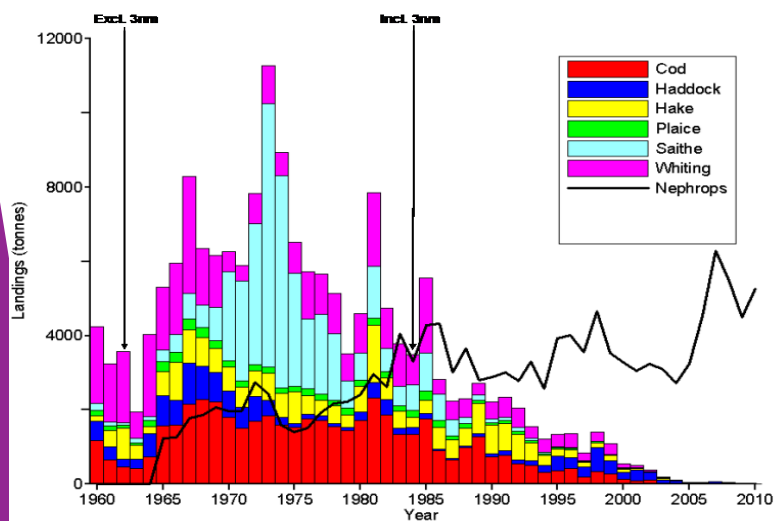


Marine Protected Areas and Blue Carbon

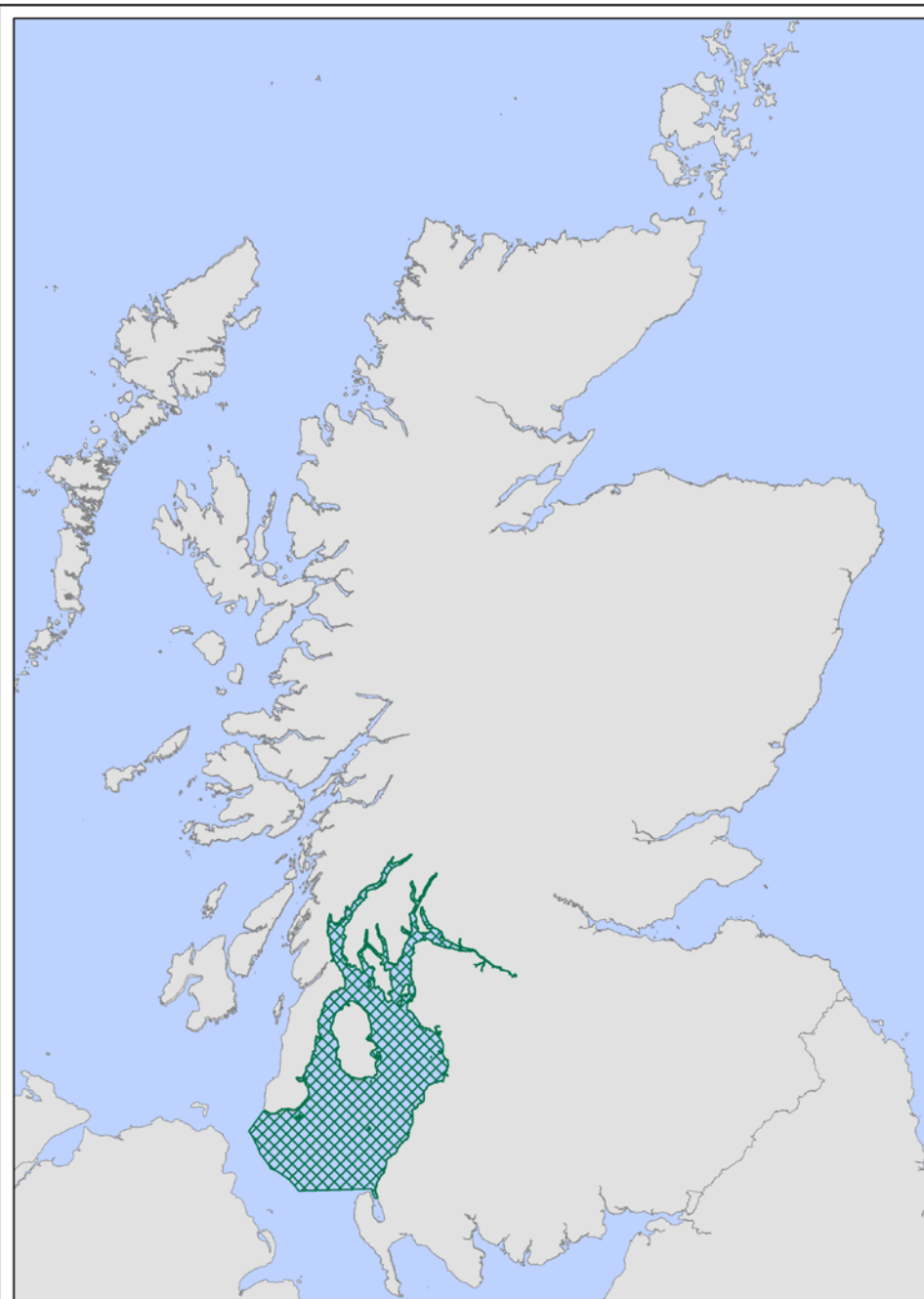


Jenny Crockett
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