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DISTURBING THE DEEP: TRAWLING AND CARBON DYNAMICS IN THE ISLE OF MAN

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PROJECT

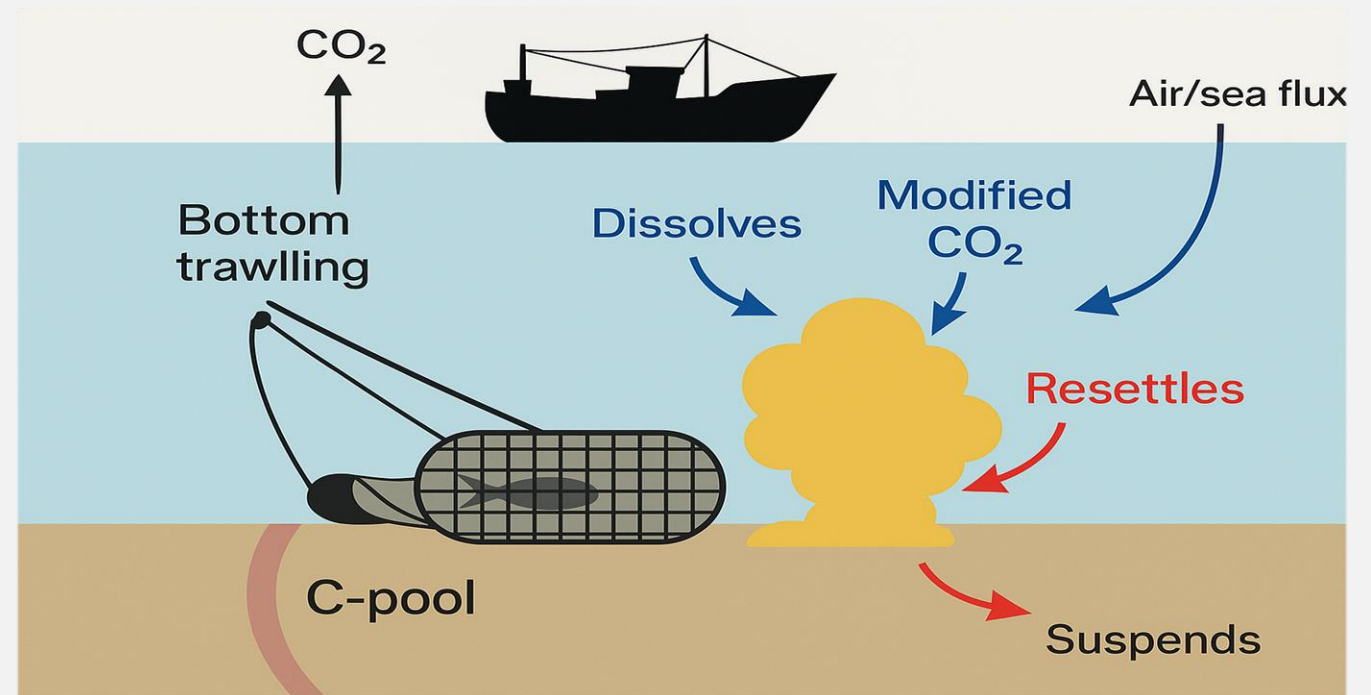
BOTTOM TRAWLING DISTURBS CARBON-RICH SEABED SEDIMENTS

Carbon Impacts Remain Poorly Quantified:

- Sediment mixing
- Bioturbation activity
- Storage of carbon
- Carbon fluxes
- Faunal removal and community shifts



This research quantifies how trawling alters sediment carbon processes to better understand climate change mitigation potential



CARBON STOCK PROTECTION WITHIN THE ISLE OF MAN



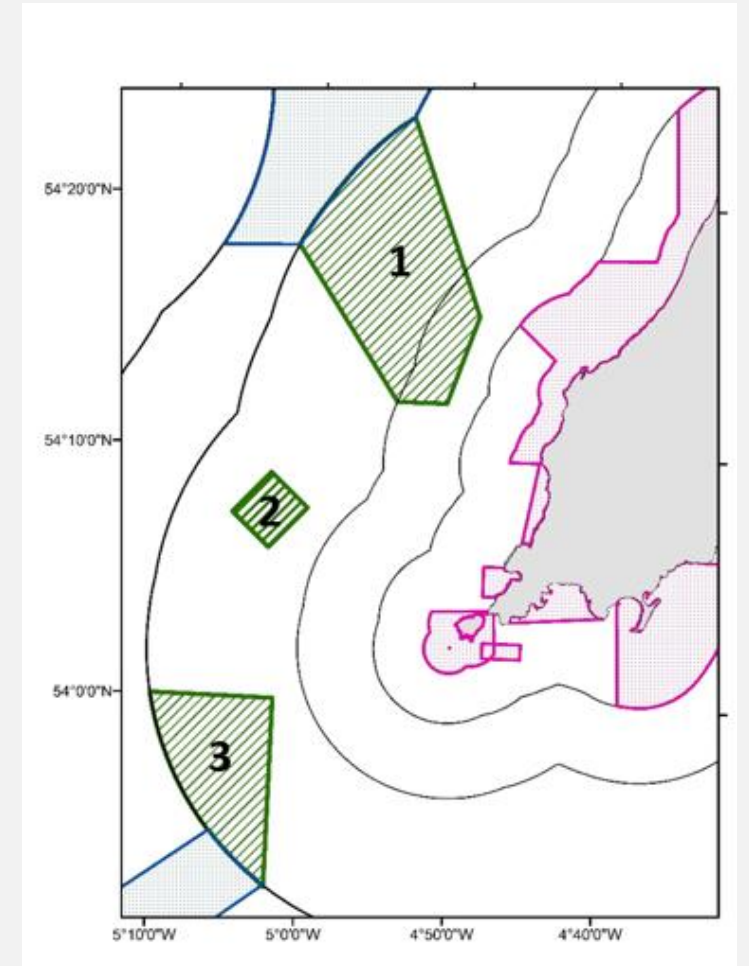
MANX BLUE CARBON PROJECT

- 12 nm territorial sea
- Western Irish Sea Mud Belt
- Active Nephrops trawl fishery
- Newly closed recovery areas



PhD focus:

Quantifying the impact of otter trawling on sediment carbon dynamics



LINKING DISTURBANCE TO CARBON MANAGEMENT

Chapter 1 - Recovery of Carbon & Fauna

Closed vs Open
Beyond-BACI
Field measurements

Chapter 2 - Quantifying Trawling Effects

Fishing intensity gradient
Swept Area Ratio
Geochemical mechanisms

Chapter 3 - Predictive Modelling (OMEXDIA)

Simulated recovery
Scenario testing
Management implications

- Recovery after closure
- Disturbance–carbon relationship
- Predictive ecosystem modelling
- This framework moves from local sediment measurements to predictive management tools



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**PROTECTING THE SEABED
PROTECTS CARBON**

**INTEGRATING FISHERIES
MANAGEMENT INTO CLIMATE
MITIGATION**



PRIFYSGOL
BANGOR
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University of
Southampton



Isle of Man
Government

