ReMeMaRe

Environment Agency

Scarborough Spa

11-12th July, 2023

OCEAN & COASTAL FUTURES

With thanks to our sponsors

Conference Details

http://coastal-futures.net/rememare-2023

Twitter: #ReMeMaRe23
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Q&A / Panel Debate

Slido

https://www.slido.com/

#4089543

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ReMeMaRe Conference 2023

Action

Session 3

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#ReMeMaRe23

Environment Agency

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SESSION THREE: ACTION

CHAIR: Dr David Tudor

Blue Marine Foundation

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Practitioners experience from the frontline: Showcasing practical action

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SESSION THREE: ACTION

Amelia Newman, Ocean Conservation Trust

Restoration of Zostera Marina within two SACs for LIFE Recreation ReMEDIES

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ReMEDIES

Reducing and Mitigating Erosion and Disturbance Impacts affecting the Seabed

Restoration of *Zostera Marina* within two SACs for LIFE Recreation ReMEDIES

Amelia Newman

Ocean Conservation Trust

Lead Cultivation Officer

11th July 2023

LIFE Recreation ReMEDIES is a four-year project that aims improve the condition of four marine habitats of European importance

OBJECTIVES

1.Protect and reduce recreational pressures to England's most important and at risk intertidal/subtidal seagrass/maerl beds.

2.Demonstrate large scale successful restoration and management techniques.

3.Promote awareness and inspire better care by recreational users. Use relevant stakeholders' networks and public at a local, national and trans-national levels to maximise the longevity and sustainability of the project actions.

- Annex 1 habitats
- Sandbanks which are slightly covered by seawater all the time
- Mudflats and sandflats not covered by seawater at low tide
- Large shallow inlets and bays
- Estuaries
- Sub-features: Seagrass and Maerl

ocean conservation trust


52°0.000'N
50°0.000'N
4°0.000'W
0°0.000'
Essex Estuaries
Solent Maritime
Plymouth Sound and Estuaries
Fal and Helford
Isles of Scilly complex

Seagrass Ecosystem Services

Sheltered habitat

Coastal protection from erosion

Roots nitrogen fixation

Blue Carbon Stores Help combat climate change

Commercial Fishing top 9 species of fish in UK

ocean conservation trust

EU LIFE ReMEDIES Restoration Sites

- 4 ha Plymouth SAC
  - Seed dispersal and seedlings
  - VNAZ
  - MMO License procured

- 4 ha Solent SAC
  - Seed dispersal
  - MMO License procured

ocean conservation trust

Seed Collection and Storage

- C. 1,000,000 seeds collected by our dive team this year
  - Falmouth
  - Looe
  - Solent
- Mature over Autumn
- Majority are healthy
  - Few bacteria issues
- Developed sterilisation techniques

ocean conservation trust

Bag Deployment

- Natural materials to carry and protect the seed
- 57,004 bags packed overall
- Just under 700 volunteers got involved – most events sold out.
- Deployment 2021 - 2022
  - 1 ha in Solent
  - 2.85 ha in Plymo

Outcomes – Seed dispersal

Aim

- To restore 4ha in Plymouth and the Solent with seed dispersal

Successes

- Huge engagement activity
- Large area covered in a short period
- Germination rate ~5%

Lessons Learnt

- Increasing bags per m^2 does not increase growth success
- The weave of the hessian bags limited growth, forming an anoxic layer
- Seedling washed away before it could get established
- Solent bags washed up due to currents

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Outcomes – Seagrass Mat Technology

Aim

- Trial large scale seedling restoration through Seagrass Mat Technology (SMT).

Successes

- 200 live SMTs have been deployed.
- Germination rate averages 35% and has reached 69% in the lab
- Rhizomes formed in the lab
- Large root structure within and under the SMT
- Once deployed, significant growth around the mats

Lessons Learnt

- Sediment type is critical to germination
- License complications
- Regular standardised monitoring is needed in the lab and at sea
- Monitoring technologies will give better feedback.

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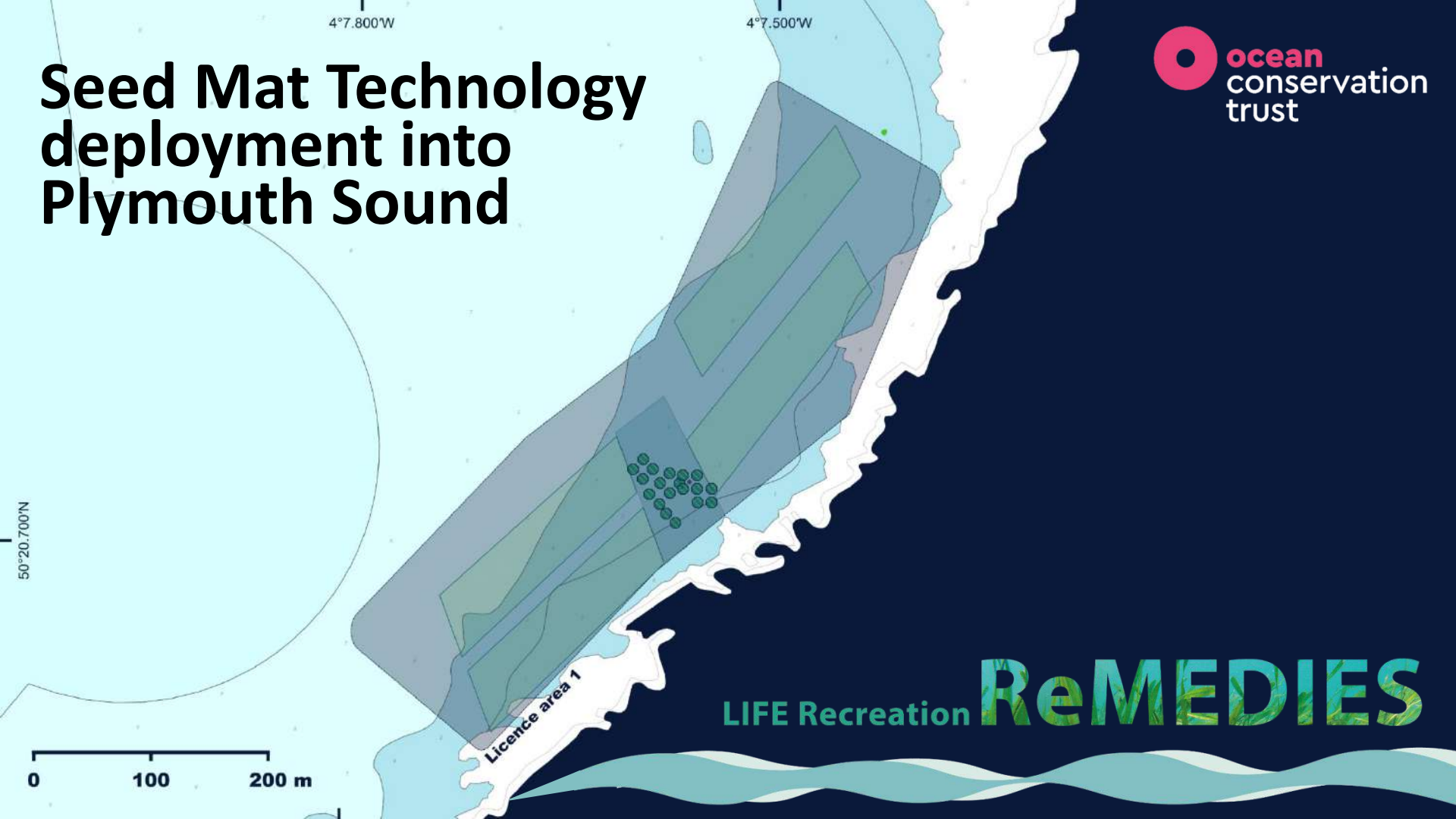
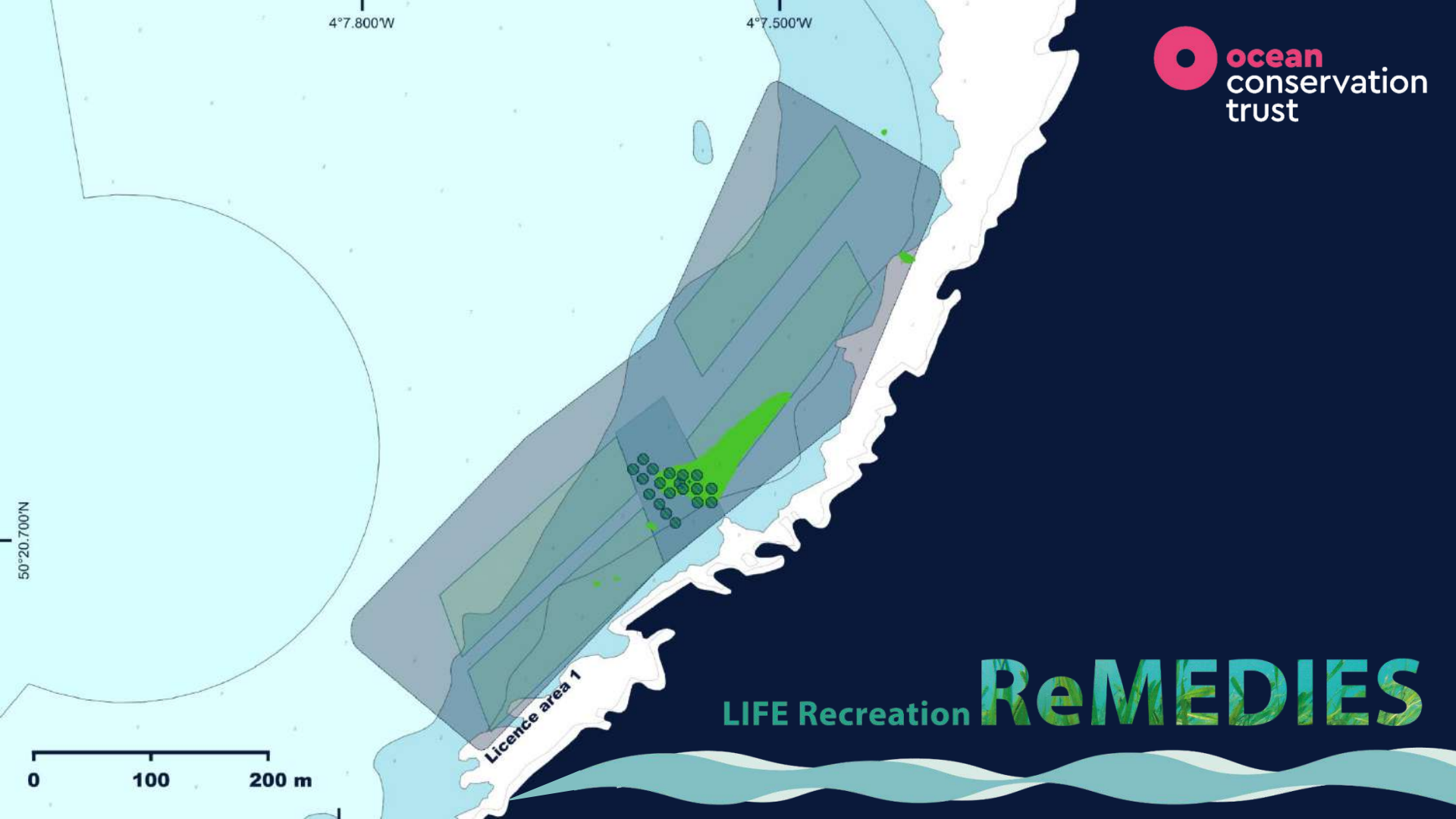
Seed Mat Technology deployment into Plymouth Sound