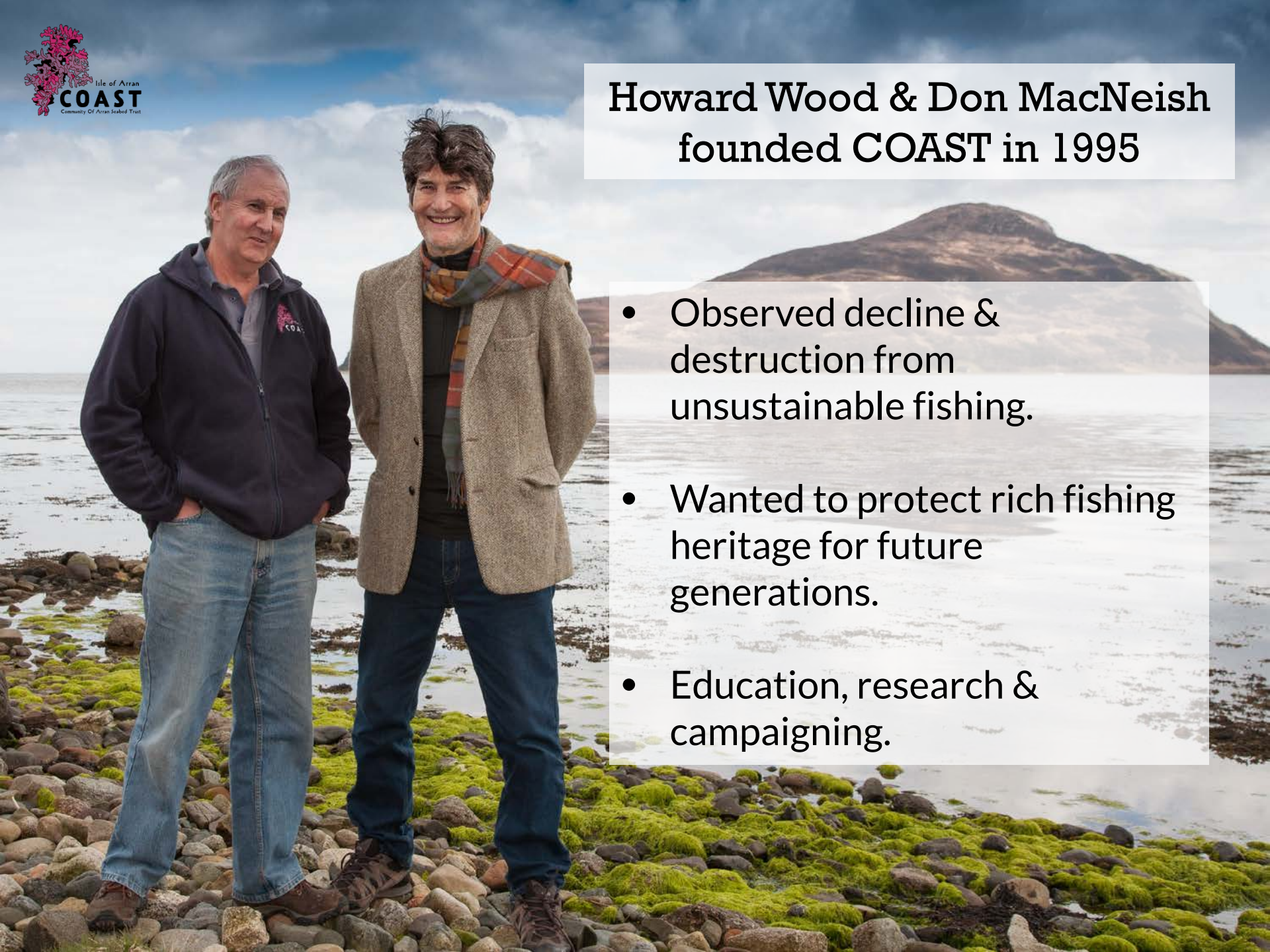
- Isle of Arran – within the Clyde marine region.
- Important fisheries area.
- Catastrophic decline from mid 80's.



