



ReMeMaRe Conference 2024 Restoring Estuarine & Coastal Habitats

10 – 11 July 2024





ReMeMaRe Conference 2024 10 - 11 July, Scarborough



OCEAN & COASTAL

Graham Underwood, Chair of the UK Blue Carbon Evidence Partnership and Professor at the University of Essex REWRITE : <u>REWilding</u> and <u>Restoration of InterTIdal</u> <u>sediment Ecosystems</u>

ReMeMaRe, Scarborough, Graham J.C. Underwood, University of Essex 17-18th July 2024







Intertidal soft sediment

- Form seascapes covering > 10 000 km² along the 35 000 km in Europe
- Provide multiple ecosystem services (ES) with a great potential to cope with the biodiversity-climate-society crisis
- Three key habitats:









Intertidal soft sediment

Nevertheless:

- Intertidal coastal area continue to disappear, to be fragmented and to be polluted
- These ecosystems are often overlooked by research actions and management
- High potential ecological and geomorphological connectivity
- Limited knowledge about their functions and services => inability to predict with low uncertainty their trajectories by 2050



Current context







Current context



carbon neutrality, climate resilience biodiversity support and social expectations for 2050





Rewrite Oct 2023 – Sept 2028,

The overall aim of REWRITE is to expand innovative approaches and nature-based solutions for rewilding intertidal soft sediment seascapes, bridging environmental needs (carbon sequestration, climate adaptation and biodiversity support) and societal expectations and uses



Rewrite key challenges

- Reducing the uncertainty of the future trajectories of these seascapes by 2050
- Assessing the cascading effect. Understanding the propagation of the effect of the increase of CO₂, temperature, sea level rise, extreme events and the loss of biodiversity from the local to the global scale
- Assessing how society engages to agree upon and / or overcome the trade-offs of rewilding, considering environmental benefits and societal pressures





- Climate gradient (space for time)
- Varied level of recognition (UNESCO to national designation)
- REWRITE

- Varied status: Urbanized, restored (rewilded), abandoned
- Varied stakeholder engagement









Rewrite specific objectives

- <u>SO1</u>: Analyse the changes in ISS functioning within their past and current trajectories
- <u>SO2</u>: Strongly engage stakeholders
- <u>SO3</u>: Estimate and upscale trajectories of ISS seascape changes from the local to the European shoreline
- <u>SO4</u>: Establish protocols (*i.e.* tools and methods) for successful ISS seascape rewilding to ensure a high ecological and societal co-benefit / low-cost ratio.









Expected results

Ecological and social Integrity











www.rewriteproject.eu

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Thank you





ReMeMaRe Conference 2024 10 - 11 July, Scarborough



Q&A with **Graham Underwood**, UK Blue Carbon Evidence Partnership and University of Essex

Slido for extra questions QR code or www.slido.com Code: **4741966**





ReMeMaRe Conference 2024

Restoration Through Collaboration Session

Chair: Amy Pryor, Thames Estuary Partnership

- **Daryl Burdon**, Daryl Burdon Ltd. Marine Research
- Emma Magee, Environment Agency
- Giulia Cecchi, Marine Conservation Society
- Karen Daglish, South Tyneside Council
- Natasha Bradshaw



ReMeMaRe Conference 2024

Restoration Through Collaboration Session

Daryl Burdon, Daryl Burdon Ltd. Marine Research Supporting Coastal Communities 'Sea the Value' of Marine Restoration Initiatives





Supporting Coastal Communities 'Sea the Value' of Marine Restoration Initiatives

Dr Daryl Burdon

T. Potts (UoA), A. Van Der Schatte Olivier (UoP), K. Gormley (UoA), J. Anbleyth-Evans (UoA), V. Paxton (MFCP), G. Watson (UoP), J. Preston (UoP), Antony Ndah (PML) & S. Watson (PML)

ReMeMaRe Conference, Scarborough Spa, 10-11 July 2024

www.seathevalue.org







Natural Environment Research Council



Economic and Social Research Council



Marine Research, Teaching & Consultancy



Sea the Value Aims & Project Team

- Quantify the interlinkages between marine biodiversity, natural capital, and ecosystem services, taking quantity & quality into consideration.
- Determine the economic and social values associated with the benefits of <u>carbon sequestration</u> and <u>bioremediation of</u> <u>waste</u> and apply these values to support natural capital accounting and community benefits.
- Connect the ecological, economic, and social values of biodiversity to decision-making through co-design and supporting of green investment to enhance biodiversity.



The Cromarty Firth Photo: D. Burdon



The Solent Photo: A. Van Der Schatte Olivier



















Participatory Mapping Method



- The Participatory Mapping approach is driven by the stakeholders at every stage through the workshops.
- Identifies and maps features and benefits (Workshop #1).
- Explores the trade-offs between benefit provision under different management scenarios (Workshop #2).
- Identifies and scores linkages between beneficiaries and benefits (<u>Workshop #3</u>).