4°7.800'W
4°7.500'W
50°20.700'N
Licence area 1
0
100
200 m
ocean conservation trust
LIFE Recreation ReMEDIES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trust


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conservation
trust


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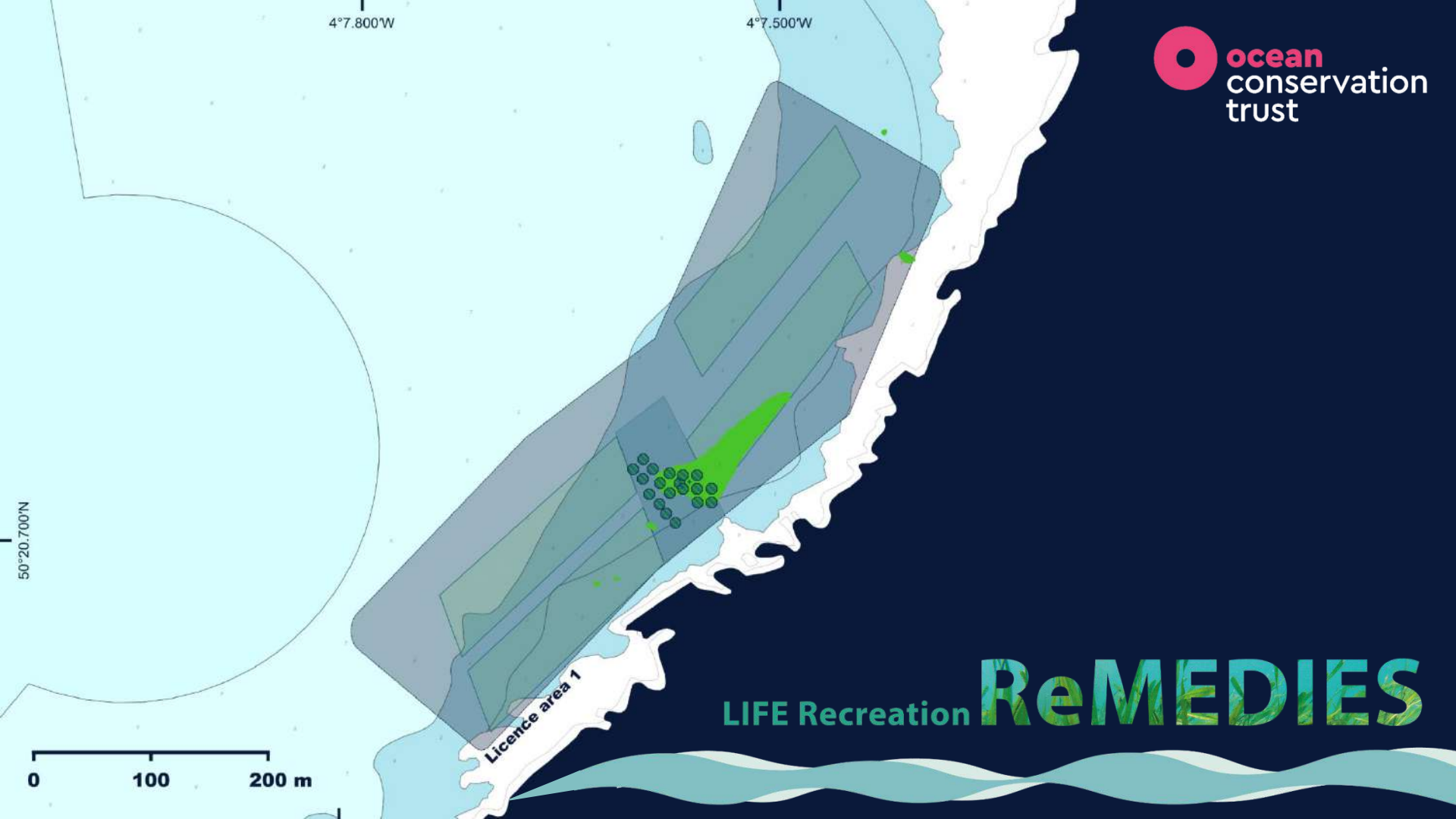
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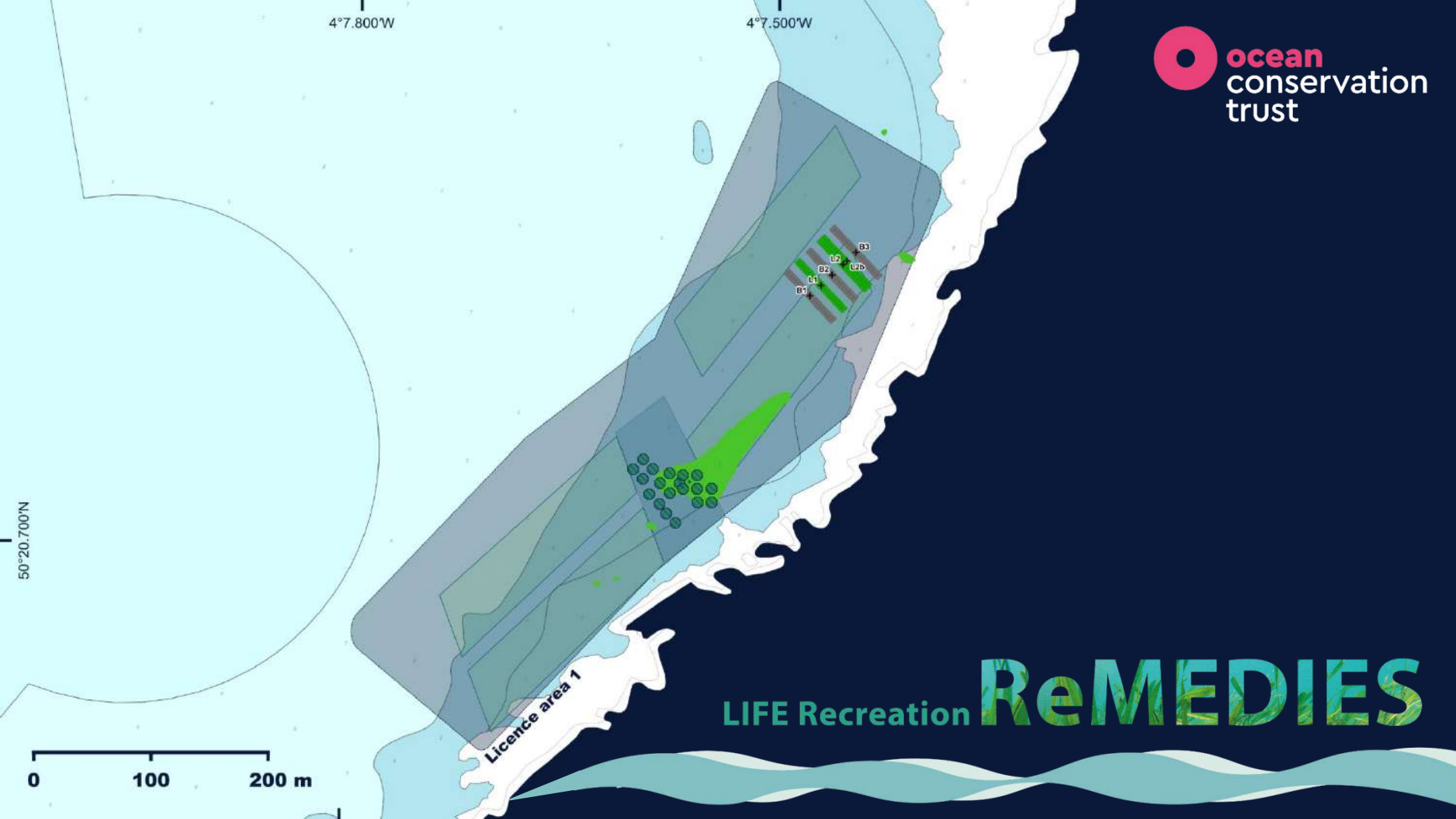
200 m
ocean conservation trust
LIFE Recreation ReMEDIES


4°7.800'W
4°7.500'W
50°20.700'N
B3
L2
L2b
B2
L1
B1
Licence area 1
0
100
200 m
ocean conservation trust
LIFE Recreation ReMEDIES

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ocean conservation trust


L2
SE7
ocean
conservation
trust

ocean conservation trust

blue meadows

saveourseabed.co.uk

Amelia Newman

amelia.newman@oceanconservationtrust.org

@EULIFERemedies

euliferemedies

LIFE Recreation Remedies

LIFE Recreation ReMEDIES

Working in Partnership with:

NATURAL ENGLAND

RYA

THE GREEN BLUE

MARINE CONSERVATION SOCIETY

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PLYMOUTH CITY COUNCIL

TAMAR ESTUARIES CONSULTATIVE FORUM

LIFE Recreation ReMEDIES (LIFE18 NAT/UK/000039) is financially supported by LIFE, a financial instrument of the European Commission.

