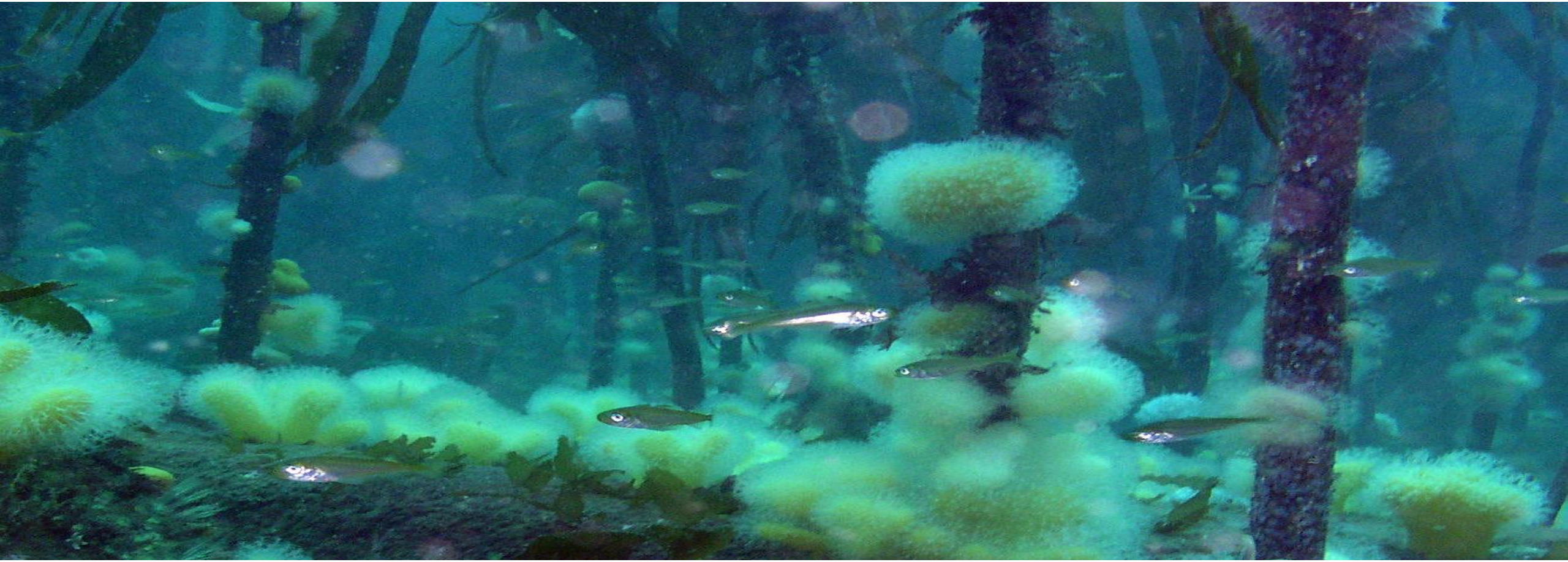
Just Transition – Marine



Calum Duncan
Head of Conservation Scotland
Marine Conservation Society

10th June 2020

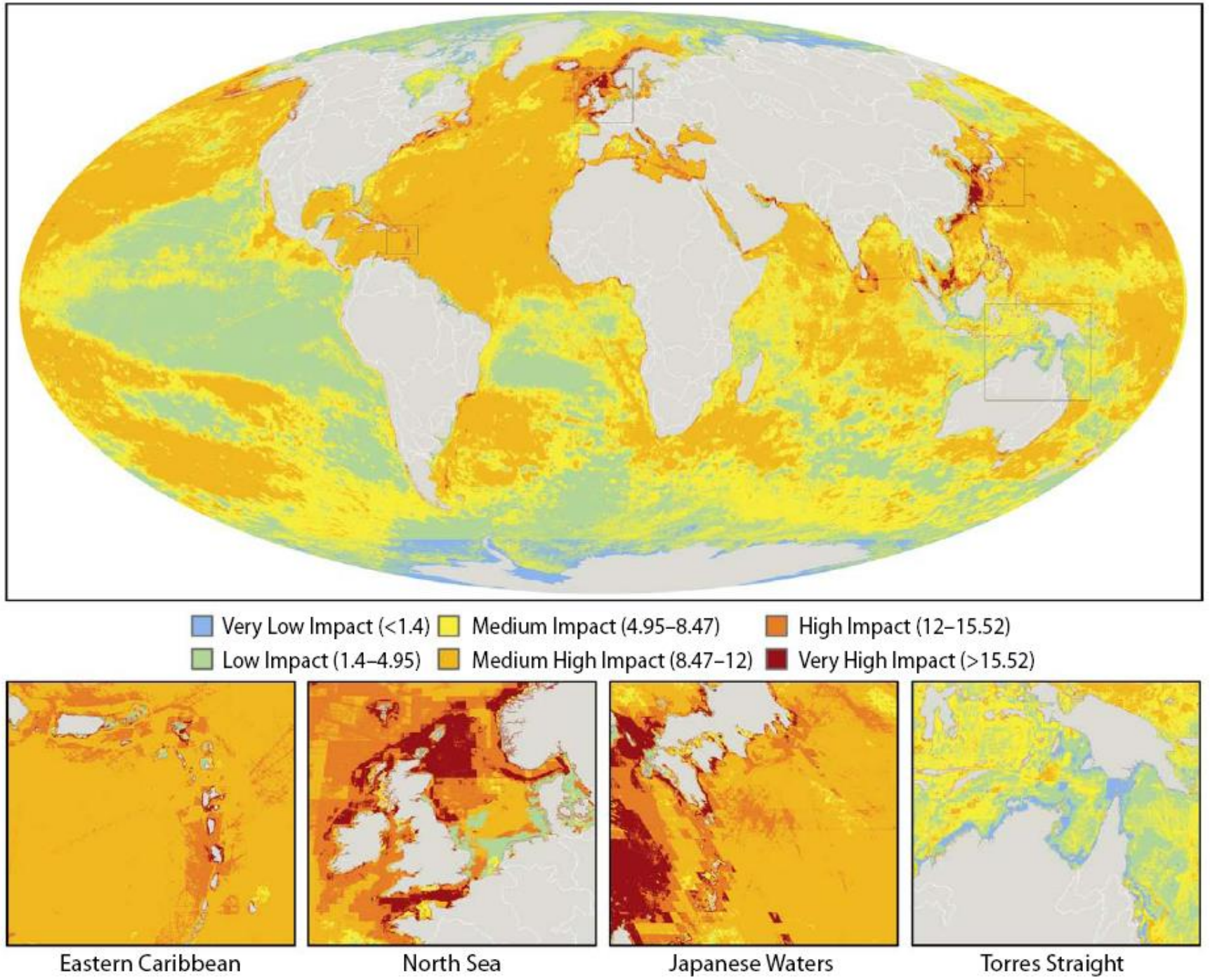
Summary

- ❑ Ocean in crisis
- ❑ Progress
- ❑ Integration
- ❑ Transformation

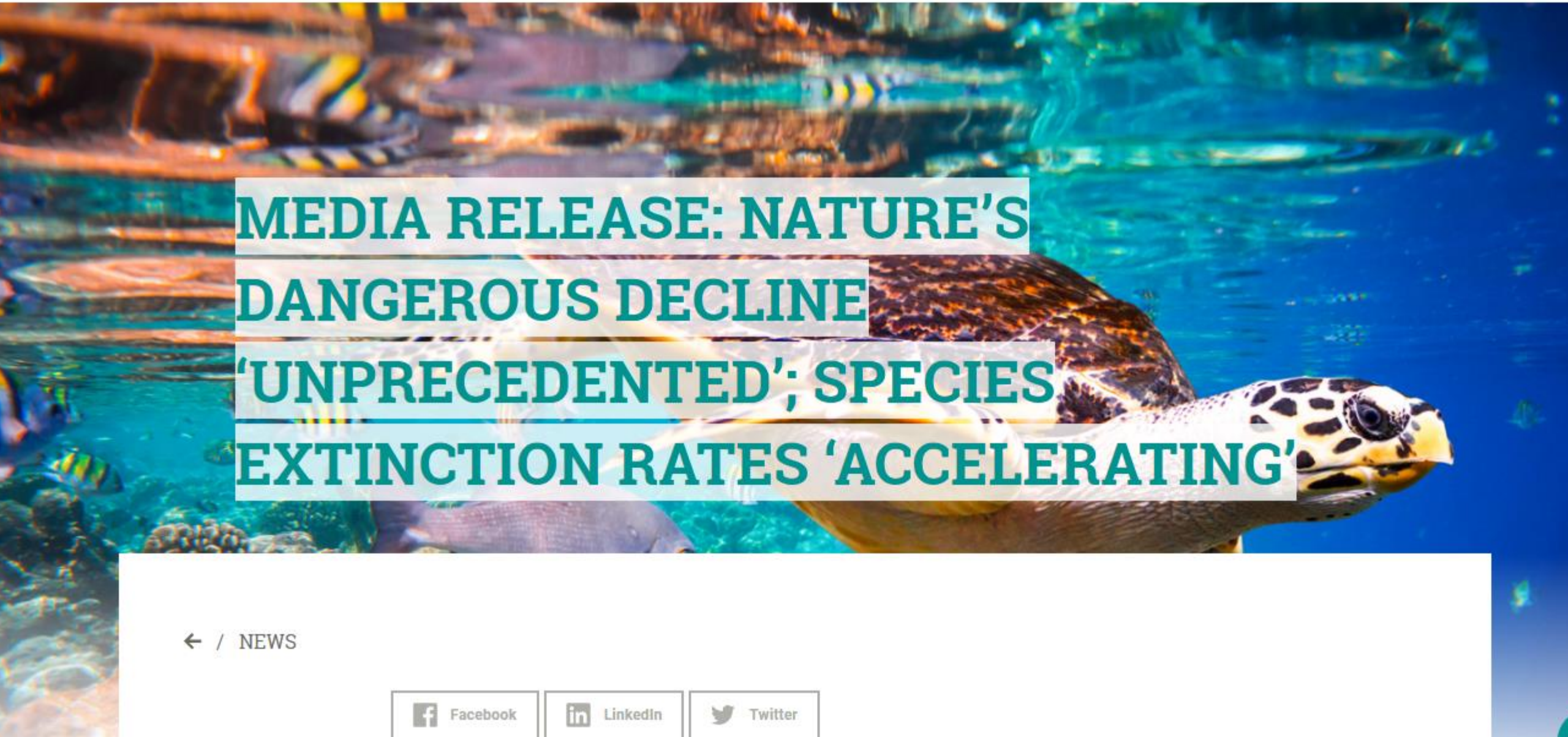
Ocean

Absorbed >90% anthropogenic heat
>third anthropogenic CO_2

Produces >half O_2
we breathe



Benjamin S. Halpern, *et al* (2008).
A Global Map of Human Impact on Marine Ecosystems
Science 319, 948



MEDIA RELEASE: NATURE'S DANGEROUS DECLINE 'UNPRECEDENTED'; SPECIES EXTINCTION RATES 'ACCELERATING'

"Goals for conserving and sustainably using nature and achieving sustainability **cannot be met by current trajectories, and goals for 2030 and beyond may only be achieved through transformative changes** across economic, social, political and technological factors"

https://ipbes.net/sites/default/files/downloads/spm_unedited_advance_for_posting_htn.pdf

Chapter 1 Vision

Target 6

By 2020 all **fish and invertebrate stocks** and aquatic plants are managed and **harvested sustainably**, legally and applying ecosystem based approaches, so that **overfishing is avoided**, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and **ecosystems are within safe ecological limits.**

		uncertain. Harbour seals in the Greater North Sea have not yet achieved GES.
D1 & D4 BIRDS		The UK has achieved its aim of GES for non-breeding waterbirds in the Greater North Sea but not in the Celtic Seas. Breeding seabirds have not achieved GES.
D1 & D4 FISH		Demersal fish communities are recovering from over-exploitation in the past, but GES has not yet been achieved in either the Greater North Sea or the Celtic Seas. A partial assessment of pelagic shelf fish did not provide a clear result.
D1, D4 PELAGIC HABITATS		Prevailing environmental conditions are likely to be driving the observed changes in plankton communities but human activities cannot be ruled out and it is uncertain whether GES has been achieved.
D1 & D6 BENTHIC HABITATS		The achievement of GES is uncertain for intertidal and soft sediment habitats. The levels of physical damage to soft sediment habitats are considered to be consistent with the achievement of GES in UK waters to the west of the Celtic Seas, but not in the Celtic Seas or in the Greater North Sea. For sublittoral rock and biogenic habitats GES has not yet been achieved.