Beneficiaries Mapping

						Societ	al Benef	its (SB)					Ab	iotic Be	nefits (A	4B)	Econon	nic Bene	fits (EB)	Other	Benefit	s (OB)
		SB1	SB6	SB7	SB8	SB9	SB10	SB11	SB12	SB13	SB14	SB15	AB1	AB2	AB3	AB4	EB1	EB2	EB3	OB1	OB2	OB3
Reneficiaries		:ood (wild, farmed) / Drink	Healthy climate (Carbon Sequestration)	orevention of coastal erosion	iea defence	Naste burial / removal / neutralisation	fourism / Nature Watching	piritual and cultural well-being	Aesthetic benefits	iducation, research	bhysical health benefits	sychological health benefits	Vind energy	Vater resources (quality and quantity)	Archaeology / Geology / Geomorphology	ransport	place to live	alace to work	ndustry	<pre>Habitat / species biodiversity</pre>	ntrinsic value	unctioning ecosystems
	Mean	0	1	1	1	1	3	2	2	1	3	3	0	2	1	2	2	2	1	1	3	2
Cromarty Boat Club	Range	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Moray Firth Coastal	Mean	1	2	1	1	1	3	2	1	3	1	1	1	2	1	1	2	3	2	2	2	2
Partnership	Range	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0
SEDA	Mean	1	3	2	3	3	0	0	1	2	1	1	1	3	1	1	1	1	2	3	1	3
SEFA	Range	0	0	1	0	0	0	0	1	0	1	1	0	0	0	1	1	1	0	0	0	0
Highland Council	Mean	1	2	2	3	1	2	1	2	3	2	2	2	2	2	3	3	3	2	2	1	3
	Range	0	2	1	1	2	0	1	1	1	1	1	3	2	0	0	0	1	1	1	1	1
Port of Cromarty Firth	Mean	0	1	1	2	1	1	1	1	1	1	1	2	1	1	3	0	3	3	1	1	1
	Range	1	2	0	2	1	2	2	3	2	2	2	3	0	2	1	1	0	0	1	2	2
Whyte & Mackay	Mean	3	2	1	2	2	1	1	1	2	1	1	0	2	0	1	0	3	3	1	1	2
	Range	0	2	1	2	1	2	3	3	1	2	2	1	2	1	3	1	1	0	1	2	1
Scottish Water	Mean	1	2	1	1	2	0	0	0	2	1	1	0	3	1	1	1	1	2	1	1	2
	Range	3	2	3	3	3	0	1	0	3	2	3	1	0	2	3	1	1	2	1	1	2
RSPB	Mean	0	3	3	2	2	3	2	2	3	1	3	1	3	1	1	1	1	1	3	2	3
	Range	0	0	1	2	2	0	1	2	1	1	1	2	1	2	2	0	1	2	0	1	0
Moray Ocean Community	Nean	0	3	2	1	2	2	2	2	3	3	3	0	3	1	1	1	2	1	3	3	3
	Moon	1	1	2	1	2	3	1	2	2	2	1	1	1	2	1	2	2	1	0	2	0
NatureScot	Range	2	0	2	2	1	2	2	2	2	2	2	2	0	2	2	1	1	3	0	1	0
	Mean	1	2	-	1	1	-	0	0	2	0	0	2	2	1	1	0	1	3	3	1	2
Marine Directorate	Range	1	2	0	0	0	0	1	0	2	0	0	3	1	2	1	1	0	0	1	1	2
	Mean	1	2	1	1	2	1	1	1	3	1	1	2	2	1	1	0	2	2	3	2	3
Academia	Range	1	1	0	0	2	2	0	1	0	1	1	3	1	2	1	1	0	1	1	1	1
	Mean	2	2	3	2	2	1	2	2	1	1	2	1	2	2	2	3	3	2	2	2	3
Landowners	Range	1	0	1	2	1	1	1	0	1	1	2	2	1	0	3	0	0	1	0	2	1
	Mean	2	1	2	1	1	3	2	3	2	3	3	0	2	2	3	2	2	2	2	2	2
Black Isle Partnership	Range	1	1	1	1	0	0	1	1	0	1	1	1	1	0	1	2	1	1	1	2	1

