



# Chichester Harbour Protection and Recovery of Nature



*Photo: Paul Adams*

## Annual Review: 2022/2023

Final Version

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## 1. Introduction

Chichester Harbour Protection and Recovery of Nature (CHaPRoN) is a partnership initiative to protect and restore nature within Chichester Harbour. There are 8 organisations represented on the Steering Group. These are:

- Chichester Harbour Conservancy
- The Environment Agency
- Natural England
- Coastal Partners: now representing both Havant Borough Council and Chichester District Council
- RSPB
- Sussex Inshore Fisheries and Conservation Authority (IFCA)
- Southern Water

The partnership was formed to protect, enhance and drive recovery of the natural environment within Chichester Harbour and help create a landscape more resilient to climate change.

In February 2021, Natural England's Condition Review Report downgraded Chichester Harbour Site of Special Scientific Interest (SSSI) to Unfavourable Declining condition. The overall reason for this is 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). The report highlighted that despite being a highly designated area, Chichester Harbour had not escaped the gradual deterioration of the natural environment and loss of biodiversity.

<http://publications.naturalengland.org.uk/publication/5535304204419072>

This document is the first Annual Review since CHaPRoN began in December 2020. In planning the reporting period, the Steering Group realised that the CHaPRoN Annual Review did not necessarily need to coincide with the end of financial year. However, due to the forthcoming change in senior personnel at the Conservancy, the Annual Review has been brought forward from June to March this year. The Review will not only provide an update to the Board of the Conservancy on the progress of CHaPRoN, but will also provide a useful resource to the new senior members of staff who will be joining the Conservancy, partners, and the interested general public.

The Review covers the period from January 2022 to March 2023 following the last update to the Conservancy. It begins with a summary of two new partnerships that CHaPRoN has become part of, which bring funding to support delivery across the CHaPRoN initiative. Progress is then reported under the 8 key Focus Areas:

- Coastal Resilience & Saltmarsh Restoration
- Seabed Disturbance & Seagrass Restoration
- Water Quality & Clean Harbour
- Shellfish Populations
- Marine & Farmland Birds
- Landscape & Nature Recovery Network
- Engagement & Connecting People with Nature
- Green Funding

Each of the Focus Areas are progressing at different rates, as would be expected, due in part to the complexities of the subject areas and the deployment of available resource. Significant progress has been made towards the CHaPRoN aims, which demonstrates the value of collaborative and partnership working, aligning interests and enabling greater outcomes to be achieved together.

## 2. New CHaPRoN Partnerships

### 2.1 The Solent Seascape Project

CHaPRoN are delighted to have become a named partner in the Solent Seascape Project (SSP), which is a 5-year partnership project across 10 different organisations. The aim of the project is:

*"To reconnect the Solent into a functioning seascape by improving the condition, extent, and connectivity of key marine and coastal habitats, using protection and restoration initiatives".*



In October 2022, the partners, led by the Blue Marine Foundation, formally secured \$5m from the Endangered Landscape Programme (ELP) to deliver their Vision for the Solent. The ELP is managed by the Cambridge Conservation Initiative and is funded by Arcadia, a charitable fund of Peter Baldwin and Lisbet Rausing.

The Solent Seascape Project will be the first of its kind in the UK to initiate seascape scale recovery. Its long-term vision is to protect and restore at least 30 per cent of the Solent's seascape, tipping the balance from a degraded state to a naturally expanding, connected and productive ecosystem. By restoring and connecting the Solent's seascape, the project will provide nature-based solutions to many of the issues currently affecting it and the people who depend on it, as well as helping to fight the impacts of climate change.

CHaPRoN's key responsibilities for the SSP are:

- To work with partners to help develop the long-term seascape recovery plan, that supports better management of marine and coastal habitats.
- To deliver the Saltmarsh Restoration BuDs Trial at West Itchenor
- To developing wider saltmarsh restoration initiatives within Chichester Harbour
- To carry out seagrass survey work in the Harbour
- Comms and Engagement – to support the development and delivery of the SSP engagement plan with local communities, raising awareness and catalysing behavioural change
- To carry out monitoring work as required for the SSP
- To support partners with the delivery of restoration initiatives within the Harbour

As part of this project, CHaPRoN has secured funding of £425,989 from the ELP and is requested to secure match funding of a further £143,593. This funding will support delivery of our key responsibilities and provide funding for two new staff posts at the Conservancy to enable delivery on the ground. These posts are:

- i. a Nature Recovery Projects Officer (F/t)
- ii. a Comms & Engagement Officer (P/t).

The project brings together a wealth of experience and expertise from across all partners, including seagrass restoration, native oyster restoration, the monitoring of blue carbon and nutrient fluxes, marine birdlife and comms and engagement strategies. Collectively the project



forms a very powerful and exciting partnership and CHaPRoN looks forward to being part of this over the next 5 years.

## 2.2 New Partnership with East Head Impact

CHaPRoN is delighted to have formed a new partnership with East Head Impact, a local charitable trust, who have agreed to offer CHaPRoN its full match funding for the Solent Seascape Project. East Head Impact are extremely supportive of the work of both the Solent Seascape Project and CHaPRoN and are pleased to be supporting a local initiative striving to improve the natural environment within Chichester Harbour. We look forward to working with East Head Impact and developing the partnership over the next 5 years.



## 3. CHaPRoN Progress Updates Across the 8 Focus Areas

### 3.1 Focus Area: Coastal Resilience & Saltmarsh Restoration

The Coastal Resilience & Saltmarsh Restoration Focus Area is now a well-established working group and has engaged with 30 members representing a range of different stakeholder organisations. The Group is co-chaired by Jackie Mellan (Environment Agency) and Kate Bull (Natural England) and meets on a quarterly basis.

The focus area has 4 key aims within Chichester Harbour. To:

- i. Mitigate and Adapt to Climate Change
- ii. Improve coastal processes
- iii. Achieve sustainable development for the management of the coastline
- iv. Protect and enhance biodiversity, in particular through saltmarsh restoration and creation sites

The Group has established key targets and indicators and has made steady progress through the delivery of its prioritised plan for 2022/23.

This is a complex area of work, with many challenges and obstacles to overcome, as partners seek to develop new ways of working in response to a changing coastline.

Currently around 65% of the coastline is protected by hard sea defences which are a key contributing factor to the decline in Chichester Harbour SSSI. Within the Harbour, a Coastal Management Strategy is currently being developed for Hayling Island, but there is no Coastal Management Strategy from Emsworth to East Head, which covers approx. 80% of its coastline. The current North Solent Shoreline Management Plan (SMP) (2010) has the policies of 'Hold The Line', 'Hold The Line (No Public Funding Available)', 'Managed Realignment', and 'Adaptive Management' for different sections of the Harbour. The SMP refresh in 2020, identified the approach of 'Hold The Line' as being unsustainable across many policy units. There is currently no confirmed public funding to carry out a formal SMP Policy Review.

Over the past couple of years, with increasing storm events, sea defences have started to fail at a number of sites around the Harbour as they approach the end of their life expectancy. This is creating opportunity, but also many challenges to overcome and increasing urgency to work collaboratively to determine the most appropriate and sustainable management of the

shoreline. For this reason, Coastal Partners are currently drafting a scope, and exploring options to fund a Strategic Environmental Management Plan / Coastal Management Strategy for the remainder of the Harbour.

Against this backdrop, the Coastal Resilience & Saltmarsh Restoration Focus Area has been making significant progress towards delivering against its aims. The following sections of the Review outlines the achievements to date under each of the four aims, and in line with the work areas identified in the Prioritised Plan. It should be noted however, that several work areas contribute to more than one of the key aims. A summary of the Focus Area's key progress indicators can be found in section 4.1.

### **3.1.1 Aim: Mitigate and Adapt to Climate Change**

#### **3.1.1.1 The Hayling Island Coastal Management Strategy**

Progress with the new Hayling Island Coastal Management Strategy continues. Coastal Partners carried out the public consultation on the draft strategy between October and December 2022. The draft Strategic Environmental Assessment, Habitat Regulations Assessment and Water Framework Directive assessment are currently being finalised prior to consultation with statutory consultees.

#### **3.1.1.2 Chichester Harbour Proposed Strategic Environmental Management Plan / Coastal Management Strategy – Emsworth to East Head**

The West Sussex side of Chichester Harbour from Emsworth to East Head does not currently have a Flood and Coastal Erosion Risk Management Strategy in place. This is now the only stretch of coastline within the Coastal Partners boundary that does not have this level of policy. With the downgrading of Chichester Harbour SSSI, several sections of failing sea defences and the conclusions from the Shoreline Management Plan refresh, the need for a Strategic Environmental Management Plan / Coastal Management Strategy for this section of the coastline has been exacerbated. The existing high level North Solent Shoreline Management Plan policies within the Harbour would significantly benefit from re-assessment as part of this proposed strategy, alongside confirming wider environmental opportunities.

Coastal Partners have been allocated funding from the 23/24 financial year within the Environment Agency's FCERM Capital Investment Programme to start developing this, however this will require approval of a business case to unlock funding. The next stages will be to confirm a scope for this work and apply to secure funding. This project is expected to require contributions from wider partners.

The proposed Strategy will link into wider and ongoing projects, plans and initiatives, such as the Environment Agency's Strategic Asset Review (see section 3.1.1.6) and the Chichester Harbour Coastal Characterisation Study (see section 3.1.2.1). It may also enable priority actions to be developed on the ground, whilst the strategy is under development.

#### **3.1.1.3 The Shoreline Management Plan Refresh**

The North Solent Shoreline Management Plan (SMP 13) management group are leading on the actions arising from the Shoreline Management Plan (SMP) Refresh published in 2020.

The first Environment Sub-Group meeting was held in October 2022 and environment actions within the SMP Action Plan were updated. An overview of these actions was provided to the Coastal Resilience working group in January 2023. These actions included:

- developing the Emsworth to East Head Strategy.
- actions related to bird data and movements.
- continuing to maintain an up-to-date Habitat Compensation and Restoration Programme balance sheet.
- further studies on coastal squeeze through the Solent Dynamic Coast Project.
- a strategic Solent & South Downs (SSD) coastal grazing marsh study
- further studies for opportunities at Conigar and Warblington and other harbour sites.
- actions linked to Habitat Regulations compliance.
- developing and understanding mechanism for Biodiversity Net Gain delivery and Net Zero Carbon.

Coastal Partners are currently preparing scopes for two of the key SMP environmental actions. This includes the Solent Coastal Grazing Marsh study (see section 3.1.4.1), and an update to the Solent Dynamic Coast Project by re-calibrating 'coastal squeeze' calculations across the North Solent region, using latest sea level rise data (UKCP18). These initiatives will help advise / clarify opportunities for intertidal habitat creation across the Solent region and apply some ground truthing (modelling vs. what's actually happening on the ground).

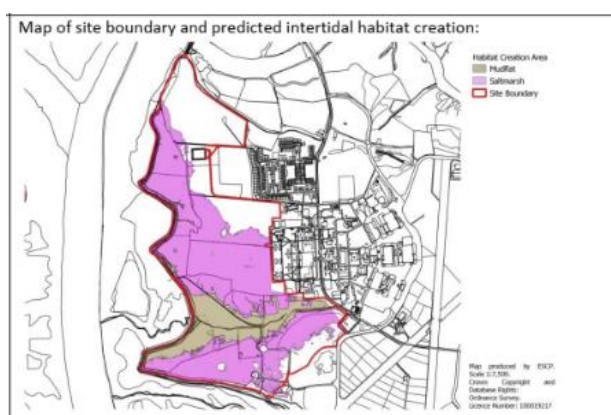
### 3.1.1.4 Habitat Compensation and Restoration Programme (HCRP)

Coastal Partners have been working with the Environment Agency to continue to progress the Habitat Compensation and Restoration Programme (HCRP) (formally known as the Regional Habitat Compensation Programme). The annual progress report is with DEFRA. They are working with stakeholders and partners to assess and deliver habitat creation at several sites around the Harbour/Solent and South Down's Region.

As part of this programme, Coastal Partners continue to investigate opportunities for intertidal habitat creation on the East Coast of Hayling Island linking in with the new Coastal Management Strategy.

The potential HCRP site on the west side of Thorney Island, known as Project Marker, is currently under review. The project is being led by the Environment Agency and discussions continue regarding potential ground contamination levels at the site. The Conservancy sit on the stakeholder group for the project.

The length of coastline under review is approx. 2.5km. The site could potentially provide a total area of 30 hectares of intertidal habitat. However, coastal grazing marsh and semi-improved grassland would be lost.