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SESSION THREE: ACTION

Mike Williams, Environment Agency

Adapting to Climate Change:
The Lower Otter Restoration Project

Environment Agency

Scarborough Spa

11-12th July, 2023

OCEAN & COASTAL FUTURES

Adapting to Climate Change:

The Lower Otter Restoration Project

Mike Williams

Environment Agency, Exeter

ReMeMaRe July 2023

[Lower Otter Restoration Project]

[Promoting Adaptation to Changing Coasts (PACCo)]

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Interreg France (Channel Manche) England

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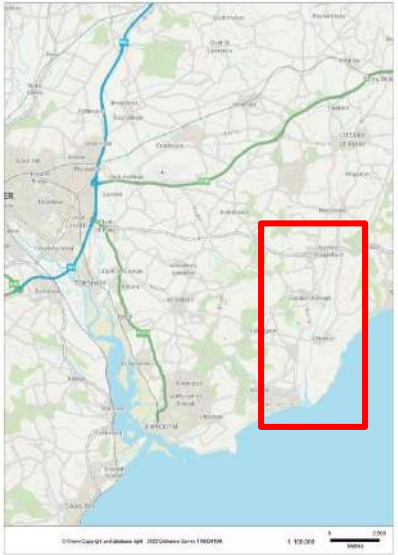
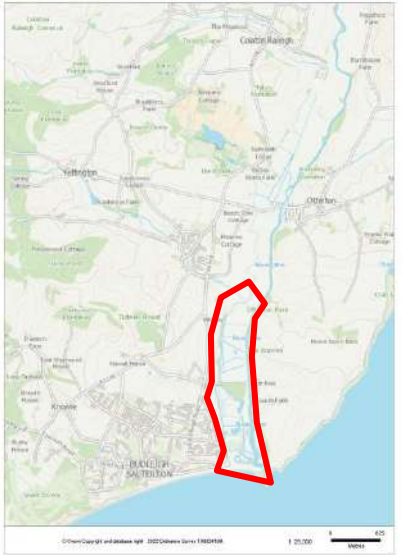
Lower Otter Restoration Project





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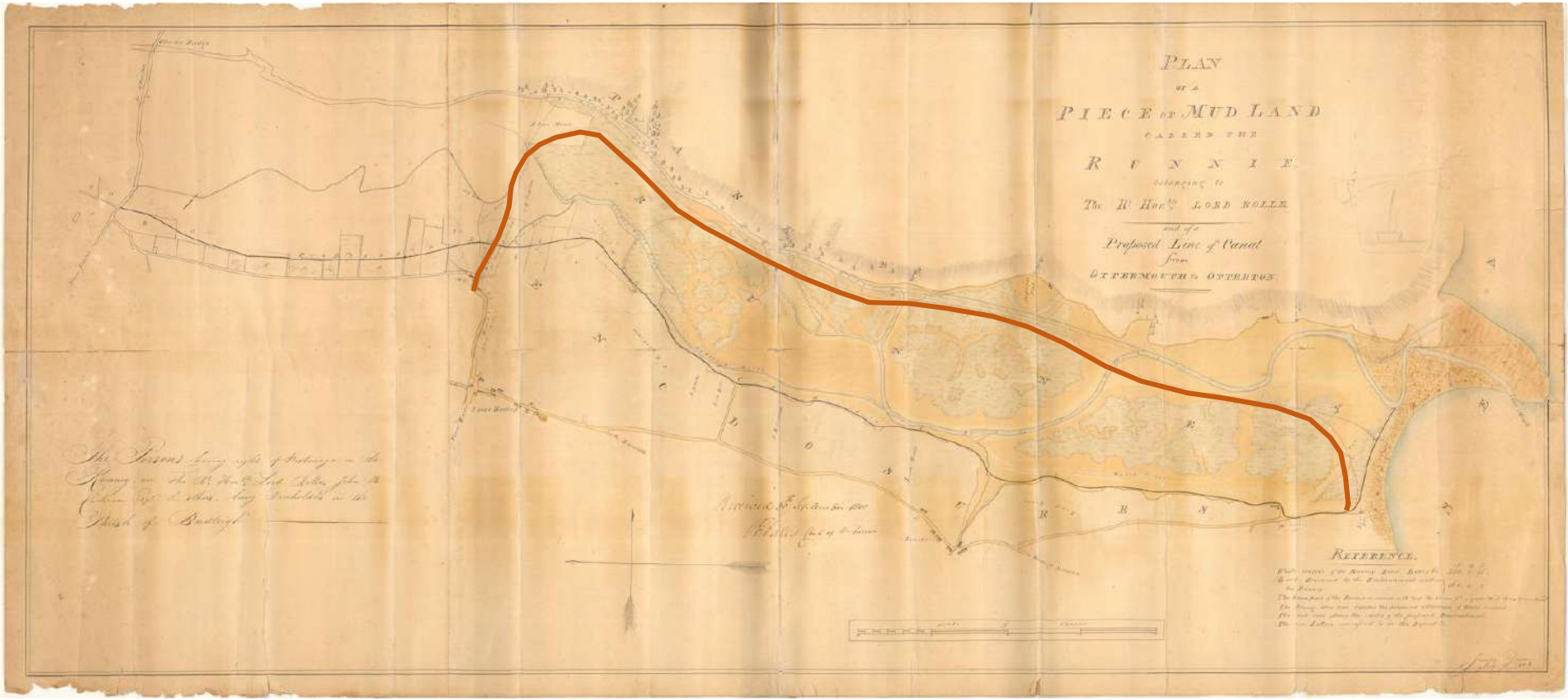
Site plan

Site boundary – approx. 55ha

River Otter and estuary in 1809



Lower Otter Restoration Project is:

- Restoring 55Ha of intertidal habitat
- Reconnecting the river to its floodplain
- Raising 600m of highway by 2.5m
- Building 35m span highway bridge
- Installing 70m span footbridge on SWCP
- Safeguarding former landfill site

April 2021

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Lower Otter Restoration Project is also:

- Relocating a cricket pitch out of floodplain
- Increasing infrastructure resilience
- Delivering range of social and natural capital benefits
- Setting up a monitoring programme
- Capturing up to 1000t CO_2 per annum

June 2023

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Lower Otter challenges

- Designated sites – WHS, SSSI and AONB
- Protected species – dormice, birds, bats and beavers
- Schedule 1 bird species breeding
- Ageing CSO at risk
- Public water supply abstraction
- Potential pollution from former landfill site
- Demonstrating no increased flood risk
- Complex stakeholder engagement
- Programme constrained by funding
- Intense public scrutiny

Site overview

April 2021

June 2023

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Breach area and footbridge

April 2021

June 2023

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Old tip and new road

April 2021

June 2023

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New road bridge

April 2021

June 2023

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Northern creek network

April 2021

June 2023

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New cricket ground

April 2021

June 2023

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Site overview: the future?

March 2023 with spring tide and river flooding

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Lower Otter funding

- Project cost ~ £27m
- Majority is FCERM grant in aid
- Legal driver from Exe Estuary strategy
- Cost:Benefit analysis not required
- In kind and financial contributions from landowner
- Contribution from water company
- Approval required additional funding
- HLF bid unsuccessful
- Interreg bid secured £6.7m for LORP

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Promoting Adaptation to Changing Coasts (PACCo)

PACCo
Promoting Adaptation to Changing Coasts
Promouvoir l'Adaptation aux Changements Côtiers

Interreg
France (Channel Manche) England
European Regional Development Fund

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What is PACCo?

- Promoting Adaptation to Changing Coasts
- €27M Interreg VA France Channel England programme
- Helping guide pre-emptive adaptation to climate change
- Recognising common issues and solutions
- Focussing on estuaries and coasts
- Using lessons learned from real world examples
- Start: January 2020 End: September 2023

PACCo
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One project - two estuaries

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Project sites

Lower Otter Restoration Project

Budleigh Salterton, near Exeter

Devon

Basse Saâne 2050

Quiberville, near Dieppe,

Normandy

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Learning from what we are doing

PACCo outcomes

- Deliver two pilot projects
- Demonstrate the benefits of early adaptation
- Assess socio-economic and natural capital benefits
- Communications and engagement best practice
- Produce a ‘How-to’ guide to help inform others

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Interreg France (Channel Manche) England
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Thank you - find out more here

Lower Otter Restoration Project

Lower Otter Restoration Project

PACCo homepage

https://www.pacco-interreg.com/

Reconnecting the Saâne Valley

https://www.conservatoire-du-littoral.fr/117-projets-de-territoire.html

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SESSION THREE: ACTION

Natasha Lough, Natural Resources Wales

Wales Native Oyster Restoration Project

Environment Agency

Scarborough Spa

11-12th July, 2023

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Wales Native Oyster Restoration Project

Milford Haven waterway

Ben Wray, NRW
Presented by Natasha Lough

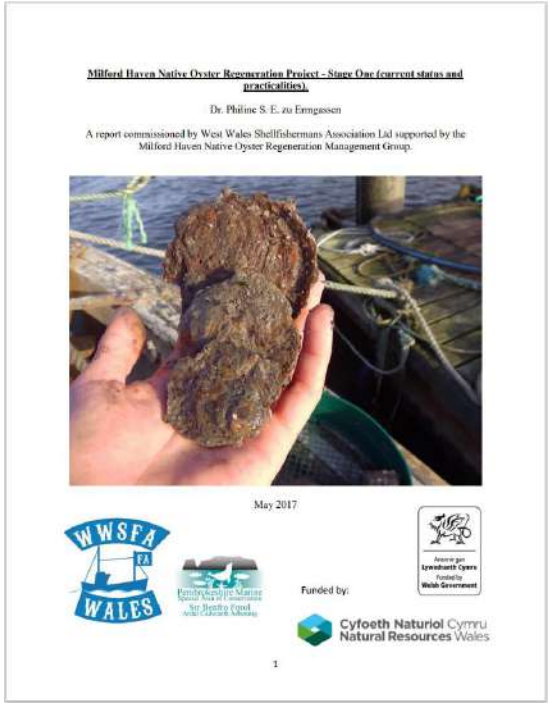
Cyfoeth Naturiol Cymru
Natural Resources Wales

2020 – NRW (funded by EMFF) set to undertake a local Native Oyster restoration trial in Milford Haven

Aim – Further investigate the potential for active Native Oyster restoration in the Milford Haven waterway

Objectives

- Establish series of trial restoration plots with introduced (hatchery/aquaculture raised) native oyster broodstock across several sites to address specific questions:
  - survivability,
  - recruitment,
  - stocking density,
  - effects *Bonamia ostrea* and INNS e.g. *Crepidula fornicata*,
  - positive biodiversity effects
- Produce a *Native Oyster Restoration evidence report* and *'Native Oyster Action Plan'* for Wales



Milford Haven Native Oyster Regeneration Project - Stage One (current status and practicalities).