D2-NON-INDIGENOUS SPECIES (NIS)		The UK has not yet achieved its aim of GES for NIS. Our ability to detect new NIS has improved but there has been no significant change in the number of new records of NIS made between 2003 and 2014.
D3 COMMERCIAL FISH		The UK has achieved its aim of GES for some commercially exploited fish. In 2015, 53% of marine fish (quota) stocks were fished below maximum sustainable yield (MSY). Most national shellfish stocks have either not yet achieved GES or their status is uncertain. The percentage of quota stocks fished below MSY and the proportion of marine fish spawning stock biomasses capable of producing MSY have increased significantly since 1990.
D4 FOOD WEBS		The extent to which GES has been achieved is uncertain: plankton communities are changing; some fish communities are recovering, but others are not; breeding seabird populations are in decline; grey seal numbers are increasing and trends in cetacean populations are unclear.

'Spectacular failure': Green groups respond to government's Marine Strategy

10 May 2019, source edie newsroom

Conservation and environmental lobby groups have heavily criticised the government's revised UK Marine Strategy, saying that politicians need to radically revise their plans to tackle the growing emergency.

The ocean emergency has grown as a decline in biodiversity, warming and plastic pollution has impacted their health

According to the new strategy, which is currently undergoing consultation, the UK has only met four out of 15 indicators required for healthy oceans - and environmentalists claim the revised framework and targets do not meet the requirements of the UN's biodiversity report on immediate action to prevent mass extinction of species and habitats.

The green groups, commenting under the collective banner of the UK Marine Strategy from Wildlife and Countryside Link coalition partnership, said the strategy was a "spectacular failure" admission that oceans are in poor condition should be a "wake up call" to government to take more action and faster.

Chris Tuckett, Director of Programmes at Marine Conservation Society, and Chair of Wildlife and Countryside Link's Marine Group, said:

"Such a wholescale failure to meet our own targets for healthy oceans must be a wake-up call on behalf

Missed targets

- ❑ 2010 Halt the loss of biodiversity
- ❑ 2015 Well-managed MPA network
- ❑ 2020 CFP sustainable fisheries
- ❑ 2020 Good Environmental Status…

Nature *is* the context for everything

Graphics by Jerker Lokrantz/Azote

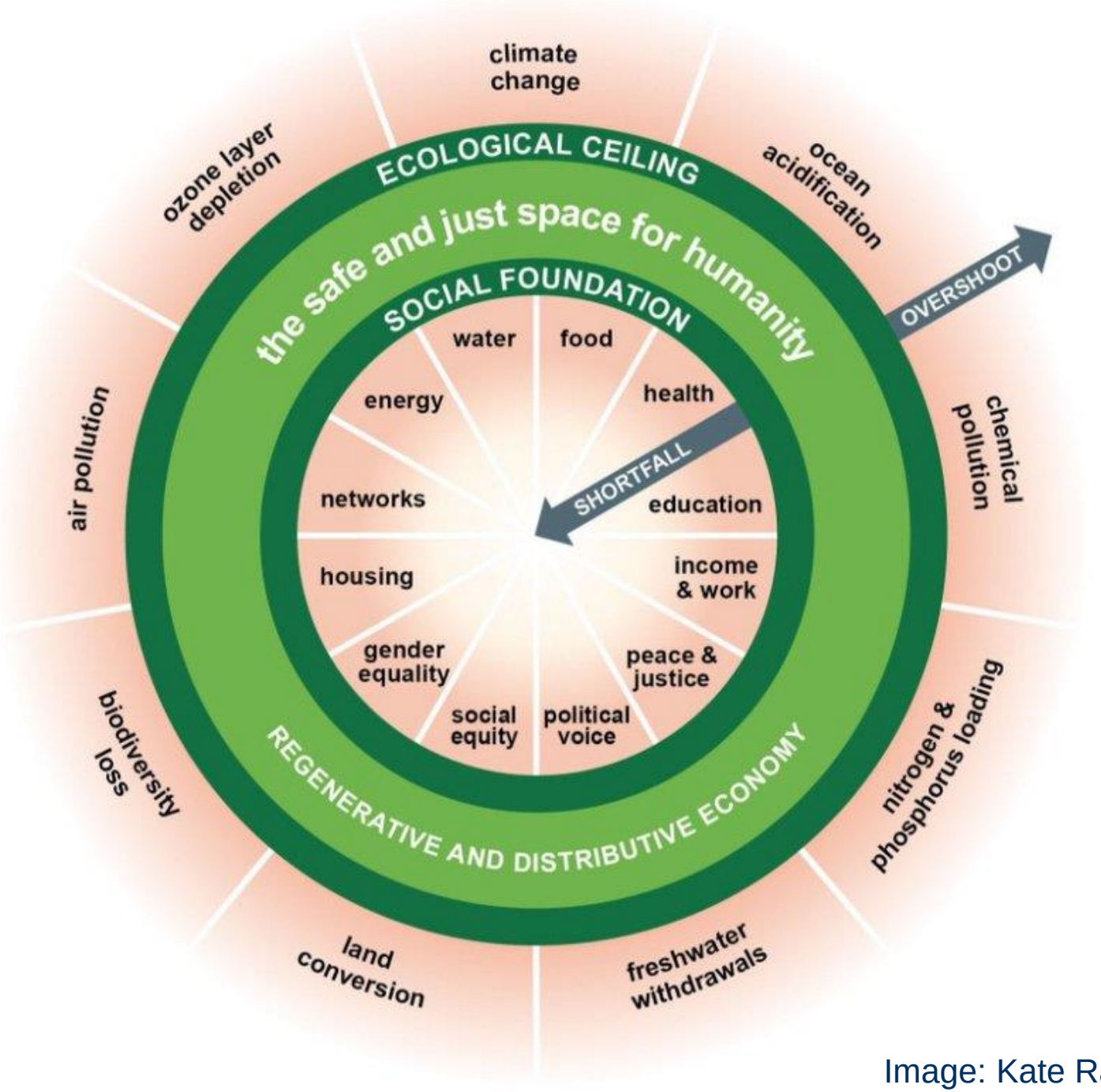
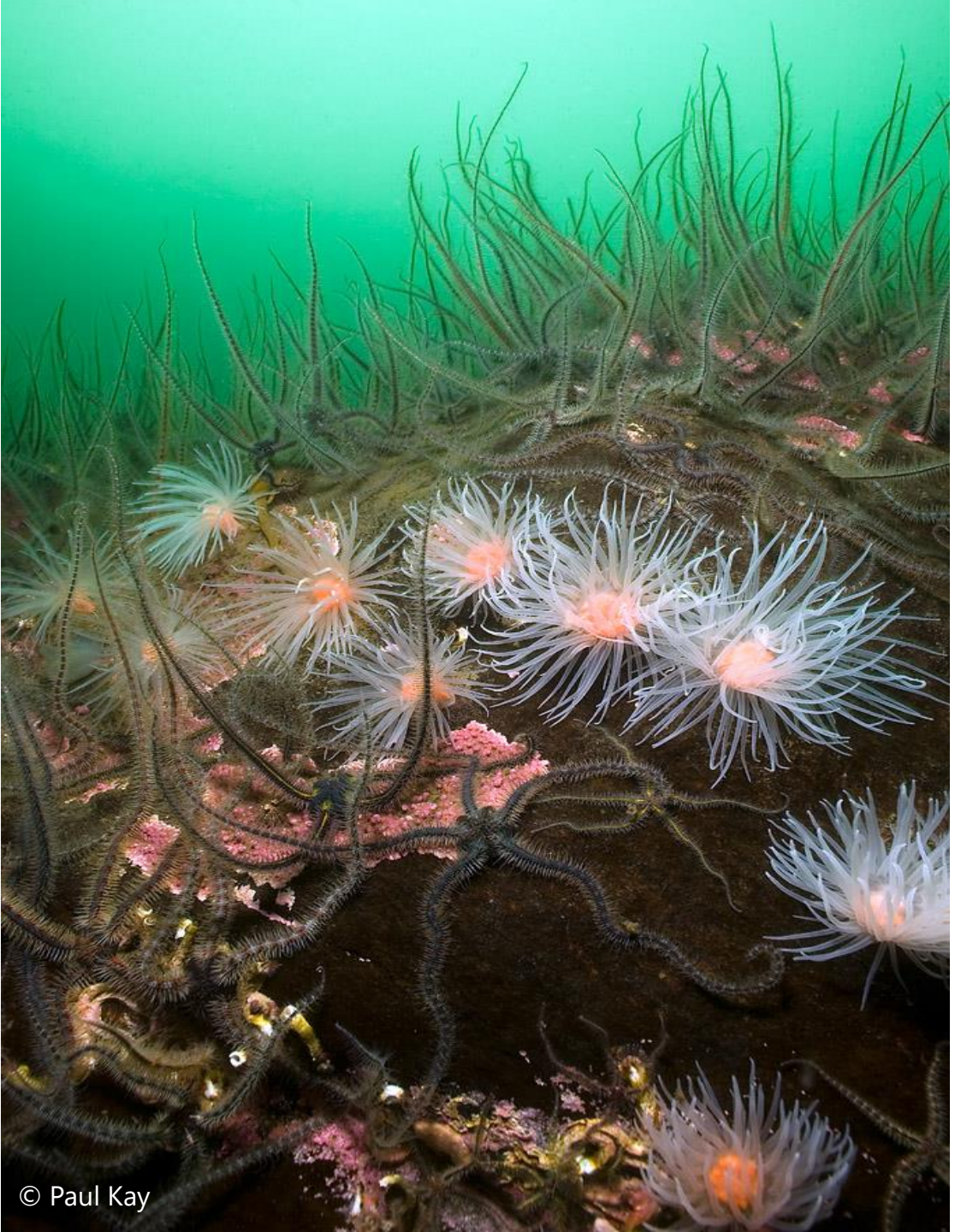