Location of Project Marker from HCRP (Coastal Partners)

Statutory bodies will decide on the direction of the project at this site in 2023/24.

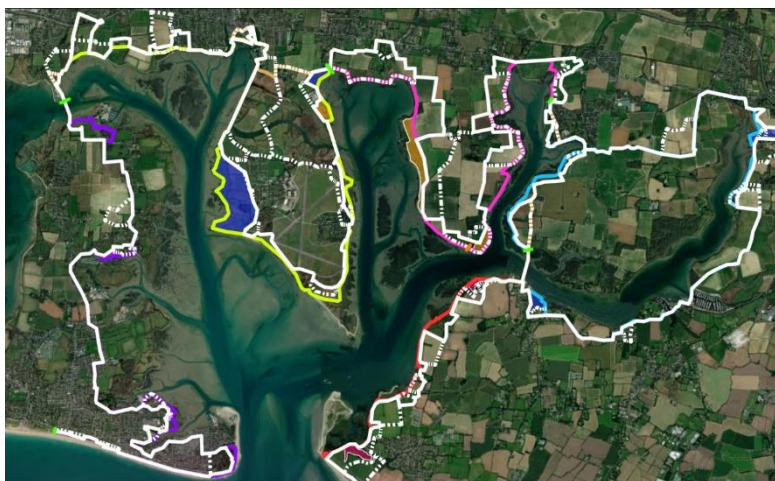
### 3.1.1.5 England Coastal Path – Footpath Review

The England Coast Path (ECP) that runs around Chichester Harbour provides great recreational and health and well-being benefits to a large number of local people and visitors. However, its current route also creates challenges when considering opportunities to roll back the coastline and create/extend intertidal habitat. Climate change is also placing increasing pressures on the coastal path, rising sea levels combined with increasing storminess, often overtop and flood areas and there are an increasing number of sections impacted by erosion.

Those people who enjoy using their local footpaths are very protective of the route they currently follow. However, as the pressures start to increase on the coastal path, society needs to be thinking more strategically about its future route. It is no longer sustainable to automatically repair hard sea defences that only protect the coastal path, due to the adverse impact on the SSSI and the high, on-going costs required. Often the ECP is sandwiched between a failing sea defence and private land, so natural roll back is not a straightforward option. However, if there is a greater understanding of the potential options for the future coast path, it will help to inform and prioritise habitat restoration efforts and increase awareness of the need for change. By working with local communities a long term sustainable plan that delivers an enhanced visitor experience can be developed.

#### (a) The England Coast Path – 2100 high level study

To begin this work, the Conservancy, with support from the Environment Agency and Natural England, hosted a second year Environmental Science undergraduate from the University of East Anglia for a summer placement during July and August 2022. During the placement, the student completed a project to explore options for the potential future route of the England Coast Path around the Harbour. His final report focuses on where the ECP could potentially be re-routed to by the year 2100, based on both sea level rise predictions, and the Highest Astronomical Tide +1m. The options for the potential routes for different sections of the ECP have been mapped out, following hedgerows and existing routes as much as possible. The report also highlights sites where the coastal path is under greatest threat due to erosion or sea level rise and will require attention in the near future.



*An image showing the fully mapped current ECP and potential 2100 ECP options within Chichester Harbour (by Luke Davenport)*

The information provided in this report, emphasises the need to develop an agreed approach to the future management of the ECP and provides a valuable resource to help inform restoration efforts.

### **(b) ECP Langstone Bridge to Prinsted (SHE2)**

Hampshire County Council (HCC) are currently working with Natural England to review the section of path from Langstone Bridge to Prinsted, known as SHE 2. This will take into account Langstone, Warblington and Nore Barn Woods. The report is currently being reviewed by NE before being made public.

HCC and partners are currently looking at options for the footpath between Langstone and Wade Lane where the seawall is failing. Please see Section 3.1.2.5 for further update on this.

### **(c) Partnership Working for the ECP**

The ECP Officers from Hampshire County Council and West Sussex County Council, together with some other Hampshire Access Authorities are currently in discussions as to whether a joint trial partnership to manage the ECP should be established.

The ECP Officers are also currently waiting for the stretch of the ECP from South Hayling to East Head to be approved by the Secretary of State (SoS). Once it has been approved, the ECP Officers will be able to share details of how they plan to engage with local communities and address the challenges they face regarding the ECP. This will provide opportunity to work more collaboratively with CHaPRoN moving forwards.

In the meantime, the ECP Officers are involved in discussions regarding a couple of key sites within the Harbour where the footpath is being directly impacted by erosion and there is strong community interest in the future of the path. The ECP Officers are supportive of working collaboratively to help determine solutions.

### **3.1.1.6 Environment Agency Strategic Asset Review within Chichester Harbour**

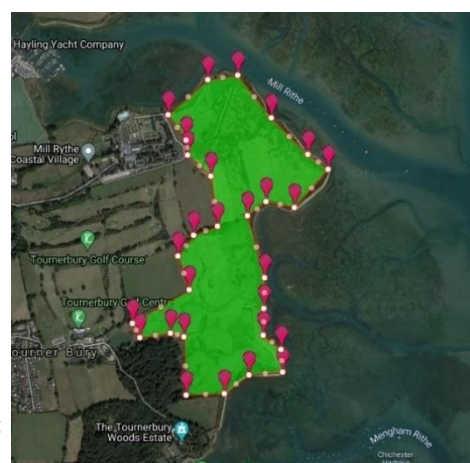
The Environment Agency are commencing a strategic review of all the assets they own within Chichester Harbour including sea defences, outfalls and other infrastructure and developing a strategy for their future management. This review will identify whether the EA will continue to manage an asset or whether it will be decommissioned. Decommissioning may include removal, change of management approach or transfer of ownership. This review is due to be completed by Autumn 2023 and the information will feed into a wider integrated coastal management strategy for the Harbour.

### **3.1.1.7 Tournerbury Farm**

In November 2022, the ownership of Tournerbury Farm changed. Chichester Harbour Trust are now the new owners of this 99-acre site.

The acquisition of this site by the Trust is a significant step towards protecting sites to enable future roll back, supporting coastal resilience and intertidal habitat creation.

Location of Tournerbury Farm, East Hayling

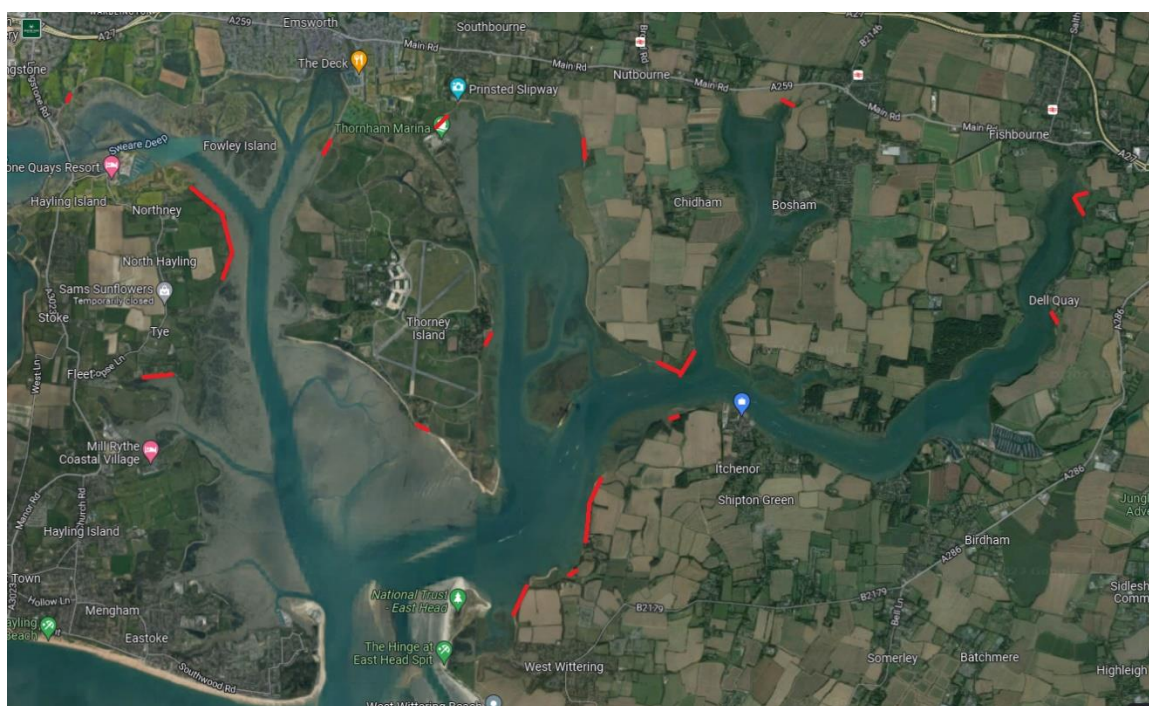


The site will continue to be grazed by the previous owners under a Farm Business Tenancy. When this tenancy comes to an end in 2037, the Conservancy will take on a 99-year lease of the site.

The length of coastline at this site is approximately 1.8 km of hard sea defence in varied condition. The whole site has excellent potential for a habitat creation scheme in the future which will support all 4 of the focus area's aims. Although it is some years until the Tenancy agreement ends, feasibility studies, optioneering, planning and consenting processes can begin in advance.

### 3.1.1.8 Failing Sea Defences

Chichester Harbour Conservancy carried out a review to identify all the locations within the Harbour where sea defences are currently failing. A total of 16 locations were identified at the time, but it is a continually evolving scene.



Map to show location of failing sea defences in Chichester Harbour

Failing defences provide an opportunity to review the management of the coastline, consider its impact on the SSSI, the future pressures of climate change and ascertain whether management approaches need to change and adapt. However, this is not without its challenges as society adapts to sea level rise.

Three key sites are discussed in section 3.1.2 below: Colner Creek, Apuldram and Langstone (see sections 3.1.2.3, 3.1.2.4 and 3.1.2.5).

The situation has exacerbated the need to work collaboratively to develop a consistent approach to dealing with failing sea walls and to review the Conservancy's Sustainable Shoreline Guidelines. The Conservancy will be working with the CHaPRoN partnership to review and update these guidelines this year. Changing approaches will support the Harbour's natural environment to adapt to climate change and feed into the wider coastal strategy.

## 3.1.2 Aim: Improving Coastal Process

### 3.1.2.1 Chichester Harbour Coastal Characterisation Study – Environment Agency

To help increase our understanding of the potential opportunities for managed realignment, increasing natural sediment supply and habitat creation within the Harbour, Uwe Dornbusch, an EA Senior Coastal Specialist and member of the CHaPRoN Steering Group, has carried out a detailed study looking at the land use and elevations of the shoreline, existing saltmarsh areas, predicted future elevations, potential to enhance natural coastal processes and habitat creation opportunities. His study comes with several caveats, but his report is an extremely valuable piece of work, alongside other evidence, to help inform future potential restoration and prioritisation of sites.

The study includes a GIS analysis of the elevation of existing saltmarsh areas and how this compares with the available area for intertidal habitat based on elevation and simple astronomical tide levels. It then projects this area analysis into the future, with 1 m of sea level rise, to indicate how sustainable the present intertidal habitat extent is into the future (approx. 2100).

Following on from this, the study carries out a characterisation analysis of the entire Harbour coastline based on its elevation, habitat availability, defence status and land use behind the coastline. This analysis is based on a subjective interpretation of data collected for this piece of work.

The results of the analysis have revealed trend data that can help to inform potential habitat restoration options. These include identifying landward locations suitable for saltmarsh creation, raising the elevation of the intertidal area at appropriate sites to encourage saltmarsh establishment, and the managed realignment of higher ground fringes rather than the traditional low-lying areas. The latter approach looks at options to potentially remove defences at locations with appropriate elevations, which would not cause a flood risk, erosional processes would be very gradual, and land loss would be comparatively small. This approach would support natural coastal processes, increasing sediment supply within the Harbour. The study explores a number of sites within the Harbour suggesting potential opportunities to be further investigated.

### 3.1.2.2 Sea Defence Review within Chichester Harbour – Royal Haskoning DHV

To further develop the Coastal Characterisation Study completed by Uwe Dornbusch from the EA, CHaPRoN commissioned a supplementary report to review the sea defences within the Harbour, which is due to be completed by 31 March 2023. The study is being carried out by Royal Haskoning DHV and is being commissioned and funded by Natural England.

