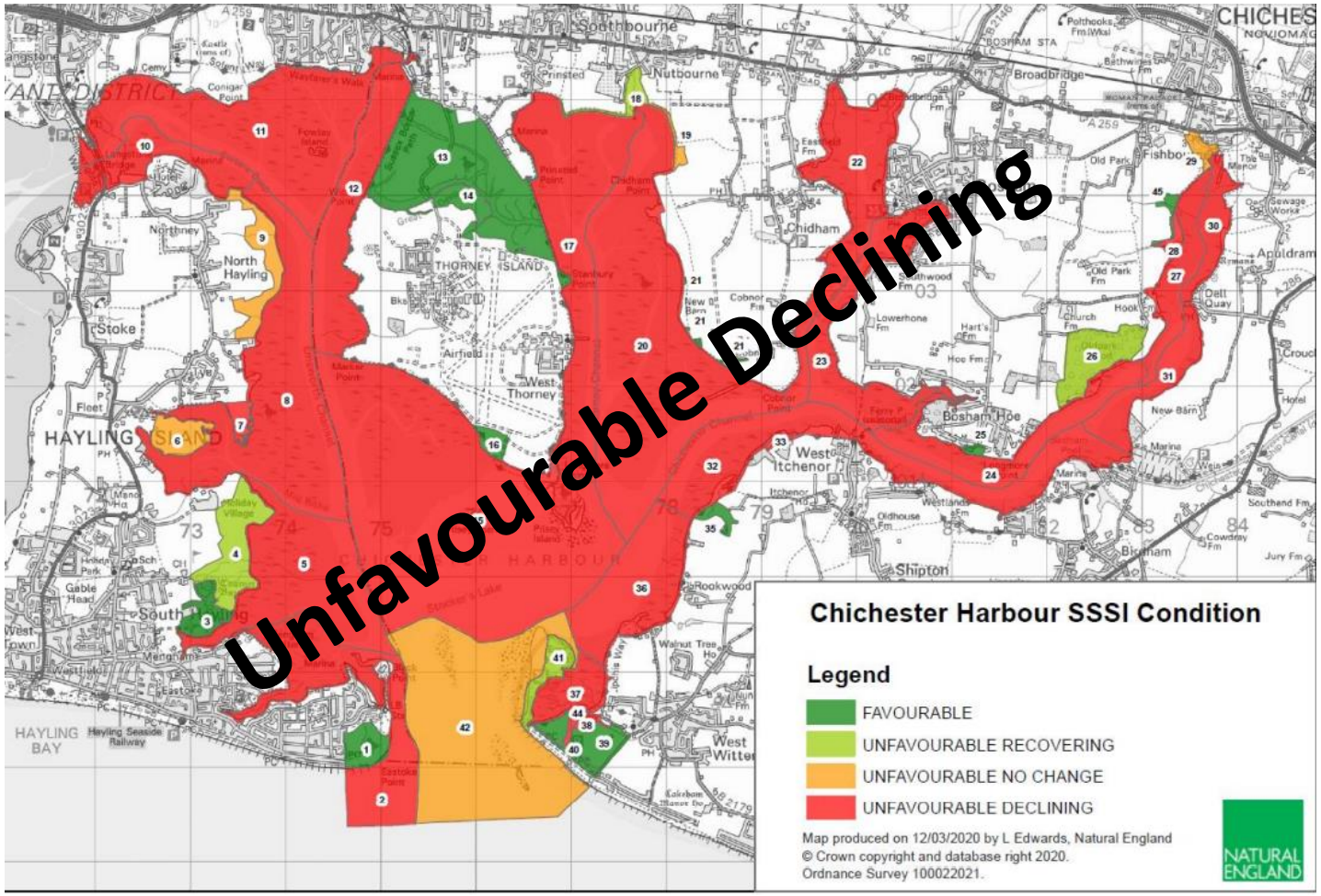
2011-2020 is the **warmest decade on record**

Mean sea level rise has increased to **3.8 mm/year** **along the south coast**

Sea levels along the south coast are projected to rise by up to **115cm by 2100**

UK sea levels will continue to rise **well beyond 2100** under all future emissions scenarios

Climate change is resulting in **more extreme weather events** **stormier winters, increased flooding and coastal erosion**



Overall, the main intertidal habitats and bird features are assessed as unfavourable declining condition largely due to the continued loss of saltmarsh, the poor quality of saltmarsh and mudflat habitat, and the continued decline of several bird species (wintering and nesting).