Dr. Philine S. E. zu Ermgassen

A report commissioned by West Wales Shellfishermans Association Ltd supported by the Milford Haven Native Oyster Regeneration Management Group.

May 2017

Funded by:

Cyfoeth Naturiol Cymru Natural Resources Wales

1

Project experimental design

- Intertidal vs subtidal restoration sites;
- Benthic plots (oyster placed directly onto the seabed) vs elevated plots (oysters placed into structures raised above the seabed); and
- Different stocking densities within restoration plots

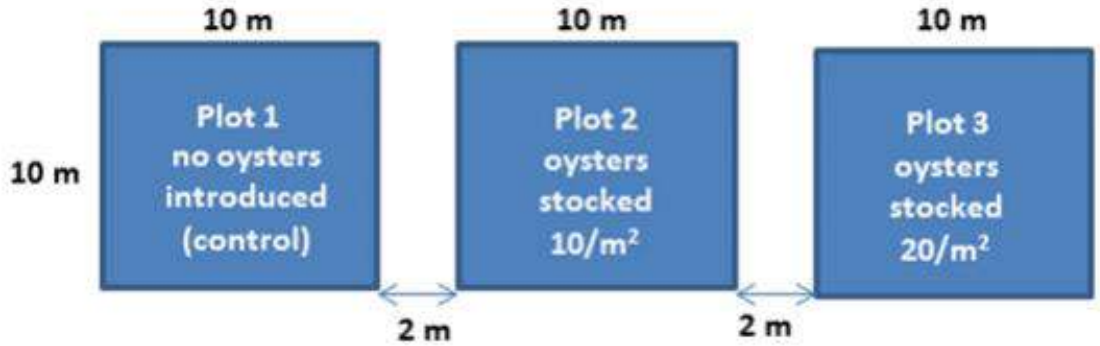


Figure 1. Experimental design of the intertidal and subtidal benthic restoration plots

Oyster cages

- ‘Aquaculture’ style approach to restoration
- Suitable method for on-growing of juvenile ‘broodstock’ for restoration efforts?
- Custom oyster ‘cages’ built and deployed at 2 sites
- Approx. 1000 juvenile oysters deployed in each cage.

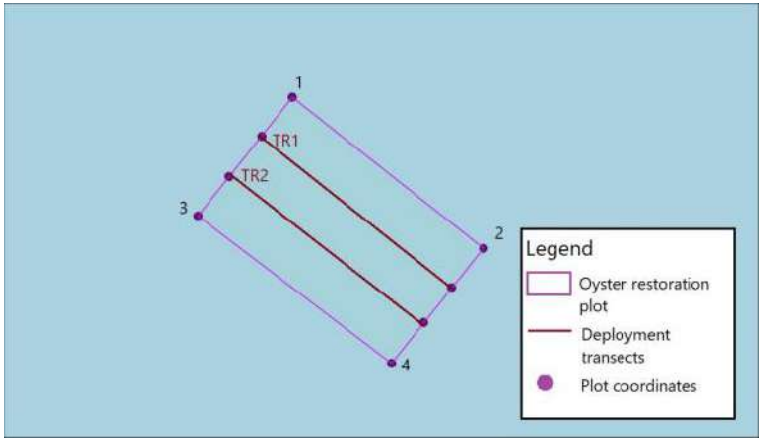
Cyfoeth Naturiol Cymru
Natural Resources Wales

Spat settlement & recruitment

- July 2021 – 2 x cages with ‘coupelles’& tiles deployed for 8 weeks at intertidal sites adjacent to the broodstock cages
- Dipped in lime mix – typical of the systems used in France in large aquaculture farms

Cultch & Broodstock Trial - 2021

- Site selection of two 20m x 30m plots for cultch deployment using DDV
- 13 tonnes of clean cockle shell and 4,500 oysters deployed at each site
- Oysters deployed 1 week after cockle shell



Schematic of the oyster deployment transects conducted at each restoration plot.

Monitoring

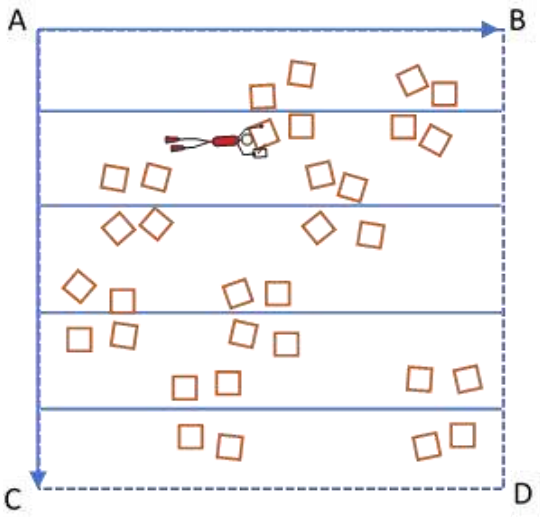
Subtidal and intertidal plots

- Random quadrats across transects - 10m x 10m plots
  - Abundance *O. edulis* – live/dead (attached vs not attached)
  - Size/weight live *O. edulis*
  - Abundance *C. fornicata*
  - Presence oyster spat
  - % Cultch availability
  - Sedimentation assessment (H,M,L)
  - Presence *O. edulis* predators (*Urosalpinx cinerea, Ocenabra erinaceus*)
  - Photos of quadrats – habitat analysis

Intertidal cages

- Abundance / survival *O. edulis* – live/dead
- Size/weight live *O. edulis*

Intertidal plots – twice a year (April & Sept)
Subtidal plots – once a year (Sept)



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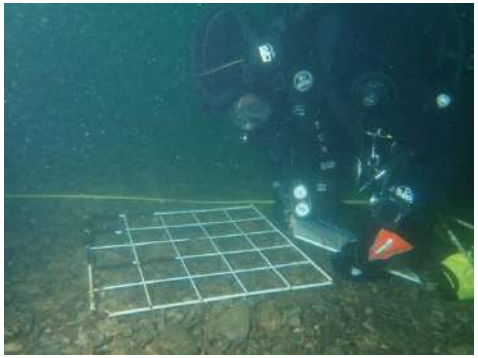
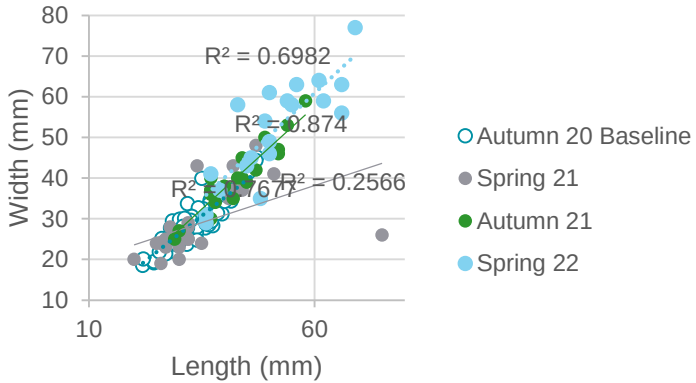
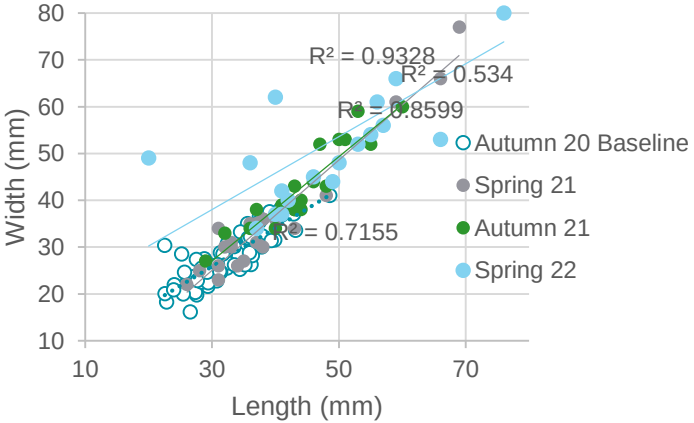


Example Results – Intertidal benthic plots - Growth





Higher density
20 m²

Lower density
10 m²

Summary

- Survivability – hatchery/aquaculture raised relayed oysters survive and grow in the Milford Haven waterway although evidence of high mortality.
- Evidence of recruitment
- Aquaculture cages not suitable for on growing of juveniles without considerable husbandry
- Stocking density – lower density (10m^2 plots) appear to slightly more successful in terms of survival rates – movement of oysters out of the plots?
- Bonamia – difficult to assess at this point in time – continued monitoring and survival of newly settled oysters is key
- Increased occurrence of *Crepidula* and predators in subtidal plots may have contributed to lower survival and/or lack of new oyster settlement
- Positive biodiversity effects – not yet assessed. New recruitment is extremely positive
- Dive monitoring – costly and challenging. DDV with FW lens considerations
- NRW continuing intertidal monitoring - gauge success of the newly recruited oyster settlement in 2022

Next steps

Wales Native Oyster Restoration Project

- **Action plan**
  - Collaboration,
  - Priority locations for restoration,
  - Establish best practice,
  - Legislation and policy,
  - Sourcing and supply
  - Communities, fisheries and aquaculture

published in autumn

- **Final report – to be published soon**

Welsh Marine Treasures (Natur am Byth!)

- **Outreach**
- **Marina broodstock cages**
- **Relaying additional broodstock**

Any questions?