Image: Kate Raworth, 2017



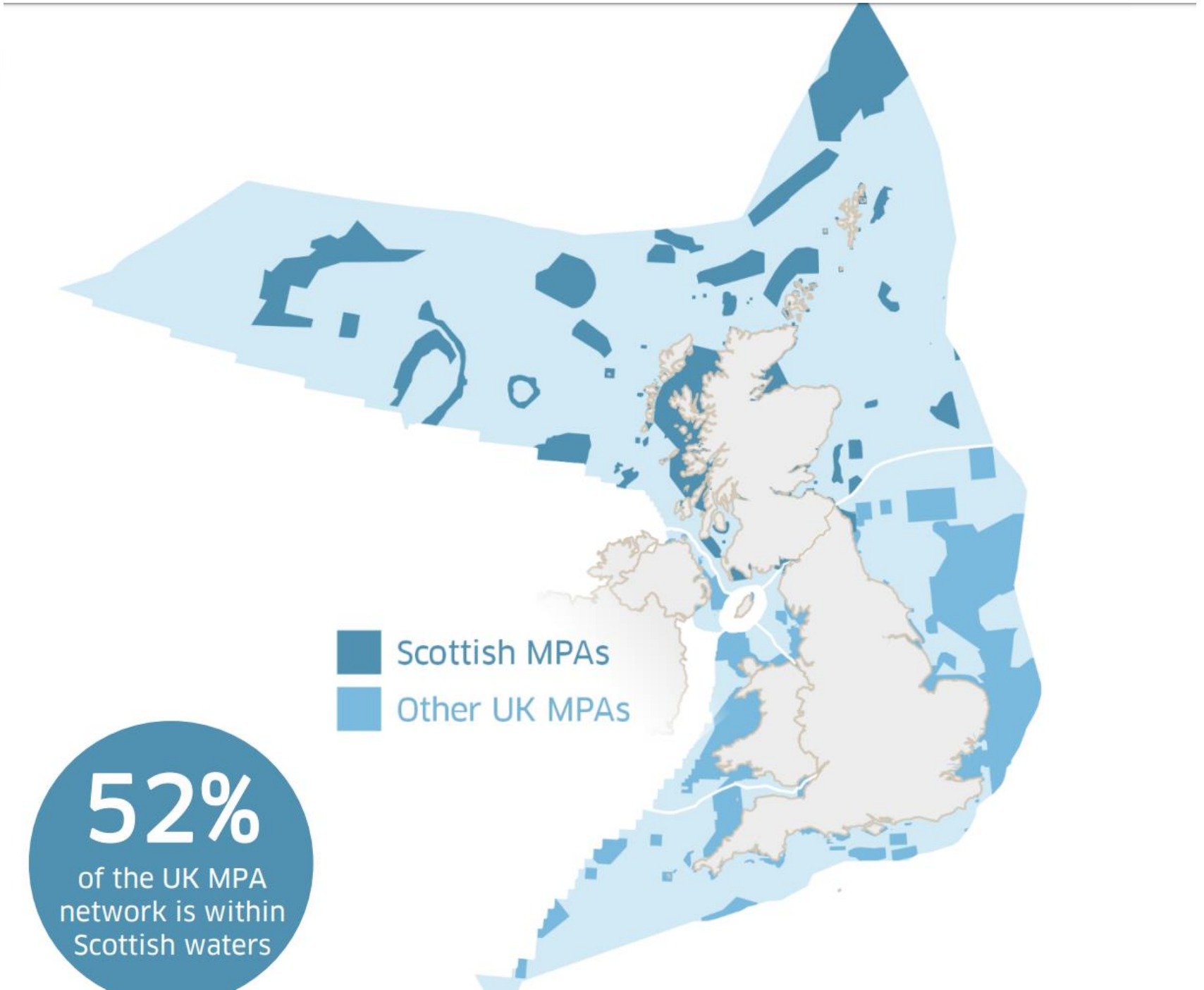
- **61%** UK waters
- **Global** basking shark hotspot
- A **third** world's grey seals
- **45%** EU breeding seabirds
- **24 species** whale/dolphin
- Coldwater **coral reefs**
- **Unique** sea lochs
- **Most** Deepwater habitats