Key

Mean 0

1 2

		1	2	3.0	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
		SB1	SB5	SB6	SB7	SB8	SB9	SB10	SB11	SB12	SB13	SB14	SB15	AB2	AB3	EB1	EB2	EB3	OB1	OB2	OB3	OB4
		Food (wild, farmed) / Drink	Medicines and blue biotechnology	Healthy climate (Carbon Sequestration)	Prevention of coastal erosion	Sea defence	Waste burial / removal / neutralisation	Tourism / Nature Watching	Spiritual and cultural well-being	Aesthetic benefits	Education, research	Physical health benefits	Psychological health benefits	Water resources (quality and quantity)	transport	Place to live	Place to work	Industry	Connectivity	Biodiversity	Sense of space	Intrinsic Value
Locks Sailing Club	Mean	0	0	1	2	2	1	3	3	2	2	3	3	3	2	1	1	0	1	1	3	3
	Range	0	0	1	2	0	2	1	1	1	2	0	0	0	0	1	0	1	1	0	0	0
Chichester Harbour Conservancy	Mean	2	0	3	3	3	2	3	2	3	3	1	2	3	3	1	3	2	3	3	3	2
	Range	1	0	0	0	1	1	0	1	0	0	1	0	0	1	1	0	1	0	0	0	1
Environment Agency	Mean	1	1	3	3	3	3	2	1	1	3	1	1	3	1	1	2	1	3	3	1	1
	Range	0	0	0	1	0	0	0	0	1	0	0	0	0	0	2	2	1	1	1	0	0
Blue Marine Foundation	Mean	1	0	3	2	1	2	2	2	2	3	2	2	3	0	1	1	2	3	3	3	3
	Range	0	1	0	1	2	1	2	1	2	0	2	1	1	1	1	0	1	1	0	1	0
Langstone Harbour Office	Mean	1	0	2	3	2	1	3	2	2	2	2	1	3	3	1	2	2	2	2	2	3
	Range	1	0	1	1	2	2	1	2	2	3	1	2	0	1	0	2	2	0	2	3	1
Hampshire and Isle of Wight Wildlife Trust	Mean	1	0	3	2	2	2	3	2	2	3	2	3	3	1	1	1	1	3	3	3	3
	Range	1	1	0	2	2	1	0	1	1	0	2	1	1	0	0	1	1	1	0	0	0
Natural England	Mean	1	0	3	3	3	2	2	2	1	3	2	2	3	1	1	2	1	3	3	2	3
	Range	1	1	0	0	1	1	1	1	1	0	1	1	1	1	2	2	1	0	0	2	1
The Crown Estate	Mean	1	1	2	2	2	2	1	0	1	2	1	1	2	1	1	2	3	2	2	1	2
	Range	1	2	3	3	3	1	2	1	1	1	1	1	1	3	2	1	0	2	1	1	1
Royal Society for the Protection of Birds	Renas	2	1	3	3	3	2	3	2	2	3	2	3	2	1	1	2	2	3	3	3	3
IECAr	Mean	2	1	2	1	1	2	2	1	1	2	2	1	1	1	1	1	1	2	2	1	1
IFCAS	Range	0	2	2	2	2	2	1	3	1	1	1	2	0	2	1	1	0	2	2	1	2
Rewilding Britain	Mean	2	0	2	2	1	2	3	2	2	3	1	2	3	0	1	1	2	3	3	3	3
	Range	2	1	3	1	2	1	0	1	2	0	1	0	1	0	1	2	1	1	0	0	0
Academia	Mean	1	2	2	1	1	1	1	1	1	3	2	2	2	1	1	2	1	2	2	1	2
	Range	2	3	1	1	1	1	2	1	1	0	1	1	1	2	2	1	2	3	3	2	3
Landowners	Mean	2	0	2	2	2	1	1	3	3	1	2	3	2	2	3	2	2	2	2	2	2
	Range	1	0	3	1	1	3	2	1	1	2	2	1	3	3	1	1	0	1	1	0	1
Hampshire County Council	Mean	0	0	3	2	2	2	1	1	1	2	1	1	2	2	3	2	2	1	2	2	2
	Range	1	1	1	3	1	1	2	2	2	1	2	2	0	2	0	2	2	2	1	2	2