Email:
ben.wray@naturalresourceswales.gov.uk

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SESSION THREE: ACTION

Celine Gamble & Dr Alison Debney, Zoological Society of London

Creating stepping stones to seascape scale recovery

Environment Agency

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Zoological Society of London:

Creating steppingstones to seascape scale recovery

Alison Debney & Celine Gamble

ReMeMaRe Conference - Scarborough July 2023

NATIVE OYSTER NETWORK UK & IRELAND

ENORI ESSEX NATIVE OYSTER RESTORATION INITIATIVE

THE WILD OYSTERS PROJECT #WILDOYSTERS


FLADEN
RESCUE SYSTEM

About us

We work with businesses, communities, NGOs and governments to address major global challenges to biodiversity loss and ensure **a world where wildlife thrives**

ZSL is an **international conservation charity** based in London, founded in 1826

150,000 members of ZSL who contribute to our mission

750+ staff
160 Conservation & Policy

We work for **people, planet and profit** to conserve wildlife

Active in 50 countries with offices in 9 countries – focussed on Africa and Asia

ZSL Directorates include **Conservation, Science & Zoos**

Our global conservation targets

Embed biodiversity at the heart of all decision making

ZSL engages 10 million people, £1 billion of private sector capital and assets and influences 10 Government and 20 business policy processes to drive the systemic change needed for global biodiversity recovery.

Drive the recovery of threatened species

By 2030 we will drive measurable, evidence-based steps towards global recovery for at least 40 highly threatened species for which we have the expertise to contribute to long-term, holistic conservation.

Empower communities to lead wildlife recovery

The recovery of wildlife becomes part of community practice in 10 priority ecosystems by 2030, reaching at least 10,000 households and supporting scalable models of community action for conservation.

Restore degraded ecosystems

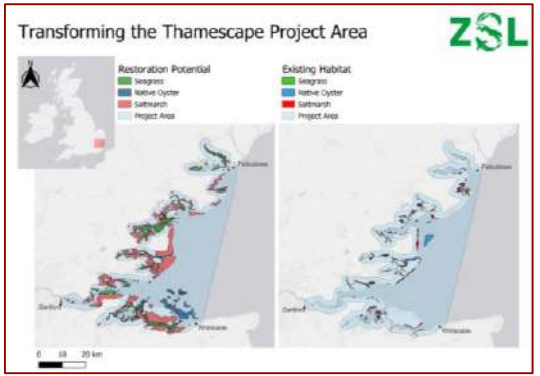
Drive the science and practice of species and ecosystem protection and restoration to improve the status and resilience of at least 10 ecosystems to global environmental change by 2030

Stepping-stones for coastal habitat recovery

Our goal is for there to be more, healthier, resilient and connected coastal and estuarine habitat created through a coordinated and collaborative approach that can be collectively implemented.

We do this through:

1. Active restoration (seagrass, oyster, kelp, saltmarsh)
2. Coordinating seascape-scale recovery
3. Conducting cutting-edge science, feeding into policy
4. Sharing knowledge & building restoration capacity
5. Conservation Finance







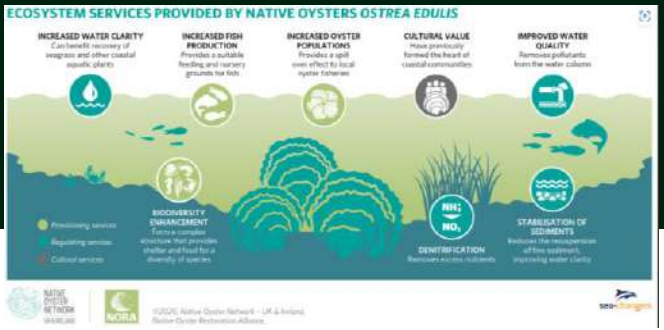
ZSL WHAT WE DO SUPPORT US NEWS & EVENTS ABOUT ZSL

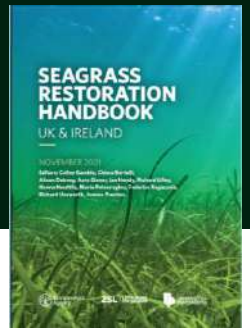
UNIVERSITY OF PORTSMOUTH

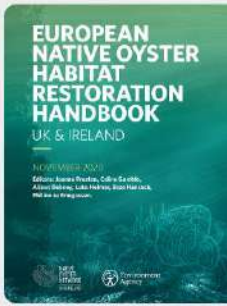
What's On

SYMPOSIUM: ECOLOGICAL CONNECTIVITY ACROSS TEMPERATE COASTAL HABITATS

NORA Native Oyster Restoration Alliance

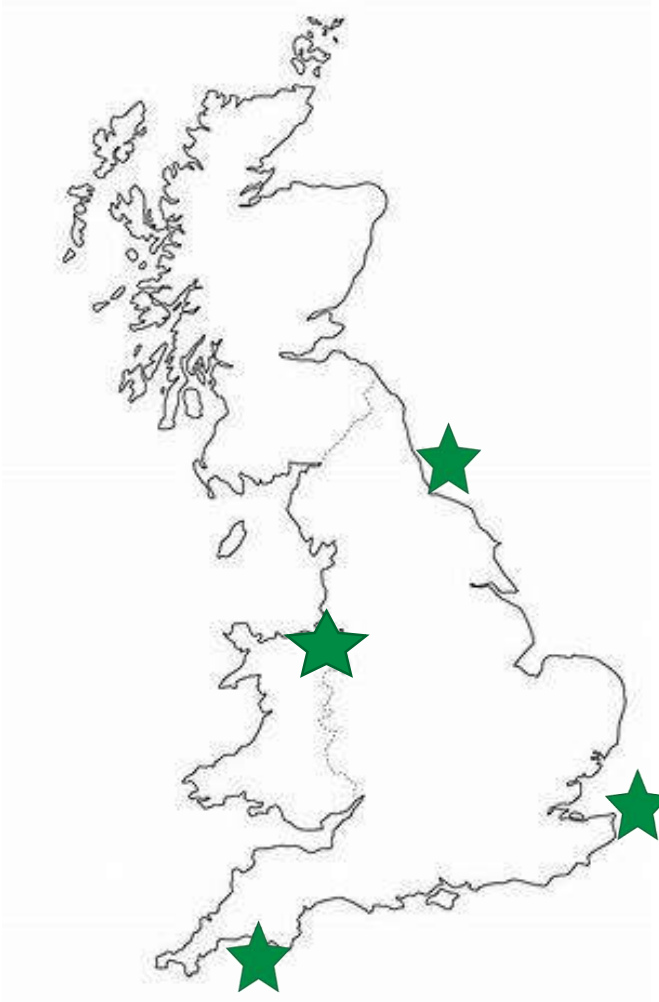






Four coastal recovery hubs

- **Tyne & Wear**, NE England
- **Greater Thames Estuary**
- **Helford**, Cornwall
- **Conwy Bay**, North Wales



Where it all started. So far, we have:

Reduced the pressures by closing the public fishery

Protected the remaining oysters by establishing an MCZ

Working with the knowledge of the oystermen, pioneered the concept of active restoration

Developed an adaptive management plan and had it enshrined in lase through a byelaw – led by KEIFCA

Obtained the first licences for restoration – navigating unchartered territory

Piloted restoration – using novel and traditional approaches

Extensive outreach including targeting children with SEND and recently cages

Piloted spatting ponds for restoration

Shell recycling scheme working with local and London restaurants

Targeted intervention over 2ha of seabed including deposition of 2,000 tonnes of cultch, traditional seabed prep (harrowing)

Deposition of 20,000 mature oysters

ENORI
ESSEX NATIVE OYSTER RESTORATION INITIATIVE

12/09/2023

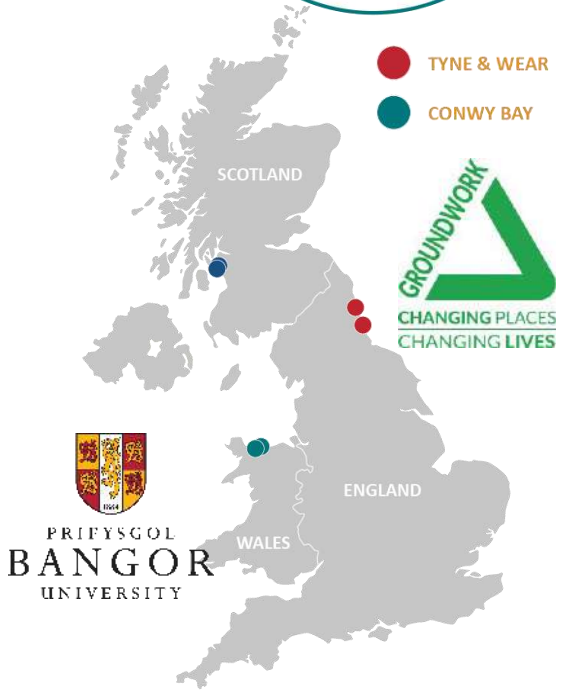
Aim is for the UK seas have self-sustaining populations of native oysters which can in turn provide clean water, healthy fisheries, plentiful biodiversity and re-ignited cultural recognition of the native oyster within the communities we work.

Oyster nurseries

Outreach & engagement

Seabed restoration

- Delivered education sessions to over **12,000 school students**, with an **additional 13,000 students** reached through our online education materials
- Engaged **73,000+** members of the public aiming to inspire and inform on coastal habitat restoration.
- Over **250 volunteer citizen scientists** have contributed **2,000+ volunteer** hours to our project.