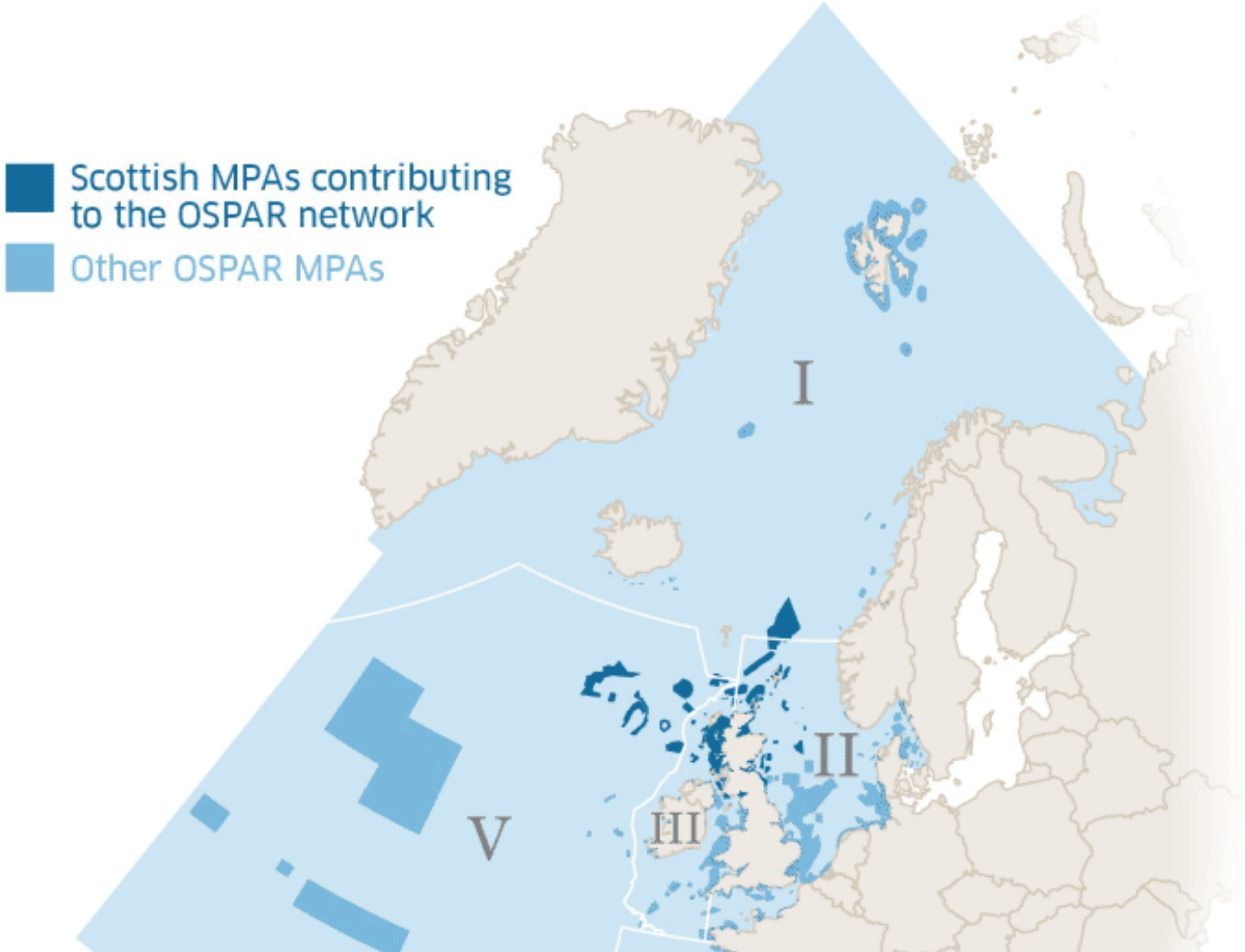
Scottish Government
Riaghaltas na h-Alba
gov.scot

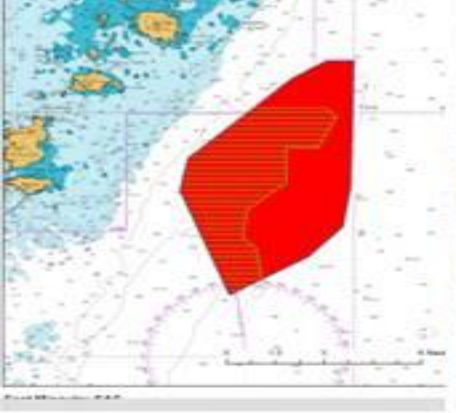
marinescotland

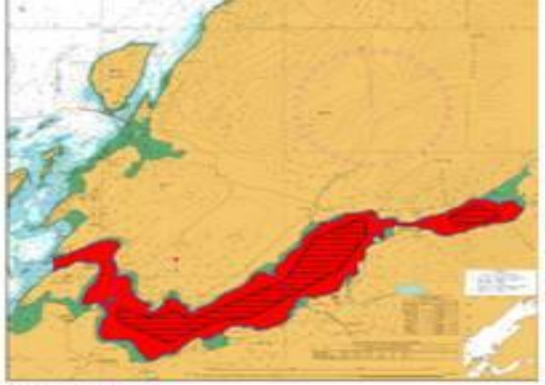
Scottish Natural Heritage
Dualchas Nàdair na h-Alba
nature.scot

