



Scottish  
Environment  
LINK

# ELUK Biennial Event 2021

## Setting our Ocean on a Path for Recovery

Scottish Environment LINK 31st August 2021

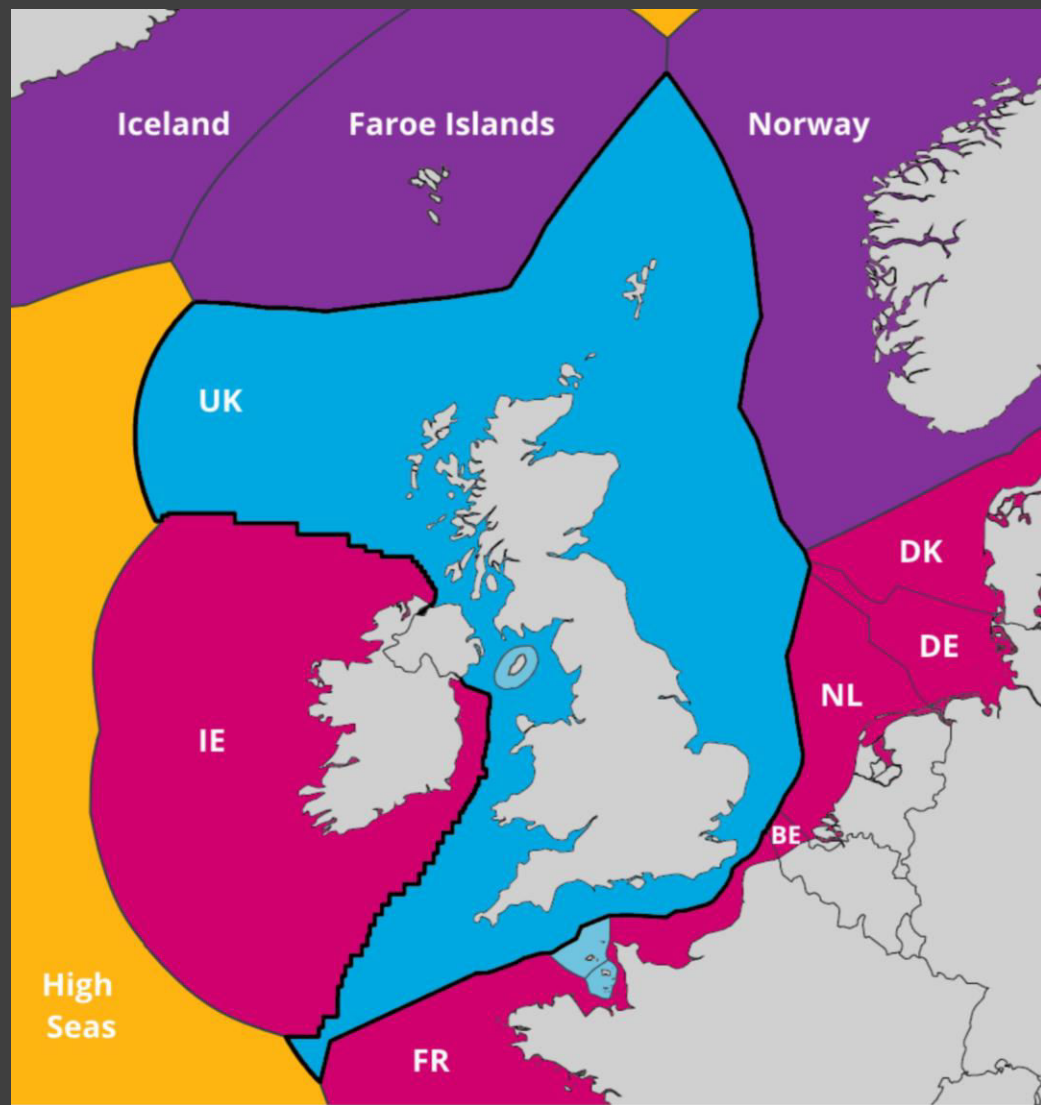
Photo credits: Ray Henessy on  
Unsplash

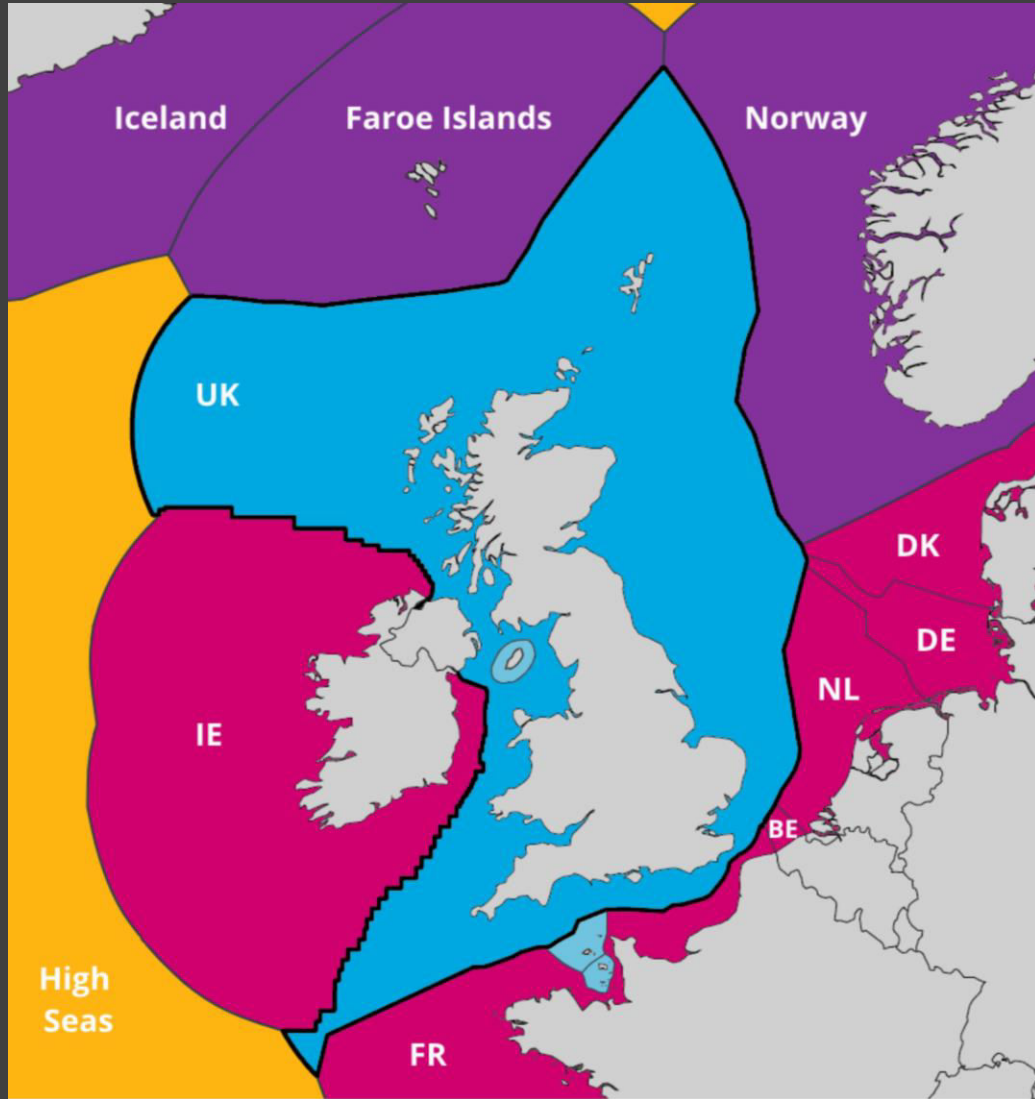


# Ocean Recovery

An aerial photograph of a blue fishing boat moving across the ocean. The boat is leaving a white wake behind it. Several seagulls are flying in the sky above the water. The text "Ocean Recovery" is overlaid in white at the top of the image.