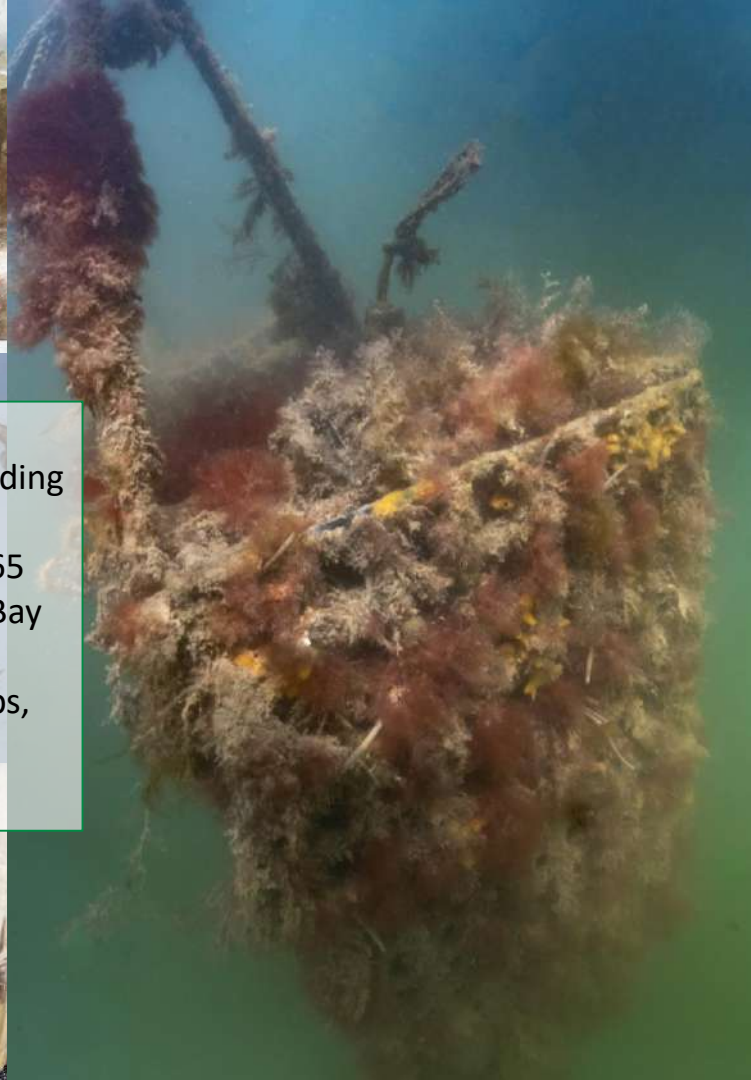


Conwy Bay

- **Site selection surveys** - Hydrodynamic modelling, multibeam surveys, drop down video and grab sampling.
- **Seabed restoration:** Deploying 840 tonnes of cultch material, live native oysters – to create 100m x 75m oyster reef area.
- **Monitoring** – pre and post restoration surveys – multibeam, grab samples, drop down video, BRUV's & spat collectors.

Cronfa Treftadaeth Heritage Fund

Mewn Partneriaeth â **Llywodraeth Cymru**
In Partnership with **Welsh Government**



Oyster nursery monitoring:

- ~2 years of monitoring data – including mobile & sessile species
- 40 unique mobile organisms (19,765 total mobile organisms) in Conwy Bay
- E.g., Blennies, common prawns, European eels, common shore crabs, fifteen spined stickleback
- Data analysis & reporting

Tyne & Wear

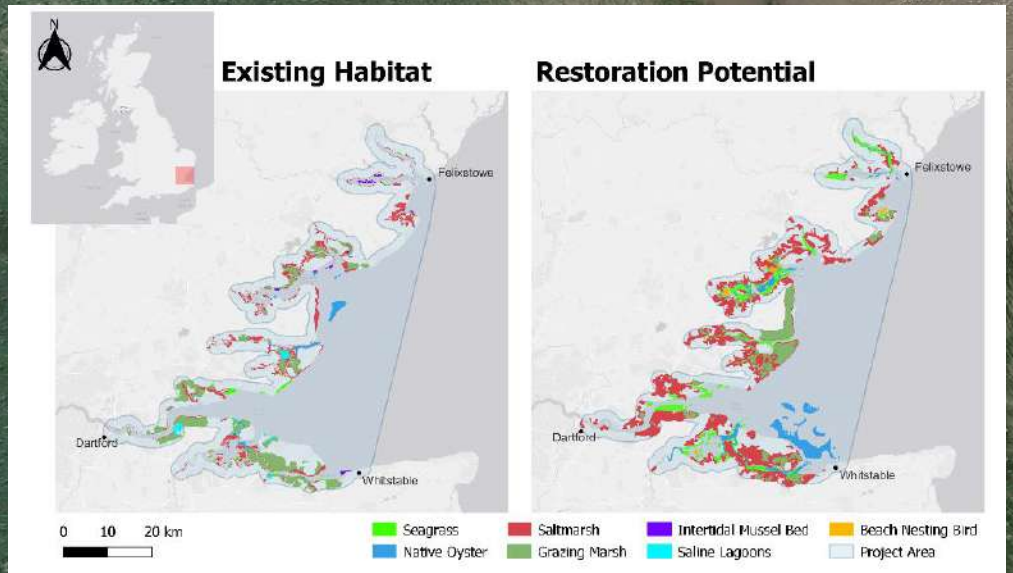
- **Site selection surveys** - Hydrodynamic modelling, multibeam surveys, drop down video and grab sampling.
- **Marine licence** = pending.
- **Seabed restoration:** due to start September ‘23, we have 155 tonnes of scallop shell weathered.
- **Monitoring** – pre and post restoration surveys – multibeam, grab samples, drop down video, BRUV’s & spat collectors.





Restoring the Thamescape

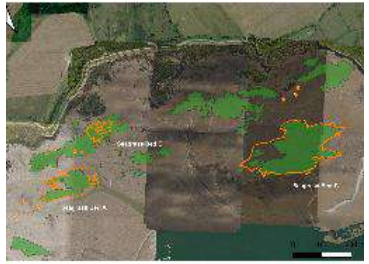
The Goal: To restore coastal habitat in the Greater Thames Estuary at a seascape scale to create cleaner water, sequester and store carbon, increase biodiversity and reconnect communities with their local blue spaces.

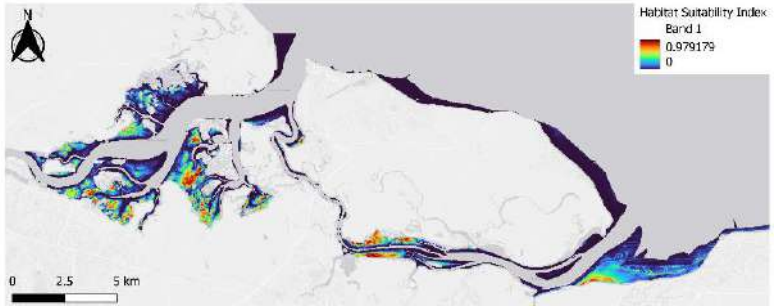


- Seascape scale
- Holistic and integrated approach (moving away from single habitat restoration)
- In partnership

Medway Swale Pilot Project
Baseline and Feasibility Studies

- Intertidal *Zostera* extent and condition assessment
- Native oyster baseline survey
- Water quality monitoring
- Intertidal seagrass habitat suitability model
- Spathe development monitoring
- Habitat Suitability Model





Current Activities

- Trial seagrass restoration techniques
  - Seed-based and transplant methods
  - Seed development monitoring
- Assess Ecosystem services including fish nurseries, carbon sequestration and substrate stability
- Estuary-wid…vat… campaign
- Native oyste…s of… Swale and M…






Transforming the Thames

- Partners:

- This partnership project will seek to bring back the wildlife spectacle of the Thames by re-connecting the fragmented seascape through habitat protection and restoration.

- We will develop a coastal habitat restoration plan for the Greater Thames Estuary at a seascape scale, co-created with, and adopted by local communities across the estuary.

- An Endangered Landscape Programme Planning grant is in, we hear on 14th July.

- If successful we would have 18 months to co-design a coastal habitat restoration plan for the Greater Thames Estuary giving us a blueprint for the future.

Thank you
& any questions

ReMeMaRe

SESSION THREE: ACTION

Dr James Wood, North Sea Wildlife Trusts
Samir Whitaker, Orsted

Wilder Humber

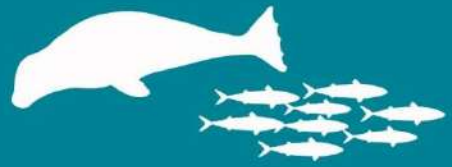
Environment Agency

Scarborough Spa

11-12th July, 2023

OCEAN & COASTAL FUTURES

Yorkshire Wildlife Trust



Wilder Humber

ywt.org.uk

Yorkshire Wildlife Trust is the only charity entirely dedicated to conserving, protecting and enhancing Yorkshire's wildlife and wild places

Yorkshire Wildlife Trust

Restoration and Recovery

- Our vision is for a network of landscape scale conservation programmes which are well-connected, designed at the right scale, and provide the right conditions for species and habitat recovery – **built on the Lawton Principles.**

- We need **bigger** and **bolder** action and can only deliver this through collaboration and **partnership approaches**.

- **'Wilder Humber'** which was built from the ground-up on these principles.

Wilder Humber

Yorkshire Wildlife Trust | Ørsted | Lincolnshire Wildlife Trust

Wilder Humber, a new conservation partnership;

- Ørsted
- Yorkshire Wildlife Trust
- Lincolnshire Wildlife Trust

- Taking forward 2 Humber Coastal Conservation Corridor priority project proposals

- Reflects our joint vision to work towards integrated species and habitat scale restoration.

Yorkshire Wildlife Trust

Wilder Humber SEAGRASS RESTORATION

Seagrass Restoration

- Partnership with Ørsted's **Hornsea Four** team
- Restoration of **up to 30 h.a.**
- Focused within **Spurn Point** protected byelaw area
- Created a **dedicated seagrass team and facility**
- Planting over **4 hectares** per year

Yorkshire Wildlife Trust

Wilder Humber SEASCAPE 2030

Seascape 2030

- **5-year** demonstrators at Spurn Point & Horseshoe Point
- Relaying **500,000** native oysters
- Restoring **4 h.a**. of dwarf seagrass
- Enriching **2 h.a** of impoverished saltmarsh
- Repairing **0.25 h.a.** sand dune.
- Does combined restoration enhance benefits and improve restoration success?