JNCC
Joint Nature Conservation Committee

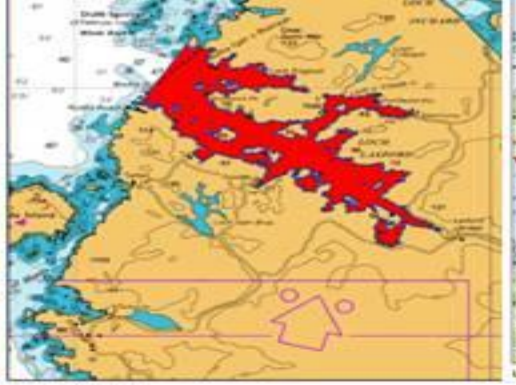



Scottish MPAs contributing to the OSPAR network
Other OSPAR MPAs
I
II
III
V





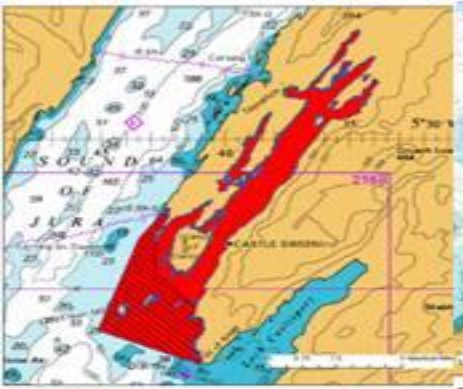
Loch Creran MPA/SAC



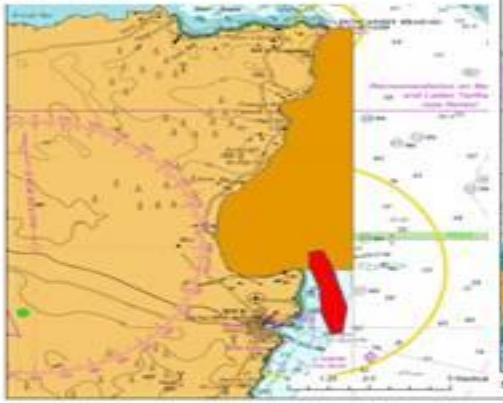
Loch Laxford SAC

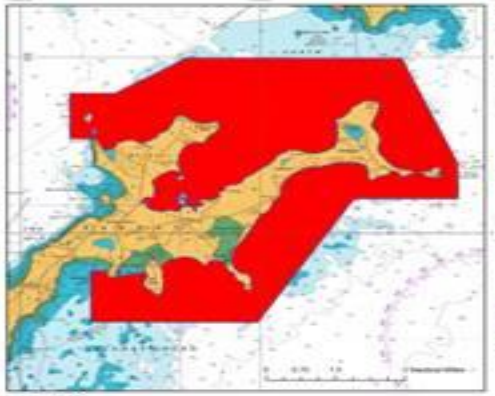
Loch Sunart MPA / SAC

Loch Sunart to Sound of Jura MPA



Lochs Duich Long & Alsh MPA/SAC

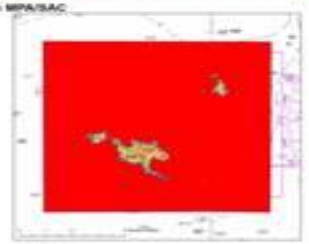




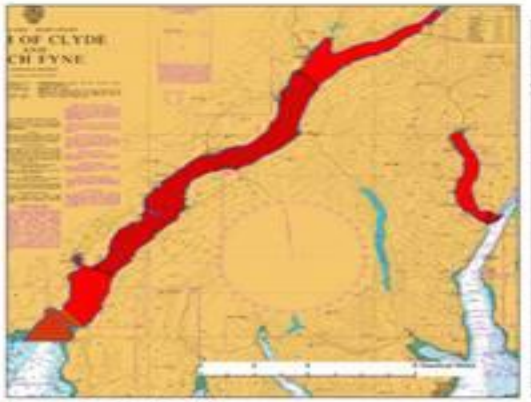
SANDAY SAC

Small Isles MPA

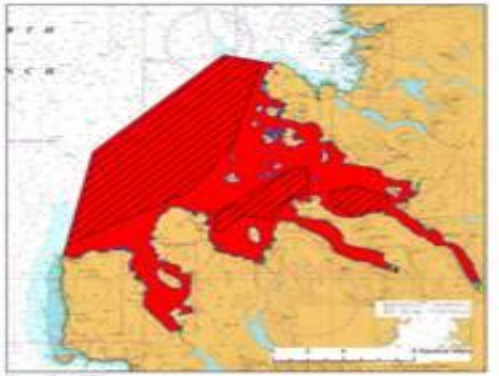
South Arran MPA



Wyre and Rousay Sounds MPA



Upper Loch Fyne & Loch Goil MPA



Wester Ross MPA

No dredging or trawling

Mobile derogations*

Creeling derogations*

No dredge, trawl or creel

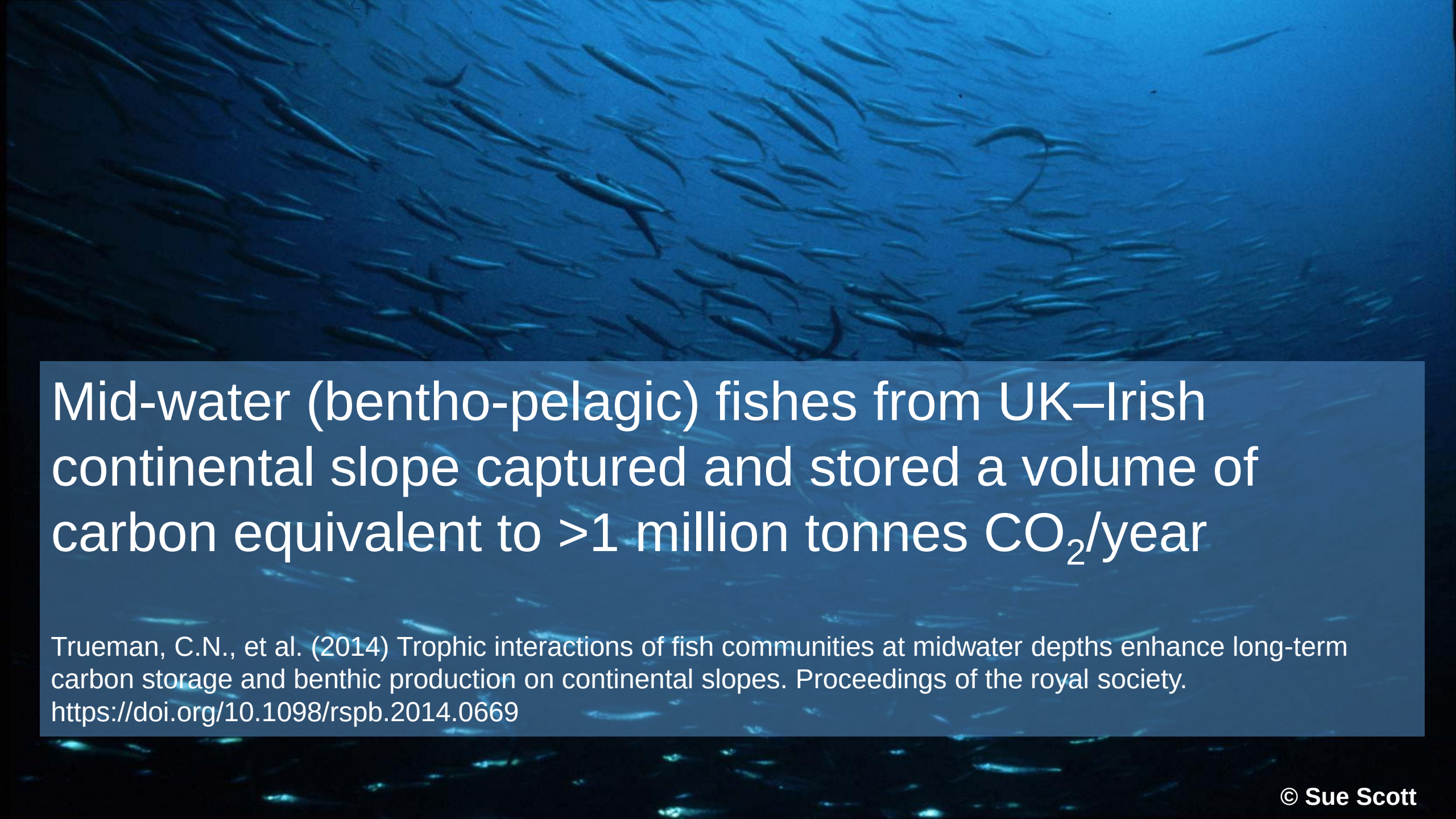
***Rough guide: maps vary a little**

Scotland's inshore MPAs/SACs store the equivalent of 210.8Mt of CO_2e

© Paul Naylor

Scotland's peatlands ~1,620 million tonnes carbon (Mt)

Top 10cm of Scotland's marine sediments store ~1,756Mt



Mid-water (bentho-pelagic) fishes from UK–Irish continental slope captured and stored a volume of carbon equivalent to >1 million tonnes CO_2/year

Trueman, C.N., et al. (2014) Trophic interactions of fish communities at midwater depths enhance long-term carbon storage and benthic production on continental slopes. Proceedings of the royal society. https://doi.org/10.1098/rspb.2014.0669

Climate Change (Emissions Reduction Targets) (Scotland) Act 2019

(15)The plan must also set out the Scottish Ministers' proposals and policies regarding the consideration of the **potential for the capture and long-term storage of carbon when designating marine protected areas** under section 67 of the Marine (Scotland) Act 2010.

ipbes
Science and Policy for People and Nature

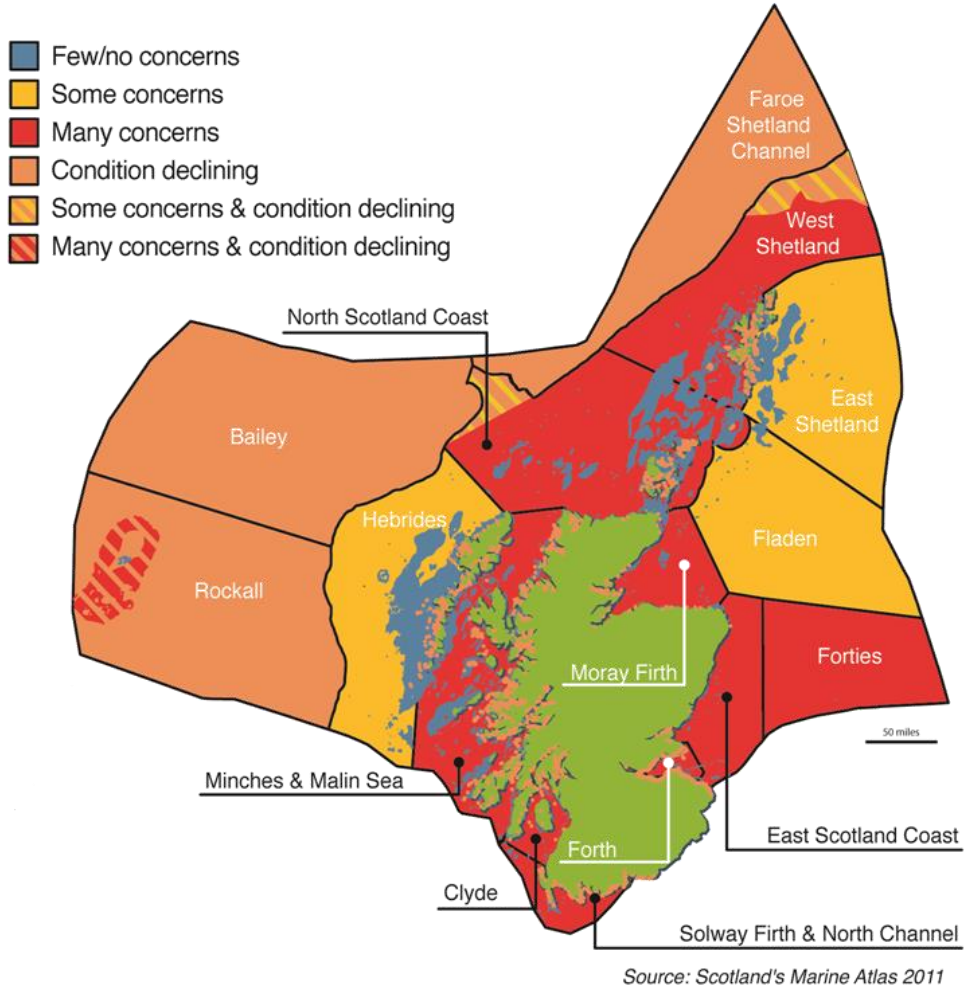
- Eroding the foundations of our lives by failing to protect and value nature

- *"in marine systems, fishing has had the most impact on biodiversity (target species, non-target species and habitats) in the past 50 years alongside other significant drivers"*

Status of seafloor and habitats

"There are two significant pressures on the Scottish marine area which are widespread:

- Human activity contributing to **climate change**
- **Fishing**, which impacts on the seabed and species"



Source: Scotland's Marine Atlas 2011

What is very likely is that much of Scotland's seafloor is currently modified from a natural state, but what the relevant natural state for each area of seafloor would be is not known.

The critical test is whether there is evidence that the seafloor retains the ability to recover to a natural state and therefore retains its full potential for other uses.

If there is no evidence of rapid change towards a natural state when pressure is reduced then the seafloor is not being used sustainably and additional measures will be required.

Scottish Environment LINK

SEAFLOOR INTEGRITY

DR CHARLOTTE HOPKINS
AND DR DAVID BAILEY

UNIVERSITY OF GLASGOW

Assessing the resilience of Scotland's Blue Carbon Sediment Stores

Image Required

Scotland's shelf and coastal seas hold vast quantities of sedimentary carbon. Yet the stability of these sedimentary C stores under increasing anthropogenic pressure is poorly understood. This project seeks to examine and quantify the potential impacts of management practices, particularly the impacts of mobile benthic fishing gear, on the long-term stability of Scotland's marine sedimentary C stores.