& Climate  
Smart Fisheries





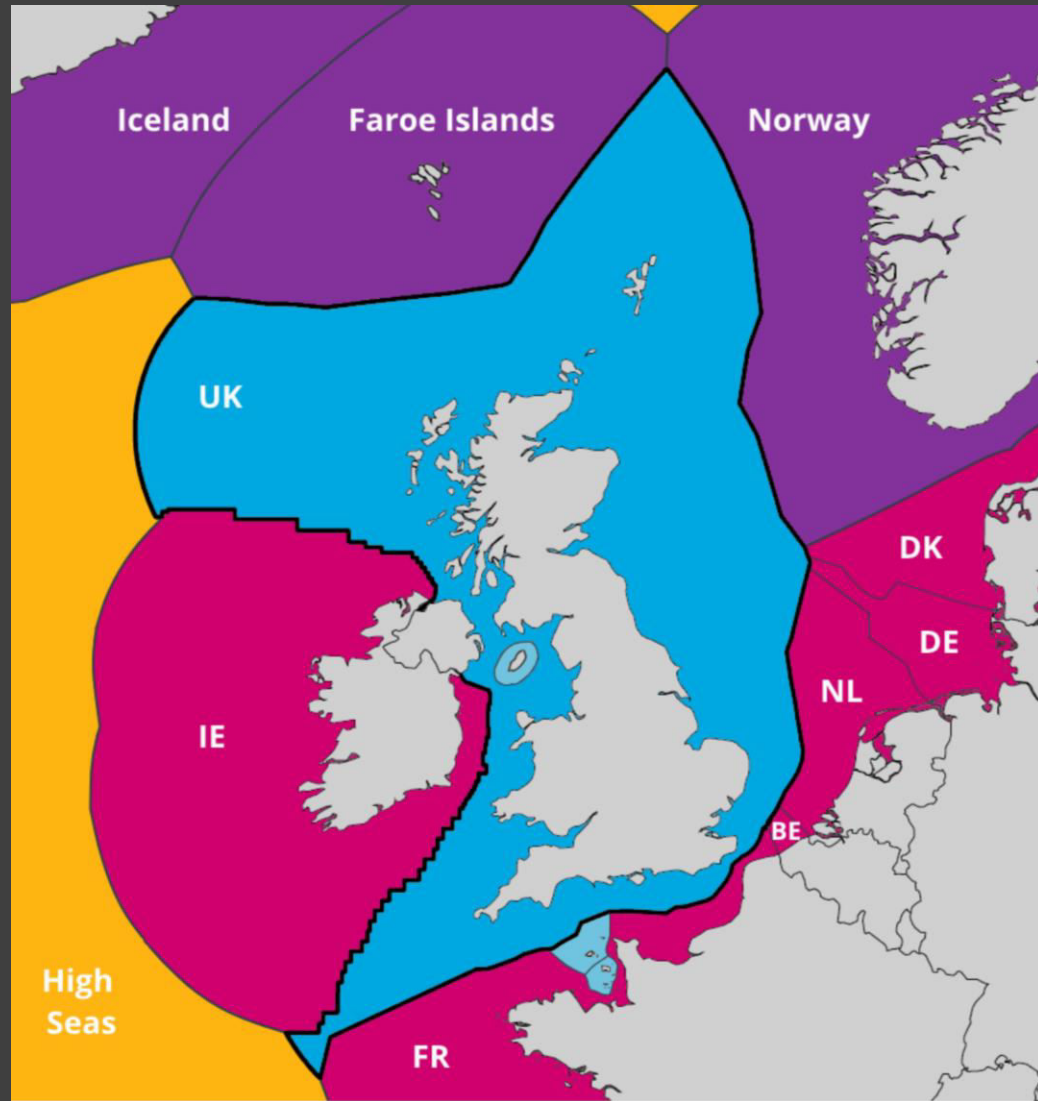
## Fisheries Act 2020

### 2020 CHAPTER 22

An Act to make provision in relation to fisheries, fishing, aquaculture and marine conservation; to make provision about the functions of the Marine Management Organisation; and for connected purposes.

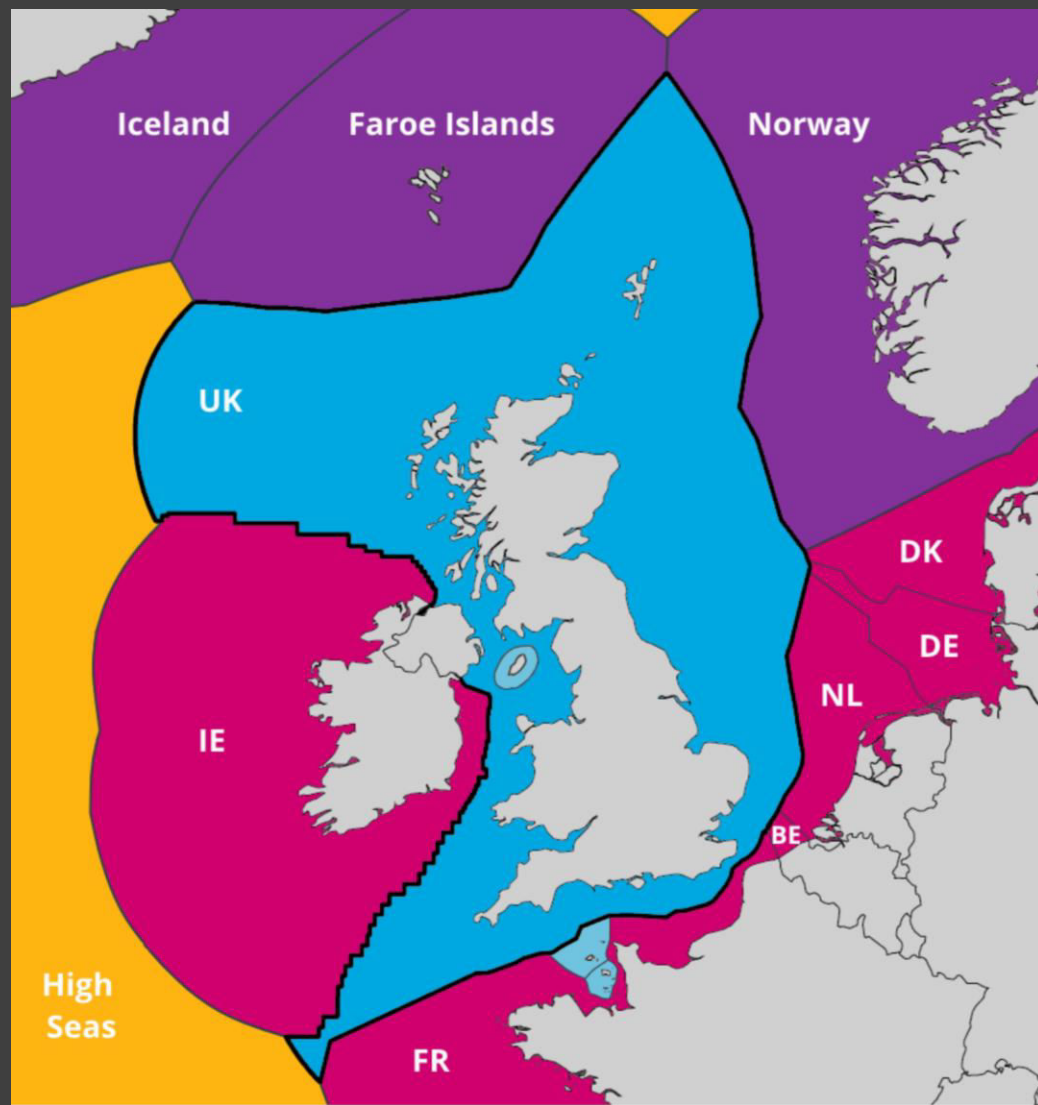
[23rd November 2020]

BE IT ENACTED by the Queen's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:—