The main purpose of the work is to explore two of the recommendations that were raised in NE's Condition Review of the SSSI (February 2021). These were the need to:

- Remove barriers to coastal change caused by inappropriate coastal management including coastal squeeze, which are resulting in saltmarsh erosion and the interruption of sediment supply; and

- Identify options for increasing low nutrient sources of sediment into the harbour, particularly mud sediment, if removing the barriers does not restore the sediment supply.

The study will begin by reviewing ownership of seawall assets around the harbour, trying to fill in the gaps where ownership is uncertain. The report will then look in more detail at the land elevations at a number of sites (22 in total) with both existing and +1m HAT of sea level rise. The report will assess at these sites whether:

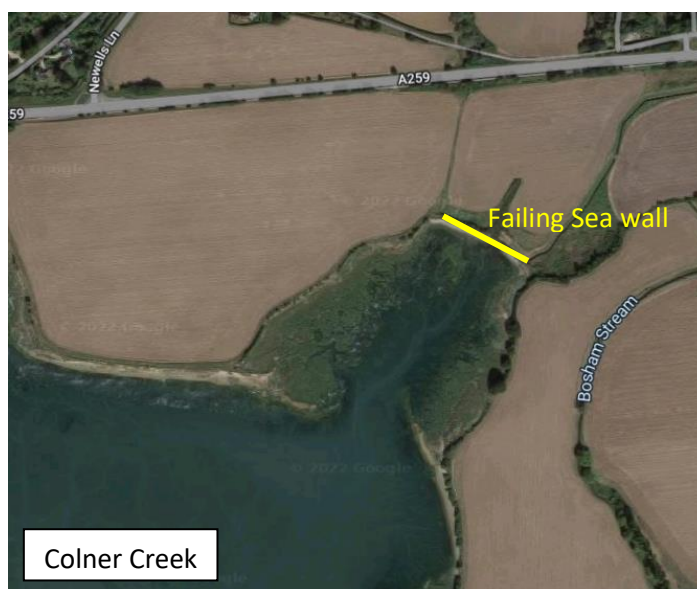
- there is currently enough land at the right elevation to support the creation of saltmarsh
- which areas could benefit from BuDs (Beneficial Use of Dredgings)
- which areas may never be suitable for saltmarsh
- where there might be areas that could enable cliff erosion to bring sediment back into the system
- where it is important to factor in loss of coastal grazing marsh as saltmarsh moves back
- how we deal with any loss of coastal grazing marsh

Once the report is complete, the information it provides will be extremely valuable in helping CHaPRoN to strategically plan restoration efforts, identify any further knowledge/data gaps, and prioritise sites.

### 3.1.2.3 Colner Creek Sea Defence – Decision Upheld on Appeal

The landowner at Colner Creek applied for SSSI consent to repair the failing sea defences at the top of the channel (approx. 0.12km). Natural England refused the SSSI Consent on the 21 September 2021. The landowner appealed against the decision.

On the 28 October 2022, the Secretary of State affirmed Natural England's decision to refuse SSSI consent and the landowner lost the appeal. The reason for this decision is that hard sea defences are having an adverse effect on the integrity of the SSSI site and are known to be one of the key contributing factors causing its decline. As the sea defences are not protecting any property or key infrastructure, the benefits of repairing the sea wall do not outweigh the likely impacts on the features of the SSSI that make it of special interest.



This decision somewhat sets a precedent for future requests for SSSI consent to repair failing sea defences. It will support opportunities to review options for more nature-based solutions to managing the coastline at appropriate locations around the Harbour and facilitate the recovery of the SSSI.

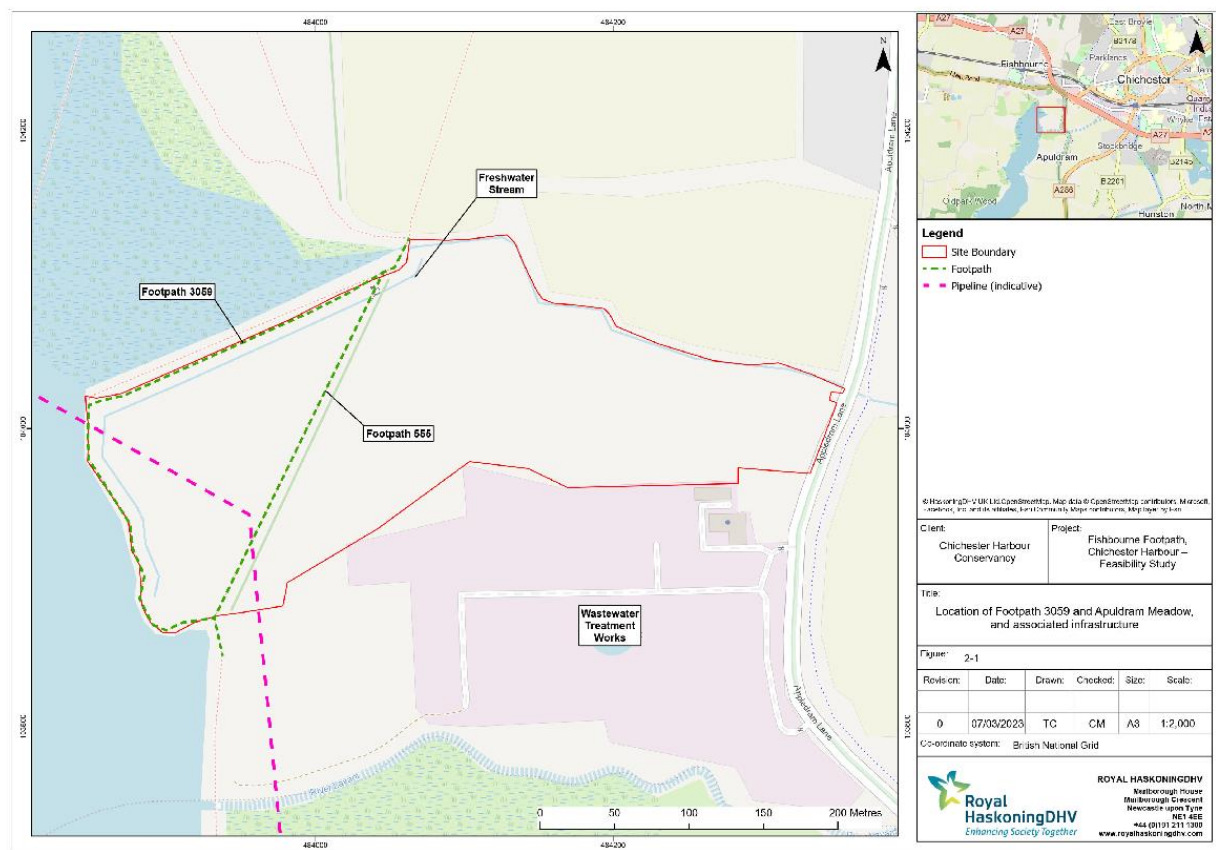


The landowner is currently discussing alternative options with a range of partners.

The site behind the failing sea wall is a potential site for grazing marsh, another priority habitat.

### 3.1.2.4 Feasibility Study at Apuldrum for future management options and habitat creation – Royal Haskoning DHV

The failing sea wall at the site at Apuldrum owned by the Chichester Harbour Trust, has created an opportunity for CHaPRoN to review the future management of this site, its potential for habitat creation and enhancement, improving coastal processes within the Harbour and recreational benefits. With Natural England unlikely to give SSSI consent for the repairing of the sea wall, and no public funds available, CHaPRoN are keen to explore more nature-based management solutions supporting recovery of the SSSI.



Map to show boundary of the site at Apuldrum owned by Chichester Harbour Trust and location of footpaths – Royal Haskoning DHV

The Footpath 3059 around the edge of the site (approximately 0.4km) has been temporarily closed by the Highways Authority, West Sussex County Council for safety reasons. Chichester Harbour Conservancy has laid a new boardwalk along Footpath 555 to improve accessibility along this route whilst management options are explored. The boardwalk was funded through Chichester District Council and the Friends of Chichester Harbour.

Local residents enjoy the recreational benefits of the site and have expressed concern about the closure of the footpath 3059 and the future of the site. CHaPRoN held a site visit on the 16 November 2022 with representatives from Fishbourne Parish Council and a Senior Coastal specialist from the Environment Agency to discuss the site and listen to local concerns. The Conservancy also discussed the issue at the Apuldram Parish Meeting on the 30 November 2022.

The CHaPRoN partnership developed a specification for an independent Feasibility Study to consider the future options for the site, the pros and cons of these options and outline a recommended stakeholder engagement plan. The specification includes consideration of:

- Baseline conditions of the site and surrounding area
- The implications of sea wall failure and taking no action
- Risks and mitigation to key infrastructure
- Costs to repair and maintain sea wall, although consent unlikely
- The options to enhance, protect and maximise biodiversity, the environmental and recreational benefits.
- Options for managed realignment
- History of the site
- Current value of the land parcel
- Estimated costs of different options

On 21 December 2022, Royal Haskoning DHV were appointed by the Conservancy to prepare and publish the Feasibility Study. The study is now well underway and the target date for completion of the report is 30 April 2023. The study is being funded by the Environment Agency through the Water Environment Improvement Fund (WEIF).

On completion, the findings of the report will be shared with the Conservancy, Fishbourne Parish Council and wider stakeholders. CHaPRoN are keen to engage with local stakeholders to assist with determining the preferred management option for the site moving forwards. The preferred option will then be developed up into a detailed plan for the site.

### 3.1.2.5 Failing Sea Defence at Langstone along Coastal Footpath



Location of failing sea defence at Langstone along coastal path (length approx.. 33m)

A section of sea wall north of Langstone Mill Pond collapsed 2 or 3 years ago, and public discontentment at the lack of inaction led to the launch of an online petition, which has so far attracted 2,321 signatories. Two Local Councillors convened a working group last year to oversee the way forward. The working group includes the Conservancy, Hampshire County Council, Coastal Partners, and the England Coast Path Officer (hosted by HCC). The Environment Agency and Natural England were invited to attend meetings as well. It became apparent that the issue was greater than the collapsed section of wall, with questions raised about the rest of the length up to Langstone Mill, and the future of the Mill Pond itself. The Conservancy published an Ecological Report into the Mill Pond, to help inform the discussions. The Cllrs are currently speaking to landowners and the working group is considering installing a boardwalk to allow the footpath to rollback.

<https://www.change.org/p/coastal-erosion-at-langstone>

<https://coastalpartners.org.uk/news/damaged-defences-langstone-to-wade-lane/>

### 3.1.2.6 Ellanore Spit

Discussions regarding a potential shingle recharge at Ellanore Spit have continued during this reporting period. This project was originally part of the Return of the Tern Project (see section 3.5.1). However due to increasing costs and complexities, it was agreed with the Heritage Fund, that this would not go ahead under this project, although the Conservancy would seek the relevant planning and consents. There are currently discussions taking place between stakeholders to the extent and location of a shingle recharge. The main interested parties include the landowner, the leaseholder (Chichester Harbour Trust), the Conservancy, Chichester District Council, Natural England, the Environment Agency and the Marine Management Organisation.

### 3.1.3 Aim: Achieve Sustainable Development

#### 3.1.3.1 Beneficial Use of Dredged Sediment (BuDs) Trial – West Itchenor

In February 2023, as part of the Solent Seascape Project, the CHaPRoN partnership together with Land & Water, Earth Change and ABPmer, successfully trialled a new technique to place dredged sediment on the upper foreshore at a site at West Itchenor to support saltmarsh restoration. The technique was piloting the innovative Saltmarsh Restoration Dragbox, Victorian technology reinvented by Land & Water to transfer dredged sediment to the upper foreshore and raise the elevation of the mudflats to a suitable level to encourage the regeneration of saltmarsh.



There were many variables to align to enable successful delivery of the project, but after a huge, combined effort from all partners, everything came together to enable delivery. Nearly 1600m<sup>3</sup> of dredged sediment has now been placed at site, and the elevation has been raised to sufficient heights to encourage saltmarsh to start to colonise the site. The post-trial LIDAR survey is currently being analysed by ABPmer to determine the exact levels and changes in elevation.

The site will continue to be monitored over the coming months and years. A monitoring plan has been developed to study the following variables that support both the BuDs trial and the wider Solent Seascape Project:

- Sediment Accretion
- Topography
- Benthic invertebrates
- Saltmarsh Vegetation
- Overwintering bird usage
- Water Clarity
- e-DNA (biodiversity)
- Carbon Stock assessment
- Nutrient Fluxes

The data collected from the on-going monitoring will help to evaluate the success of the trial and inform statutory bodies. A 'Lessons Learnt' document is currently being compiled so that partners can learn from the trial and seek to improve and develop the approach.