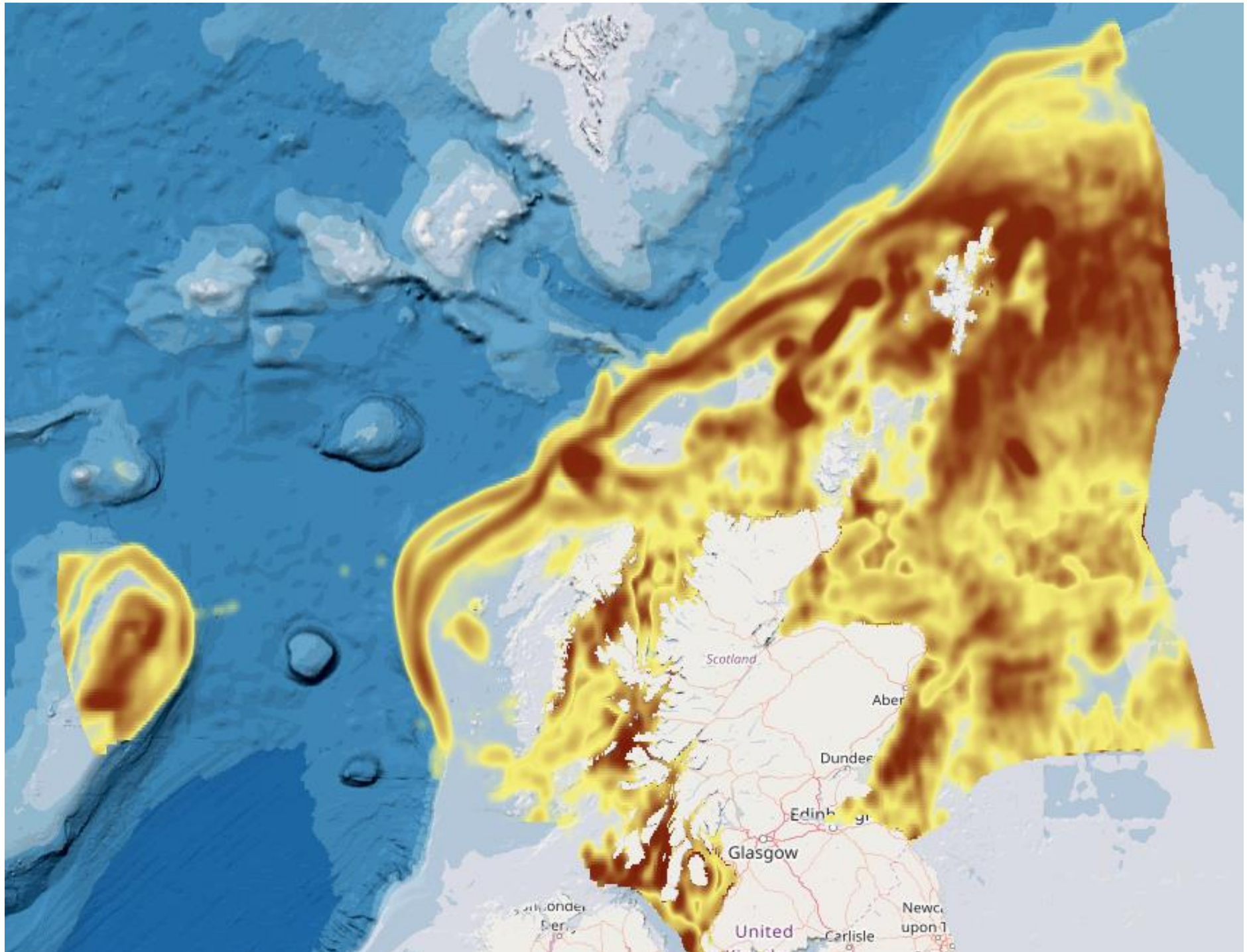
Unlocking the vaults: Blue carbon and bivalve shellfish beds.

Bivalve molluscs provide a wealth of ecosystem goods and services, from water quality management to being commercially valuable. Historically, overfishing and disease has led to the depletion of bivalve stocks globally. This project aims to quantify the potential of shellfish beds to be more widely considered as blue carbon stores.

Towards A National Inventory for Sedimentary Carbon on the Scottish Continental Shelf

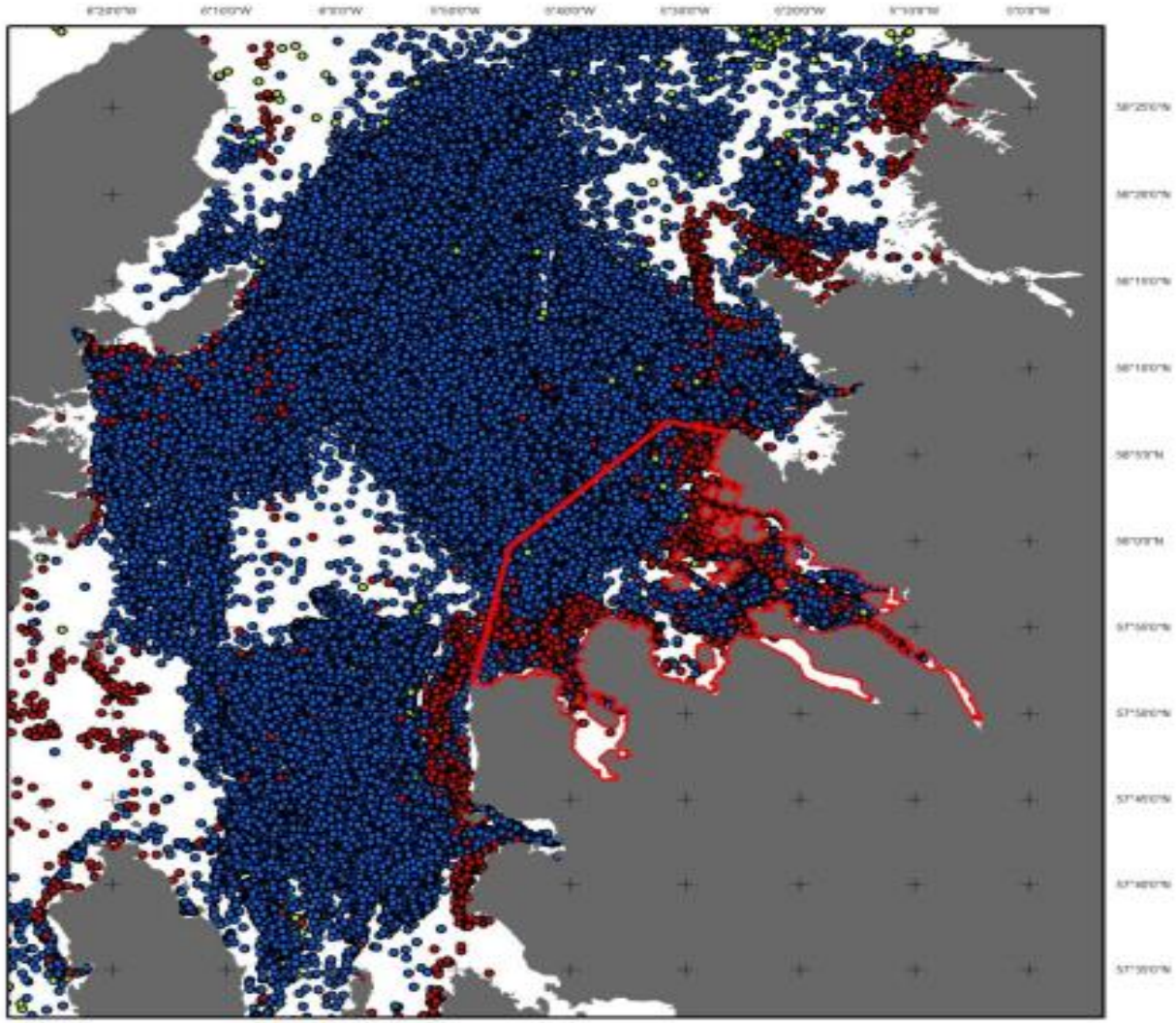
It is understood that the seabed is a long-term store of OC, however there are gaps in our knowledge of more specifically where this C is found. Spatial mapping will play an integral component to understanding where OC is likely to be and to create a first-order estimation of the surface OC stock. This project is focused on understanding the spatial distribution of OC within the diverse seabed sediments on the Scottish Continental Shelf (SCS). The project will also

UN Special Envoy for the Ocean Peter Thomson "ending overfishing is essential to build ocean resilience and can mitigate the impacts of climate change"