Research & Monitoring

- Suite of technical monitoring throughout programme;

1. Fish, avian, invertebrate surveys
2. Environmental & Ecosystem services
3. Geomorphology and hydrological impacts
4. Community perception & engagement

Wilder Humber - Outcomes

- Broadscale seagrass restoration, in-fill and expansion
- Positive influence of combined habitat restoration
- Long-term evaluation of impact on multiple metrics
- Opportunity for wider broadscale implementation
- Championing nature-based solutions to the community and beyond - The Deep

Ørsted's Biodiversity Ambition

Net Positive Impact

Samir Whitaker - Biodiversity Lead Specialist

19th June, 2023

Ørsted goals on biodiversity and sustainability

2025 Carbon neutral business

2040 Carbon neutral footprint

SCIENCE BASED TARGETS

2030 No later than 2030, all projects commissioned must have net positive biodiversity impact

Today Ban on landfilling of wind turbine blades

Ørsted

How we'll go about meeting our net positive ambition by 2030

2021
Launch of net positive ambition and Ørsted's biodiversity programme

2021
- Develop full programmatic approach
- Identify asset projects with COD before 2030
- Review available biodiversity indicators to measure footprint

2022-2023
- Examine existing and future offsetting actions across different asset types
- Select preferred indicator capable of measuring our biodiversity footprint across multiple markets and businesses
- Secure strategic delivery partners

2023-2029
Produce net positive action plans for all asset projects in scope

2030
Asset projects with net positive impact commissioned

We have experience but need to increase our efforts

Borkum Riffgrund 2

Bubble curtains were deployed during installation of the monopile foundations, helping protect marine wildlife

2018

2020

Installation of four purpose-build cod artificial reefs to improve habitat for cods

Borssele

Anholt

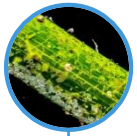
Collaboration with WWF to install 10 biohuts at offshore wind farm to provide shelter to juvenile fish

2021

2021

Building four artificial nesting towers for black-legged kittiwakes to protect birds

Hornsea 3



NPI Ambition

Launched global ambition to have a Net Positive Impact on biodiversity at all projects commissioned from 2030

2022

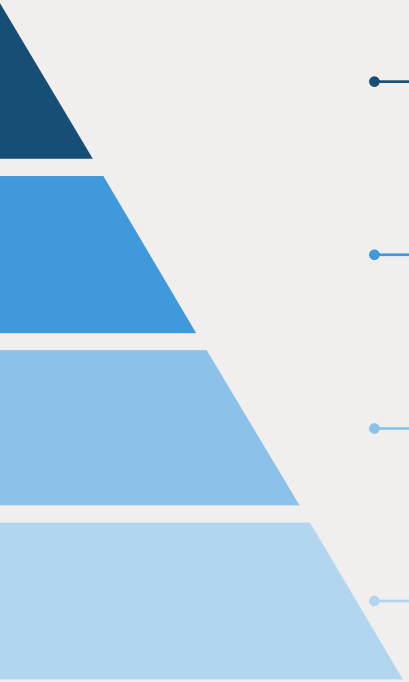
ReCoral project trials growing coral on offshore wind turbines to create new offshore habitat

6+ Year Wilder Humber project launched

2023 onwards

Work towards delivering our net-positive ambition

Applying the mitigation hierarchy



Compensation

- Compensates for unavoidable residual biodiversity loss from development projects, achieving a net gain of biodiversity
- *Ørsted example:* Deploying artificial cod pipes at Borssele

Restoration

- Aims to return an area to the original ecosystem present before impact
- *Ørsted example:* Restoring areas of saltmarsh habitat temporarily disturbed during intertidal cable installation

Minimisation & mitigation

- Aims to minimise and mitigate for impacts that cannot be avoided
- *Ørsted example:* Using noise mitigation technology (bubble curtains) during installation

Avoidance

- Avoids disturbance of biodiversity from the outset during development
- *Ørsted example*: Avoidance of sensitive benthic habitats along offshore cable routes

Source: International Union for Conservation of Nature; OECD; The Biodiversity Consultancy

Biodiversity Initiative examples: Humber Seascape – UK

Description

- We've partnered with the Lincolnshire and Yorkshire Wildlife Trusts to restore biodiversity around the Humber Estuary

- Restoring seagrass and salt marsh and introducing half a million native oysters to improve the health and resilience of the estuary's ecosystem

> 10 acres of saltmarsh will be restored

>15 acres of seagrass will be planted

A further 74 acres of seagrass will be planted and restored as part of our Hornsea 4 project

500,000 native oysters will be introduced

Coastal sand dune will be revegetated

Tracking outcomes

- Measuring multiple outcomes including biodiversity, carbon sequestration using a variety of techniques

- Gain key insights into the implementation and restoration

Assessing biodiversity in offshore seaweed farming

Description

- We've partnered with SeaGrown, an established seaweed SME off the coast of Scarborough
- Aiming to develop a standard methodology to assess biodiversity uplift at offshore seaweed farms
- Over 2022 we assessed a range of technologies including eDNA, ROV, drop-down cameras, and direct observations for biodiversity

Tracking outcomes

- Based on these results, Phase 2 will consider applying the methodology to a commercial-scale seaweed farm to track change over time
- The goal is to understand the viability of

Supporting Fisheries Research

- Ørsted contributed to the funding of the Yorkshire Marine Research Centre which was implemented by the Holderness Fishing Industry Group (HFIG) in 2020.
- The research centre is a community laboratory and research hatchery on the east coast, allowing scientists to conduct research on fishing grounds in the North Sea
- Ørsted's East Coast Projects Fund (ECPF) has also funded a number of projects at the research centre, which have been suggested by

Lobster population study

- In 2013, Ørsted started working with HFIG to conduct studies to investigate the effect of fishing in a wind farm (Westermost Rough).
- Westermost Rough wind farm, off the Holderness coastline in Yorkshire, is in one of the most productive lobster fishing grounds in Europe.
- Ørsted hoped to better understand how the two industries can work together and improve coexistence.
- After 6 years, the results of the study indicate that there are no observable differences in the size distribution, increased catch rates of lobsters and consistent economic return for fishers with no observable effects of concern on crab populations.

Biodiversity Initiative examples: Anholt 3D Reef Structures

Description

- The project was created as a part of Ørsted's partnership with WWF Denmark with the purpose of pilot testing the reefs at on offshore windfarm
- The reefs will provide habitat for cod to spawn
- **Cod play a key part in marine ecosystem**, controlling populations of crustaceans and sea urchins and act as a key prey species for sharks, dog fish and other predators.
- By ensuring a safe spawning ground for cod, the projects hopes to **increase the abundance of cod** around Grenaa and in Kattegat, and thus increasing biodiversity in the area

Tracking outcomes

- Measuring benefits for multiple biodiversity features against a detailed baseline
- Assess the feasibility of scaling up such initiatives in other operational locations

Questions?

ReMeMaRe

SESSION THREE: ACTION

Louise MacCallum, Blue Marine Foundation

The Solent Seascape Project: lessons from our first year

Environment Agency

Scarborough Spa

11-12th July, 2023

OCEAN & COASTAL FUTURES

Solent Seascape Project

Louise MacCallum
Solent Project Manager
Blue Marine Foundation

BLUE MARINE FOUNDATION

SOLENT SEASCAPE PROJECT

Photo: Shaun Roster

BLUE MARINE FOUNDATION

Hampshire & Isle of Wight Wildlife Trust

NATURAL ENGLAND

UNIVERSITY OF PORTSMOUTH

Coastal Partners

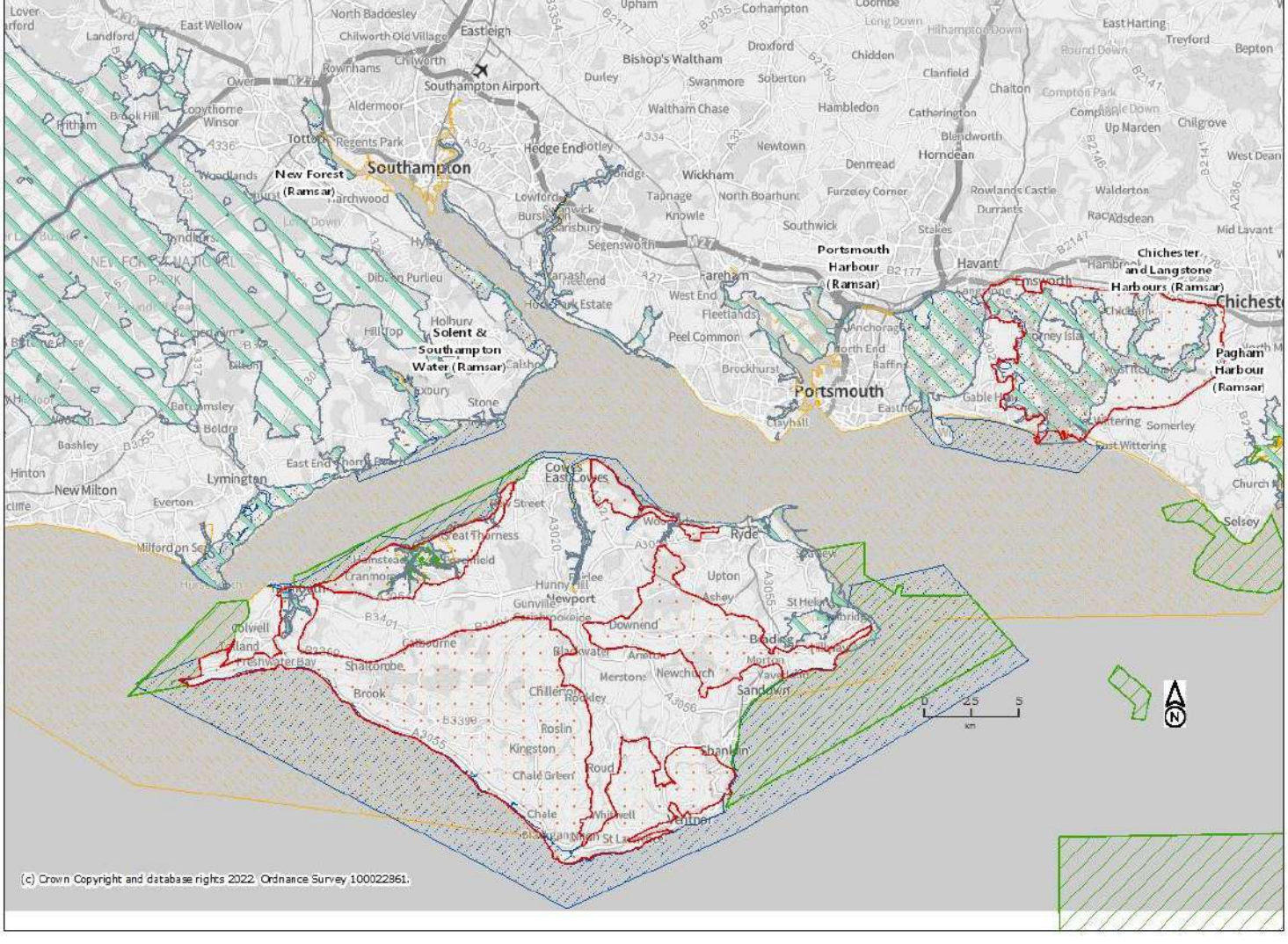
Isle of Wight estuaries

RSPB

PROJECT SEAGRASS

Environment Agency

CHICHESTER HARBOUR
PROTECTION & RECOVERY OF NATURE



Ramsar Sites (England)

Marine Conservation Zones (England)

Designated

Special Areas of Conservation (Marine Components GB)

Candidate

Designated

Possible

Special Protection Areas (Marine Components GB)

Classified

Potential

Projection = OSGB36
xmin = 400100
ymin = 72740
xmax = 507500
ymax = 123800

0 4 8
km


349

Our long-term vision is to protect and restore the Solent seascape, based on historic records. We will tip the balance of the Solent seascape from a degraded state to a naturally expanding, connected and productive ecosystem.