The project is also part of the Centre of Ecology and Hydrology's 'Living Laboratory' who are supporting us with the monitoring of Carbon and Nitrogen. This feeds into the national work being led by Angus Garbutt to establish the saltmarsh carbon code and nutrient absorption ability of saltmarsh.

The Marine Licence for the site at Itchenor is for 5 years. If the trial is deemed successful by statutory bodies and funding can be secured, we will seek to repeat the process within the licence period.

This trial was the first initiative to be delivered as part of the wider Solent Seascape project, demonstrating that effective partnerships and collaborative working can deliver greater outcomes for conservation and move quickly under the right circumstances.

### **3.1.3.2 Study for Chichester Harbour SSSI on Saltmarsh Restoration and sediment dispersion – opportunities for Beneficial Use of Dredgings**

Further to the BuDs trial at Itchenor, CHaPRoN have commissioned an additional report that will support the Sea Defence Review (3.1.2.2) that is currently underway and build on Uwe Dornbusch's work (3.1.2.1). This study is reviewing opportunities for the Beneficial Use of Dredgings across the Harbour. The study is a Sussex Harbours Priority Place Project, supported by the NRN Seedcorn funding and commissioned by NE.

The project will:

- Review and map of existing sites of dredging activity in Chichester Harbour (primarily from annual maintenance dredging of marinas) and where dredged sediment has been used 'alternatively' in activities rather than depositing it at sea, thus enabling its retention within the harbour system.
- Identify potential receptor sites for beneficial use of dredged sediment to increase the elevation of existing intertidal habitat, making it more suitable for the restoration of saltmarsh
- Capturing these sites into GIS, linking to a set of attributes for success.

The information provided by the report will feed into new and existing conversations with partners and landowners to inform the decision-making process around further BuDs work within Chichester Harbour and assist with the development of the wider coastal strategy. The report is being carried out by Royal Haskoning DHV and is due for completion by 31<sup>st</sup> March 2023.

### **3.1.3.3 Local Plans – Policy on coastal setback**

Both the Chichester and Havant Local Plans are currently being developed. The draft Local Plan for Chichester was open for consultation between the 3 February and the 17 March 2023. Natural England, EA, the Conservancy and Coastal Partners responded to the draft. Within both authorities, policy on setback and distance from the coast for development, should ensure that any future coastal flooding/natural processes can happen in appropriate areas and negate the need for unsustainable defences.

The new Chichester Plan proposes that all new Harbourside properties should be set-back at least 25 metres from the shore. However, given the projected rate of sea level rise, and the non-dynamic nature of dwellings, this distance will need to be reassessed in future years.

No further update on the Havant Local Plan.

### 3.1.4 Aim: Protect and Enhance Biodiversity

#### 3.1.4.1 Coastal Grazing Marsh Study

Chichester Harbour contains around 290ha of coastal grazing marsh, another Priority Habitat which is subject to a range of threats including sea-level rise and coastal squeeze, agricultural intensification, and development pressure. As options are explored for rolling back the coastline and creating intertidal habitat, it's also important to consider the future options for coastal grazing marsh within the Harbour. If a habitat creation scheme was to reduce the area of coastal grazing marsh, it would need to be compensated for at another location.



Coastal Grazing Marsh along east-facing coast of north Hayling

To increase our understanding of the future potential, CHaPRoN commissioned a report to provide a feasibility study to identify suitable locations for arable reversion to coastal grazing marsh and creation of coastal grazing marsh at new sites. The report was completed by Royal Haskoning DHV and was funded by the EA and a grant from the Farming in Protected Landscape (FiPL) scheme.

The report identified 10 broad areas containing existing sites with potential for arable reversion. For each of these areas, the study used the current distribution of coastal grazing marsh habitat and identified sites adjacent to it that would be suitable for arable reversion. Furthermore, 3 potential new sites for coastal grazing marsh were identified taking into consideration both current and future conditions.

Alongside this, the report also discusses the current and future mechanisms that are required to deliver the improvements for coastal grazing marsh. The technical elements of delivery are outlined alongside financial and investment considerations, including financial benefits to landowners and options for funding in line with conservation objectives.

The information provided within the report will to help inform restoration efforts and plan strategically across the Harbour. Further research in this field will be required, which is being progressed by Coastal Partners.

#### 3.1.4.2 Solent Coastal Grazing Marsh Study – Coastal Partners

Expanding on the Grazing Marsh study which was completed for Chichester Harbour (see section 3.1.4.1 above), Coastal Partners are currently working with EA and NE to develop the scope for a Solent-wide Coastal Grazing Marsh Study. This will clarify opportunities in the wider Solent area, and is now considered critical to the success of the Habitat Compensation

and Restoration Programme (HCRP), in order to assess and maintain key environmental networks and enable informed decisions on future coastal management.

### **3.1.4.3 Feasibility Study for Using Dredged Sediment for Saltmarsh Restoration at Langstone**

Coastal Partners commissioned a feasibility study to explore the potential of using dredged sediment for a saltmarsh restoration project at Langstone as part of the Langstone FCERM scheme. The final report has been received, and it concluded that large scale restoration within the study area is not currently considered to be feasible. However, the report also recognised the historic importance of the saltmarsh in this area and recommended exploring a pilot study approach.

Due to the specialist nature of this field of work, Coastal Partners are now seeking a second opinion to confirm whether a pilot study is worthwhile, or whether there are other opportunities in the adjacent area. Coastal Partners have secured funding from the Solent Seascape Project towards the delivery of this initiative.

### **3.1.4.4 The Church Commissioners for England and Wetland Habitat Creation Opportunities**

The Church Commissioners for England (CCE) have recently been introduced to the Coastal Resilience Working Group. As a significant landowner in the vicinity of both Chichester Harbour and Pagham Harbour they are keen to engage with stakeholders, particularly in regard to wetland habitat creation schemes. It should however be noted that the CCE land is leased to farming tenants who will need to be a working stakeholder in exploring opportunities. CCE are one of the Blue Recovery Leaders amongst the Wildfowl and Wetland Trust (WWT) and have significant contacts who may be able to assist the work of the Coastal Resilience Working Group, including with regard to funding. A number of meetings have been held to date with the Chichester Harbour Conservancy, WWT, Land & Water and Earth Change to start to explore interests. A site visit took place on Monday 23<sup>rd</sup> January 2023 to visit sites at West Chidham, Apuldram, Chichester Marina reed beds and Sidlesham/Pagham.

## **3.2 Focus Area: Seabed Disturbance & Seagrass Restoration**

The Seabed Disturbance & Seagrass Restoration Focus Group consists of representatives from Chichester Harbour Conservancy, Natural England, Environment Agency, University of Brighton and Sussex IFCA. The Group currently meets on an occasional, ad hoc basis.

A Prioritised Plan has been developed for this Focus Area (see Appendix 2A) together with a Key Targets and Indicators document (see Appendix 2B). Important groundwork has been achieved to enable progress in this area, but further work needs to be done to enable measurements against the key indicators for this focus area.

### 3.2.1 Data Collation and Research Analysis

All known existing data on seagrass extent, condition and related research has been collated. The most recent seagrass surveys within the Harbour were carried out by the Hampshire and Isle of Wight Wildlife Trust (HIWWT) from 2016-2018 and some small scale localised mapping by Fathom Ecology. The routine Water Framework Directive (WFD) monitoring on macroalgal weed carried out by the Environment Agency identified some co-ordinates where seagrass has been observed in unmapped areas. A PhD student called Natalie Huckle has carried out a literature review as part of her initial research for her project. As part of the EA's ReMeMaRe (Restoring Meadows, Marsh and Reefs) project, seagrass potential maps have also been generated, but further ground truthing needs to be carried out.

### 3.2.2 Solent Seagrass Working Group

CHaPRoN is now represented on the Solent Seagrass Working Group, to build relationships and learn from the experts in the field of seagrass restoration. The group meets monthly, and members represent organisations from the Solent, Plymouth and Wales who are involved in seagrass initiatives. It has proven extremely valuable in learning about previous trials and methodologies, successes and failures, licencing processes, and engagement initiatives. In April, the Conservancy will attend a Seagrass Monitoring Workshop run by the HIWWT to learn the standard, agreed techniques and methodology for monitoring.

### 3.2.3 Visit to Langstone Harbour Seagrass Restoration trials

In May 2022, the Conservancy visited the seagrass trials in Langstone Harbour with the HIWWT to find out more about the techniques they have been trialling and the challenges they have faced. Levels of macroalgae weed smothering the trial sites continued to be an issue, but there were signs of the seed bags starting to germinate.



Visiting the Seagrass Trials at Langstone with the HIWWT



(i) On the mudflats checking the trial sites; (ii) Macroalgal weed; (ii) Seagrass



### **3.2.4 PhD: Investigating the causes of environmental degradation in coastal ecosystems and evaluating restoration potential.**

Natalie Huckle, a PhD student from Brighton University is conducting a 3-year research project within Chichester Harbour, into the causes of environmental degradation in coastal ecosystems and evaluating restoration potential. The PhD is joint funded by the Conservancy and the Manor of Bosham and will increase our understanding of the pressures on the Harbour's coastal habitats and help inform suitability of potential restoration sites.

Her research is focusing on contaminants within the Harbour, particularly within the sediment of seagrass beds and accumulation in the tissue of shellfish populations. Natalie is also utilising citizen science to support her research and engaging with the Friends of Chichester Harbour for volunteers. Her work therefore spreads across three of our CHaPRoN Focus Areas.

Following her initial stakeholder engagement, literature review, data collection and analysis, Natalie has been developing and refining her laboratory methods to use for analysing her field samples. These include analysis of dissolved inorganic nitrogen in water samples, sediment trace element analysis, particle size analysis, organic content in sediment and genomic analysis of microbial community. Natalie has also been exploring techniques for analysing pharmaceutical accumulation in the tissue of shellfish.

Natalie has begun her fieldwork. She has surveyed 7 sites for suitability, accessibility and health and safety for sediment sampling. She has carried out a pilot study at 2 sites using a peat corer to ascertain depth of sediment contamination. Wider sampling collection will commence at the end of March with the support of volunteers.

Furthermore, Natalie has collected *Crassostrea Gigas* (Pacific Oysters) from 3 sites ready for tissue analysis. She has placed caged *Mytilus edulis* (Blue Mussel) at 4 sites for 7-days in the field. These too have now been collected for analysis.

The results of her analysis work will be of interest to many organisations.

### **3.2.5 Dwarf Seagrass Trial – Fathom Ecology**

Fathom Ecology have secured funding from the Solent Forum's Natural Environment Group towards a dwarf seagrass (*Zostera nolte*) trial within Chichester Harbour. Initial discussions have taken place with CHC, NE and HIWWT regarding the approach for the project.

A number of sites will be sampled and analysed to determine an appropriate location to carry out the trial. This is most likely to be along the east coast of Hayling Island. Fathom Ecology is currently studying the sites where the intertidal area is owned by Chichester Harbour Conservancy.

If a suitable site with favourable conditions can be found, the trial will test 3 different restoration techniques in adjacent plots. The current proposal is to test the following approaches:

- i) injecting the seeds into the sediment using a corking gun. This will be trialled on two plots with the seed mix at different densities
- ii) replanting seedlings that are found washed up on the strand line

Each trial plot will be 10x10m<sup>2</sup>. Following deployment, each plot will be monitored for survival, shoot density and epiphyte abundance at monthly intervals to assess the success and efficiency of the different approaches.

The project will require SSSI consent. Site selection, seed and seedling collection will take place this summer, potentially providing an opportunity for volunteers to assist. Deployment will take place in 2024.

### **3.2.6 EU Life Remedies Seagrass Project - Anchoring and Mooring best practice webinars.**

As part of the EU Life Remedies Seagrass Project, the Green Blue have been hosting a short series of webinars on anchoring and mooring best practice. These webinars were run to raise awareness of the value of seagrass, promote best practice for anchoring and mooring boat management and encourage boat users to help protect seagrass beds. CHaPRoN promoted these webinars to encourage attendance by the local sailing community.

## **3.3 Focus Area: Water Quality & Clean Harbour**

This is a multi-pronged area of work, with many different factors impacting on water quality. A number of initiatives are already underway and being delivered by partners. Some of these initiatives are summarised within this section.

The first meeting to formally progress this focus area as part of the CHaPRoN initiative was held in November 2022. This was a workshop held at Eames Farm and more details can be found in section 3.3.9.

Further work is required to clarify the role of this focus area, its objectives, targets and measures.