Scotland
Aber
Dundee
Glasgow
United
Carlisle

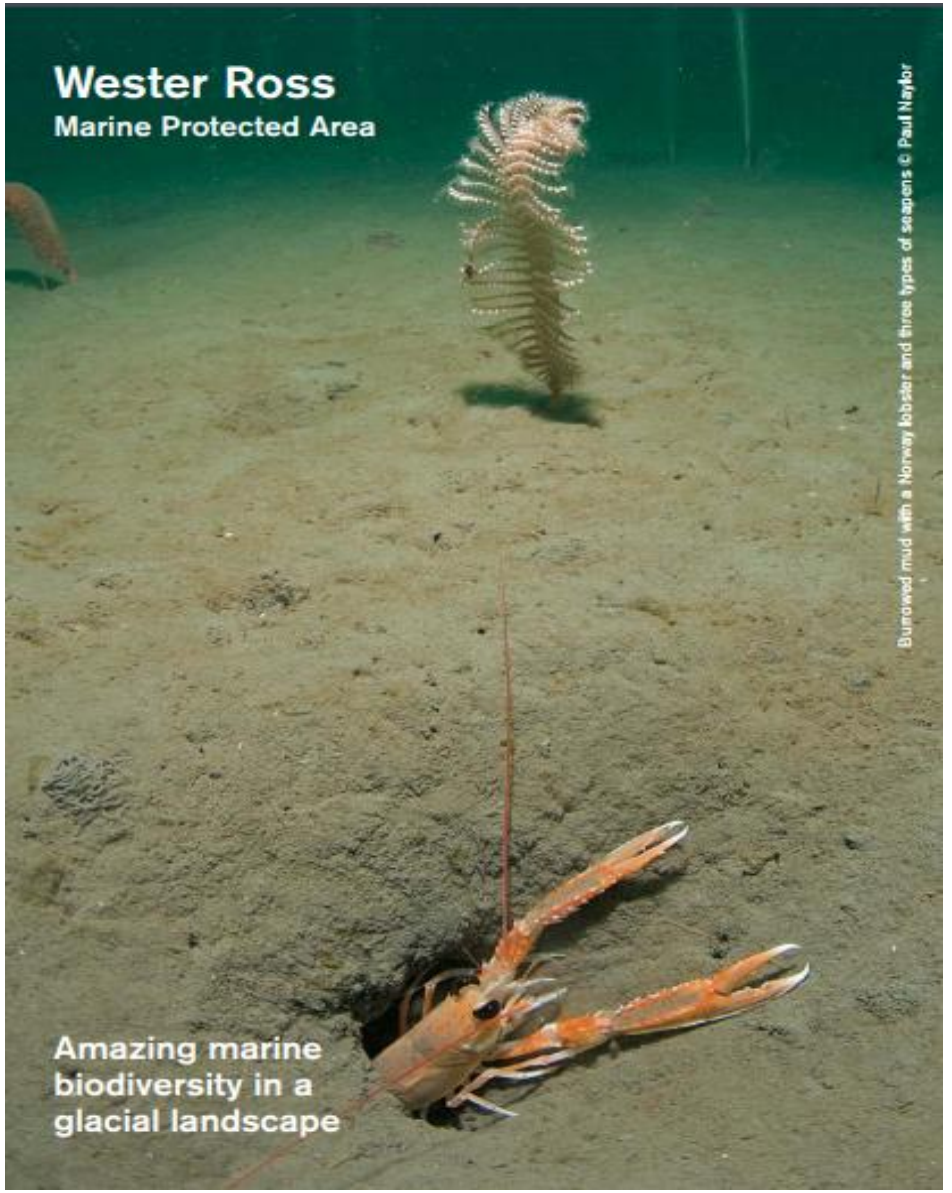
Nature and climate friendly fishing

- ❑ Maximise blue carbon protection & recovery (MPAs/PMFs)
- ❑ Improved management (recover stocks, spatial approach)
- ❑ Fully documented fishing to MSY **(REM all vessels)**
- ❑ Stop forage fisheries (e.g. sandeels)
- ❑ Eliminate Bycatch
- ❑ Whole-site approach to MPA management
- ❑ Decarbonise the fishing fleet (green energy, lighter gears)



Wester Ross pMPA
Showing VMS data from 2007 to 2013

Land
MPA Boundary
Trawls
Static



Integrating Inshore fisheries and conservation

❑ Presumption against trawling & dredging in "significant area of inshore waters"

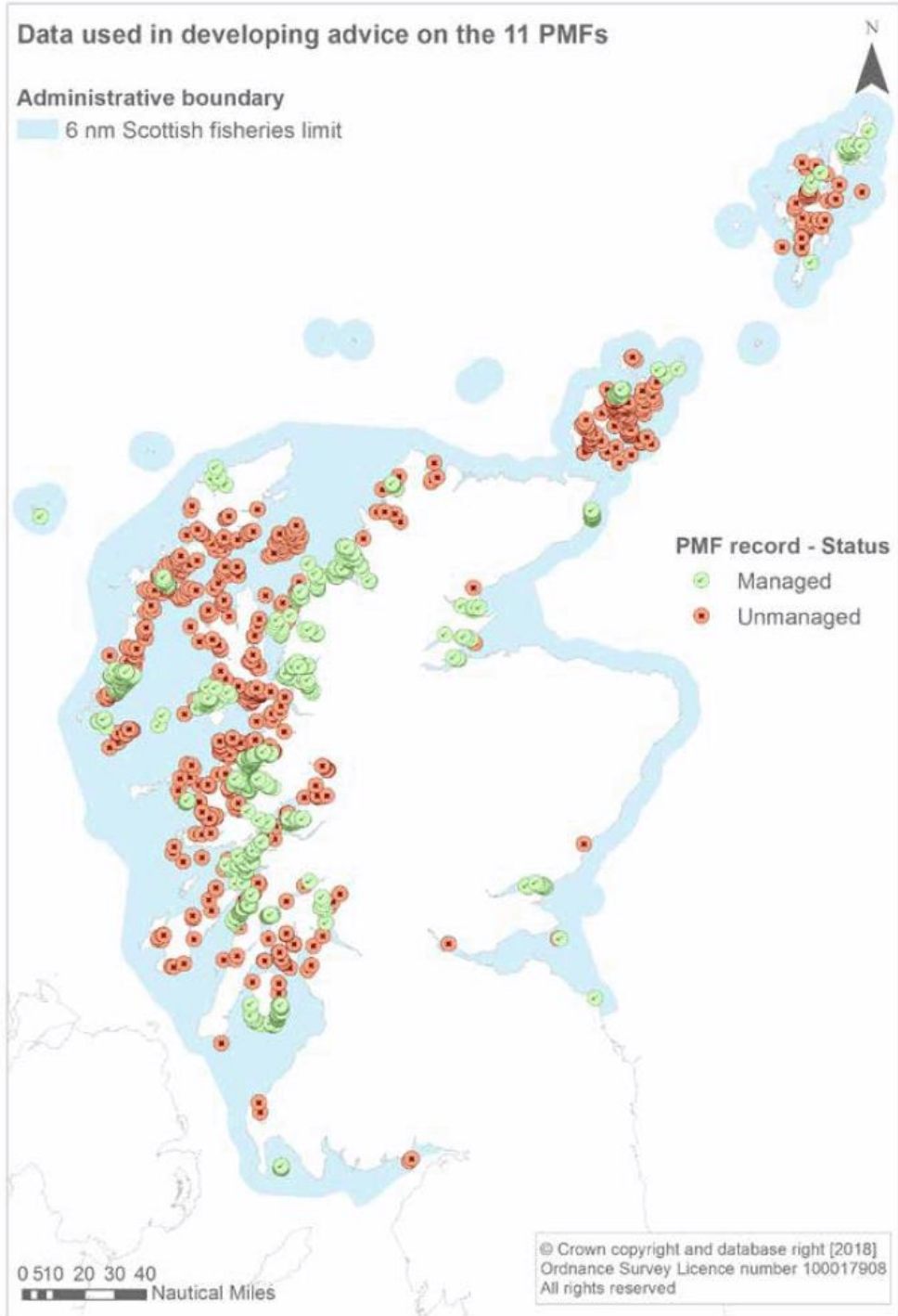
- "low impact" zone (lower impact fishing, gear-only zones, NTZs)
- No trawling or dredging within 1nm (PMF recovery)

❑ Supporting best value sustainable use inshore (e.g. GRID Assessing Options for Change Report)

Scottish Government
Riaghaltas na h-Alba
gov.scot

marinescotland

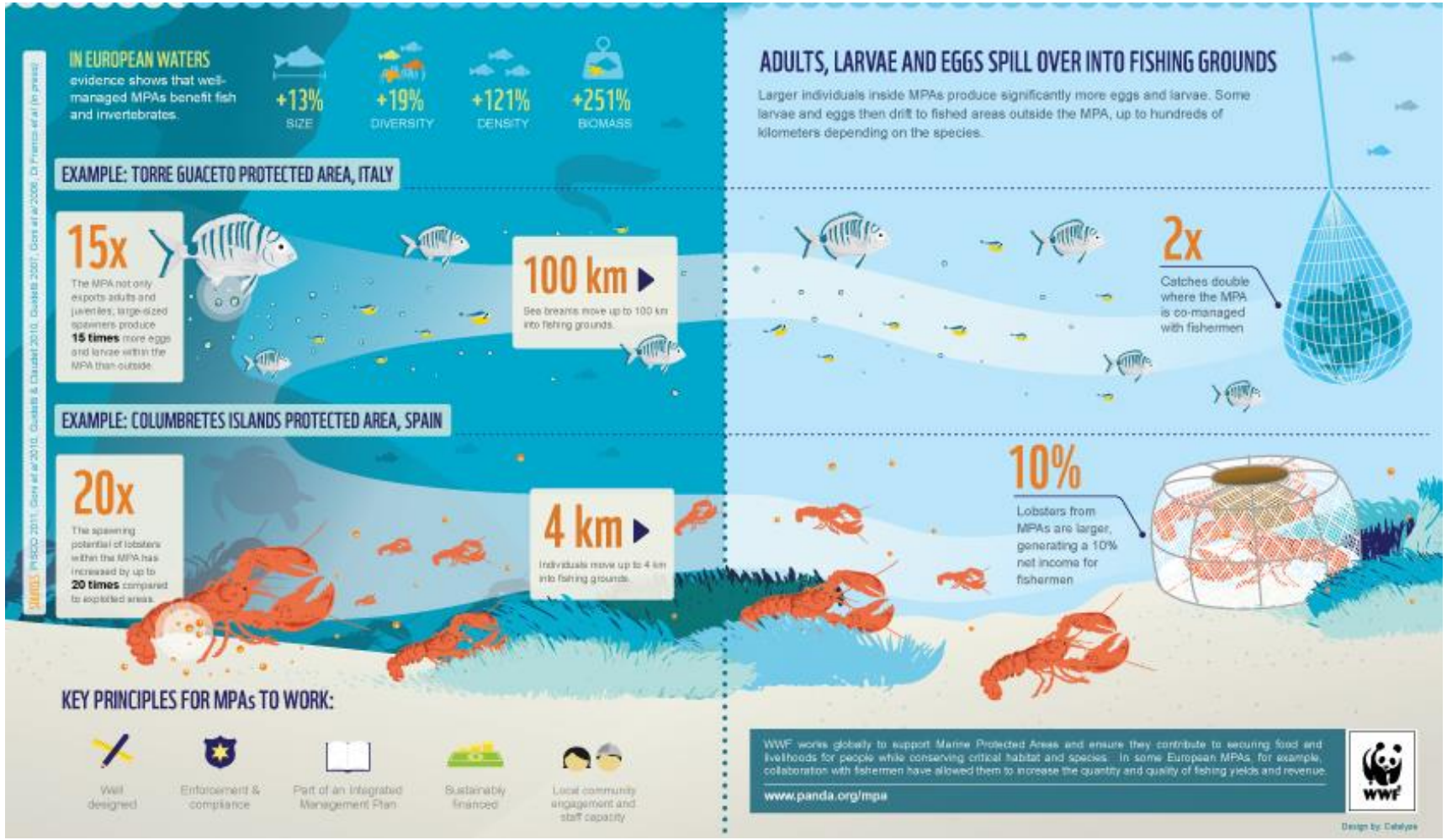
Scottish Natural Heritage
Dualchas Nàdair na h-Alba
nature.scot