NE Condition Review of Chichester Harbour sites: intertidal, subtidal and bird features

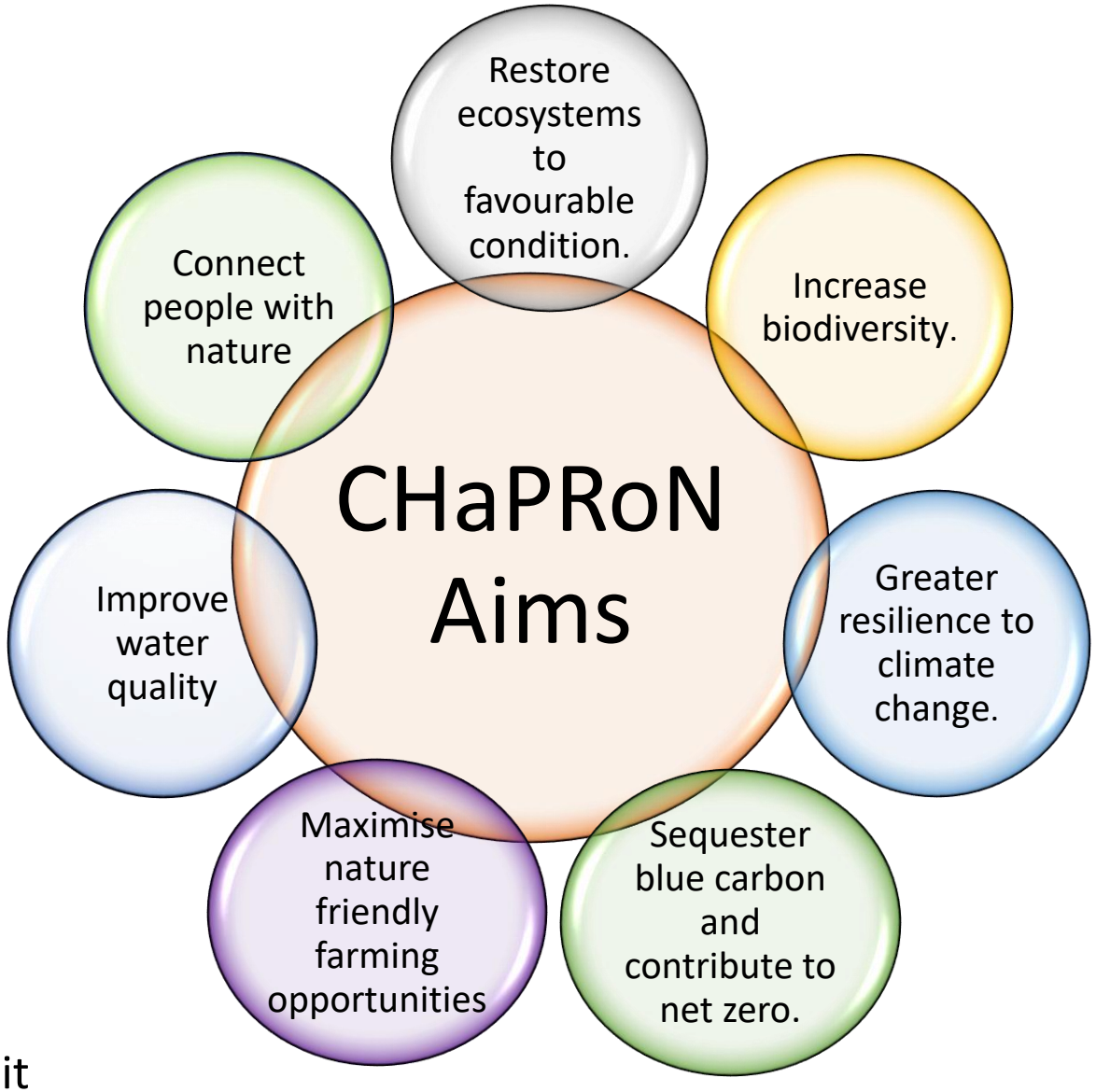
Published February 2021

Reasons for the decline

- Impacts of climate change
- Coastal squeeze
- Reduced sediment supply
- Water pollution
  - nutrient levels and eutrophication
- Human impact

The CHaPRoN Vision:

"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, and is resilient to environmental and anthropogenic pressures, maximizing ecosystem services benefits and supporting nature recovery for generations to come"



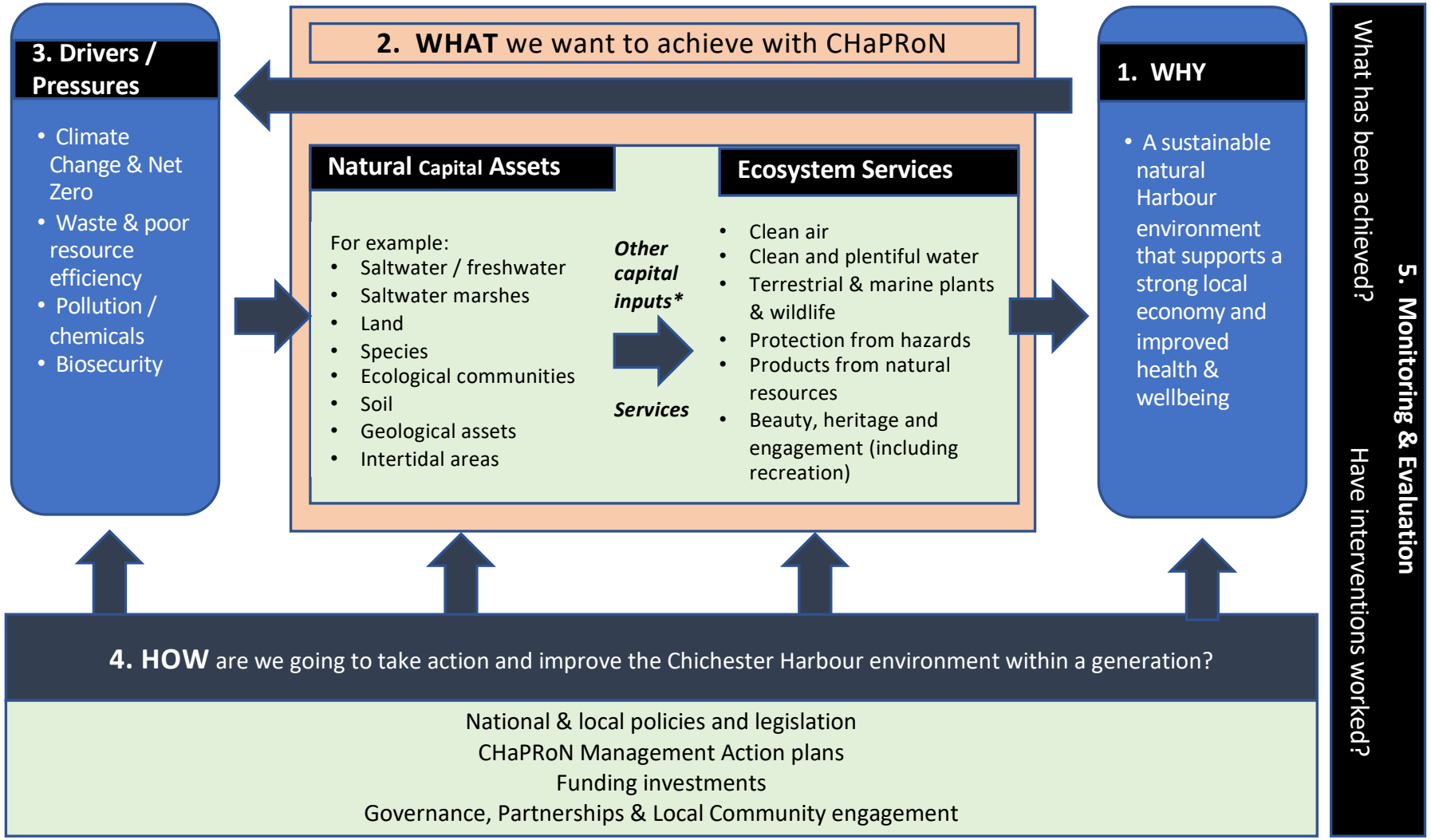
Objective: To **protect**, **enhance** and **drive recovery** of the natural environment within Chichester Harbour and help it adapt to climate change.