### **3.3.1 Project RedPol – Reduction of Pollution by endocrine disrupting compounds at source.**

The aim of the REDPOL project (an Interreg funded project) is to develop innovative tools that can determine whether chemical pollutants in the environment interfere with the endocrine systems of wildlife. These pollutants are known as endocrine disruptors. They can interfere with endocrine (or hormonal) systems in humans, causing cancerous tumours, birth defects and other developmental disorders, as well as impacting the wider environment. Endocrine disruptors can cause reproductive, developmental and behavioural problems in wildlife and plant populations, leading to an imbalance in environmental health. Chichester Harbour Conservancy has been continuing to support the



work of the various research scientists. The project is now drawing to a close and is due to end in June 2023.

### 3.3.1.1 RedPol Symposium at Chichester Yacht Club

On the 6<sup>th</sup> October 2022, the Conservancy hosted a Symposium on Endocrine Disruptors in the English Channel, at Chichester Yacht Club. The symposium drew together the findings of the RedPol research together with closely related research from other universities and organisations, to further understand the issues, identify gaps in knowledge and start to embark on the journey to solutions.

The event was chaired by Lucy Seigel a journalist, broadcaster and environmentalist and was attended by a number of senior figures from academia, regulation, utilities and wider Harbour community.

### 3.3.1.2 Final RedPol Funded Research within Chichester Harbour

As the project comes to a close this year, some remaining RedPol funding is being used to support some further research work within Chichester Harbour and collect scientific data to inform the 'State of the Natural Environment'. The work is being lead by the PhD student Natalie Huckle, alongside her PhD research, and with support from the Conservancy.

The following research will be carried out:

- Placing mussel cages at 3 further locations for 7 days and subsequent LC-MS tissue analysis for presence of 6 different EDCs.
- Faecal indicator analysis of water undertaken at deployment and collection of mussel cages as indicator of recent pollution events (to be aligned with Combined Sewers Overflows (CSO) release data).
- Benthic mollusc diversity analysis at same locations within the harbour being undertaken.
- eDNA analysis of water at same locations being undertaken.
- Microbial community analysis of water at same locations being undertaken.

The Conservancy assisting with collecting eDNA samples



The data and information generated from this research will not only add to the findings from the RedPol project, but also support CHaPRoN in understanding the pressures on our coastal ecosystems.

### **3.3.2 PhD: Study into nutrient and faecal contamination and source apportionment across the harbours**

Southern Water are funding another PhD with Brighton University to focus on nutrient levels, faecal and microbial analysis, and source apportionment across the 3 Harbours – Langstone, Chichester and Pagham. The outcomes of this research will be of great interest.

### **3.3.3 Environment Agency – Real Time Water Quality Monitoring at Dell Quay**

Further to the research carried out by the CHASM project (Crustaceans, Habitat and Sediment Movement) whereby very low levels of dissolved oxygen were found in the Fishburne Channel outside Chichester Marina, the Environment Agency have set up a sonde unit at Dell Quay to record real time water quality data. The sonde will measure temperature, dissolved oxygen levels, salinity, chlorophyll and turbidity. The information gathered by the sonde unit is relayed via a telemetry unit and satellite to the Environment Agency offices.

CHaPRoN will look forward to receiving further information regarding the data collected at this site. It will be very valuable to understand how the data compares to that collected outside Chichester Marina. The data analysis will help to inform whether the conditions outside Chichester Marina were unusual, or if similar conditions prevail in another area of the channel.

### **3.3.4 Abandoned Boats Project – University of Brighton**

The University of Brighton (UoB) have secured funding for a project to raise awareness of abandoned boats and the impact they have on the natural environment.

Fibreglass boats have, for the past sixty years, provided an affordable and durable means for small scale commercial fishers, and professional sailors, to secure their livelihoods and enjoy recreational practices across the globe. As these boats age and decay they release toxic microfibres including glass reinforced plastics (GRPs) into the aquatic environments within which they are moored. These toxins inhibit marine life and intractably embed themselves in human/animal soft tissue if ingested. Boat abandonment and disposal at sea through scuttling is a route often taken by some boat owners in the UK and elsewhere, mostly due to the lack of legislation around boat disposal/recycling. This project will evidence these practices in order to secure reliable data.

The aims of the research are:

1. To capture the differing perspectives from local community actors with regards to ameliorating end-of-life and abandoned fibreglass boat littering.
2. To enable local community actors to evidence incidences of marine pollution within aquatic environments.
3. To support local community actors to communicate their data findings in a range of media.
4. To develop a range of policy recommendations and action points from a community perspective targeted at individual sailors and sailing organisations, governance practitioners and the boating industry.

To support their research, UoB will be using citizen scientists to help gather the data and will be engaging with the Friends of Chichester Harbour. They will be running three workshops for volunteers on water quality testing, photography and blog writing to enable them to support the evidence collection. They also have 6 x £100 bursaries to award to local schools or community groups to engage with the project and raise awareness amongst young people.

The Conservancy are facilitating the delivery of this project and are interested in the outcomes.

Furthermore, this project will align with Defra's project on abandoned boats which is progressing the UK's commitment to lead action B.2.1 of the new [OSPAR Regional Action Plan on Marine Litter](#). This action focuses on tackling marine litter by managing end-of-life recreational boats.

Defra's project aims to inform policy development to discourage abandonment and improve waste management of end-of-life recreational boats by establishing volume, location and type of materials in the waste stream, and understanding current disposal options and barriers in the UK and across the OSPAR Maritime Area.

### **3.3.5 Overview of Solent Eutrophication and Recovery Report – Environment Agency**

Further to discussions between the Environment Agency and Natural England, the Solent and South Downs Marine Team within the Environment Agency, have now released their report on eutrophication and recovery within the Solent. This has been shared with the Chichester Water Quality Group and will be published on the Solent Forum website

The data collected by the Marine Team over the last 20 years, as part of the requirements under the Water Framework Directive (WFD), shows that as a result of reductions of Nitrogen entering the waterways, we are now seeing reduced amounts of green macroalgae in several Solent estuaries, plus other encouraging signs of recovery.

As predicted, it has taken time to see signs of recovery due to biological time lag and the influence of groundwater. Although the amount of macroalgae does vary annually due to environmental factors, EA data confirms that Chichester Harbour demonstrates sustained reductions in macroalgae compared to historic levels of growth. In fact both Chichester and Langstone Harbours, now meet their target classifications of GOOD status for macroalgae under the Water Framework Directive (WFD) which achieves their Natura 2000 eutrophication objective set in 2015.

It is important to recognise this success and that the work that has been taking place over the last 20 years, has helped to shift things in the right direction. The EA regulatory work will continue. However, there are still clearly areas within the Harbour where levels of macroalgae continue to be a concern. In particular, locations near the top of the channels. This indicates that further work still needs to be done to help reduce nutrients. The Environment Agency will be working collaboratively with CHaPRoN to determine how to take this work forwards.



Macroalgal weed – Emsworth Channel

### **3.3.6 Southern Water’s Water Quality Testing Buoys**

Southern Water wishes to improve water quality understanding amongst local stakeholders and communities. In Summer 2022, they launched two water quality testing buoys into the sea – one off Tankerton shore and one off Hayling Island. These buoys are currently being used on a 12-month pilot to monitor water quality. Once the data has been calibrated, it will be publicly available online and provide live data.

### **3.3.7 Southern Water Beachbouy Improvements**

Southern Water has listened to feedback from customers and stakeholders regarding their Beachbuoy App. They have now improved the functionality so that Beachbuoy provides a more accurate indication of whether a release actually impacts the bathing water. This feature uses the location of the outfall, duration of the spill and the tide conditions to determine whether the release impacts the bathing water or not. Details of any spill is still available in the release table.

### **3.3.8 Southern Water’s Clean Rivers and Seas Task Force**

Southern Water Clean Rivers and Task Force is a dedicated team that is seeking to significantly reduce the use of Combined Sewers Overflows (CSOs) by 2030. They are piloting six pathfinder projects across the South, that will test solutions to removing or slowing down the level of rainwater entering the sewer network. They will also be building and delivering a regional plan to reduce storm releases between now and 2030, which will include optimisation of existing infrastructure and building bigger infrastructure.

At the same time, they will be raising awareness of what people and local communities themselves can do to help protect water quality. There are several small things that can be done, but collectively they can make a significant difference.

### 3.3.9 Water Quality Focus Group Workshop November 2022

In November 2022, the first meeting was held with stakeholders to start to determine the role and purpose of this CHaPRoN focus area. It was a workshop held at Eames Farm.

There is a large amount of work that is already being carried out by partners to address water quality and CHaPRoN does not wish to duplicate these efforts. It's important therefore that the role of this focus area adds value and brings stakeholders together to work collaboratively, to achieve greater outcomes that support recovery of the natural environment.

Representatives from Chichester Harbour Conservancy, Environment Agency, Natural England, University of Portsmouth, University of Brighton, Southern Water, Clean Harbours Partnership, Arun and Rothers River Trust and Rampion Consulting attended the workshop.

The objectives of the workshop were:

- To identify what work is already being done
- To identify gaps in existing projects and activities
- To understand areas of interest of stakeholders
- To determine what role the focus group is best placed to take on that will support and enable the healthy functioning of the Harbour's natural environment
- To agree key priorities
- To seek potential opportunities to align interests and develop further partnership working

The workshop generated valuable discussion, and ideas from all stakeholders were collated and reviewed. Three core themes stood out from the feedback which could help inform the role of this focus area and identify where CHaPRoN could add value. These are:

**A] Nutrient Levels – further reduction from agricultural sources within the harbour catchments, identifying gaps in catchment-based initiatives.**

Exploring opportunities to align interests between partners and the work that is already being done, working more collaboratively to achieve greater outcomes.

**B] An Academic Hub – develop a central hub for all academic research both historic and present within Chichester Harbour.**

This will bring together past and existing research and help inform the focus of future research, increasing our understanding of the pressures on the Harbour's natural environment. Aligning interests, securing funding and gathering scientific evidence to inform interventions.

**C] Comms and Engagement linked to water quality – providing informed and accurate data.** Identifying the key messages and stakeholders to engage with. Developing a co-ordinated programme of projects/initiatives to raise awareness, deliver key messages, educate and empower people to help make a difference.

The next step in progressing this focus area is to bring stakeholders together to define the objectives for these work areas, targets and indicators and work in partnership to develop a prioritised plan of action and determine how to drive these areas forward.



CHaPRoN Water Quality Workshop at Eames Farm

## 3.4 Focus Area: Shellfish Populations

The focus group for this area, currently consists of a small group with representatives from Chichester Harbour Conservancy, Sussex IFCA and University of Brighton.

The focus area was established to seek to increase our understanding as to why the native oyster populations have declined so dramatically within the Harbour, develop initiatives that help to reduce these pressures and explore potential active restoration methods to restore native oyster populations to self-sustaining levels again.

Furthermore, the focus area is seeking to also increase monitoring of other shellfish within the Harbour including cockles and clams, to gather evidence regarding the health, size and population numbers of these species. Through regular monitoring we will be able to identify trends in other shellfish which are an important food source for many wading birds.

### 3.4.1 Native Oyster Reef – Feasibility Study

As part of the Solent Seascape Project, Blue Marine are taking the lead on oyster restoration work. They have secured funding to carry out a feasibility study to determine whether the conditions are suitable for a native oyster reef within Chichester Harbour. To begin the consultation process, a meeting was held in March to discuss potential sites for a reef within Chichester Harbour and gather local knowledge about the area. Blue Marine will now continue to investigate potential sites with the support of partners.

### 3.4.2 SxIFCA New Byelaw: Bait-digging and Hand-gathering

Sussex IFCA's new Byelaw for bait-digging and hand-gathering is currently waiting to be approved by Defra. The byelaw will cover the Sussex side of the Harbour and will cover two key management areas:



- Bait digging for angling
- Collection of shellfish for the human food chain

The Byelaw will introduce a system whereby it would restrict the amount of marine flora and fauna that an individual could collect from the intertidal zone to 5kg for personal use. Above this, a permit would be required.

The bye law will also restrict hand gathering to certain areas, to contain activities and protect the seabed in sensitive locations.

The byelaw will be a starting point, to help manage hand gathering throughout the district, put a framework in place and assist in gathering evidence for the future.

### **3.4.3 RedPol Research Into the state of shellfish populations**

As part of the RedPol project a study is being carried out within the Harbour to analyse benthic mollusc diversity at some locations. This research will be of great value to start to inform and provide data on the health of wider shellfish populations. For further details on this research please see section 3.3.1.2.

### **3.4.4 Invasive Non-Native Species (INNS) – Biosecurity measures**

The Solent Forum are working with APEM Ltd, Natural England, and the Marine Biological Association to raise awareness of marine invasive species in the Solent and develop actions that can be taken to reduce the likelihood of their introduction and manage them through biosecurity measures.