NATURAL FEATURES

BENEFITS

BENEFICIARIES







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I SBI Food (wild, farmed) / Drink		ule scella		2 SB5	Medicines and blue biotechnology		•>	
2 SB6 Healthy climate (Carbon Sequestration)				3 SB6	Healthy climate (Carbon Sequestration)		-	
3 SB/ Prevention of coastal erosion				4 SB7	Prevention of coastal erosion		•	
		ssessmeni	S	5 SB8	Se a defence		•) >
5 SB9 Waste burial / removal / heutralisation				6 SB9	Waste burial / removal / neutralisation			
7 SB10 Fourism / Nature watching				7 SB10	Tourism / Nature Watching		•	4 •
SB11 Spiritual and cultural well-being		Trada offe	• • • •	8 SB11	Spiritual and cultural well-being		•) >
0 SP12 Education records		II aue-uns		9 SB12	Aesthetic benefits		•	
10 SB14 Deviced health henefits				10 SB13	Education, research			
10 3014 Physical health benefits				11 SB14	Physical health benefits		••	•
12 AB1 Wind energy				12 SB15	Psychological health benefits		***	
13 AB2 Water resources (quality and quantity)				A82	Water resources (quality and quantity)		•	
14 AB3 Archaeology / Geology / Geomorphology	. Co dovolopod			AB3	transport		***	
15 AB4 Transport	_ Co-developed	Coastal Managed	Native Oyster	EB1	Place to live			
16 EB1 Place to live ●>	 Scenarios with 	Realignment	Restoration	EB2	Place to work			
17 EB2 Place to work	Stakeholders	Keanginnent	Restoration	EB3	Industry	•	····*	
18 EB3 Industry	-			OB1	Connectivity			
19 OB1 Habitat / species biodiversity	-		Bioremediation of	OB2	Biodiversity			
20 OB2 Intrinsic value		Carbon Sequestration	bioremediation of	OB3	Sense of space			
21 OB3 Functioning ecosystems	Benefits of Interest	(+ wider benefits)	waste	OB4	Intrinsic Value			
-2 -1 0 +1	-	(* while in benefits)	(+ wider benefits)					
				_				
Benefits -2 -1 0 +1 1 SB1 Food (wild, farmed) / Drink	Cromarty Firth	\checkmark	 ✓ 	1 SB1	-2 Food (wild, farmed) / Drink	-1 0	+1	+2
Benefits -2 -1 0 +1 1 SB1 Food (wild, farmed) / Drink 2 SB6 Healthy climate (Carbon Sequestration)	Cromarty Firth	\bigcirc	~	1 SB1 2 SB5	-2 Food (wild, farmed) / Drink Medicines and blue biotechnology	-1 0	+1	+2 >?
Benefits -2 -1 0 +1 1 SB1 Food (wild, farmed) / Drink 2 SB6 Healthy climate (Carbon Sequestration) 3 SB7 Prevention of coastal erosion	Cromarty Firth		~	1 SB1 2 SB5 3 SB6	-2 Food (wild, farmed) / Drink Medicines and blue biotechnology Healthy climate (Carbon Sequestration)	-1 0	+1	+2
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Benefits -2 -1 0 +1 1 SB1 Food (wild, farmed) / Drink 2 SB6 Healthy climate (Carbon Sequestration) 3 SB7 Prevention of coastal erosion 4 SB8 Sea defence 5 SB9 Waste burial / removal / neutralisation	Cromarty Firth			1 SB1 2 SB5 3 SB6 4 SB7 5 SB8	-2 Food (wild, farmed) / Drink Medicines and blue biotechnology Healthy climate (Carbon Sequestration) Prevention of coastal erosion Sea defence	-1 0	+1	+2
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Benefits -2 -1 0 +1 1 SB1 Food (wild, farmed) / Drink ••••• 2 SB6 Healthy climate (Carbon Sequestration) ••••• 3 SB7 Prevention of coastal erosion ••••• 4 SB8 Sea defence ••••• 5 SB9 Waste burial / removal / neutralisation ••••• 6 SB10 Tourism / Nature Watching ••••• 7 SB11 Spiritual and cultural well-being •••••	Cromarty Firth The Solent	 	 ✓ 	1 SB1 2 SB5 3 SB6 4 SB7 5 SB8 5 SB9 7 SB10	-2 Food (wild, farmed) / Drink Medicines and blue biotechnology Healthy climate (Carbon Sequestration) Prevention of coastal erosion Sea defence Waste burial / removal / neutralisation Tourism / Nature Watching	-1 0	+1	+2
Benefits -2 -1 0 +1 1 SB1 Food (wild, farmed) / Drink ••••• 2 SB6 Healthy climate (Carbon Sequestration) ••••• 3 SB7 Prevention of coastal erosion ••••• 4 SB8 Sea defence ••••• 5 SB9 Waste burial / removal / neutralisation ••••• 6 SB10 Tourism / Nature Watching ••••• 7 SB11 Spiritual and cultural well-being ••••• 8 SB12 Aesthetic benefits ••••••	Cromarty Firth The Solent	 ✓ ✓ 	 ✓ ✓ 	1 SB1 2 SB5 3 SB6 4 SB7 5 SS8 5 SS8 5 SB9 7 SB10 3 SB11	-2 Food (wild, farmed) / Drink Medicines and blue biotechnology Healthy climate (Carbon Sequestration) Prevention of coastal erosion Sea defence Waste burial / removal / neutralisation Tourism / Nature Watching Spiritual and cultural well-being	-1 0	+1	+2
Benefits -2 -1 0 +1 1 SB1 Food (wild, farmed) / Drink •••• 2 SB6 Healthy climate (Carbon Sequestration) •••• 3 SB7 Prevention of coastal erosion •••• 4 SB8 Sea defence ••••• 5 SB9 Waste burial / removal / neutralisation •••• 6 SB10 Tourism / Nature Watching •••• 7 SB11 Spiritual and cultural well-being •••• 8 SB12 Aesthetic benefits ••••• 9 SB13 Education, research ••••	Cromarty Firth The Solent			1 SB1 2 SB5 3 SB6 4 SB7 5 SB8 5 SB8 5 SB9 7 SB10 8 SB11 9 SB12	-2 Food (wild, farmed) / Drink Medicines and blue biotechnology Healthy climate (Carbon Sequestration) Prevention of coastal erosion Sea defence Waste burial / removal / neutralisation Tourism / Nature Watching Spiritual and cultural well-being Aesthetic benefits	-1 0	+1	+2
Benefits -2 -1 0 +1 1 SB1 Food (wild, farmed) / Drink • 2 SB6 Healthy climate (Carbon Sequestration) • 3 SB7 Prevention of coastal erosion • 4 SB8 Sea defence • 5 SB9 Waste burial / removal / neutralisation • 6 SB10 Tourism / Nature Watching • • • • • • • • • • • • • • • • • • •	Cromarty Firth The Solent			1 SB1 2 SB5 3 SB6 4 SB7 5 SB8 5 SB9 7 SB10 8 SB11 9 SB12 10 SB13	-2 Food (wild, farmed) / Drink Medicines and blue biotechnology Healthy climate (Carbon Sequestration) Prevention of coastal erosion Sea defence Waste burial / removal / neutralisation Tourism / Nature Watching Spiritual and cultural well-being Aesthetic benefits Education, research	-1 0	+1 	+2
Benefits -2 -1 0 +1 1 SB1 Food (wild, farmed) / Drink • 2 SB6 Healthy climate (Carbon Sequestration) • 3 SB7 Prevention of coastal erosion • 4 SB8 Sea defence • 5 SB9 Waste burial / removal / neutralisation • 6 SB10 Tourism / Nature Watching • 7 SB11 Spiritual and cultural well-being • 8 SB12 Aesthetic benefits • 9 SB13 Education, research • 10 SB14 Physical health benefits • 11 SB15 Psychological health benefits •	Cromarty Firth The Solent			1 SB1 2 SB5 3 SB6 4 SB7 5 SB8 5 SB9 7 SB10 8 SB11 9 SB12 10 SB13 11 SB14	-2 Food (wild, farmed) / Drink Medicines and blue biotechnology Healthy climate (Carbon Sequestration) Prevention of coastal erosion Sea defence Waste burial / removal / neutralisation Tourism / Nature Watching Spiritual and cultural well-being Aesthetic benefits Education, research Physical health benefits	-1 0	+1	+2
Benefits -2 -1 0 +1 1 SB1 Food (wild, farmed) / Drink • • • • • • • • • • • • • • • • • • •	Cromarty Firth The Solent		 <	1 S81 2 S85 3 S86 4 S87 5 S88 7 S80 8 S811 9 S812 10 S813 11 S814 12 S815	-2 Food (wild, farmed) / Drink Medicines and blue biotechnology Healthy climate (Carbon Sequestration) Prevention of coastal erosion Sea defence Waste burial / removal / neutralisation Tourism / Nature Watching Spiritual and cultural well-being Aesthetic benefits Education, research Physical health benefits Psychological health benefits	-1 0	+1 	+2
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Scenario 1: Managed Realignment in Cromarty Firth