Saltmarsh


Seagrass
SOLENT SEASCAPE PROJECT


Seabird habitat


Oysters


1.Better protection and management of existing habitats
2.Active Restoration
3.Scientific Monitoring
4.Policy Advocacy and Sustainable Financial Mechanisms
5.Community Engagement
SOLENT SEASCAPE PROJECT
SOUTHAMPTON
PORTSMOUTH HARBOUR
PORTSEA ISLAND
HAYLING ISLAND
LANGSTONE HARBOUR
CHICHESTER HARBOUR
Thorney Island
SOLENT
THE SOLENT
SPITHEAD
ISLE OF WIGHT
Newport
Yarmouth
Lymington
Christchurch Bay
Hengistbury Head
Needles Channel
Dolphin Sand
Brighstone Holiday Village
FIRING PRACTICE AREA
Adjoining Folio SC5605

Lesson 1: The importance of pre-engagement

SOLENT SEASCAPE PROJECT

Lesson 2: The avoidance of stakeholder fatigue

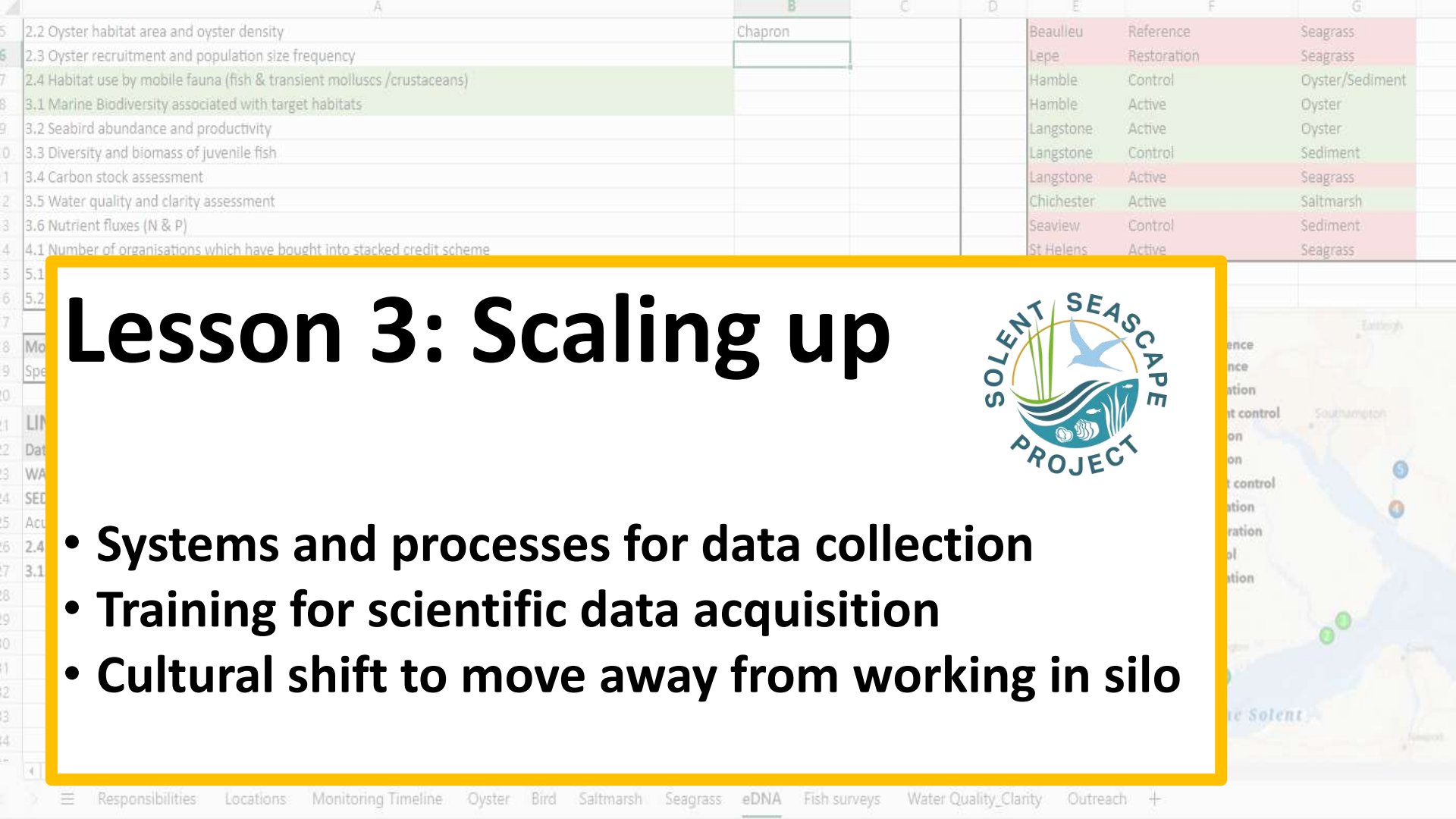
Seascape scale restoration project incorporating nature-based solutions, community engagement, stakeholder co-design, scientific monitoring, sustainable financial mechanisms and policy advocacy.

Co-develop green investment options to enable organizations to integrate the economics of biodiversity into their decision-making. Work with key interested parties to develop usable and transferrable outputs in order to ensure sustainable change.

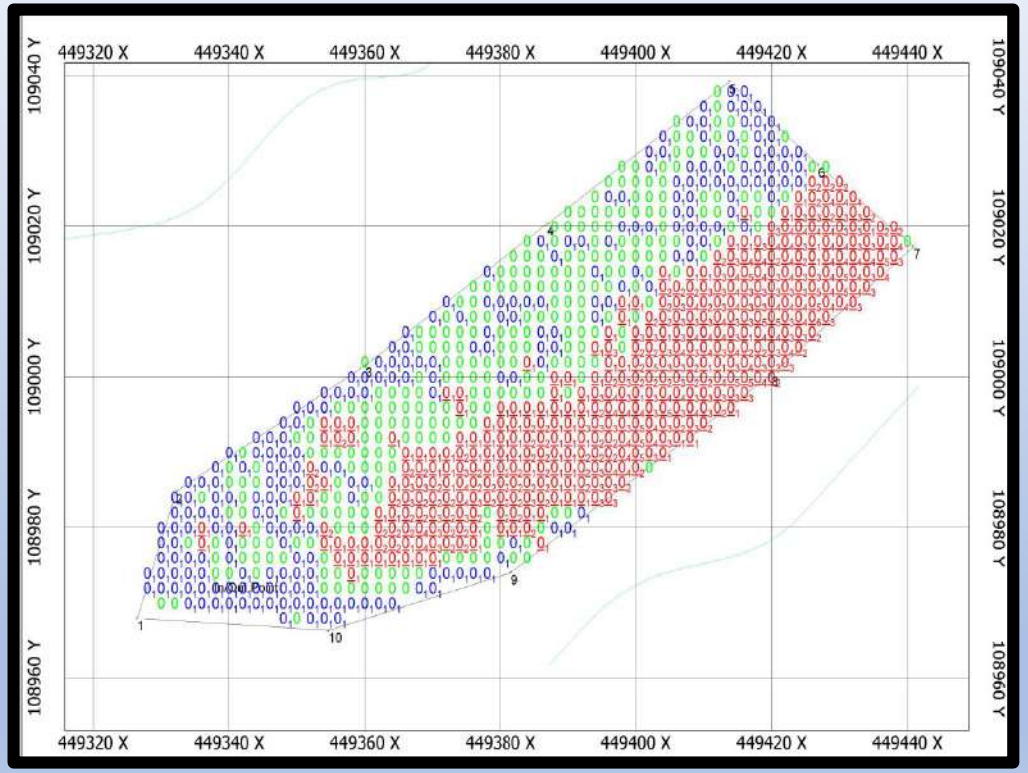
A project that brings together marine scientists and business leaders to help improve the health of the UK coastline. Researchers hope the initiative will help tackle biodiversity loss in coastal regions and mitigate the effects of climate change.

Lesson 3: Scaling up

- Systems and processes for data collection
- Training for scientific data acquisition
- Cultural shift to move away from working in silo



Lesson 4: On paper versus on the ground



SOLENT SEASCAPE PROJECT


Thankyou!
Any questions?
louisem@bluemarinefoundation.com
@solentseascapeproject
SOLENT SEASCAPE PROJECT

ReMeMaRe Conference 2023

Action

Session 3

OCEAN & COASTAL FUTURES

ReMeMaRe

#ReMeMaRe23

Environment Agency


UK
Seagrass
Symposium
9th - 10th of November
National Marine Aquarium, Plymouth

ReMeMaRe

Panel Debate

Slido

https://www.slido.com/

#4089543

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PANEL DEBATE

Amelia Newman, Ocean Conservation Trust
Mike Williams, Environment Agency
Natasha Lough, Natural Resources Wales
Celine Gamble & Dr Alison Debney, Zoological Society of London
Dr James Wood, North Sea Wildlife Trusts & Samir Whitaker, Orsted
Louise MacCallum, Blue Marine Foundation

Environment Agency

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11-12th July, 2023

OCEAN & COASTAL FUTURES

With thanks to our sponsors

With thanks to our speakers

Conference Details

http://coastal-futures.net/rememare-2023

Twitter: #ReMeMaRe23
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ReMeMaRe

WINE RECEPTION

17:30 – 19:30

Environment Agency

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