During March they held free workshops to help raise awareness amongst users and operators in the Solent of what species are already here and what we need to watch for in the future. They also started to discuss how people can develop and action biosecurity measures and what resources they need to achieve this.

The Conservancy attended a workshop to start to learn more about the INNS within the Solent and biosecurity measures. This is an area of work to support and develop with adequate resource.

## **3.5 Focus Area: Marine & Farmland Birds**

This focus area currently consists of a small group of stakeholders, including representatives from Chichester Harbour Conservancy and the RSPB. The group originally met in early 2022 and reviewed the prioritised list of projects and initiatives to support bird habitat.

The ambition for the coming year is to review the stakeholder membership for this focus area and reach out to wider representation, including Bird Aware and the Coastal Partners Environment Team. The Focus Area will then review the list of prioritised projects, align

interests, agree targets and measures and work in collaboration to start to develop a pipeline of prioritised projects ready to be delivered once funding can be secured.

However, a number of successful initiatives have continued during this reporting period which supports this focus area.

### 3.5.1 Return of the Terns Project

In 2021, Friends of Chichester Harbour, in partnership with the Conservancy, secured funding from the Green Recovery Challenge Fund for the Return of the Tern Project. Over the past 18 months, Return of the Tern has delivered a series of projects that will assist the population of little terns and common terns in Chichester Harbour.

#### A] Shingle recharge capital works

The shingle recharge capital works looked at enhancing the naturally occurring nesting habitat we have in the Harbour. Due to sea level rise and more extreme weather, the vegetated shingle habitat which the terns nest on is often washed over on a high spring tide, resulting in a rapid decline in fledging chicks. Stakes Island, south of Cobnor, was identified as a perfect site for a shingle recharge as it mostly inaccessible to predators and has no public access.



Stakes Island Shingle recharge

Therefore, 500 tonnes of shingle was used to raise the Stakes Island bank to approximately 1 metre above our current highest spring tide height. The work has conducted by Walcon Marine and was completed in October 2022. The shingle has remained in place over the winter and has been used by the winter waders as a high tide roost. As the terns arrive back to the Harbour this Spring, we hope to see how the restored habitat is used.

## **B] Tern rafts**



Tern rafts were first launched on Thorney Island in 2019 and have had a huge impact on the common tern population in the harbour. As part of the project, 5 purpose-built rafts were bought that are double the size of the original rafts and sit higher in the water.

Baby tern on tern raft

The table below shows the number of common terns nesting in the harbour between 2019-2022.

Year	No of rafts	Common tern pairs	Fledged young
2019	1	9	20
2020	2	33	48
2021	3	34	15
<b>2022</b>	<b>8</b>	<b>42</b>	<b>54</b>

## **C] Small fish survey**

The aim of the small fish survey was to increase our understanding of how both nesting and visiting terns in the harbour use the area as a feeding ground. Working in partnership with Sussex IFCA, we conducted 4 surveys at 2 sites in mid-June 2022, which is in line with when terns are feeding their young, and a further 2 surveys in October 2022. The findings of these surveys are being compared to data over the past 12 years. The project has allowed us to purchase all the necessary equipment, which will allow us to repeat the survey ourselves in future years.

Other aspects of the project, includes development of a Nature Recovery Plan for the South Coast Plain and Engagement initiatives. This will be covered in the relevant CHaPRoN Focus Areas.

### **Return of the Tern Nature Recovery Project – Chichester Harbour AONB**

<https://www.youtube.com/watch?v=99j5HEynTRo>

### **3.5.2 Snowhill Marsh – West Wittering – Habitat Enhancement Scheme**

Discussions have taken place over the past year to consider options for a habitat enhancement scheme at Snowhill Marsh, West Wittering. The landowners, West Wittering Estate, and the National Trust are very supportive of the scheme. It will potentially provide alternative habitat for seabirds, away from East Head, which is so heavily used by visitors and dog walkers.

Southern Water are also interested in supporting the development of the scheme as part of their Environmental and Conservation initiatives. They are currently employing a contractor to carry out an initial feasibility study and ecological survey work.

### **3.5.3 Wildlife Refuge Buoys**

The Conservancy are currently piloting some 'Wildlife Refuge Buoys' to protect a sensitive wildlife site along the coast of Hayling and discourage harbour users from getting too close and disturbing the wildlife. Volunteers have been monitoring the site to help assess their effectiveness.

Feedback from the pilot, suggests that the buoys were too far apart for harbour users to appreciate the request to navigate around the area. The location of the buoys will be reviewed this year.

## **3.6 Focus Area: Landscape & Nature Recovery Network**

The National Association of AONB's made 3 nature recovery pledges as part of the Colchester Declaration:

**2020** – All AONB's to develop a Nature Recovery Plan

**2024** – Ecosystem Services to be incorporated into AONB Management Plans

**2030** – at least 200,000ha of SSSIs in AONBs will be in favourable condition

These are ambitious targets, but they help to inform and direct the focus of this CHaPRoN work area.

The NAAONB has recently appointed a National Landscapes Nature Recovery Coordinator who is co-ordinating collaborative sessions and providing support to AONB's with the development of their nature recovery plans.

### **3.6.1 CHaPRoN – Nature Recovery Plan Workshop**

In May 2022, CHaPRoN held a workshop to bring stakeholders together to start discussions regarding the development of a nature recovery plan, not just within Chichester Harbour AONB, but also including strategic wildlife corridors linking the AONB to the wider area including Langstone Harbour, Pagham Harbour & Medmerry and the South Downs National Park.

The workshop was attended by a number of representatives from different stakeholder organisations, including the Conservancy, Chichester District Council, Sussex Local Nature Partnership, Havant Borough Council, Langstone Harbour and Natural England.

At this time, partners were still waiting for further guidelines from Defra on the details of Local Nature Recovery Strategies (LNRs) that were introduced under the Environment Act 2021, including how they were to be delivered and funded. Consequently, representatives from West

Sussex County Council and Hampshire County Council were not able to attend. However, the workshop generated useful discussion and a sharing of initiatives between partners, that could feed into a Nature Recovery Plan.

### **3.6.2 Local Nature Recovery Strategies (LNRs)**

On 23 March 2023, Defra published the LNRs Regulations and Statutory Guidance documents. These documents will establish 'the rules' to enable high quality and consistent LNRs to be prepared across England.

Defra intends that the LNRs provide a new system of spatial strategies that will: support efforts to recover nature across England; help planning authorities incorporate nature recovery objectives; support the delivery of Biodiversity Net Gain; and help deliver the Government's national environment targets.

Under the Regulations: *"The responsible authority must take reasonable steps to involve such persons and organisations as appear to the responsible authority to be appropriate in the preparation of its local nature recovery strategy"*.

During the coming year, we will seek to continue to engage with the responsible authorities as we develop our Nature Recovery Plan, enabling the AONB to be a consultee in the development of local LNRs.

### **3.6.3 Development of the Nature Recovery Plan**

As part of the Return of the Tern Project and in support of this area of work, one of the deliverables is to develop a Nature Recovery Plan for the South Coast plain. Our project manager has been developing this area of work. Initially reviewing the outcomes from national pilot projects, reviewing nature recovery documents available from other AONBs, and starting to consider what the Nature Recovery Plan for Chichester Harbour might look like; its purpose, the area it covers, how it will inform nature recovery initiatives, who will engage with the plan, what data is required within the plan, the practicalities of mapping this data and how it could feed into a LNR. It's important that this work is comprehensive as it will direct, inform and support funding for future nature recovery initiatives. The first draft of the plan will be finalised soon.

### **3.6.4 Local Plans Update – Protecting the AONB landscape**

Chichester District Council consulted on its revised Local Plan between 3 February and 17 March 2023. The Plan can largely be considered as the next iteration of the Preferred Approach consultation of December 2018. The revised Plan includes 300 new dwellings at Bosham on the boundary of the AONB, 300 dwellings at Chidham & Hambrook (exact location to be determined), and 1,050 dwellings at Southbourne (exact location to be determined). The Conservancy has Objected to these allocations, on the grounds of the likely impacts to the character and setting of the AONB, as well as a host of other reasons.

Aside from a few technical corrections, the rest of the Plan featured no real surprises. The proposed wildlife corridors will help with the connectivity between the AONB and the National Park, however there is a sense that the geographical coverage still somewhat lacks ambition.

The Plan cites the Local Nature Recovery Strategy as well, which is a new addition since 2018. There is some discussion taking place nationally as to the planning status of LNRs. As things stand, they will be used as evidence to inform the preparation of a Local Plan, rather than as a standalone Supplementary Planning Document (SPD). Whilst this will mean LNRs can be regularly updated, it is a concern that they will not actually inform decision-making, when it comes to real development applications.

There are no further updates on the Havant Local Plan as of time of writing. The last iteration of the Plan did not pass inspection, so it is understood the Authority are working on a revised Plan, taking into account the reasons why it failed.

(see also section 3.1.3.4)

### 3.6.5 Farming in Protected Landscapes (FiPL)

In April 2022, we successfully appointed a Farming Officer and a Farming Admin Assistant to support the delivery of the Farming in Protected Landscapes scheme within Chichester Harbour AONB.

During this financial year, the FiPL Team have successfully allocated all our FiPL budget for project delivery, totalling £80,440 and all projects are due to be completed on time. The support of the Local Assessment Panel (LAP) has been essential in enabling successful delivery of the scheme.

In total, across the 2 years of FiPL, 23 projects have been approved by the LAP and 19 have been completed. These projects support the 4 FiPL themes of Climate, Nature, People and Place as well as the Chichester Harbour Management Plan. Four of the approved projects are due for completion in Year 3 of the FiPL programme.

The table below provides summary of what all the Year 2 (22/23) projects will be helping to deliver:

Land Managed with Regenerative Farming (ha)	<b>2248</b>
Projects to improve soil quality (no.)	<b>7</b>
Projects to reduce flood risk (no.)	<b>2</b>
Hedgerows planted (metres)	<b>712</b>
Positive management on SSSIs (ha)	<b>1</b>
Habitat improvement for biodiversity (ha)	<b>1298</b>
Habitat connectivity improved (ha)	<b>316.6</b>
Projects delivering educational visits (no.)	<b>3</b>
Projects making landscape more inclusive for visitors (no.)	<b>2</b>
Projects to support public engagement in land management (no.)	<b>5</b>

Other People outcomes (description and quantity of metric)	<b>1</b>
Projects increasing resilience of nature friendly sustainable farm business (no.)	<b>5</b>
Farmers engaged in programme (no.)	<b>13</b>
Farmers who the PL has not engaged with before (no.)	<b>1</b>
New Farm Clusters created (no.)	<b>1</b>
Land managers engaged in programme (no.)	<b>2</b>

The new Farm Cluster that is establishing on the Manhood Peninsula has the potential to really support the programme and the recovery of nature. The FiPL programme granted the cluster some seed money to help establish the group. They are a group of young farmers, passionate about improving the natural environment and supportive of nature-friendly farming techniques. They farm land across the Manhood Peninsula and within the AONB. CHaPRoN looks forward to seeing the cluster grow and working collaboratively to help restore nature.

The Conservancy is delighted that following the success of the FiPL programme across all the protected landscapes, Defra have announced that the FiPL programme will be extended for a further year, up until 2025. Confirmation of budgets for the next two years is pending.

### 3.6.6 Southern Water Conservation Grant Scheme – 3 Harbours Project

In 2022, Southern Water launched their own Conservation Grant Scheme as part of their 3 Harbours Initiative. They wish to support sustained conservation improvement in the 3 harbours area by:

- Reducing the amount of nitrate entering the harbours
- Enhancing and connecting available habitat; and
- Enhancing public rights of way, to improve access and reduce bird disturbance.

Southern Water's Grant Scheme will run over a period of three years (2022 to 2025), providing grants up to £10,000 per applicant, for conservation projects to improve the conservation status of the three harbours. The aim is to award at least five fully funded projects each year although they are keen to support as many projects as the funding allows.

Projects must be delivered within Southern Water's eligibility area, which spans across the 3 harbours – Langstone, Chichester and Pagham.

Each application is being considered on a case-by-case basis by Southern Water and a local stakeholder panel. The Conservancy's FiPL Team are members of the stakeholder panel and supporting the scheme.

The delivery of this scheme in parallel with the FiPL programme has also provided opportunity to secure match funding to support farm projects. Furthermore, by working in collaboration, it provides opportunity to enhance and build on initiatives to support nature recovery.