Turning the CHaPRoN Vision into a Delivery Plan

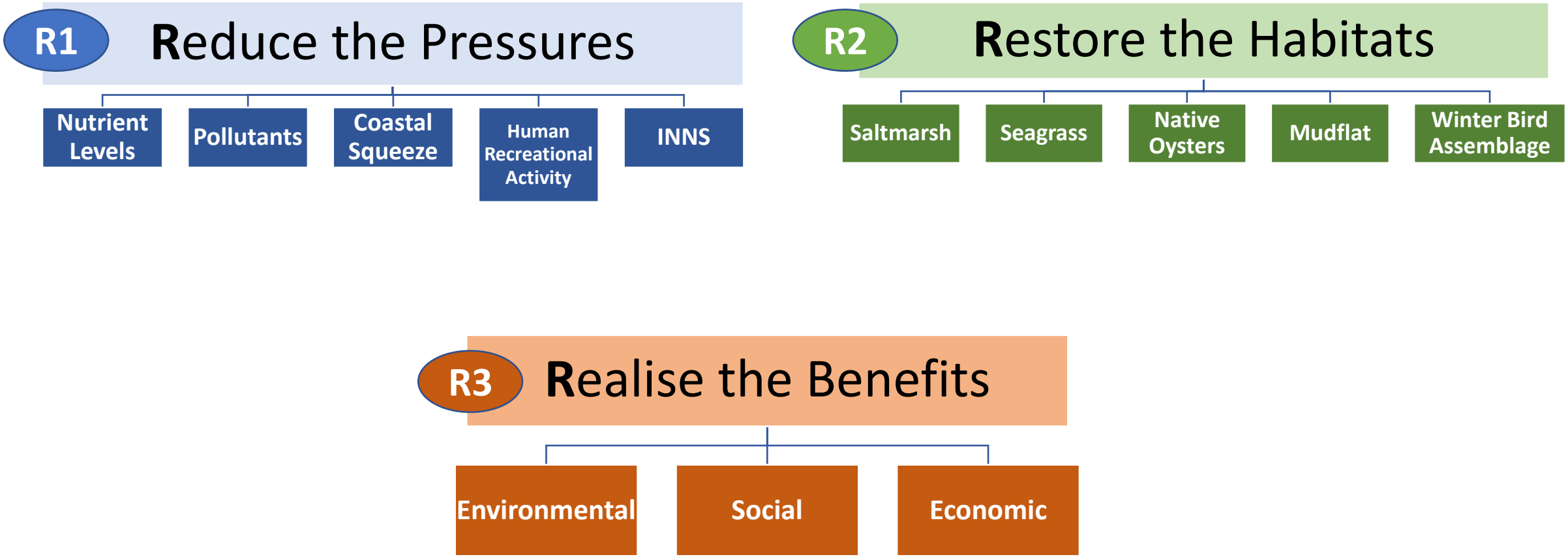
CHaPRoN

The Capital Model:

- Adapting the DEFRA 25YEP model as a framework to improve the Chichester Harbour environment