### Fisheries objectives

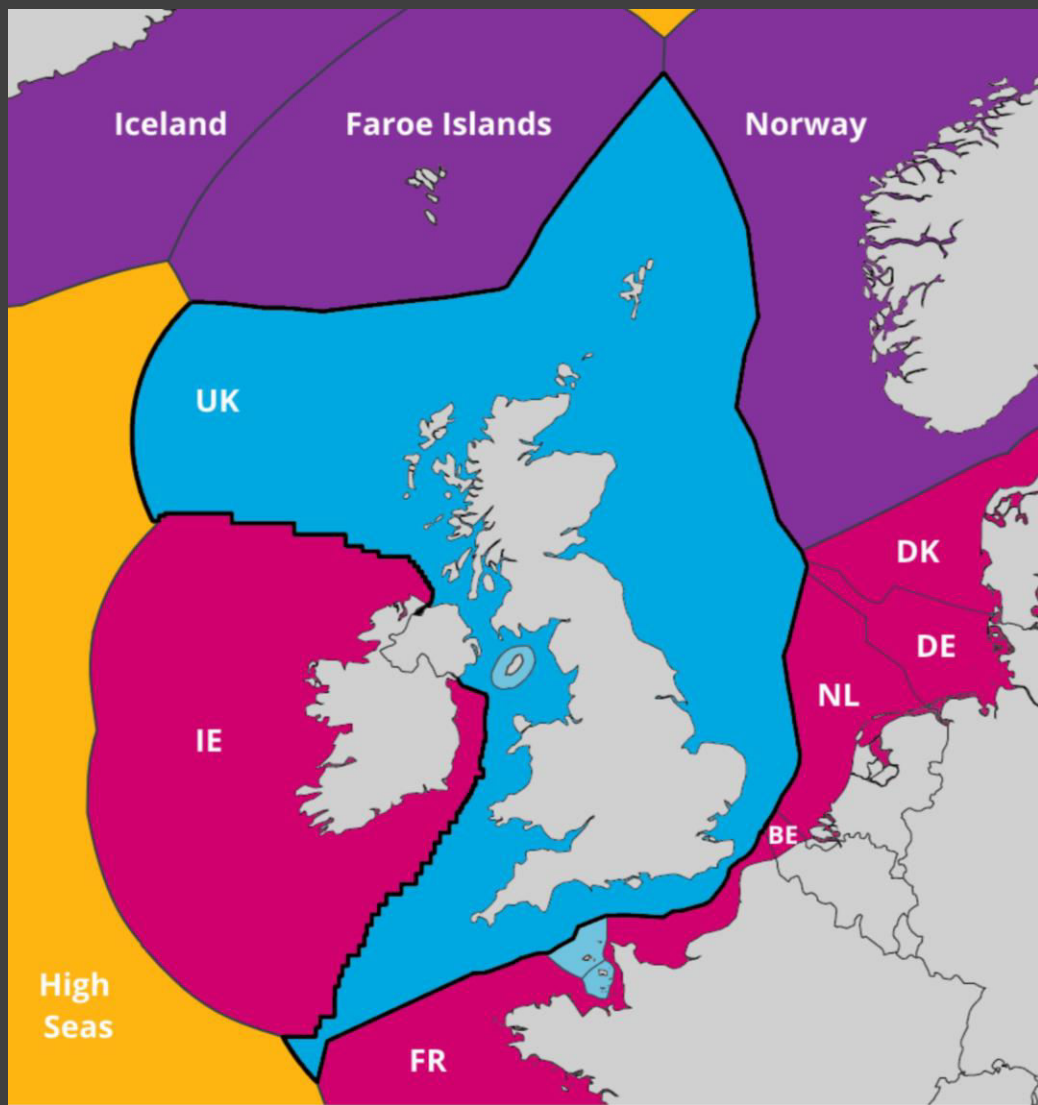
- (1) The fisheries objectives are—
- (a) the sustainability objective,
  - (b) the precautionary objective,
  - (c) the ecosystem objective,
  - (d) the scientific evidence objective,
  - (e) the bycatch objective,
  - (f) the equal access objective,
  - (g) the national benefit objective, and
  - (h) the climate change objective.



2

#### Joint fisheries statement

- (1) The fisheries policy authorities must prepare and publish a document, to be known as a joint fisheries statement (a "JFS"), that —
  - (a) sets out the policies of the fisheries policy authorities (or any of them) for achieving, or contributing to the achievement of, the fisheries objectives,
  - (b) contains a statement explaining the use the fisheries policy authorities (or any of them) propose to make of fisheries management plans in order to achieve, or contribute to the achievement of, the fisheries objectives, and
  - (c) contains a statement explaining how the fisheries objectives have been interpreted and proportionately applied in formulating the policies and proposals mentioned in paragraphs (a) and (b).
- (2) The policies for achieving, or contributing to the achievement of, the fisheries objectives required to be set out in a JFS by subsection (1)(a) include, in particular, the policies of the fisheries policy authorities relating to the distribution, in accordance with section 25, of catch quotas and effort quotas for use by fishing boats.
- (3) The statement under subsection (1)(b) must, in particular—
  - (a) contain a list of fisheries management plans that are already in force;
  - (b) contain a list of fisheries management plans that the fisheries policy authorities (or any of them) propose to prepare and publish;
  - (c) specify, in relation to each proposed fisheries management plan—
    - (i) the fisheries policy authority or authorities by whom it is to be prepared and published;
    - (ii) if it is to be prepared and published otherwise than by all of the fisheries policy authorities acting jointly, the reasons for that;
    - (iii) the stock or stocks of sea fish, the type or types of fishing and the geographical area or areas to which the plan will relate;
    - (iv) a timetable for preparation and publication;
  - (d) set out the fisheries policy authorities' reasons for deciding which stocks of sea fish, types of fishing and geographical areas should be subject to fisheries management plans and which should not.
- (4) A JFS must contain a statement that it has been prepared for the purposes of this Act.
- (5) The fisheries policy authorities must comply with subsections (1) to (4) before the end of the period of two years beginning with the day on which this Act is passed.



## Joint Fisheries Statement

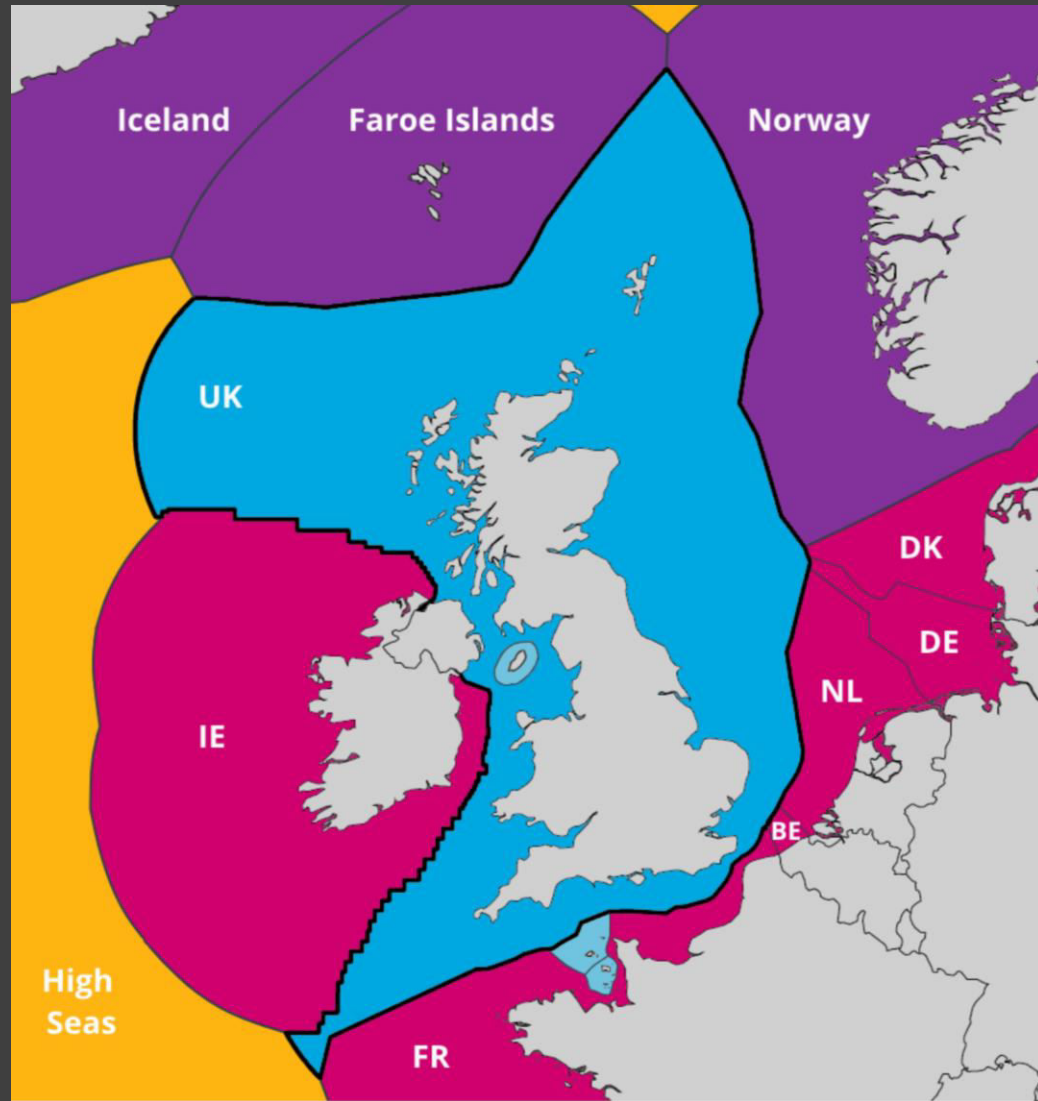
Drafting (in progress)

Public Consultation (Jan 2022)

Parliamentary Scrutiny (Autumn 2022)

Sign-off (November 2022)