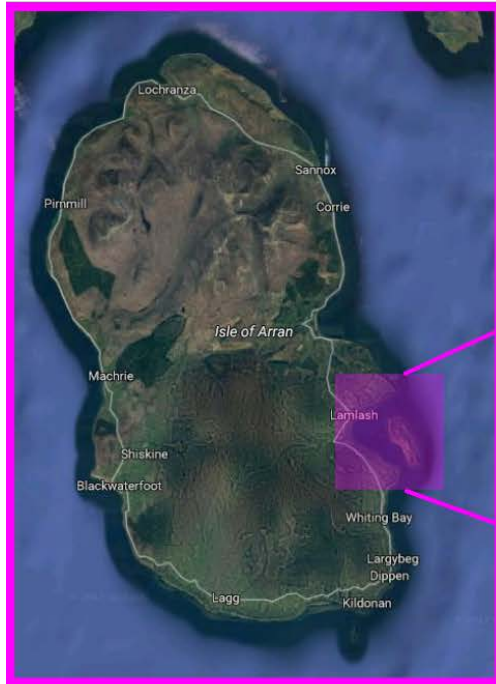
Clyde Ecosystem Review, Marine Scotland 2012



Howard Wood & Don MacNeish founded COAST in 1995

- 
- Howard Wood and Don MacNeish are standing on a rocky shore covered in green moss. In the background, there is a large, rounded mountain under a cloudy sky. The water is calm and reflects the sky.
- Observed decline & destruction from unsustainable fishing.
 - Wanted to protect rich fishing heritage for future generations.
 - Education, research & campaigning.

Lamlash Bay No Take Zone





Lamlash Bay No Take Zone



The Community of Arran Seabed Trust (COAST) is a community-led organisation, founded in 1995, that works to protect and restore the marine environment around Arran and the Clyde and ensure it is sustainably managed.

Following 13 years of sustained campaigning by COAST and supporters, islanders finally achieved the establishment of the Lamlash Bay NTZ. The 2.67km² area was designated by Marine Scotland and NatureScot in 2008, and contributes to the recovery of marine life within Lamlash Bay. A second campaign led to the designation of the larger South Arran Marine Protected Area (280km²); this restricts seabed dredging and trawling and came into effect in 2016.

The NTZ forms part of the South Arran MPA. Together they provide islanders and visitors with the opportunity to enjoy Arran's recovering marine life and for the study of seabed habitats and species.

What is the No Take Zone (NTZ)?

An area of sea where the collection of marine life is prohibited.

Enjoy your visit to Lamlash Bay, but please respect the NTZ by following the rules and leaving marine life in its natural environment.

Infringement of the NTZ regulations can lead to a £50,000 fine and criminal conviction.

What can/can't be done?



NO - fishing of any kind.