The CHaPRoN Strategic Framework – The 3Rs



Developing the CHaPRoN Plan

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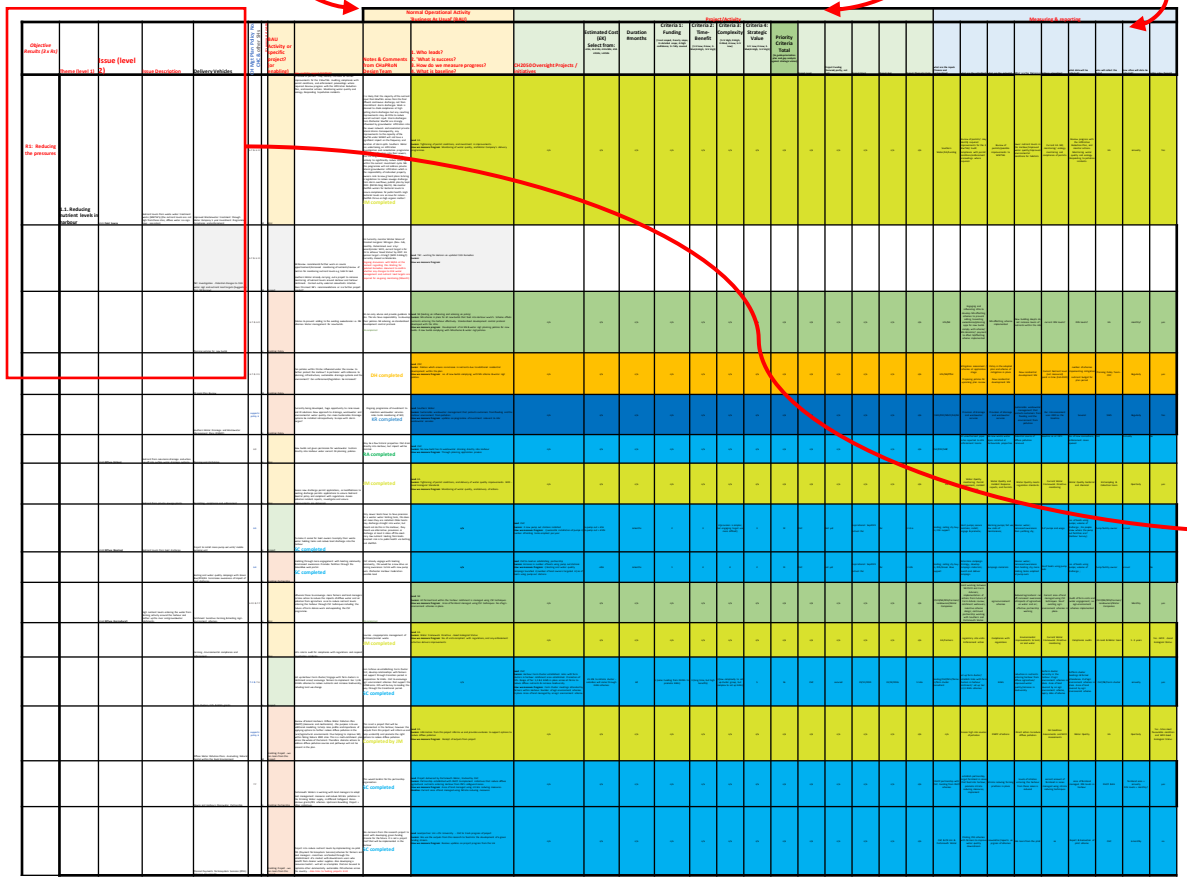
Normal Operational Activity 'Business As Usual' (BAU)			
BAU Activity or specific project? (or enabling)	How could this support CHAPRoN?	Notes & Comments from CHaPRoN Design Team	1. Who leads? 2. 'What is success? 3. How do we measure progress? 4. What is baseline?