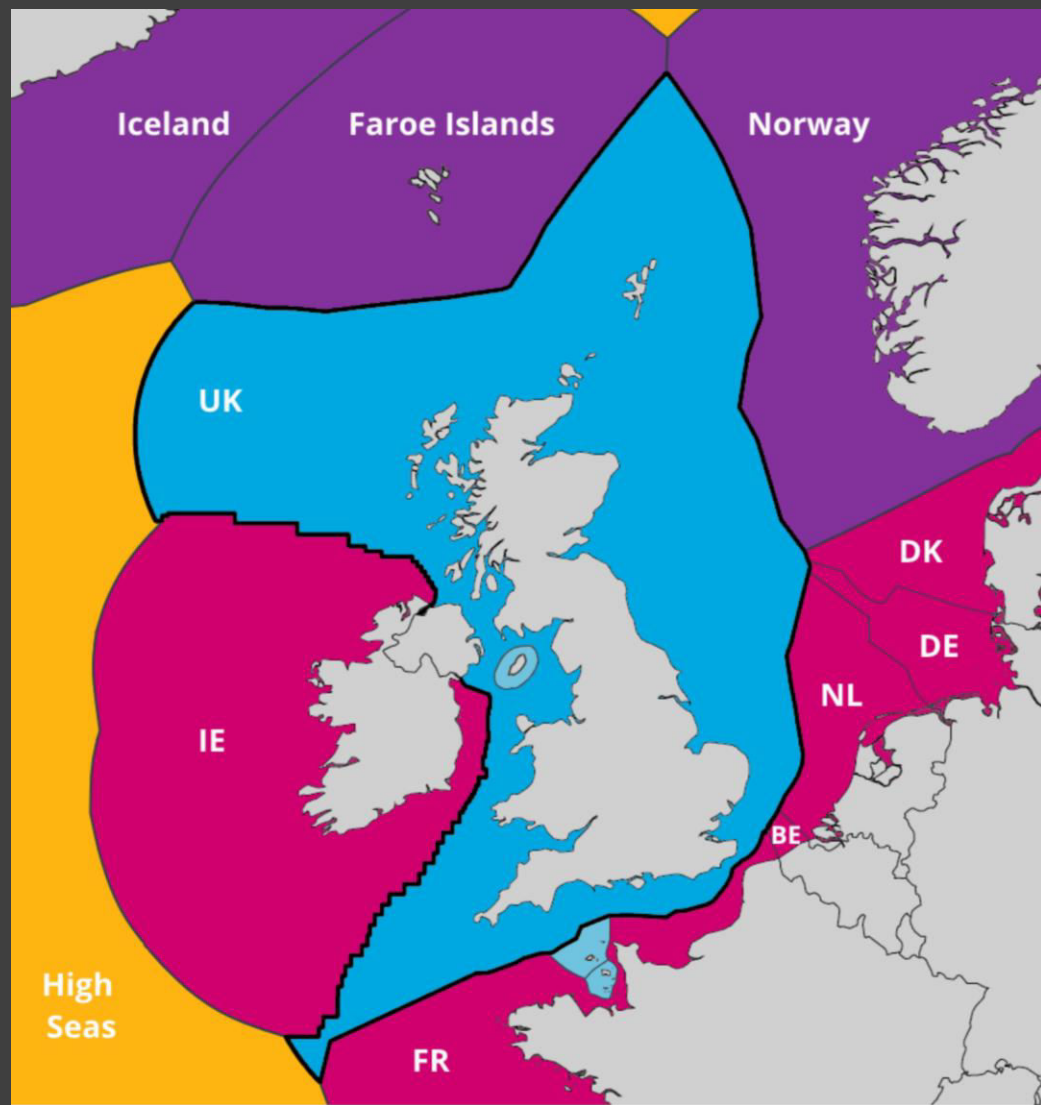
© 2022 The Joint Fisheries Statement



### Fisheries objectives

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  - (h) the climate change objective.





# 1) Vessel Fuel



## Fisheries fuel emissions

As with any industry burning fossil fuels releases harmful greenhouse gases.

## Removing fish

Fish are a source of carbon and removing them means removing a carbon stored from the ocean.

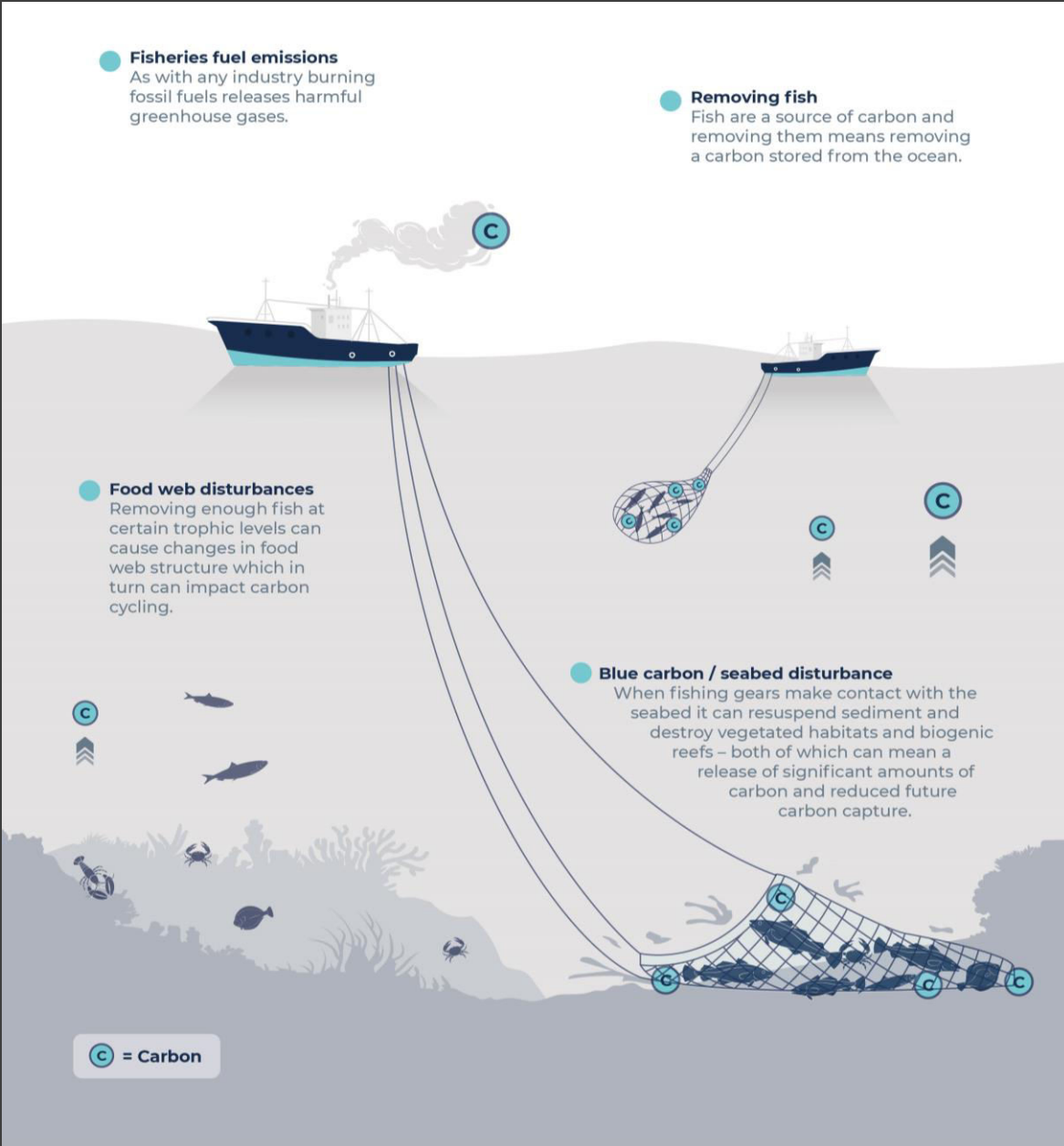
## Food web disturbances

Removing enough fish at certain trophic levels can cause changes in food web structure which in turn can impact carbon cycling.

## Blue carbon / seabed disturbance

When fishing gears make contact with the seabed it can resuspend sediment and destroy vegetated habitats and biogenic reefs – both of which can mean a release of significant amounts of carbon and reduced future carbon capture.