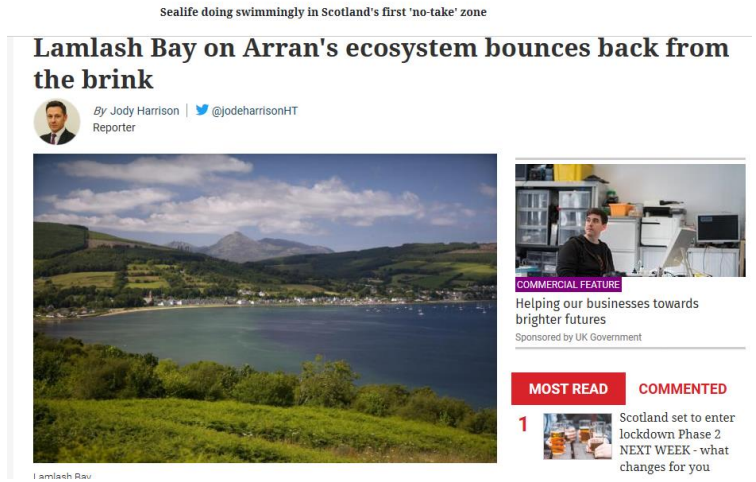


PMFs Included	PMFs not included
Blue mussel beds	Celtic featherstar aggregations
Cold water coral reefs	**Burrowed mud**
Fan mussel aggregations	**Inshore deep mud with burrowing heart urchins**
Flame shell beds	**Kelp and seaweed communities on sublittoral sediment**
Horse mussel beds	**Kelp beds**
Maerl beds	**Tide-swept algal communities**
Maerl or coarse shell gravel with burrowing sea cucumbers	Burrowing sea anemone
Native oysters	Heart cockle
Northern sea fan and sponge communities	
Seagrass beds	
Serpulid aggregations	

Fish & shellfish stock recovery areas

COAST
Community Of Arran Seabed Trust




Sealife doing swimmingly in Scotland's first 'no-take' zone

Lamlash Bay on Arran's ecosystem bounces back from the brink

By Jody Harrison | @jodeharrisonHT
Reporter

Lamlash Bay

COMMERCIAL FEATURE
Helping our businesses towards brighter futures
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MOST READ COMMENTED

1 Scotland set to enter lockdown Phase 2 NEXT WEEK - what changes for you

Practical solutions

- ❑ Ambitious four-nation Marine Strategy
- ❑ Join-up NPF4, Climate Change Plan, National Marine Plan & Future Fisheries Management outcomes
- ❑ Join-up & extend FFM, PMF, MPA and blue carbon work
- ❑ Regional Marine Plans enhance blue carbon stores
- ❑ Support active restoration projects (e.g. native oyster, seagrass)

http://uwsoxfampartnership.org.uk/wp-content/uploads/2019/06/On-Target-July-2019-Web-FINAL.pdf

DEEP - AN ENVIRONMENTAL ‘FIRST’

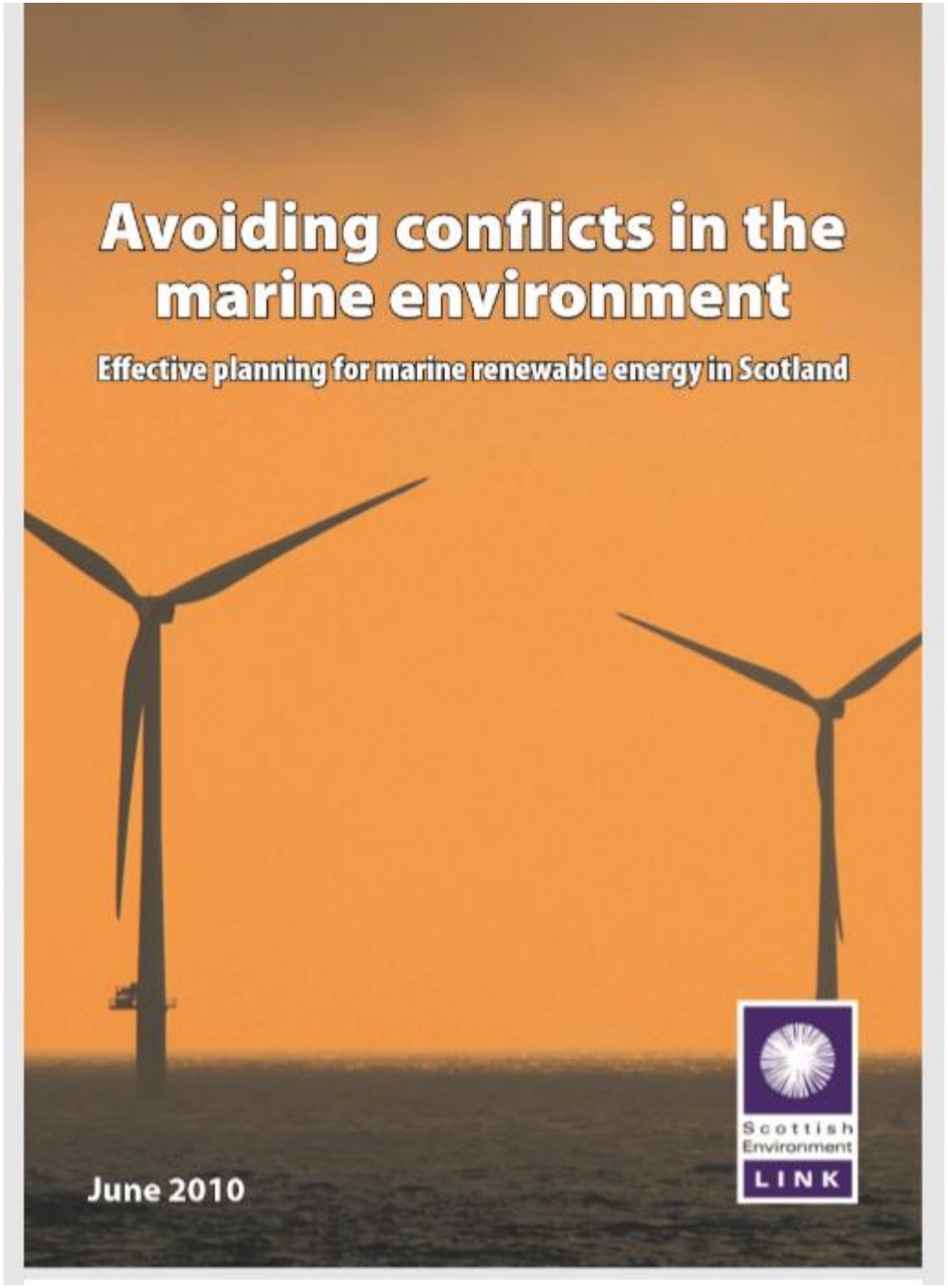
DEEP
Dornoch Environmental Enhancement Project

marine conservation society

GLENMORANGIE
SINGLE MALT SCOTCH WHISKY

HERIOT WATT UNIVERSITY

OYSTERS RETURN - FIRST TIME IN 100 YEARS!



- Responsible growth
- Right technology in the right place
- *De facto* marine reserve benefits **only** if pristine sites avoided

Conservation

This article is more than 1 year old

Kelp dredging proposal criticised by Scottish conservationists

Use of mechanical device to pull kelp plants from beds would destroy local ecosystem, say campaigners

Cathleen O'Grady
@cathleenogrady
Fri 24 Aug 2018 12.05 BST

180

▲ Underwater sealife on the Isle of Canna, Scotland. 'Kelp habitats are vital ecosystems that absorb the power of waves along stormy coasts, lock up millions of tonnes of carbon every year and provide shelter for hundreds of species,' said Calum Duncan of the Marine Conservation Society. Photograph: Will Rose/Greenpeace

A proposal to mechanically dredge kelp forests off the coast of Scotland has led to an outcry from conservationists, who say it would destroy local ecosystems.

Ayr-based company Marine Biopolymers has approached Marine Scotland to

By yr 5 MBL proposed to mechanically harvest up to 30,000 tonnes wet weight per annum of *Laminaria*

Transformative change

- ❑ Manage with grain of ecosystem
- ❑ Nature restoration core of all decisions
- ❑ Climate & nature friendly fishing
- ❑ Break false dichotomy
- ❑ Unlock **blue recovery** investment
- ❑ **30% ocean highly protected by 2030**