Three projects have been approved in the first year of delivery. These include:

1] Manhood Wildlife and Heritage Group: Hedging our Future Project

Grant awarded: £10,000

2] RSPB: Fencing to reduce disturbance to nesting and HT roost habitats

Grant awarded: £10,000

3] Stansted Park : Replanting woodland after ash dieback devastation

Grant awarded: £7,768

### 3.6.7 The 3 Harbours Nature Recovery Strategy & Partnership

In November 2022, the RSPB appointed the 3 Harbours Project Manager (funded by Southern Water) to develop a vision and strategy for nature protection and recovery for Langstone and Pagham Harbours, including identifying projects. This strategy will form part of the wider programme of landscape-scale recovery for the eastern Solent and is intended to complement CHaPRoN. The Project Manager will facilitate the wider partnership and help develop a pipeline of projects that will particularly focus on coastal and wetland habitats and species.

The Project Manager has set up a Steering Group to assist with the development of the strategy. Four members of the CHaPRoN Steering Group currently sit on the 3 Harbours Steering Group. The work within this initiative will link with the 3 Harbours Technical Working Group and Southern Water's Harbour Summit Group. As the strategy develops members will determine how best to align the two initiatives effectively.

### 3.6.8 Marina Farm – Thorney Island

In January 2023, Chichester Harbour Trust bought Marina Farm, which is a site directly north of Eames Farm, Thorney Island.

The site has fallen into disrepair and requires a significant amount of clearance. Much of the detail still needs to be worked out, but it could become a special green space for local people to enjoy, especially as a public footpath currently runs through the site. Applications will be made for grant funding to support this work.



Location of Marina Farm and outbuildings to be cleared.





### 3.6.9 The Queen's Green Canopy Project

Chichester Harbour Conservancy took part in the Queen's Green Canopy Project and were successful with four applications under the Chichester District Council tree scheme. During 2022, a total of **3,165 trees** were planted. The trees were planted with the help from the Friends of Chichester Harbour, volunteer work parties.

Trees were planted in the following locations:

- Itchenor Park Farm, Itchenor  
1,465 young trees planted, made up of a mixture of Holly, Scots Pine, Alder, Norway Maple and Hawthorn.
- Ella Farm, West Wittering  
95 young trees planted, made up of a mixture of Holly, Scots Pine, Alder, Norway Maple and Hawthorn.
- Lowerhone Farm, Bosham  
77 young trees planted, made up of a mixture of Holly, Scots Pine, Alder, Norway Maple and Hawthorn.
- Hammonds Farm, Birdham  
117 young trees planted, made up of a mixture of Hazel, Pedunculate oak, Field Maple, Hawthorn and Yew.

Prior to this, as part of the Defra Test Project, the following trees were planted:

- Hone Farm, Bosham - 1411 trees and whips

**The total trees planted during 2022 was: 3,165**

## 3.7 Focus Area: Engagement Activities & Connecting People with Nature Focus Area

The stakeholder analysis for CHaPRoN has been completed identifying a wide range of stakeholders that we need to engage with and to varying extent. The Comms & Engagement Strategy has also been developed. The next step is to develop this up into a delivery plan.

The Conservancy are currently advertising for the part-time Comms and Engagement Officer as part of the Solent Seascape Project. This role will support the Comms and Engagement for the SSP, being led by the HIWWT, as well as CHaPRoN initiatives.

### 3.7.1 CHaPRoN Website

The CHaPRoN website was launched towards the end of November 2022 and received a positive response. We have since posted 11 news items on the site and will continue to keep the website up to date with news and blogs, linking with social media posts.

Statistics on the website usage will be reported in the next Annual Review.

[Chichester Harbour Protection & Recovery of Nature \(chapron.org.uk\)](http://chapron.org.uk)

### 3.7.2 Return of the Tern Project

This project has worked with the Conservancy Education team to engage with approximately 100 young people. Providing lessons focused on nature recovery and the tern species in the Harbour.

The success of the project has been promoted through a range of channels, including the Friends of Chichester Harbour social media, where one video received 26,000 views. Jessica Vagg, Project Manager, has presented to numerous community groups and been interviewed by local press about the project.



Working with the Youth Rangers – painting model terns

### 3.7.3 Thorney Island Community Primary: Harbour Wildlife Day – March 2022

Lizzie Hibberd, Education lead for Bird Aware invited the Conservancy to work on a joint Community project to raise awareness of wildlife and habitats among Thorney Island residents

The RSPB and Conservancy had raised concerns about coastal disturbance on the island, in particular the bird colonies at Pilsey Island.

It was hoped that working with the island's school would help to promote understanding of the Harbour habitats and the need to give wildlife, particularly the birdlife, space.

Bird Aware and the Conservancy Education Centre worked together to design a full day of activities for 5 classes at the school.

The children learnt about wetland birds, bird biodiversity, shoreline creatures, food chains and the seal population.

A variety of learning tools and styles were used, with games, art activities and hands on identification of animals and plants.

Feedback from the staff and children was excellent.

The project was a very successful collaboration for the Conservancy and Bird Aware Solent, and the project has led to other partnership work.

### 3.7.4 BuDs Trial

A Comms and Engagement plan was delivered for the BuDs Trial, engaging with local businesses and communities, successfully raising awareness of the initiative. This included

presentations, information flier sent to local communities and businesses, information board along the footpath, 1:1 engagement with members of the public during the works, website update and press releases. Blue Marine are currently developing a short documentary film on the BuDs trial.

### 3.7.5 Volunteer Engagement Opportunities

Through CHaPRoN we are seeking opportunity for volunteers to become involved in the work of the initiative. In February 2023, Natalie Huckle the PhD student, with the support of the Conservancy, hosted a workshop for the Friends of Chichester Harbour, to talk about her research and to seek volunteers to help with her sample collection. She also promoted the University of Brighton's Abandoned Boats Project, through which there are further opportunities for volunteers to get involved. More than 25 members attended the workshop, indicating the enthusiasm from local people to become involved.

As CHaPRoN evolves, there will be further opportunities for volunteers to get involved and support the conservation work.



Volunteer Workshop at Eames Farm

### 3.7.6 CHaPRoN Presentations

A number of presentations have been given during this reporting period to local groups and organisations, continuing to raise awareness of CHaPRoN. These include:

- The Bournes Forum
- Southern Water Regional Forum
- Natural England Marine Advisers
- Chichester Harbour Marina Managers
- The Solent Forum
- Itchenor Sailing Club
- Church Commission England & Wetland & Wildfowl Trust
- Newtown Harbour & Partners IOW
- Students from Kent University
- Students from Portsmouth University

## 3.8 Focus Area: Green Funding

The focus group for this area of work has not yet been established. However, CHaPRoN has successfully secured the following funding during the reporting period to support the work of the partnership:

<b>Funding Source</b>	<b>Purpose</b>	<b>Total</b>
Green Challenge Recovery Fund	Return of the Tern Project	£202,580.00.
Endangered Landscape Programme	Solent Seascape Project	£425,989
East Head Impact	Solent Seascape Match Funding	£143,593
Environment Agency – Water Environment Improvement Fund (WEIF)	Apuldram Feasibility Study	£20,000
Environment Agency	Coastal Grazing Marsh Study	£12,000
Farming in Protected Landscapes scheme	Coastal Grazing Marsh Study	£3,874
Natural England	Seawall Review	£25,000
NRN Seedcorn funding (NE)	Saltmarsh restoration and sediment dispersion in Chichester Harbour SSSI Report – opportunities for Beneficial Use of Dredgings	£10,000
Chichester Harbour Conservancy	Development of CHaPRoN Website	£4,999
Farming in Protected Landscapes	Delivery of the FiPL Programme 22/23	£120,132.00
<b>TOTAL FUNDING SECURED:</b>		<b>£968,167</b>

Other funding applications that are currently in the pipeline are:

- Dream Fund application led by Blue Marine – this includes funding to secure the match funding for the SSP project. As CHaPRoN has already secured match funding, we have requested for this potential funding to be directed towards restoration initiatives.
- Environment Agency’s Capital Investment Programme - Coastal Partners have requested funding to be allocated from this programme to support the development of the Emsworth to East Head Integrated Coastal Management Strategy. Further work is needed to secure this funding, together with match funding.

### 3.8.1 Metrics for Ecosystem Services

To support the mechanisms for green funding streams, the metrics for ecosystem services need to be defined, agreed, and approved. Work is currently underway nationally to determine the saltmarsh carbon code, which will then hopefully lead to saltmarsh being included in the Greenhouse Gas Inventory. A considerable amount of research is also being carried out into nutrient absorption and other blue carbon ecosystems.

There are a number of pilot studies taking place across the country from which we can learn from. The Natural Environment Investment Readiness Fund (NEIRF), provides grants of up to £100,000 to environmental groups, local authorities, businesses and other organisations to help them develop nature projects to a point where they can attract private investment. A number of projects funded by this initiative are underway, so it would be of great value to take the learning from these projects and develop a project initiative within the Harbour.

To support the metrics work, CHaPRoN will be working with the University of Portsmouth as part of the Solent Seascape Project to gather data and help provide evidence for the ecosystem services provide by coastal habitats. We will also be supporting the Centre of Ecology and Hydrology, who will be monitoring the BuDs trial site to gather data on nutrient absorption capabilities of saltmarsh.

### **3.8.2 National Carbon Absorption Study**

The Environment Agency are undertaking a National Carbon Absorption Strategy study. The aim of the study is to provide an evidence base that carbon offsetting nationally is possible, achievable/deliverable and justifies further investigation. CHaPRoN have proposed some sites in Chichester Harbour for the pilot study (before March 2024) and main programme (2024 – 2034).

### **3.8.3 Biodiversity Net Gain Update**

In February 2023, Defra published further details on Biodiversity Net Gain (BNG) which is a strategy to develop land and contribute to the recovery of nature. It is a way of making sure the habitat for wildlife is in a better state than it was before development.

The biodiversity metrics and calculator is available to calculate the biodiversity net gain of a project or development. The online service for recording BNG and the buying and selling of credits will be available from November 2023.

## 4 CHaPRoN Key Indicators & Measures

This section of the report contains a summary of the key indicators and measures for each of the CHaPRoN Focus Areas. Each focus area is developing at a different rate, so in some areas the targets and measures still need to be clarified and agreed by stakeholders.

### Key:

	Indicator achieved and no further input required
	Positive progress made, some actions delivered, but further progress required towards indicator.
	Early stages of planning & development towards indicator.
	No progress against this indicator.

### 4.1 Coastal Resilience & Saltmarsh Focus Area

Mitigation & Adaptation to Climate Change		
Indicator	Measure	
Length of coastline where there is a changing <b>attitude</b> towards managing the coastline towards more natural processes	Tournerbury Farm (CHT) = 1.8km Apuldrum Site (CHT) = 0.4km Colner Creek = 0.12km Langstone Seawall = 0.03km Project Marker = 2.5km  <b>TOTAL: 4.85km</b>	
Delivery of HCRP in Harbour	See 1.1.4 On-going. Project Marker on Thorney under review. Additional studies considering intertidal habitat creation options on East Coast of Hayling Island.	
Key infrastructure with a risk & resilience strategy for climate change in place	Apuldrum Feasibility study will start to identify risk to utilities eg high pressure gas main and wwtw in this location. Further engagement required with utility companies to understand their risk and resilience strategies, for infrastructure within AONB.	
Strategy & Plan for a sustainable coastal footpath in place	See 1.1.5 . ECP 2100 high level study completed. Waiting for current ECP to be approved by Defra.	
Improving Coastal Processes		
Length of hard sea defence or structures removed/changed to improve natural coastal processes ( <i>physical changes</i> )	Project sites under consideration.	
Volume of sediment retained within the Hbr /brought into the Hbr to improve supply	West Itchnor – BuDs Trial – 1600m <sup>3</sup>	