**C** = Carbon



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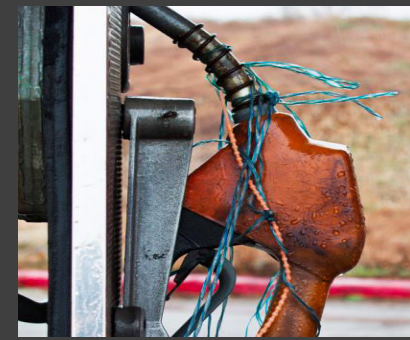
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2) Seabed Disturbance

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3) Removing Fish is Removing Carbon

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C



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C



C



C = Carbon



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2) Seabed Disturbance

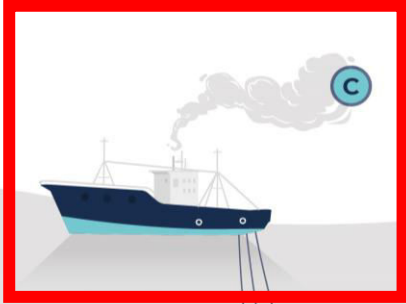


3) Removing Fish is Removing Carbon

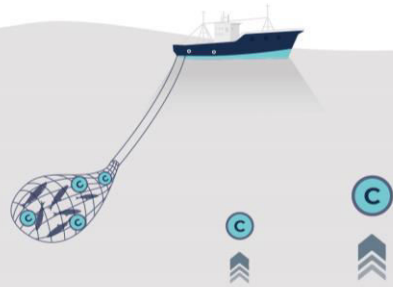


4) Food Web Disturbance

**Fisheries fuel emissions**  
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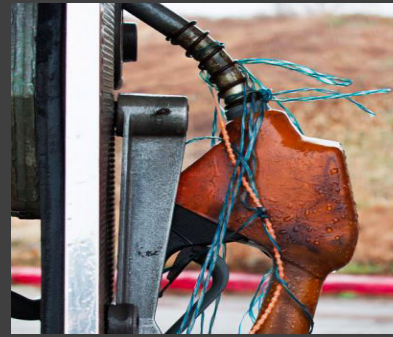
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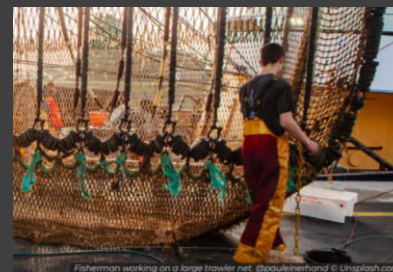
1) Vessel Fuel



2) Seabed Disturbance



3) Removing Fish is Removing Carbon



4) Food Web Disturbance



● **Continue to increase knowledge and research around blue carbon and fisheries impacts.**

- Build a clear understanding of UK blue carbon habitats and stock volume
- Improve understanding of UK towed gear activity and ability to monitor
- Increase research on climate stressors and UK fisheries impacts to fill knowledge gaps and build baseline data for climate-smart fisheries development



● **Increase transparency and traceability of UK fishing.**

- Mandate Remote Electronic Monitoring (REM) with cameras that incorporate Vessel Monitoring Systems (VMS) across vessels fishing in UK waters (including vessels <12m)
- Evidence sustainable fisheries – fishing within biological limits and minimising ecosystem impacts



● **Reduce pressure from active fishing gear types.**

- Incentivise the use of low impact and passive fishing gears
- Support and incentivise the development of less harmful gear modifications / technology



● **Work to decarbonise the UK fishing fleet and eliminate inefficient fleet segments.**

- Track UK fisheries GHG emissions
- Set out the programme to replace older vessels with new energy efficient vessels and alternative fuel use
- Remove harmful fuel subsidies such as red diesel



● **Protect blue carbon already within MPAs.**

- Prohibit bottom towed fishing gear and anchoring
- Impose speed restrictions
- Create buffers around sensitive features
- Restrict fishing within MPAs



● **Identify and protect key blue carbon in wider seas.**

- Protect key stands of blue carbon such as muddy sediments or biogenic reefs from bottom towed gear
- Ensure fishing is within biological limits



● **Strengthen marine policy with a climate change lens.**

- Increase climate change objectives within UK marine policy
- Include blue carbon within UK's Nationally Determined Contributions



**A BLUEPRINT FOR  
CLIMATE-SMART  
UK FISHERIES**



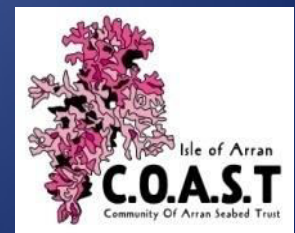
Thank you!

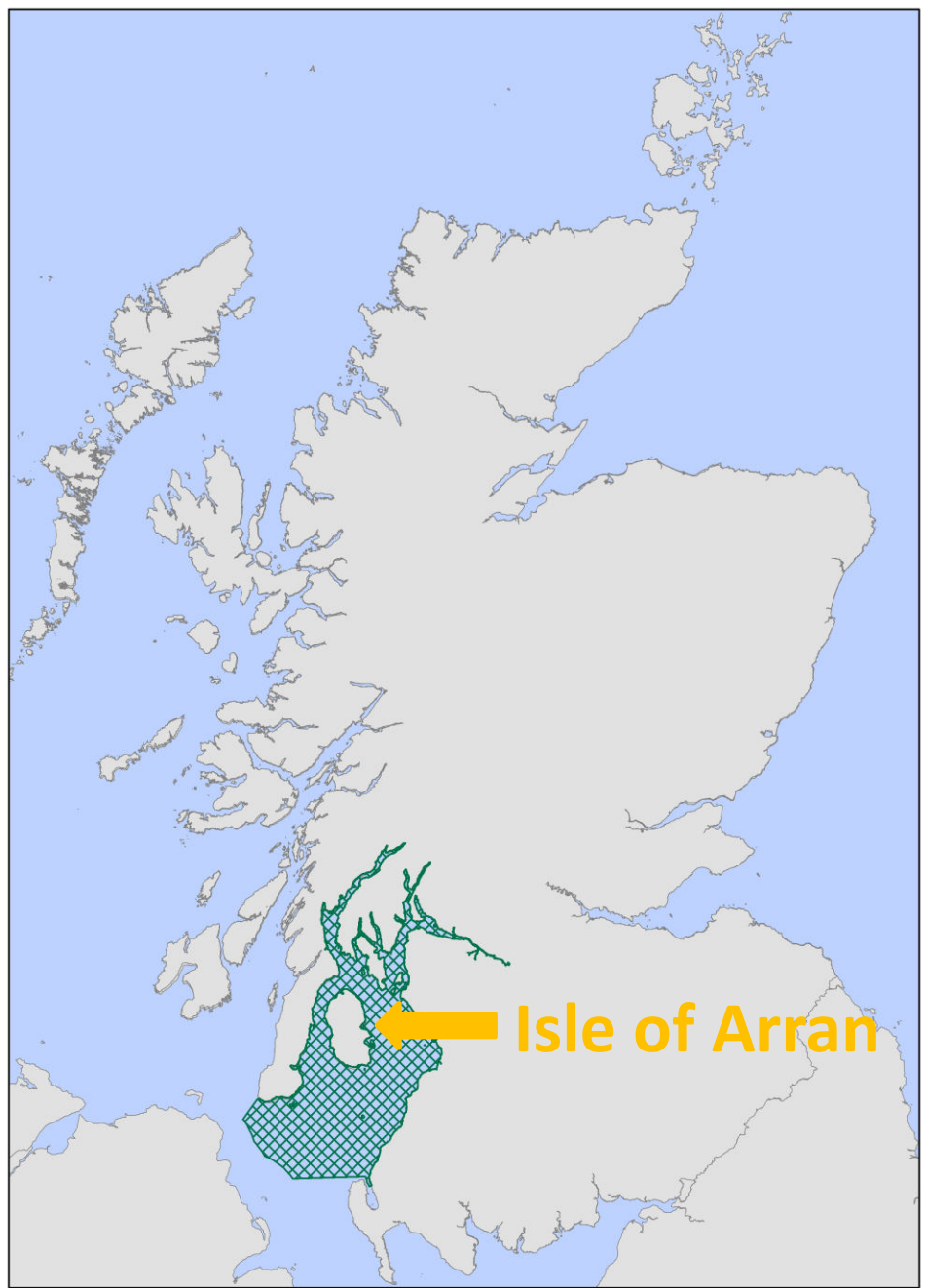


# Community-led marine protection on the Isle of Arran, Scotland



Lucy Kay, MPA Project Officer  
Community of Arran Seabed Trust (COAST)  
[www.arrancoast.com](http://www.arrancoast.com)