Project/Activity												
CH2050 Oversight Projects / initiatives	Estimated Cost (£K) Select from: <£5k; £5-£10k; £10-£50k; £50-£250k; >£250k	Duration #months	Criteria 1: Funding (1=not scoped; 2=early scope; 3= detailed scope; 4=high confidence; 5= fully sourced	Criteria 2: Time-Benefit (1=V Low; 2=Low; 3-Med;4=High ; 5=V High)	Criteria 3: Complexity (1=V High; 2=High; 3=Med; 4=Low; 5=V Low)	Criteria 4: Strategic Value 1=V Low; 2=Low; 3-Med;4=High ; 5=V High)	Priority Criteria Total (to guide priorisation plan and gap analysis against strategic vision)	Project Lead	Project Funding (Secured; partly; not yet)	Project Start	Project End	Project Thematic Code

Measuring & reporting								
what are the inputs (finance and partnerships?	what are the activities?	what are the outputs?	What are the Outcomes	Is there a baseline?	what data will be collected?	who will collect the data?	how often will data be collected?	is this a Key Target?



Objective Results (3 x Rs)	Theme (level 1)	Issue (level 2)	Issue Description	Delivery Vehicles
R1: Reducing the pressures	1.1. Reducing nutrient levels in harbour	1.1.1 Point Source	Nutrient levels from waste water treatment works (WWTW's) (the nutrient levels are not high from these sites, diffuse water is a sign. issue - see notes)	Improved Wasterwater treatment through Water Company 5 year Investment Programme, Compliance and enforcement
				TBC: Investigation - Potential changes to SSSI water mgt and nutrient load targets (Suggestion from NE Review)
				Planning policies for new builds
				CD Local Plan Review
				Southern Water Drainage and Wastewater Management Plans (DWMP)

CHaPRoN: 8 Focus Areas

1 Coastal Resilience & Saltmarsh Restoration	2 Seabed Disturbance & Seagrass Restoration	3 Water Quality & Clean Harbour	4 Shellfish Populations
5 Marine & Farmland Birds	6 Landscape and Nature Recovery Network	7 Engagement Activities	8 Green Funding Streams

- Opportunity to bring in wider stakeholders, align interests and develop further partnerships
- Focus areas overlap and are not viewed in isolation
- Focus areas progressing in parallel but at different rates

[1] Coastal Resilience & Saltmarsh Restoration Group

- Work collaboratively to strategically plan and deliver actions to increase the Harbour's coastal resilience and adaptability to climate change, with the ambition to develop a **long-term coastal environmental plan.**
    - **Research and information gathering**
    - **Influencing local plans**
    - **Changing approach**
- Identify and promote opportunities for using **nature-based solutions** and work with partners to deliver habitat enhancement projects
- Explore new techniques for restoring and extending saltmarsh habitat, including BUDs (**Beneficial Use of Dredgings**).

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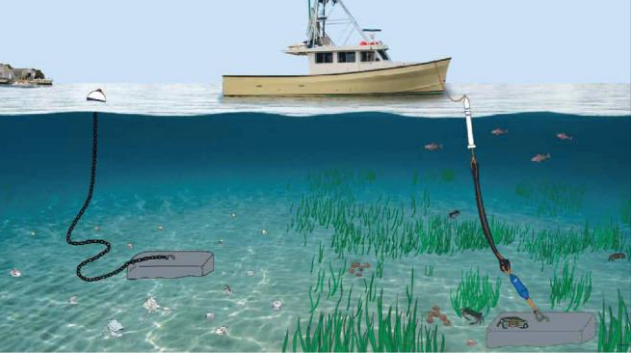

[2] Seabed Disturbance & Seagrass Restoration

- Carry out **baseline survey work** on existing seagrass beds – extent and condition
- Develop strategies **to reduce pressures on the seabed**
- **Academic research** into contaminants within the sediment
- Work with partners to **pilot and further develop active seagrass restoration techniques.**