No. of sites/area recharged with sediment to support habitat restoration	1 x West Itchenor 0.25ha	
<b>Achieving Sustainable Development</b>		
<ul style="list-style-type: none"> <li>Area of land acquired by CHaPRoN/ gained landowner support for future NbS initiatives</li> </ul>	Tournerbury Farm (CHT) = 99 acres Apuldram Site (CHT) = 13.5 acres (approx.)  <b>TOTAL: 112.5 acres</b>	
<ul style="list-style-type: none"> <li>Coastal policies adopted by CDC &amp; HBC Local plans to safeguard land for salt/grazing marsh and policy applied</li> </ul>	Consultation on draft plan for CDC closed on 17 March 23	
<ul style="list-style-type: none"> <li>Licences in place for habitat restoration initiatives</li> </ul>	5 year MMO licence in place for West Itchenor BuDs project	
<ul style="list-style-type: none"> <li>Coastal Concordat in place to streamline regulatory and licencing processes for habitat restoration work</li> </ul>	The Solent Seascape Project will bring partners together to feed into this work.	
<b>Biodiversity &amp; Habitat Enhancement</b>		
<ul style="list-style-type: none"> <li>Condition of SSSI &amp; international sites</li> </ul>	6 yearly reviews. Next SSSI review due 2027	n/a
<ul style="list-style-type: none"> <li>Extent of Saltmarsh/Coastal Grazing Marsh losses/gains</li> </ul>	No data available for changes during this review period. Will link in to next SSSI review	n/a
<ul style="list-style-type: none"> <li>No./area of habitat restoration project sites underway (e.g. saltmarsh, coastal grazing marsh, mudflat)</li> </ul>	<ul style="list-style-type: none"> <li>West Itchenor – BuDs - saltmarsh</li> <li>Feasibility study for BuDs saltmarsh restoration at Langstone under review</li> <li>Feasibility study for habitat creation at Apuldram underway</li> </ul>	
<ul style="list-style-type: none"> <li>Coastal Demonstration Site established</li> </ul>	Site to be confirmed	
<ul style="list-style-type: none"> <li>Coastal restoration sites mapped as part of the wider NRN</li> </ul>	No progress - Priority for 23/24 to map sites	

## 4.2 Seabed Disturbance & Seagrass Restoration Focus Area

Indicator	Measure	Key
Understanding of pressures on seagrass – academic research	PhD: Investigating the causes of environmental degradation in coastal ecosystems and evaluating restoration potential is underway. See item 2.4 for update	
Extent of seagrass	Baseline surveys to be carried out 2023/24	

Condition of seagrass	Baseline survey to be carried out 2023/24	
No. of moorings removed from sensitive sites	0	
Change in boating behaviour	0	
Number of Seagrass Champions recruited	0	
No. of trial sites for active restoration	Dwarf seagrass trial currently being developed by Fathom Ecology	
Licences in place for larger scale active restoration	0	

### 4.3 Water Quality & Clean Harbour

*NB. The purpose and objectives for this focus area have yet to be agreed. The measures and indicators will therefore be reviewed to align with these once confirmed.*

Indicator	Measure	Key
Changes in policy reducing inputs to harbour.		
Pollution loads entering the Hbr - WFD indicators		
% cover of macroalgal weed – tops of channels		
No. of serious Pollution incidents		
Condition of Shellfish (Bathing) Water - bacteria levels		
Use of pump out stations by boat owners		
No. of boatyards with scrub and capture systems in place		
Area of farmland managed using CSF techniques		
Volume of litter collected by volunteers		
Increase in understanding of contaminant impact on the environment		



## 4.4 Shellfish Populations

*NB. The indicators and measures for native oysters should be reviewed to align with the monitoring for the Solent Seascape Project*

Indicator	Measure	Key
Outputs from academic research.	PhD and RedPol research underway. Awaiting outcomes of research analysis.	
Ecological status of benthic invertebrates under WFD	Good	
Native Oysters CPUE ( <i>not currently taking place</i> )	<i>Not currently taking place as no fishing due to decline in numbers</i>	
Number of pilot oyster restoration initiatives in the harbour	Blue Marine currently carrying the initial consultation into feasibility study	
Area of oyster reef (ha)	<i>Oyster beds not currently being monitored due to low numbers</i>	
Biodiversity measures at reefs (eDNA)	<i>n/a at the moment</i>	
Monitoring of wider shellfish populations to study population trends (methodology tbc)	<i>No progress yet</i>	
Initiatives in place to reduce impact of boating/fishing/hand gathering on shellfish populations	New Byelaw for bait digging and hand gathering awaiting approval from Defra	
No. of marinas/sailing clubs with biosecurity action plans in place	Solent Forum currently working with APEM Ltd, Natural England, and the Marine Biological Assoc to develop biosecurity policies within the Solent, with the support of Marine organisations and businesses. Resource required to develop this area of work around Harbour. No data collected on current biosecurity plans	

## 4.5 Marine & Farmland Birds

*NB. These targets and measures still need to be reviewed by the Focus Area group.*

Indicator	Measure	Key
Webs count data	As required for analysis of population trends	
No. of bird habitat restoration projects underway	(i) Return of the Terns – nearly complete (ii) Snowhill Marsh – early days, initial feasibility discussions <b>TOTAL: 2</b>	

Area of bird habitat increased/enhanced	(i) 5 more tern rafts (ii) 500 tonnes of shingle on stakes island, raising elevation by 1m	
No. of pairs of breeding Terns & fledglings	42 pairs of common tern 54 fledged young	
Understanding of seabird movement and foraging habitats increased	(i) Small fish survey conducted as part of the Return of the Tern project to help assess food supply for terns	
Change in <b>water</b> -based harbour user behaviour to reduce bird disturbance	(i) Wildlife Refuge Buoys piloted – feedback recommends relocating the position of the buoys to make the area more clearly	
Change in <b>land</b> -based harbour user behaviour to reduce bird disturbance	<i>No data available – Bird Aware Solent continue to engage with public</i>	
No. and success of volunteer groups established in Hbr through Life on Edge project (RSPB)	No progress <i>Due to change in personnel at the RSPB, the discussions regarding this initiative stopped. However, following on from this, Harbour Education worked in partnership with Bird Aware to deliver a project with Thorney Island School last year to raise awareness of the Harbour bird life and reducing disturbance. – see engagement initiatives</i>	

## 4.6 Landscape & Nature Recovery Network Targets & Measures

*N.B. Targets and measures need to be reviewed and agreed by Focus group.*

Indicator	Measure	Key
Nature Recovery Plan in place	Initial draft currently being finalised	
Area of habitat improvement for biodiversity	FiPL = 1298ha	
Area of habitat improvement for connectivity	FiPL = 316.6ha	
Length of hedgerow planted	FiPL = 712m	
No. of trees planted	CHC = 3,165	
Area of land managed using regenerative farming techniques	FiPL = 2248ha	

No of stakeholders engaged with the Nature Recovery Plan	None to date – waiting for draft plan to be completed	
Number of FiPL projects delivered	2022/23 = 10	
Number of Southern Water Conservation Projects delivered in 3 Harbours area	2022/23 = 3	
No. of green funding streams in place (CHC)	<i>None</i>	

## 4.7 Engagement Activities Focus Area Indicators & Measures

*NB. These indicators and measures should be reviewed to align with the SSP measures*

Indicator	Measure	Key
No. of different stakeholders engaged with the natural environment	<i>No data readily available</i>	
No. of engagement initiatives delivered	CHaPRoN website Buds Trial engagement plan RoTT Project engagement plan 10 x CHaPRoN presentations	
No. of people engaged in social action for the environment	PhD research: 14 Abandoned boats project: 15 (approx.) FoCH working parties: 357 volunteers	
Change in Environmental attitudes and behaviours	<i>Need to determine how to measure this</i>	
Health and Well-being benefits	<i>Need to determine how to measure this</i>	

## 5. CHaPRoN Priorities For 23/24

The next CHaPRoN Steering Group Meeting to be held in April 2023, will review this Report and start to determine the priorities for 23/24. To assist with this process, some initial priorities are recommended below, however, the Steering Group will discuss and provide direction moving forwards.

### 5.1 CHaPRoN Wide Priorities

There are some priorities/considerations that impact across the whole CHaPRoN initiative:

- To review all the indicators and measures across the CHaPRoN initiative. Do we have the right indicators? How easily can the data be collected? Do they align with other initiatives to ease data collection? Do they help to inform the progress of CHaPRoN? Do we have too many? Are key indicators missing? Should we be linking more closely with the 25YEP Indicator Framework?
- Does CHaPRoN wish to align its interim target dates with the Environment Improvement Plan 2023? Is to set medium term targets for 5 years?
- CHaPRoN is a huge initiative. How do we continue to drive forward all 8 focus areas? Do other members of the Steering Group have capacity to chair one of the Focus Areas? Important to keep the momentum going so that Stakeholders continue to engage.

## **5.2 Priorities for the Coastal Resilience & Saltmarsh Focus Area 23/34**

The Working Group will be meeting on 2<sup>nd</sup> May to review the Prioritised Plan and agree priorities for 23/24. Some of the key priorities are likely to be:

- Mapping work to combine all the data and information we have obtained from studies and reports, to help inform a more strategic approach to prioritising project sites and opportunities for more sustainable coastal management.
- Identifying the blockers and challenges impacting this area of work and identify solutions.
- Prioritising sites for habitat creation opportunity and start to develop project schemes.
- Identify the coastal change demonstrate site to support engagement.
- Update the Conservancy's Sustainable Shoreline Guidelines.
- Continue to develop opportunity for Beneficial Use of Dredged Sediment.
- Work collaboratively with ECP officers and other partners to develop Comms and Engagement for the ECP to raise awareness of pressures of climate change and agree solutions for access issues, opportunities and changes to the coastal path.

## **5.3 Seabed Disturbance and Seagrass Restoration Priorities for 23/24**

The priority for this focus area during 23/24, is to start to carry out the baseline monitoring for seagrass within the Harbour. This includes both extent and condition for intertidal and subtidal seagrass.

Natural England have put in a bid for funding to carry out a Solent wide baseline survey for seagrass this summer. If successful, it will require match funding and partner support to enable delivery. We need to ensure that the methodology and approach is consistent across the Solent for the data to be of value. The data will then become open data to share. The CHaPRoN Seagrass working group will be meeting in April to discuss approach and start to plan the survey work.

## **5.4 Priorities for the Water Quality and Clean Harbour Focus Area 23/24**

The main priority for this focus area is to bring stakeholders together to define the objectives for the three key work areas identified at the workshop in November. Review the benefits mapping work that has been completed for this focus area, agree targets and measures that inform progress and then work collaboratively to develop a delivery plan of action and determine how to resource this work.

## **5.5 Priorities for the Shellfish Populations Focus Area 23/24**

The priorities for this work area during 23/24 will be to:

- continue to support Blue Marine with their work on a native oyster reef within the harbour
- grow the number of stakeholders supporting this group
- agree targets and measures and develop a prioritised plan
- learn from the RedPol research being carried out on shellfish within the harbour and increase our understanding of the pressures
- develop methodology for on-going monitoring of wider shellfish populations within the harbour so that we can increase our understanding of the trends and patterns in the numbers, size and health of shellfish populations over time.

## **5.6 Marine & Farmland Birds**

The priority for this working group is to extend the membership of the group to wider stakeholders. Agree the objectives of the group, targets and measures and work collaboratively to develop a pipeline of projects that will support bird habitat and function in the Harbour.

## **5.7 Priorities for the Landscape & Nature Recovery Network Focus Area 23/24**

Key priorities for this focus area are:

- to continue the development of the AONB Nature Recovery Plan, engaging with stakeholders to help inform the plan.
- engage with Hampshire and West Sussex Local Authorities developing the LNRSs and how the NRP could feed into these
- delivery of the FiPL programme, supporting projects that fulfil the FiPL criteria, support the AONB Management Plan and align with the emerging Nature Recovery Plan
- continue to support Southern Water's Conservation Grant Scheme, identifying opportunity to align interests and match fund project delivery
- work with the 3 Harbours Steering Group to determine how the 3 Harbours Strategy can complement CHaPRoN and work collaboratively for maximum impact

## **5.8 Priorities for the Engagement Focus Group for 23/24**

There are a number of key priorities for this focus area:

- Develop the Comms and Engagement Delivery Plan for CHaPRoN
- Prioritise stakeholders and deliver engagement initiatives – inc. Harbour Federation & Coastal Footpath users
- Increase understanding of the pressures on Chichester Harbour SSSI and why we need to reduce these
- Develop visual resources to engage the public - what does nature recovery look like?
- Support the Solent Seascape Project and development of the Comms and Engagement Strategy
- Develop and deliver the Comms and Engagement plan for the Apuldram site

## **5.9 Priorities for the Green Funding Focus Area 23/24**

The priorities for this focus area are:

- To bring together interested stakeholders and determine how to take this focus area forward
- To continue to support the Solent Seascape Project with monitoring, to help provide evidence for ecosystem services
- To get ready for BNG. Link with the Nature Recovery Plan to identify locations for nature recovery projects. Engage with landowners to work up BNG credits.
- Understand funding opportunities available through the Landscape Recovery Schemes.
- Learn from the NEIRF project pilots to increase our understanding of how future green funding streams could be structured

END OF REPORT