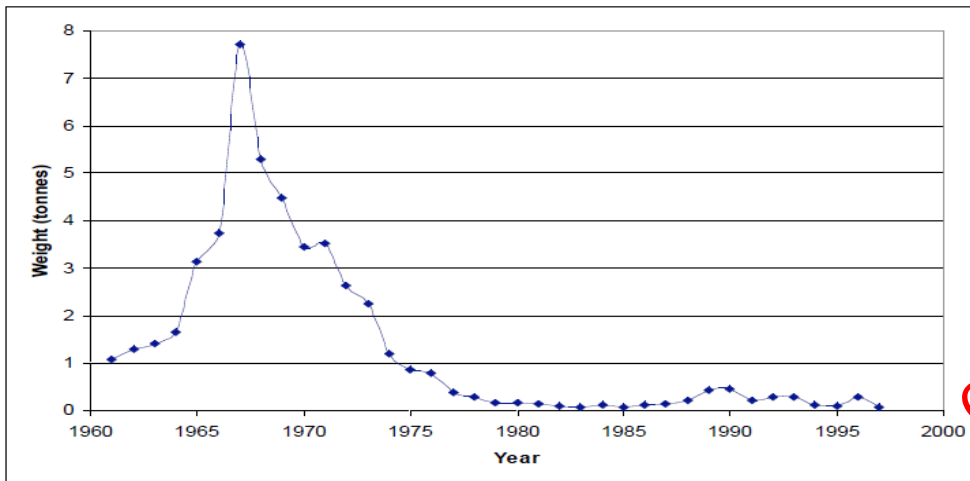
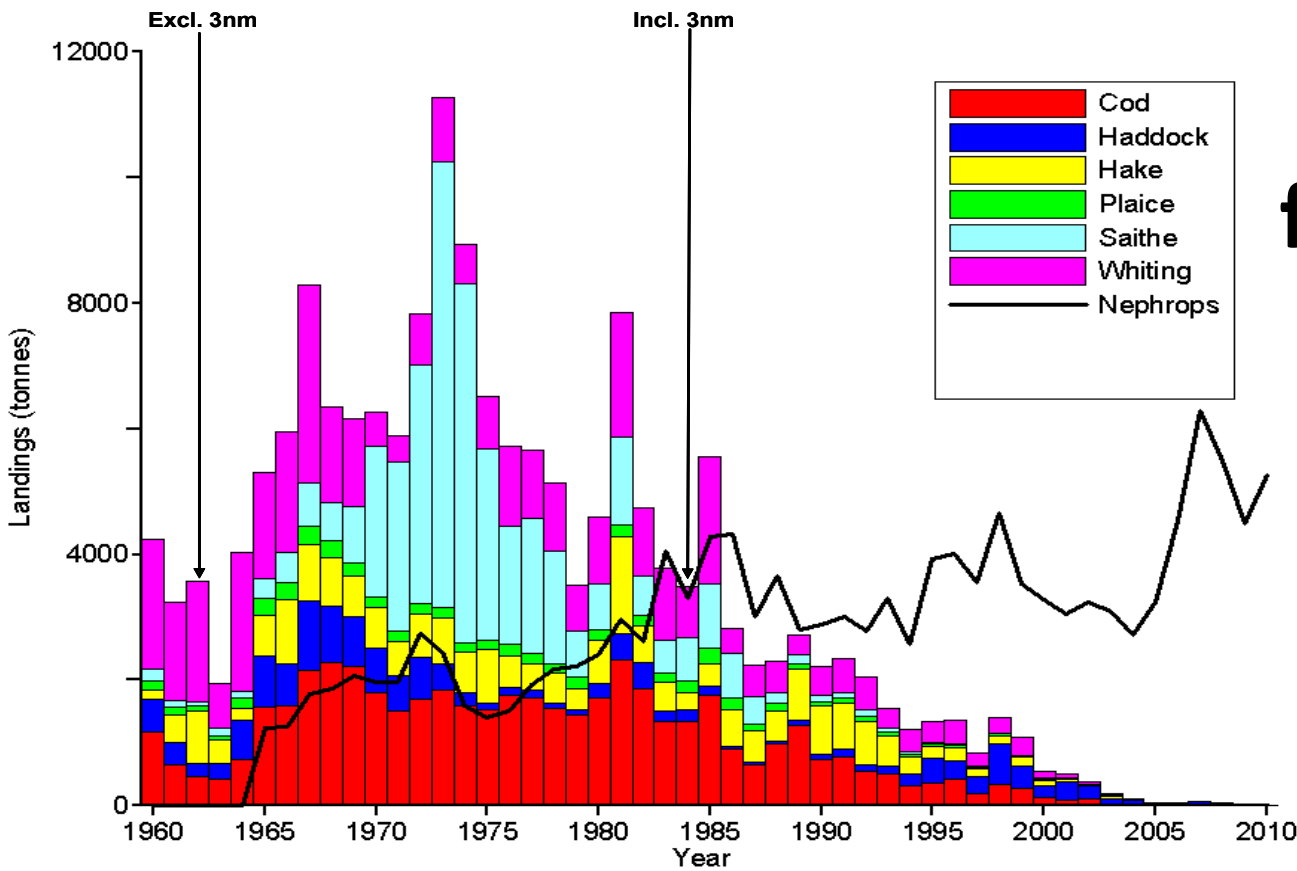


Isle of Arran

NOT FOR NAVIGATION. Created by Scottish Government (Marine Scotland) 2015. © Crown Copyright, All rights reserved. OceanWise License No. EK001-201404001. Ordnance Survey License No. 100024655. Projection: Transverse Mercator. Scale 1:1,980,193

# Collapse of fisheries in the Clyde

*Clyde Ecosystem Review, Marine Scotland 2012*



## Lamlash Fishing Festival

*catch (weight) of fish per year*

**Cancelled in 1990s  
due to lack of fish**



# Effects of dredging on marine habitats



**Undisturbed seabed**



**Dredged seabed**



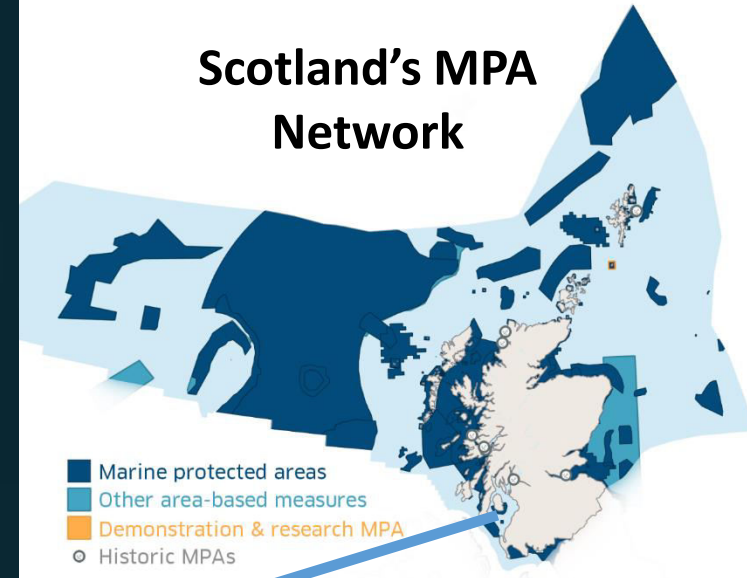
# Arran's marine protected areas

Lamlash Bay NTZ  
2008 (2.67 km<sup>2</sup>)

South Arran MPA 2014 (280 km<sup>2</sup>)  
fishing zones 2016

Sources: Esri, ©ESRI, NOAA, National Geographic, Garmin, HERE, ©openmap, and other contributors, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

## Scotland's MPA Network



Scotland's MPA network - approx 37% of Scottish Seas

But damaging activities still occur

- 17 of 31 MPAs no fisheries measures
- Only 9 MPAs achieved stated conservation objective(s)
- No well-managed MPAs

# Survey & collaborative research

- Monitoring: biodiversity, commercially important shellfish, & essential fish habitat
- Exciting results – recovering seabed marine life and shellfish populations
- Evidence to lobby for improved protection & management

Since 2010 COAST hosted 4 PhD and 33 MSc researchers

## Better habitats mean...

- Healthier marine ecosystems
- Strong, stable food chains
- All life is supported
- Social & economic benefits
- Blue carbon habitats protected



# Coastal Communities Network (CCN) Scotland

- 1 Berwickshire Marine Reserve
- 2 Clean Coast Outer Hebrides
- 3 Community Association of Lochs and Sounds (CAOLAS)
- 4 Community of Arran Seabed Trust (COAST)
- 5 Craignish Restoration of Coastal and Marine Habitat (CROMACH)
- 6 Edinburgh Shoreline
- 7 Eigg Environmental Action Group
- 8 Fair Isle Marine Research Organisation (FIMRO)
- 9 Fairlie Coastal Trust
- 10 Friends of Loch Etive
- 11 Friends of Loch Houran
- 12 Friends of the Sound of Jura
- 13 Knoydart Loch Nevis Group
- 14 Orkney Skate Trust
- 15 Sea Change, Wester Ross
- 16 Skye Communities for Natural Heritage
- 17 South Skye Seas initiative (SSSi)
- 18 Wardie Bay Beachwatch

+ 16 associated organisations  
+ supporters



Facilitated by



<https://www.communitiesforseas.scot/about-the-network/>



- Education & outreach – COAST Discovery Centre opened 2018
- Well-managed MPA – community-led & community benefits
- Influence policy & regional planning
- Survey, research, monitoring
- Campaigns, media, publicity