- A nature-based intervention whereby existing sea walls are breached to allow tidal inundation.
- Can be used for flood and erosion management, habitat compensation and/or habitat restoration.
- It can be seen as a triple-win for the environment, society and the economy.



Benefits			-2	-1	0	+1	+2	
1	SB1	Food (wild, farmed) / Drink	-	•				
2	SB6	Healthy climate (Carbon Sequestration)					••	
3	SB7	Prevention of coastal erosion						
4	SB8	Sea defence					•	Î
5	SB9	Waste burial / removal / neutralisation				•	•••••	
6	SB10	Tourism / Nature Watching					•	
7	SB11	Spiritual and cultural well-being					•	
8	SB12	Aesthetic benefits				•	▶	
9	SB13	Education, research			<		•	
10	SB14	Physical health benefits			•			
11	SB15	Psychological health benefits				•	•••••	
12	AB1	Wind energy			•			
13	AB2	Water resources (quality and quantity)					••••	
14	AB3	Archaeology / Geology / Geomorphology					•	ĩ
15	AB4	Transport				•		?
16	EB1	Place to live			•	•		
17	EB2	Place to work			•	•		
18	EB3	Industry		4	•			
19	OB1	Habitat / species biodiversity					•	
20	OB2	Intrinsic value			◀		•	
21	OB3	Functioning ecosystems			◀		•	
			-2	-1	0	+1	+2	



Scenario 1: Managed Realignment in the Cromarty Firth





SEA THE VALUE MARINE BIODIVERSITY BENEFITS FOR A SUSTAINABLE SOCIETY









Why use Participatory Approaches in Estuarine and Coastal Restoration Projects?

- Driven by stakeholders at all stages of the process.
- Creates a shared common language.
- Captures local knowledge and generates digital data.
- Generates outputs which can be used by coastal communities.
- Improves understanding of the links between natural features and benefits.
- Allows organisations to assess their own reliance on natural capital features.
- Identifies shared reliance on natural capital features and their benefits.



Participatory Mapping Feedback





Increased your understanding of the participatory mapping approach?



"The map is a good tool for showing the links between community and the environment."

"Mapping outputs will be really useful to demonstrate to other parties about the features and benefits and the impacts change can have on all of the different beneficiaries."

"Identifying opportunities for marine enhancement and linking with other partners."

"Getting local stakeholders around the same table – great connections made for future projects / partnerships."

"Meeting people from different organisations and the different points of views."

"Thanks, you for your time, help and expertise in making these workshops so informative and fun!"



Other Sea the Value Workstreams

PML Plymouth Marine Laboratory





- i. The integration of participatory mapping workshop outputs with other data sources to create **asset and risk registers** for both case study sites (lead PML);
- Linking this information to the effects of habitat quality / biodiversity on nutrient bioremediation and carbon sequestration to quantify ecosystem services (lead Portsmouth University);
- **iii. Valuing the quantified ecosystem services** and understanding how these values should be used, alongside other data, in economic appraisal and natural capital accounting (lead PML), and



iv. Using project data to outline and **test green finance approaches** for marine ecosystems (eftec).



Sea the Value Training

CPN Workshop Series

WSO: 'Sea The Value' Introductory Workshop (Tuesday 12 March)

WS1: Natural Capital & Understanding Value (Wednesday 5 June)

WS2: Interlinkages Between Biodiversity & Natural Capital (Wednesday 12 June)

WS3: Participatory Mapping (Wednesday 19 June)

WS4: Funding Nature's Needs (Wednesday 26 June)





Thank you for listening – any questions?

Dr Daryl Burdon

Prof. Tavis Potts

Prof. Nicky Beaumont (PI)

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www.seathevalue.org



@seathevalue



Natural Environment Research Council



Economic and Social Research Council



www.marbefes.eu





ReMeMaRe Conference 2024

Restoration Through Collaboration Session

Emma Magee, Environment Agency Living Dart: The Saltmarsh Project




DART SALTMARSHES

RESTORATION THROUGH COLLABORATIO



Where are we?





Virtual site visit

CREDIT: DHNA and EA

DART SALTMARSHES

RESTORATION THROUGH COLLABORAT



How did we get to here?







Work with the willing

















Adapt

- Funders
- Partners
- Plans





Keep the big picture











-E HALE

NNING. RESS. ESS."



How did we get to here?