YES - water sport activities
(boating, swimming, snorkelling)

Make a difference

Observed something suspicious?
You can help protect marine life by reporting any activity you think is breaking the NTZ rules by reporting it to the 24 hour Marine Scotland Fisheries Compliance Office on 0131 271 9700. Please let COAST know too on email@arrancoast.com

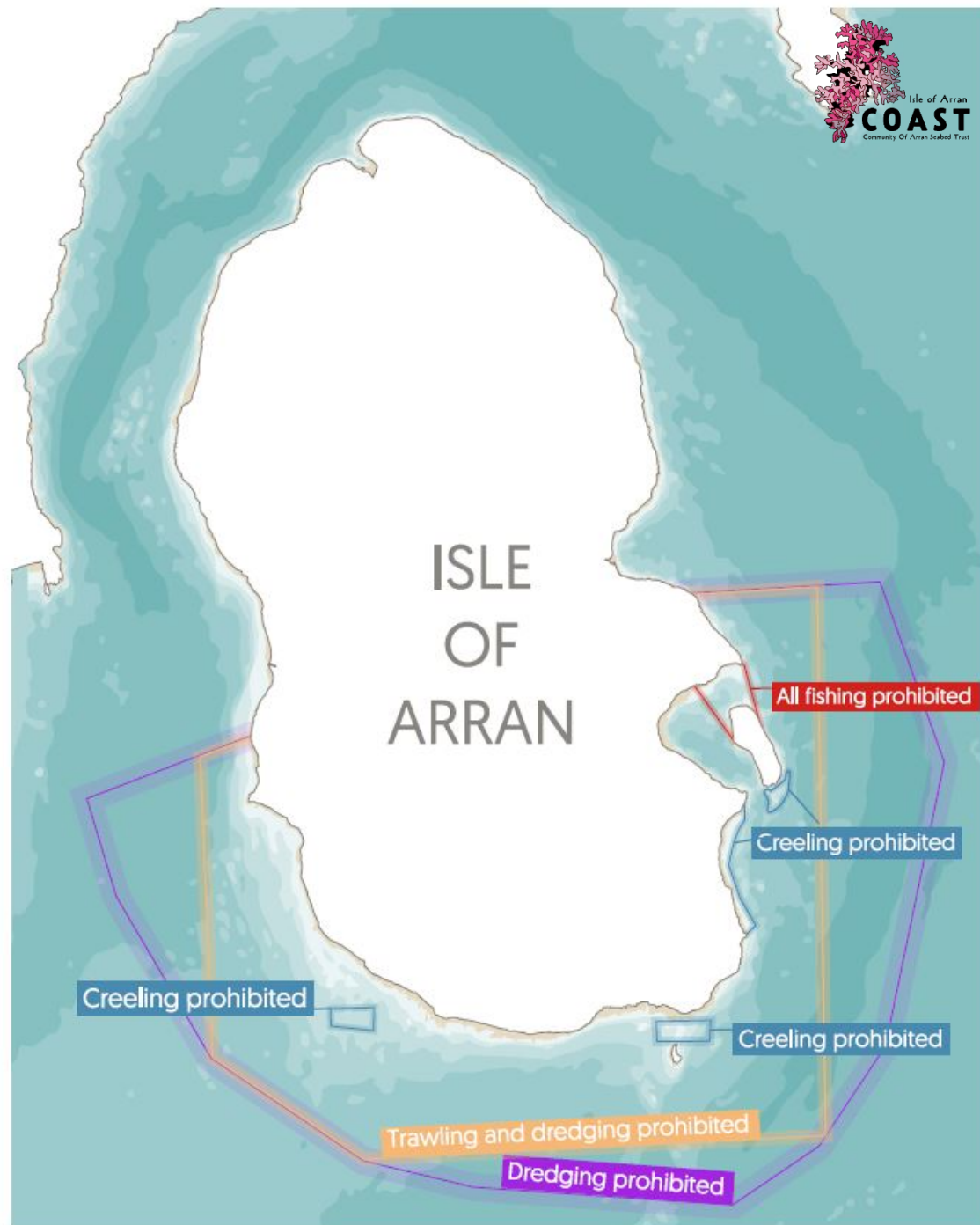
Point	Name	Latitude	Longitude
A	Mount Pleasant Farm	55°32.603'N	005°06.512'W
B	Holy Isle West	55°31.558'N	005°05.218'W
C	Holy Isle East	55°31.876'N	005°04.305'W
D	Hamilton Rock	55°32.990'N	005°04.839'W
E	Hamilton Rock	55°32.998'N	005°04.865'W
F	Clauchlands Point	55°33.002'N	005°04.957'W

Table 1. The No Take Zone is enclosed within the boundary shown on the map with the lines drawn between points at the coordinates shown in the table above. Between Points B to C, D to E, and F to A the boundary follows Mean High Water Spring Tide. (South Arran Marine Conservation Order 2015).