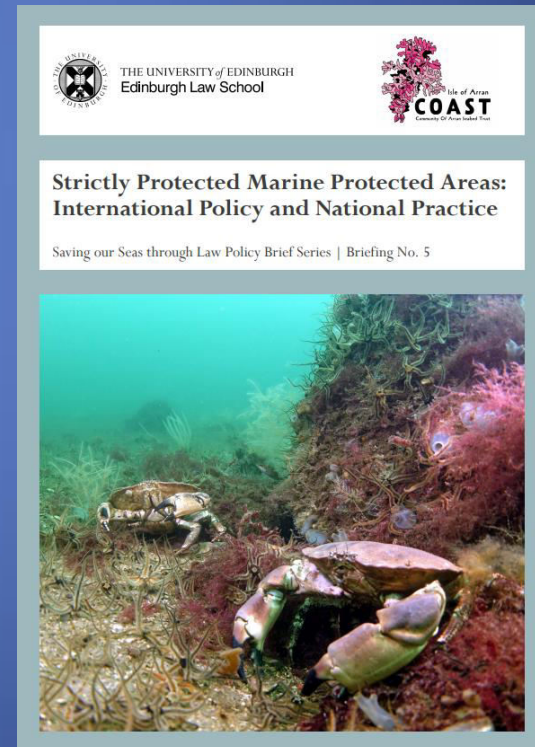


# What have we learnt?

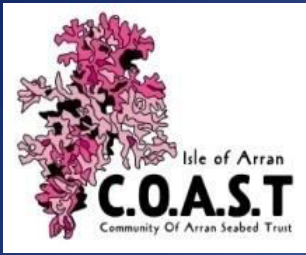
- Engage people locally, show them what is there, have the difficult discussions, explain the bigger picture
- Get on with it – the environment will respond but we don't have time to delay recovering our seas.
- Understand what you have and establish long-term monitoring. Get others on board to help
- A lot of hard work, but worth it



<https://www.frontiersin.org/articles/10.3389/fmars.2020.00076/full>



<https://www.law.ed.ac.uk/research/research-projects/saving-our-seas-through-law>



Thank You

Any questions?

Find out more about the work of COAST:

[www.arrancoast.com](http://www.arrancoast.com)

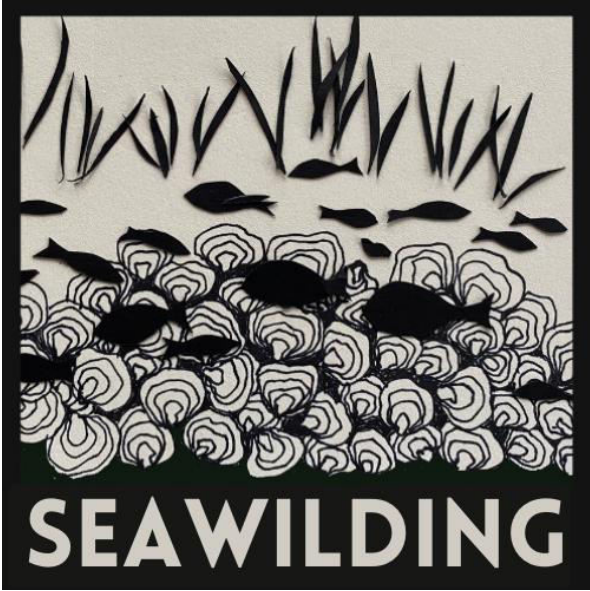
**Facebook:** arran.coast

**Twitter:** @ArranCoast

**Instagram:** arran.coast

**Youtube:** Arran Coast





[www.seawilding.org](http://www.seawilding.org)

  @seawilding

[info@seawilding.org](mailto:info@seawilding.org)

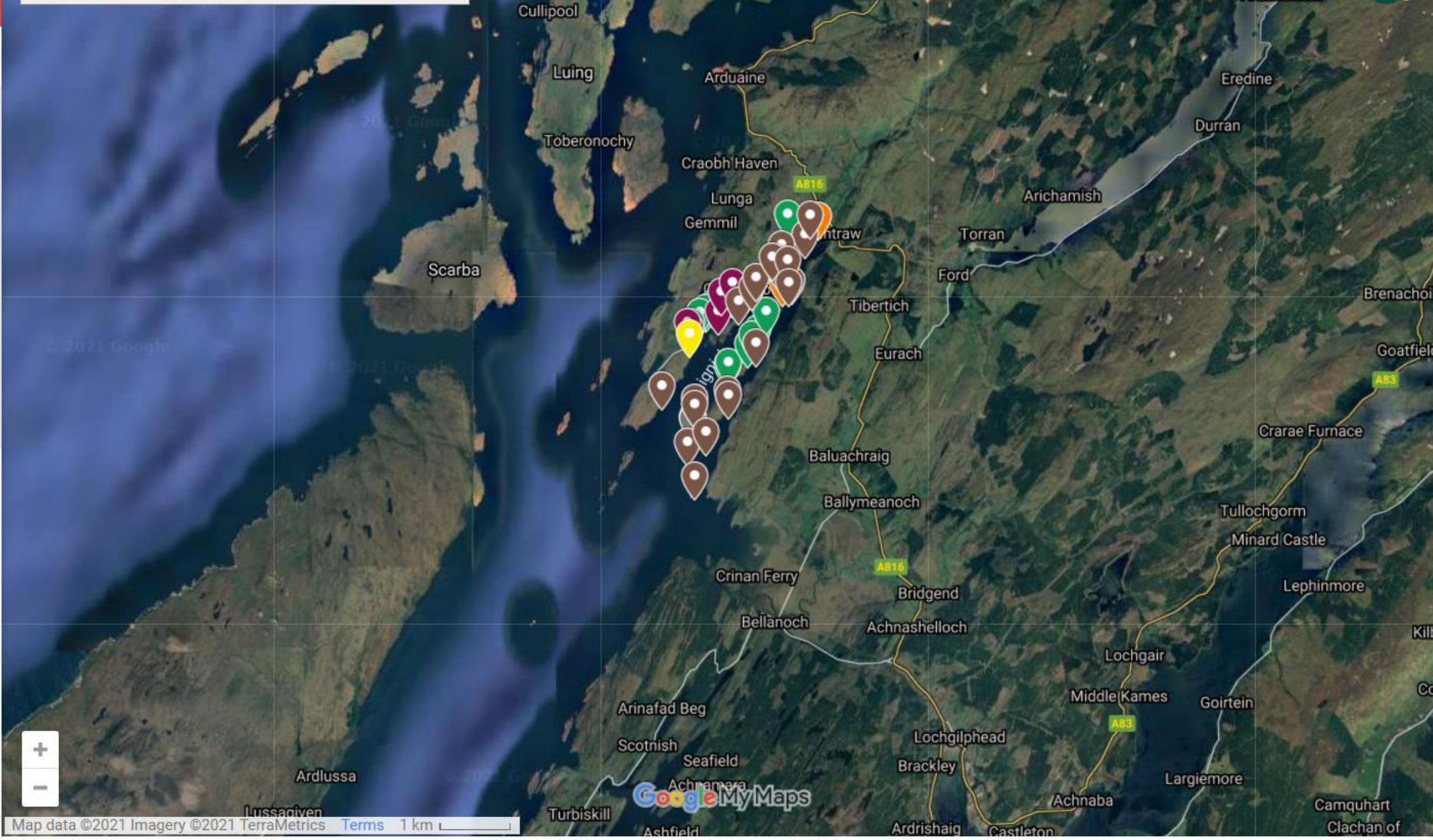
## Native Oyster and Seagrass Restoration Loch Craignish, Argyll



# Loch Craignish PMF sit...

- Seagrass**
  - Seagrass (Zostera marina)
  - Seagrass (Zostera marina/noltii)
  - Seagrass (Zostera marina)
  - Seagrass (Zostera marina)
  - ... 7 more
  
- Native oysters**
  - Wild native oysters (Ostrea edulis)
  - Wild native oysters (Ostrea edulis)
  - Wild native oysters (Ostrea edulis)
  
- Native Oyster restoration sites**
  - Seawilding Native oyster restoration sites
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This map was created by a user. [Learn how to create your own.](#)







# ECOSYSTEM SERVICES PROVIDED BY NATIVE OYSTERS *OSTREA EDULIS*

## INCREASED WATER CLARITY

Can benefit recovery of seagrass and other coastal aquatic plants



## INCREASED FISH PRODUCTION

Provides a suitable feeding and nursery grounds for fish



## INCREASED OYSTER POPULATIONS

Provides a spill over effect to local oyster fisheries



## CULTURAL VALUE

Have previously formed the heart of coastal communities



## IMPROVED WATER QUALITY

Removes pollutants from the water column



## BIODIVERSITY ENHANCEMENT

Form a complex structure that provides shelter and food for a diversity of species



## DENITRIFICATION

Removes excess nutrients



## STABILISATION OF SEDIMENTS

Reduces the resuspension of fine sediment, improving water clarity

- Provisioning services
- Regulating services
- Cultural services



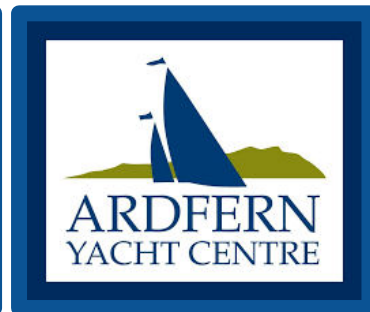
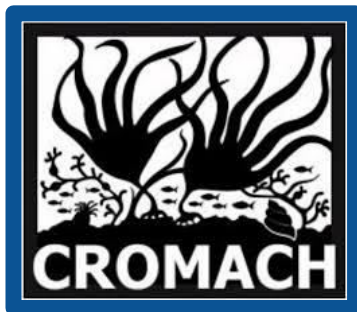
©2020, Native Oyster Network - UK & Ireland, Native Oyster Restoration Alliance.