THANK YOU



emma.magee@environment-agency.gov.uk



https://bioregion.org.uk/project/thesaltmarshproject/





ReMeMaRe Conference 2024

Restoration Through Collaboration Session

Giulia Cecchi, Marine Conservation Society Natur am Byth Môr: restoration through partnership







Adfer rhywogaethau dan fygythiad yng Nghymru

Saving Wales' threatened species

MARINE CONSERVATION SOCIETY

Natur am Byth! Môr: **Restoration through Partnership** Giulia Cecchi NaB! Môr Project Manager





Fund

Llywodraeth Cymru Welsh Government

What is Natur am Byth?

- Partnership of **9 eNGOs** led by NRW
- II place-based projects
- Save 67 threatened species in Wales from extinction and reconnect people to nature













Cefnogir gar

Lywodraeth Cymru

Supported by

Welsh Governmen

NaB! Môr



Cyfoeth Naturiol Cymru Natural Resources Wales

Map of Welsh Marine

Treasures Project Areas - to show areas which may be impacted by



Adfer rhywogaethau dan fygythiad yng Nghymru Saving Wales' threatened species





Natur am Byth - Welsh Marine Treasures



Restoration through Partnership



- Building on previous work and network with existing projects
- Wide-reaching impact
- Sharing lessons learnt





Seagrass Restoration (Zostera marina)



Seagrass Restoration (Zostera marina)







Extensive and diverse engagement











Adfer rhywogaethau dan fygythiad yng Nghymru Saving Wales' threatened species



morwellt achub cefnfor seagrass ocean rescue





Native Oysters



7th May 2024 First 20,000 native oysters 140,000 by 2027





Annual monitoring surveys using remote techniques





Adfer rhywogaethau dan fygythiad yng Nghymru Saving Wales' threatened species







Native Oysters



Oyster containment system Citizen Science



Adfer rhywogaethau dan fygythiad yng Nghymru Saving Wales' threatened species





Darwin Centre Education



- Sharing lesson learnt
- Best practice
- Wider outreach





Water Quality



SWEPT

- Winter 2024
- Citizen Science
 - surveys
- **360** sampling sites (twice)
- 720 volunteers

Adfer rhywogaethau dan fygythiad yng Nghymru Saving Wales' threatened species

am Byth!









Pink sea fan









- Research support
- Increased understanding of distribution
- Raise awareness





Cefnogir gan Lywodraeth Cymru Supported by Welsh Government



monitoring



Further Partnership



Lywodraeth Cymru Supported by Welsh Governmen

Partnership leads to...

- Consolidated learning
- Best practice
- Far-reaching impacts

MARINE

CONSERVATION

SOCIETY

Legacy of work



l project 4 work streams



Adfer rhywogaethau dan fygythiad yng Nghymru Saving Wales' threatened species



11 projects

67 species



Cefnogir gan Lywodraeth Cymru Supported by Welsh Government

Natur am Byth!



Thank you





Any Questions?

Project Managers

 Bridget Orchard, Project Manager – Natur am Byth! Môr bridget.orchard@mcsuk.org

• Giulia Cecchi, Project Manager – Natur am Byth! Môr giulia.cecchi@mcsuk.org

Project Delivery Officers

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 Sue Burton, Pembrokeshire Regional Coordinator, Natur am Byth! Môr Also the Pembrokeshire Marine SAC Officer

sue.burton@mhpa.co.uk



Adfer rhywogaethau dan fygythiad yng Nghymru Saving Wales' threatened species









ReMeMaRe Conference 2024

Restoration Through Collaboration Session

Karen Daglish, South Tyneside Council Stronger Shores - Collaborating to Innovate











Flood and coastal resilience innovation programme

Part of the £200m Flood and coastal innovation programmes

Collaborating to Innovate

Innovation

£200m Flood & coastal innovation programmes



We will drive innovation in flood and coastal resilience and adaptation to a changing climate. We're investing £200 million to test and develop new ways to create a nation resilient to flooding and coastal change. **£150 Rood & coastal** resilience innovation programme 25 local authorities delivering resilience actions

Adaptation pathways programme 4 EA teams developing

adaptation pathway plans with local partners



£200m

FOP

Coastal transition accelerator programme

South Tyneside and Stronger Shores

Council facing growing challenge of managing effects of climate change in the context of funding constraints and sustainable development goals.



Little Haven seawall realignment and beach widening



A183 Coast Road Realignment completed Autumn 2023

Stronger Shores aims to...

- improve understanding of costs and benefits of sub-tidal kelp, seagrass and native oyster habitats.
- identify innovative methods for modelling, monitoring, restoring these habitats.
- address existing evidence gaps provide a blueprint for risk management authorities to follow when considering nature-based solutions.
- maximise opportunities for partnership and community involvement.



Photo credit (top to bottom): Stronger Shores; Richard Lilley / Project Seagrass; Pip Moore, Newcastle University





Coastal Protection Value

- Wave attenuation
- Sediment stabilisation

Wider Benefits

- Valued as hotspots of biodiversity
- Carbon sequestration
- Water quality improvements



Toolkit for Risk Management Authorities

Findings of the project must be presented in a FCERM context based on needs of Risk Management Authorities.



Translating the concept into detail

A focus on resilience to flood and coastal erosion risks is paramount. The toolkit must address the following aims:

- improving evidence on the costs and benefits of the innovative resilience actions - in this instance marine Nature Based Solutions (NBS).
- using our evidence and learning to inform future approaches to, and investments in, flood and coastal erosion risk management.