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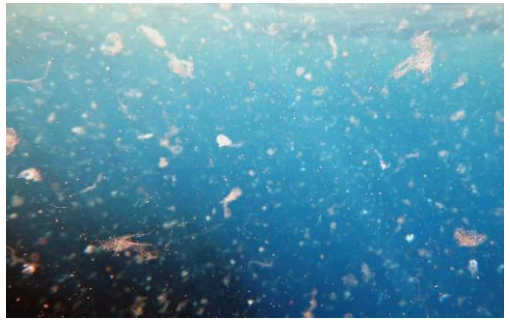
PROTECTION & RECOVERY OF NATURE



[3] Water Quality & Clean Harbour

- Many parameters – a lot of work already being done.
- Work with partners to promote and develop initiatives to **reduce nutrients** entering the harbour.
- **Academic research** - increase understanding and knowledge of sources of contaminants and their impact on coastal ecosystems
- Use evidence to **influence** policy & regulations
- **Develop local initiatives** to help reduce contaminants entering the harbour waters

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CHICHESTER HARBOUR
PROTECTION & RECOVERY OF NATURE

[4] Shellfish Populations

- **Academic research** to increase understanding of pressures on shellfish, particular the native oyster
- Develop initiatives to reduce these pressures
- Work with partners to explore **potential active restoration** methods to restore native oyster populations.
- Develop systems and methodology to **monitor populations of cockles and clams** to increase understanding of population trends over time

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[5] Marine & Farmland Birds

- **Reducing pressures** from human activities on bird populations

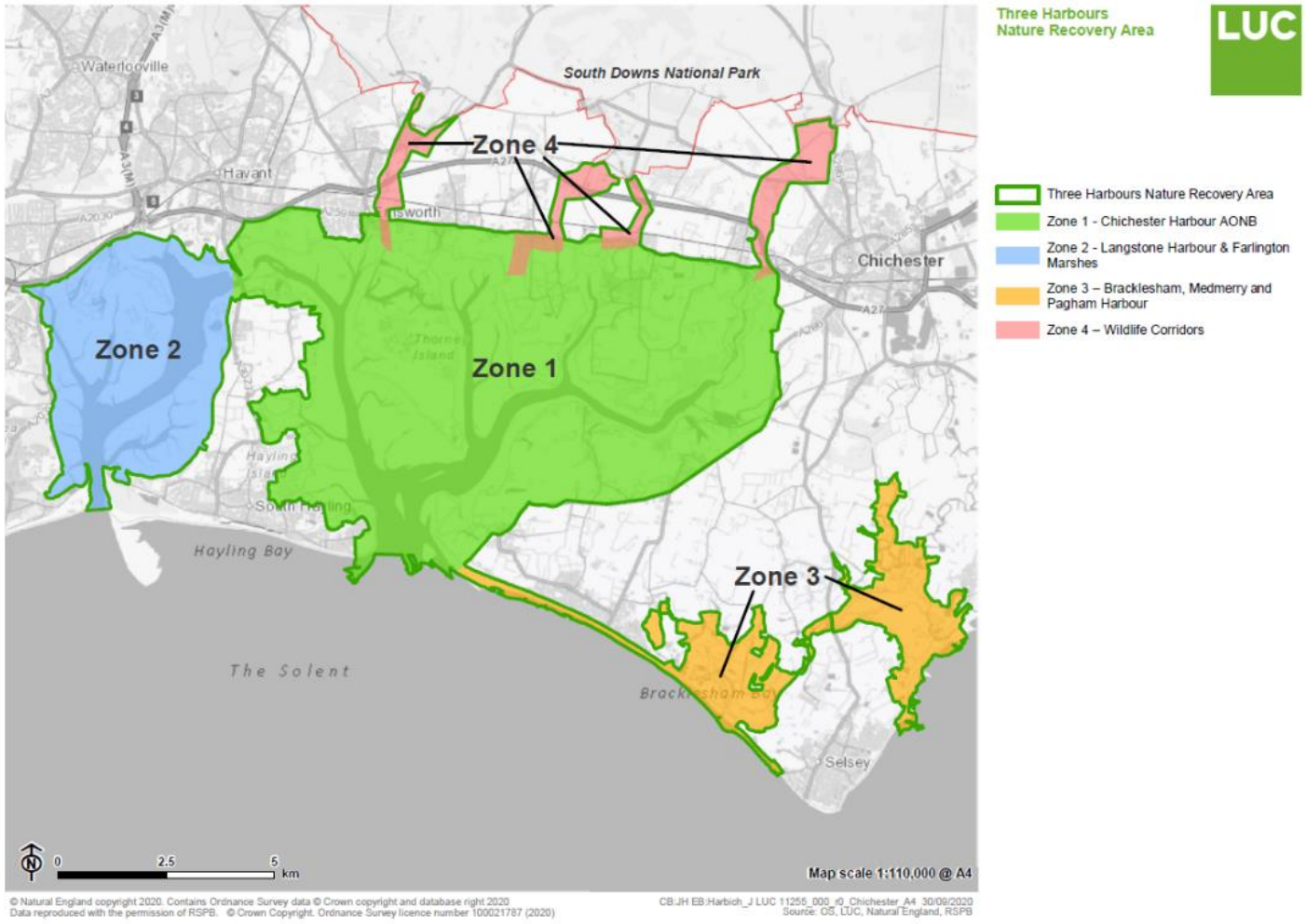
- **Increase and enhance high tide nesting and roosting sites** for marine birds, improving the resilience to the pressures of climate change