## Seawilding, Aims and Objectives:

- Community-led
- Be operational – do it rather than talk about it
- Develop low cost methodologies/resources to roll out native oyster restoration/seagrass restoration at scale to other coastal communities
- Restore marine biodiversity in Scottish sea-lochs and inshore waters
- Empower communities to be more active stakeholders in fisheries management of inshore waters





# SEAWILDING MONITORING GUIDE

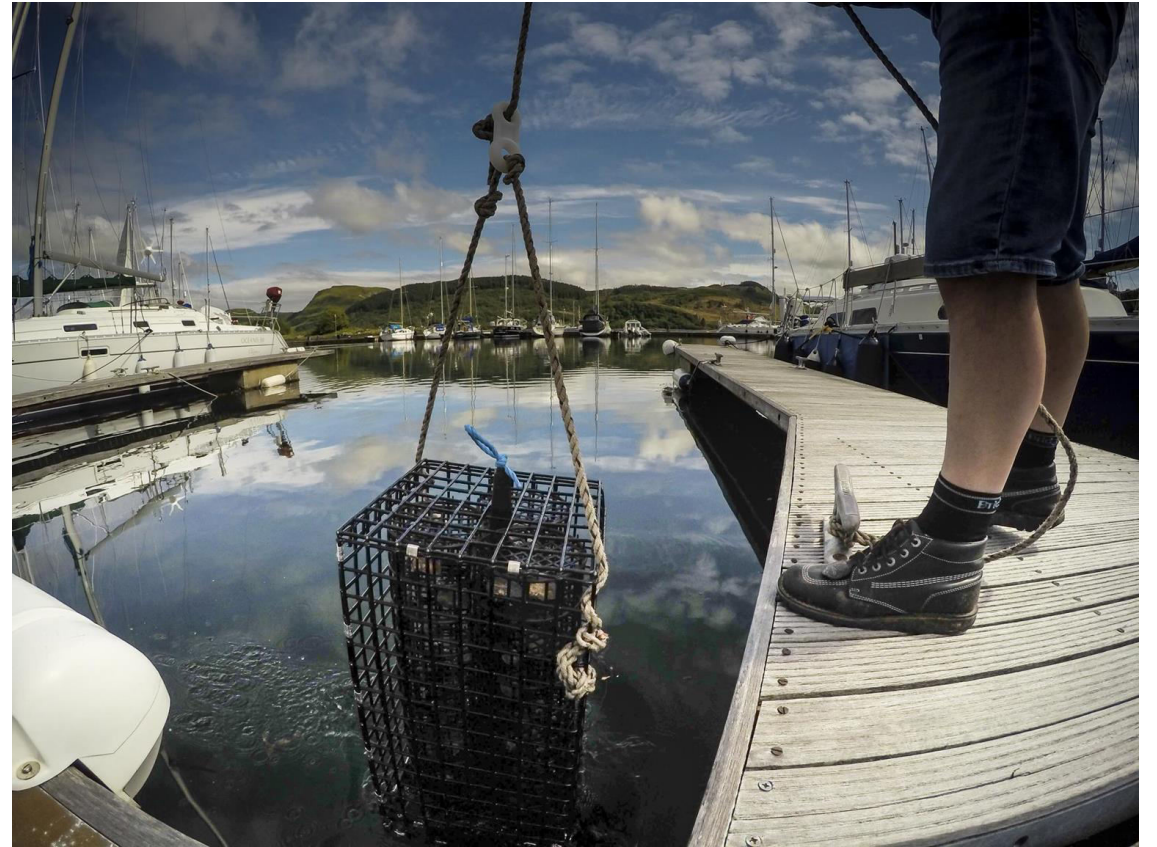
A guide to community monitoring of the restoration of the Loch Craignish marine environment  
Volume 1: Native Oyster and biodiversity monitoring



# Native Oyster Restoration







The Oyster Hoister School programme, Ardfern Yacht Centre



## **Native Oyster Restoration results so far:**

- 220,000 native oysters released into Loch Craignish so far.
- Pre-surveys, release surveys, post-surveys
- Around 20 volunteers for each release
- Oysters laid at 100 m<sup>2</sup>/density
- So far, high survival rates and growing well
- 700,000 still to go over next 3 years





# Loch Craignish Seagrass Enhancement

- Enhance the existing meadows by upto ½ hectare in 2021
  - Trial different planting methodologies
  - Develop on-site training resources
  - Roll out to other communities
- 
- Partnership between Seawilding, Project Seagrass and Scottish Association for Marine Sciences (SAMS)
  - Funded by Nature Scot











# Barriers to Community-led Restoration

- Restoration opportunity + community volunteers and capacity
- Licensing (Crown Estate, Planning Permission, Marine Scotland Fish Health Inspectorate, Marine Scotland Construction)
- Funds (Third Sector, Government, CSR, and new capital)
- Resistance to change from powers-that-be

IN LIGHT PINK AREA

MELFORT

SCALLOP DREDGING  
& TRAWLING BANNED  
BETWEEN 1ST APRIL &  
31ST SEPTEMBER

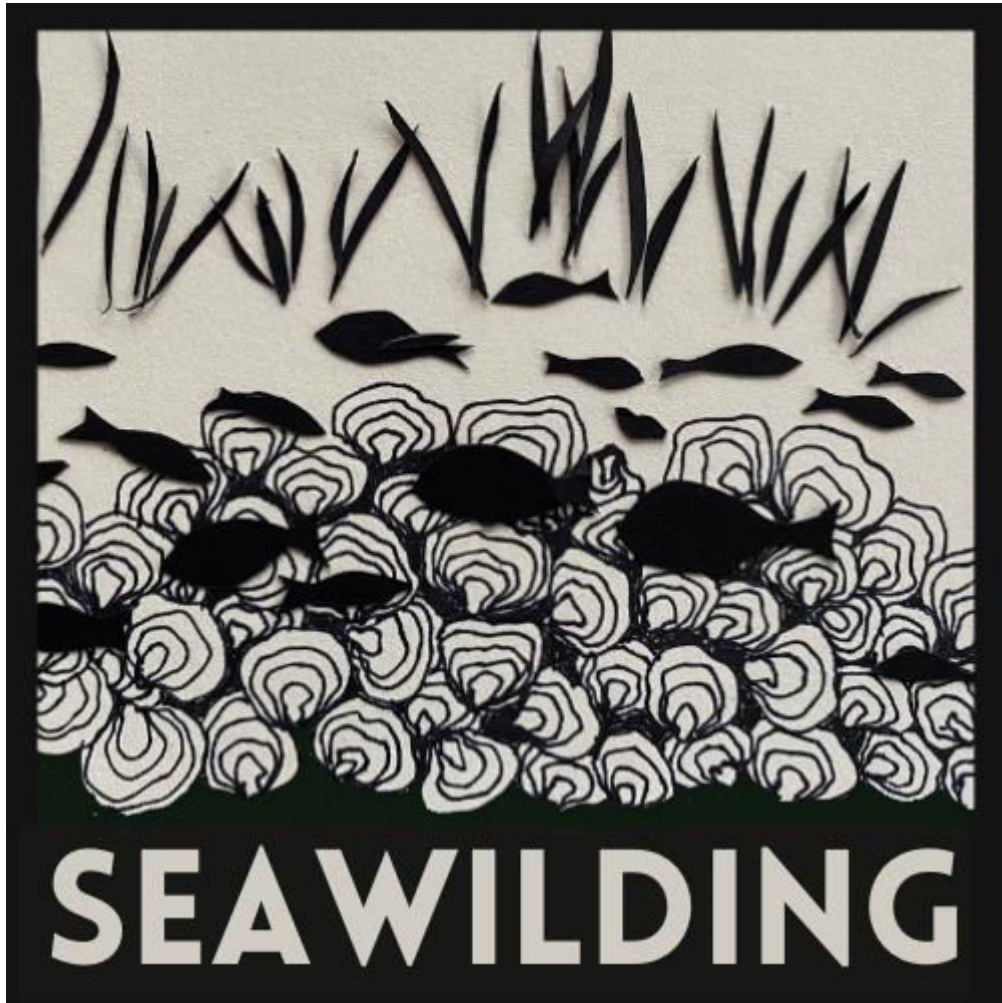
SCALLOP DREDGING  
& TRAWLING PROHIBITED  
INSIDE LOCH SWEEN

CRINAN









#Generationrestoration

*Society grows great when  
old men plant trees whose  
shade they know they  
shall never sit in.*

Greek proverb