Opportunities and Challenges

Opportunity	Challenge	Mitigation
No rules!	Distraction, mission drift. Team frustrations. Procurement	Know when to say no.
Testing and trialing.	lt may not work.	Manage expectations. Be accountable Little wins.
Mix of partners.	Different cultures, priorities, and pressures	Sound governance. IPR. Knowledge exchange.
Different perspectives.	Relationships will be tested.	Communication.
New talent.	Project burn out.	Patience. Honesty.




Thank you.







Flood and coastal resilience innovation programme

Part of the £200m Flood and coastal innovation programmes



ReMeMaRe Conference 2024

Restoration Through Collaboration Session

Natasha Bradshaw

What makes effective partnerships for marine nature recovery?







Effective Partnerships for Marine Nature Recovery





Natasha Bradshaw, Principal Researcher njb.bradshaw@gmail.com

Campaign for a Living Coast (1990's)







Marine Nature Recovery (three decades later)

Environmental Improvement Plan 2023

HM Government

First revision of the 25 Year Environment Plan Goal 10 Enhancing beauty, heritage and engagement with the natural environment



Department for Environment Food & Rural Affairs

Home Find Activities We Asked, You Said, We Did



Consultation on the Principles of Marine Net Gain



16 February 2024 — News story <u>Devon National Nature Reserve</u> extension to boost nature recovery

Natural England and Clinton Devon Estates announce extension to Pebblebed Heaths National Nature Reserve to promote natural connections and biodiversity. k HM Government

A Green Future: Our 25 Year Plan to Improve the Environment

Chapter 5: Securing clean, healthy, productive and biologically diverse seas and oceans

At a glance

We will:

- Implement a sustainable fisheries policy as we leave the Common Fisheries Policy.
- Achieve good environmental status of our seas while allowing marine industries to thrive, and complete our ecologically coherent network of well-managed marine protected areas (MPAs).



Coastal, Estuary and Marine Partnerships (CEMPs)



COASTAL PARTNERSHIPS NETWORK

Connected nationally, delivering locally.





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Our work

Events & Training



Digital resources News & blogs

s Get involved

Contact us

WORKING FOR THE SUSTAINABLE FUTURE OF THE ESTUARY







Dorset Coast Forum

Find out Who We Are 🚪 View our Current Projects



Dorset Coast Forum





"This research seeks to identify what constitutes successful coastal partnerships and explore the factors influencing this"



Objectives and Research Questions

OBJECTIVE 1 Characterising Effective Coastal, Estuary *and Marine* Partnerships

- RQ1 To what extent is the English coast and marine landscape covered by Coastal, Estuary and Marine Partnerships (CEMPs) and similar initiatives?
- RQ2 What legal and governance structures are in place for existing CEMPs?
- RQ3 Where are marine nature recovery projects [and partnerships] and how do they utilise CEMPs and similar initiatives?

OBJECTIVE 2 Supporting and Delivering Marine Nature Recovery

- RQ4 What characteristics of CEMPs and similar initiatives present barriers and opportunities to supporting marine nature recovery (MNR)?
- RQ5 What experience and opportunity exists to broaden the funding base to support MNR projects and what (if any) role could CEMPs play?
- RQ6 What (if any) trends can be identified between CEMPs legal and governance structures (RQ2) and their ability to pioneer and support delivery of MNR projects (RQ3)?



Research Method

MAPPING

Coastal Partnerships + Marine Nature Recovery Projects

SURVEY

Coastal Partnerships + Other similar initiatives (41 locations)

INTERVIEWS

Coastal Partnerships + Other similar initiatives (16 locations, 39 people)

WORKSHOP

Online participants

RESEARCH & REPORTING

Research Summaries, Main Report & Academic paper

Research Method - Survey

PART ONE – LOCATION of COASTAL and ESTUARY PARTNERSHIPS (CEPs)

Name, Location, Extent, Focus.

88

PART TWO – GOVERNANCE and FINANCE

 Introduction and Consent
PART 1 – LOCATION of COASTAL, ESTUARY and MARINE PARTNERSHIPS
PART 2 – GOVERNANCE and FINANCE
PART 3 – MARINE NATURE RECOVERY
What Happens Next

Status, governance structure, stakeholder representation, funding (core, project & overall), staffing and volunteers, aims and effectiveness (governance & softer factors).

PART THREE - MARINE NATURE RECOVERY

MNR engagement (habitat focus, level, status – past/present/future), future aspirations and barriers.



Research Method - Interviews

Semi-Structured Interviews

- January-March 2024, 4 regional researchers
- 17 interviews (16 locations) of 60-90 minutes each
- 39 people interviewed: officers, managers, chairs, hosts, partners.

LOCATIONS

NE

Stronger Shores Yorkshire Marine Nature partnership Berwickshire and North Northumberland **NW** Morecambe Bay Sefton Coast Solway Firth Partnership **SE** Sussex Marine and Coastal Forum Medway Swale

Coastal Partners East Solent

Wash and North Norfolk

Deben Estuary Partnership

SW

Dorset Coastal Forum Tamar Estuaries Consultative Forum Severn Estuary South Devon Estuaries Isle of Wight



Preliminary Findings





 1 – Characterising the national landscape of Coastal, Estuary and Marine Partnerships (CEMPs)



CEMPs

MNR projects/initiatives









Survey Response

CEMPs and Other Similar Initiatives: 41 full responses

Overall

Coastal & Estuary 79%

Marine 20%

Exclusively (46%)

- Coastal 17%
- Estuary 24%
- Marine 5%
- Catchment 0%

Combined (47%)

- Coastal & Estuary 10%
- Coastal & Marine 10%
- Coastal, Estuary & Marine 15%
- Coastal, Estuary, Catchment & Marine 12%



2 – Governance and Finance

What characterises CEMPs and similar initiatives? Effectiveness of hard and soft governance approaches





No formal status - MOU, TOR 36%



Governance Structures

What legal and governance structures are in place for existing CEMPs?