- Increase and enhance habitat for farmland birds

[6] Landscape & Nature Recovery Network

- Focusing on the wider landscape and seascape, work with stakeholders to link CHaPRoN with a wider Nature Recovery Area across the 3 harbours

- Drive wider landscape environmental initiatives including improving soil health, enhancing the landscape's resilience to climate change and sequestering & storing carbon.



NB. This map was developed only as an initial concept for a wider Nature Recovery Area

[7] Engagement Activities

- Develop the communication and engagement strategy for CHaPRoN
- Develop resources to support active engagement with stakeholders and communities.
- Develop engagement initiatives and volunteer opportunities to enable wider stakeholders to be actively involved in restoration efforts

[8] Green Funding Streams

- Gather evidence to support the metrics for ecosystem services and benefits.
- Link up with national research e.g. Saltmarsh carbon code/BNG
- Work with partners to develop the structure and framework for green funding streams that will support restoration projects within the harbour in the future

Carbon Offsetting

Biodiversity Net Gain from development

Environment Land Management Schemes

Challenges To Nature Recovery

- Chichester Harbour is a Statutory Harbour Authority
  - the largest recreational harbour in Europe – increasing numbers of boats and watersports activities – speed/wash/damage to seabed/ wildlife disturbance
- Development Pressures
  - 20,000 more houses planned up to 2029, increasing population, increasing pressures on infrastructure. AONB has no statutory authority over planning.
- Increasing population brings greater recreational pressures
  - Dog walking/trampling along foreshore/litter/increase in staycations

Challenges to Nature Recovery - Practicalities

- Changing attitudes towards coastal change & nature based solutions to managing the coastline
- Coastal Rollback and PRoW
  - Rights of way along coastal edge are often sandwiched between HW mark and arable land/private gardens/buildings. Enabling coastal rollback becomes extremely difficult when the landowner refuses to move the coastal footpath and we still need to protect access along the coastline.
- Landowner permissions around HW mark can be complex
  - Different terrestrial landowner to intertidal area – can impact on access
- Private ownership of moorings

Challenges to Nature Recovery - Practicalities

- Complex Licencing processes for works in subtidal/intertidal habitats (that are also protected areas):
  - MMO/NE/LPA/Harbour Authority - timeframes, increasing costs, duplication of work
- Rapidly increasing costs of materials – difficult to budget accurately
- Funding
  - where is this going to come from? Issues regarding using mitigation money in a SSSI.
  - difficult to find funding to carry out feasibility studies and survey work, most fund sources want to fund actual delivery
  - Similarly, cost of removing sea defences is high
- Human Resource – to manage delivery

Questions?