South Arran Marine Protected Area

Designated for a number of
Priority Marine Features:

- Maerl beds
- Seagrass beds
- Kelp & seaweed communities
- Burrowed mud
- Sands & gravels with burrowing bivalves
- Ocean quahog



Maerl

- Captures carbon within living plant tissues, as well as its hard skeleton.
- Large maerl beds are persistent, retaining carbon in deep sediment of gravel accumulated over time.
- 448,000 tonnes of carbon is stored in top 60cm of Scottish maerl beds; gross underestimate.



Seagrass

- Covers 21.64 km² of Scotland's inshore waters – 58% reduction since 1936.
- Sequesters carbon at a rate of 1000 tonnes per year.
- Majority of carbon is retained in underlying sediment, not in the plant itself.
- Shallow root structure can be destabilised by bottom-fishing.



Kelp

- Plants are short-term carbon stores.
- Dead/decaying plant material sinks to deeper waters and contributes to marine sediment stores.
- Kelp plants can sequester carbon at a rate of 1.7 million tonnes per year.



Human Benefit

- Jobs & income to coastal communities.
- Recreational opportunities.
- Biodiversity powerhouses and nursery habitat for commercially important species.
- Coastal protection.



Under threat

Key threats to Scotland's Blue Carbon

Physical disturbance to habitats:



Fishing activities

Recreational boating



Installation of infrastructure

Aquaculture



Climate change:



Ocean Acidification

Ocean warming



Deoxygenation - A loss of oxygen from the ocean

Sea-level rise



Increased storminess

Changes in land management and land use change

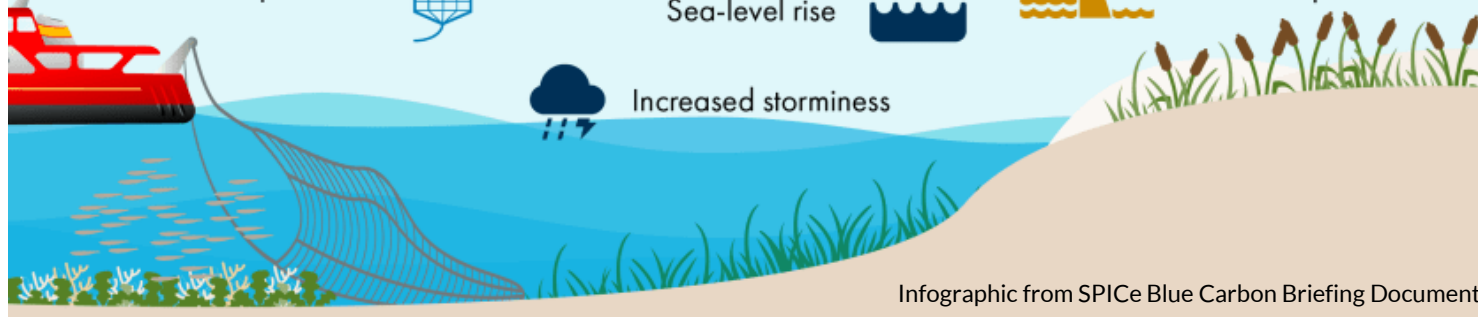


Coastal land use change and reclamation for development activities

Groundwater drainage



Human developments

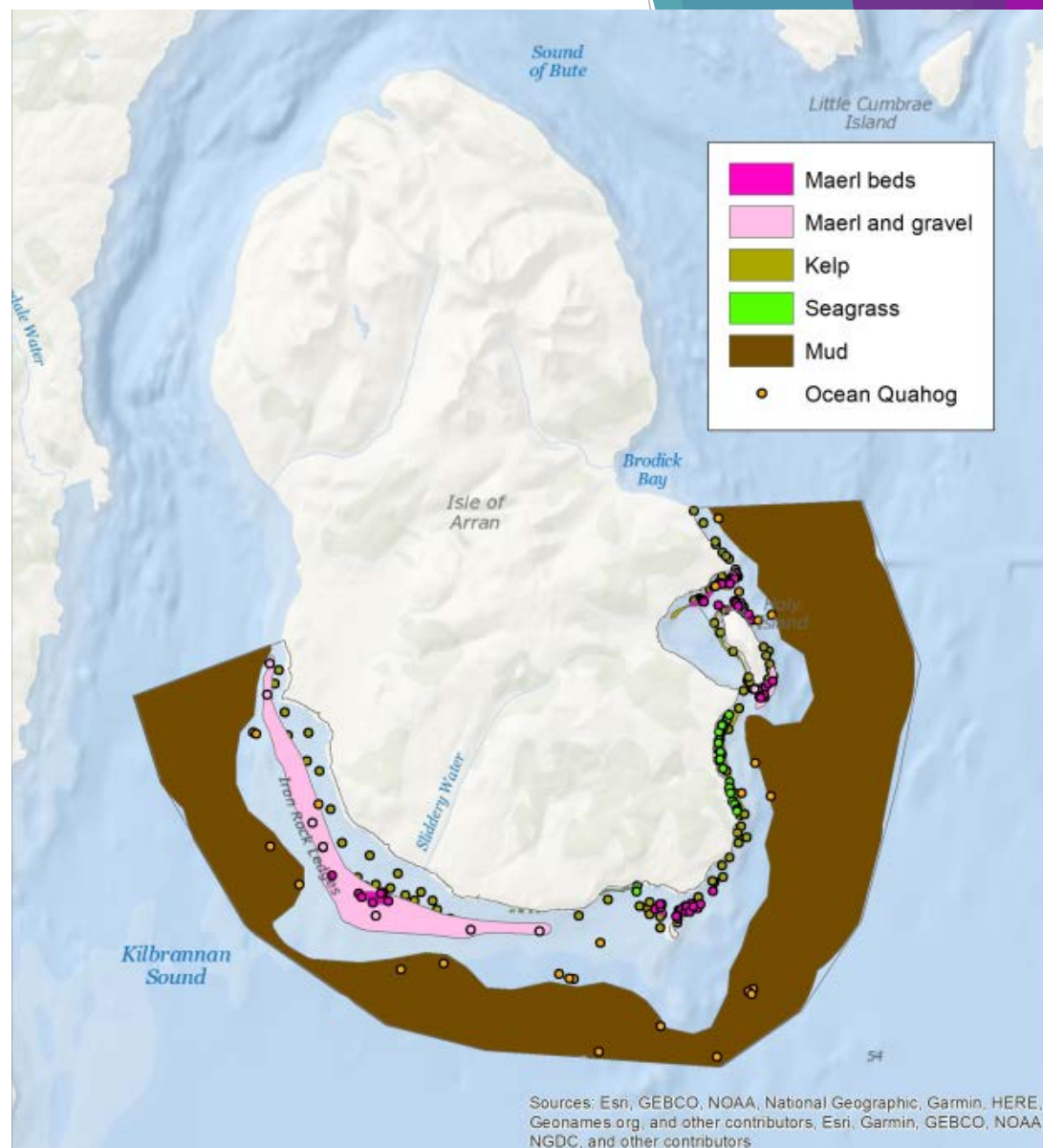


Infographic from SPICe Blue Carbon Briefing Document

- Scot. Gov scoping report: 11 habitats in Scotland particularly sensitive to bottom-contact mobile fishing.
- 8 of 11 are Blue Carbon habitats.
- Est.1.02 billion tonnes of CO₂ annually released from degraded ecosystems.

Protect

- UK marine carbon sequestration = £57.6bn annual value.
- NTZ & MPA protect Blue Carbon habitats.
- South Arran MPA captures 8,046 tonnes per km².
- 2,245,047 tonnes of carbon in whole MPA.



#InshoreLimit

- Nature-based solution to climate change.
- Reinstate an inshore limit – via a just transition.
- Combat both climate change and biodiversity loss.



<http://bit.ly/inshorelimit>

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