Partner Representation



The Coastal Collaborative Ltd

99 01/08/2024

Funding Partners – Core / long-term services



Funding Partners – project/ short-term activity



Staff & Volunteers





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Effectiveness of 'hard' governance factors

To what extent to the following factors determine the effectiveness of your partnership?



Effectiveness of 'soft' governance factors

What other 'softer' factors appear to determine the effectiveness of your partnership?



Total scores for CEMPs (*n*=41) where 1='not important' and 5 ='highly important'



Change in Status?

RQ2

What legal and governance structures are in place for existing CEMPs?

"We would like greater independence and opportunities to apply for funding"

"Legal structure to take advantage of **funding opportunities**...form of which has yet to be determined".

"The legacy and how that is handled may change things. As a minimum, the project will create a **legacy agreement for all partners** to sign".

"We have applied to become a charity but the **Charity Commission does not understand integrated coastal zone management** - the scope of our interests is causing them issues in accepting we are purely charitable".





3 – Marine Nature Recovery

How are CEMPs and similar initiatives involved in MNR?





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MNR Engagement

CEMPs (*n*=29) named 74 MNR projects/initiatives

MNR habitat focus

- 64 Inter-tidal, 39 sub-tidal, 7 offshore, 13 other
- 9 projects span three habitat types (inc inter-tidal, sub-tidal AND offshore/upstream)
- 7 projects ONLY subtidal/offshore.

Level of engagement

- 33 significantly involved (e.g. leading)
- 22 involved (e.g. partner)
- 10 some engagement (e.g. participating)
- 9 little (e.g. aware).

Curent status: past (3) present (58), future (13)

Habitat Focus



Intertidal (1) Subtidal (2) Offshore (3) Other (4)

Level of involvement



Significant (1) Involved (2) Some (3) Little (4) Not at all (5)

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MNR Engagement - Barriers





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MNR Engagement - Opportunities

NOW

Many CEMPs significantly involved as lead, partner or participating.

FUTURE

Appetite to lead/partner is evident, or at least participate.

BARRIERS

- Informal status & capacity required to change it (paperwork)
- Scale: advantages of small scale, need to scale-up?
- Risks

OPPORTUNITIES

- Trusted reputation for convening
- Strategic advantages CEMP staff know most people and organisations
- Continuity of knowledge and network (e.g. data hub)



MNR Engagement future aspiration

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Conclusions

Preliminary findings



Workshop (March 2023)



Potential CEMP roles, skills and attributes were explored

- **1** Setting up and managing nature credits schemes for return on investment
- 2 Supporting & maintaining partnerships for NbS delivery
- 3 Long-term system validation and monitoring of NbS to ensure legitimacy of nature credits

Most CEMPs sit naturally in a convening and coordination role (group 2 above).

A lead partner will need legal status

Governance changes could facilitate CEMPs to play a more formal role

Social Impact Investment can be harnessed to build the business case

Attributes and skills for Social Impact Investors and MNR project partners

Trust, enabling, longevity and legitimacy, networks, scaling and replicating through CPN and other networks.







CEMPS have substantial expertise over two to three decades:

- \rightarrow Convening partners around estuaries/coasts & (increasingly) marine
- \rightarrow Maintaining a broad (core) funding base
- → Supporting multi-partner funded projects.

Many CEMPs are involved in identifying and supporting restoration/MNR projects - but could realise their full potential with more core/service funding.

Most CEMPs interested in supporting MNR and would be willing to strengthen governance - *if necessary* but are cautious of additional burdens & possible tensions.

Not many CEMPs consider their role as the lead for MNR delivery - but would expect to play a key role in establishing & maintaining partnership working to support delivery.

A few CEMPs and other initiatives are well placed to offer experience to scale-up their investibility.





What makes effective partnerships for marine nature recovery?

- Vision
- Nimble position
- Network co-ordination
- Direct delivery of local projects
- Strategic involvement / thinking
- Community engagement, outreach and publicity
- Providing advice, support and an information hub
- Bringing people together and promoting partnership working
- A track record of investing effort in project co-ordination and delivery
- Identifying sources of funding for projects and doing the preparatory work
- Supporting the marine component of Local Nature Recovery Strategies.





What makes effective partnerships for marine nature recovery?

CEMPs supporting the delivery of MNR

"One of the biggest issues we face with marine nature recovery activity is a lack of local coordination and prioritisation. Coastal Partnerships are well placed to provide this..."



"As a partnership we are heavily involved in our local LNRS and are providing marine input into this".

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Thank You

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ReMeMaRe Conference 2024

Panel Discussion

Chair: Amy Pryor, Thames Estuary Partnership

- Daryl Burdon, Daryl Burdon Ltd. Marine Research
- Emma Magee, Environment Agency
- Giulia Cecchi, Marine Conservation Society
- Karen Daglish, South Tyneside Council
- Natasha Bradshaw

Slido for extra questions QR code or www.slido.com Code: **4741966**

