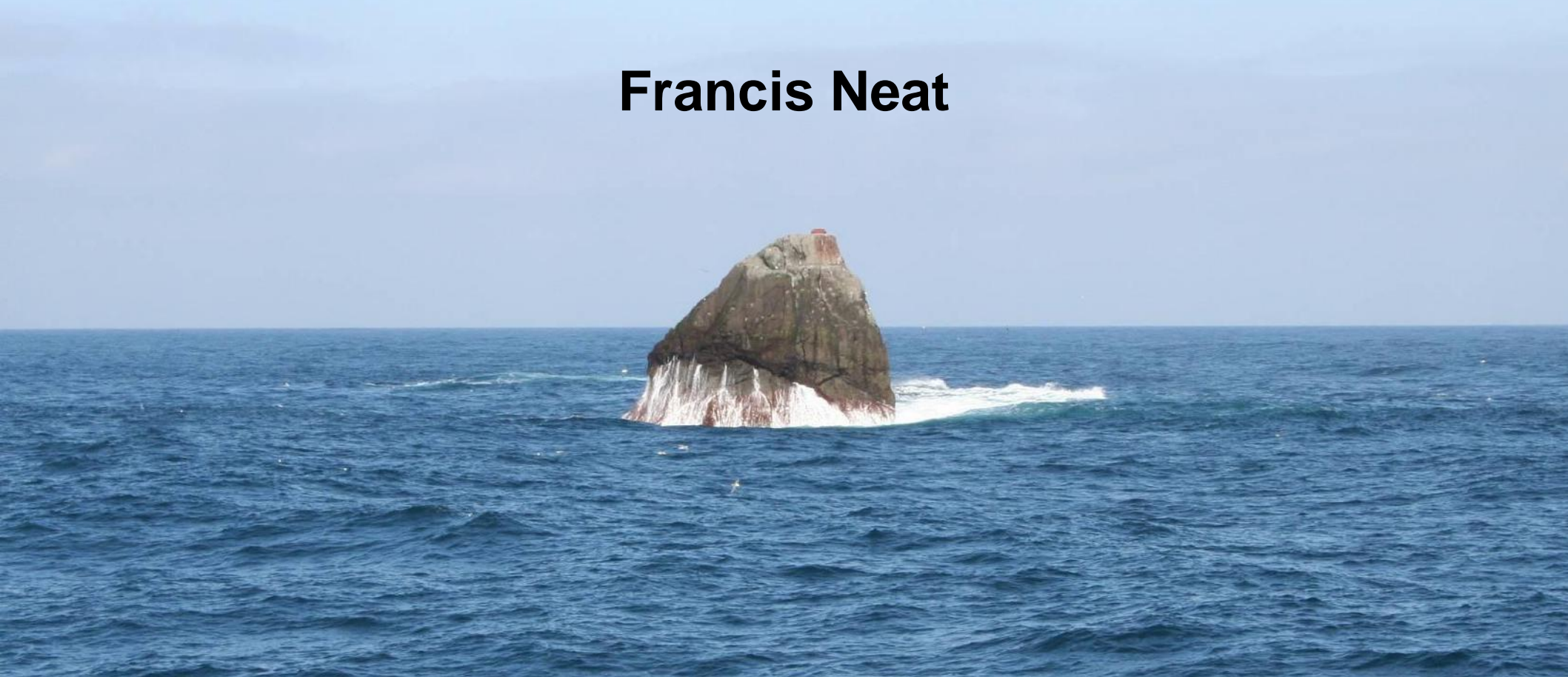
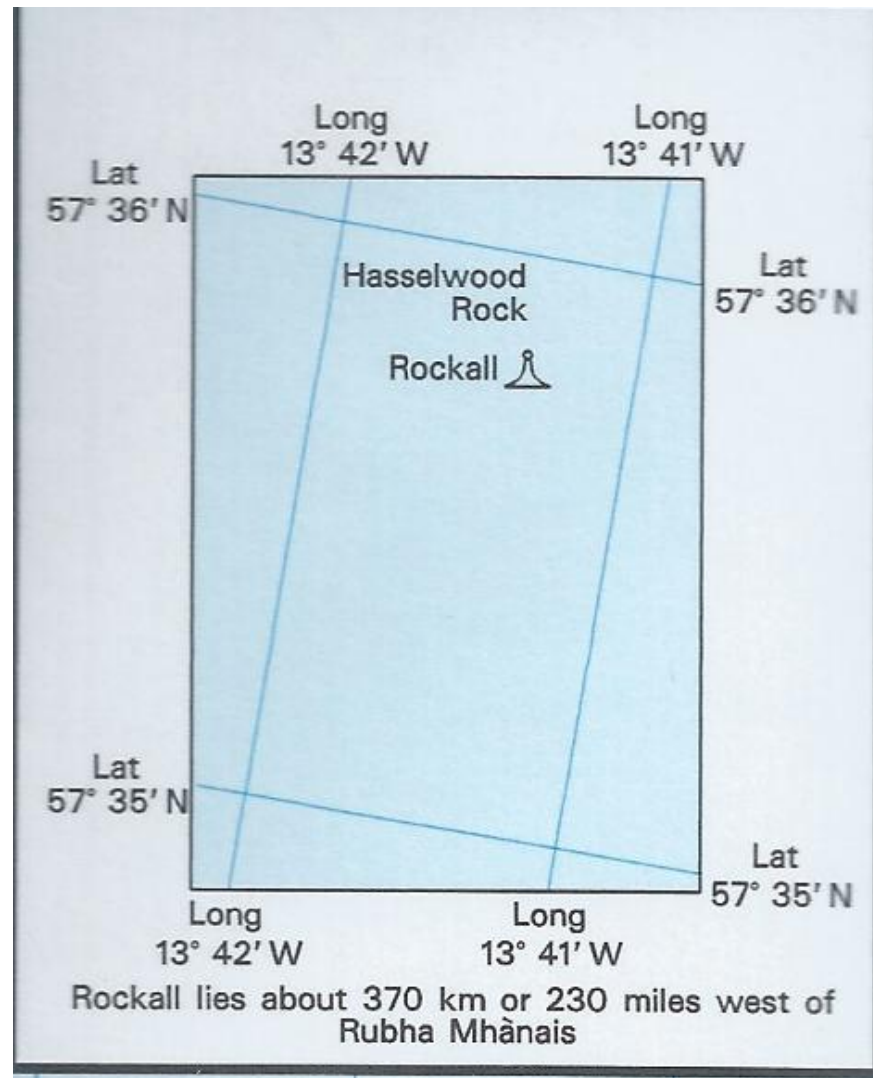


# The remarkable ecosystems of Rockall: discovery, diversity and management

**Francis Neat**



# The OS Map of Rockall



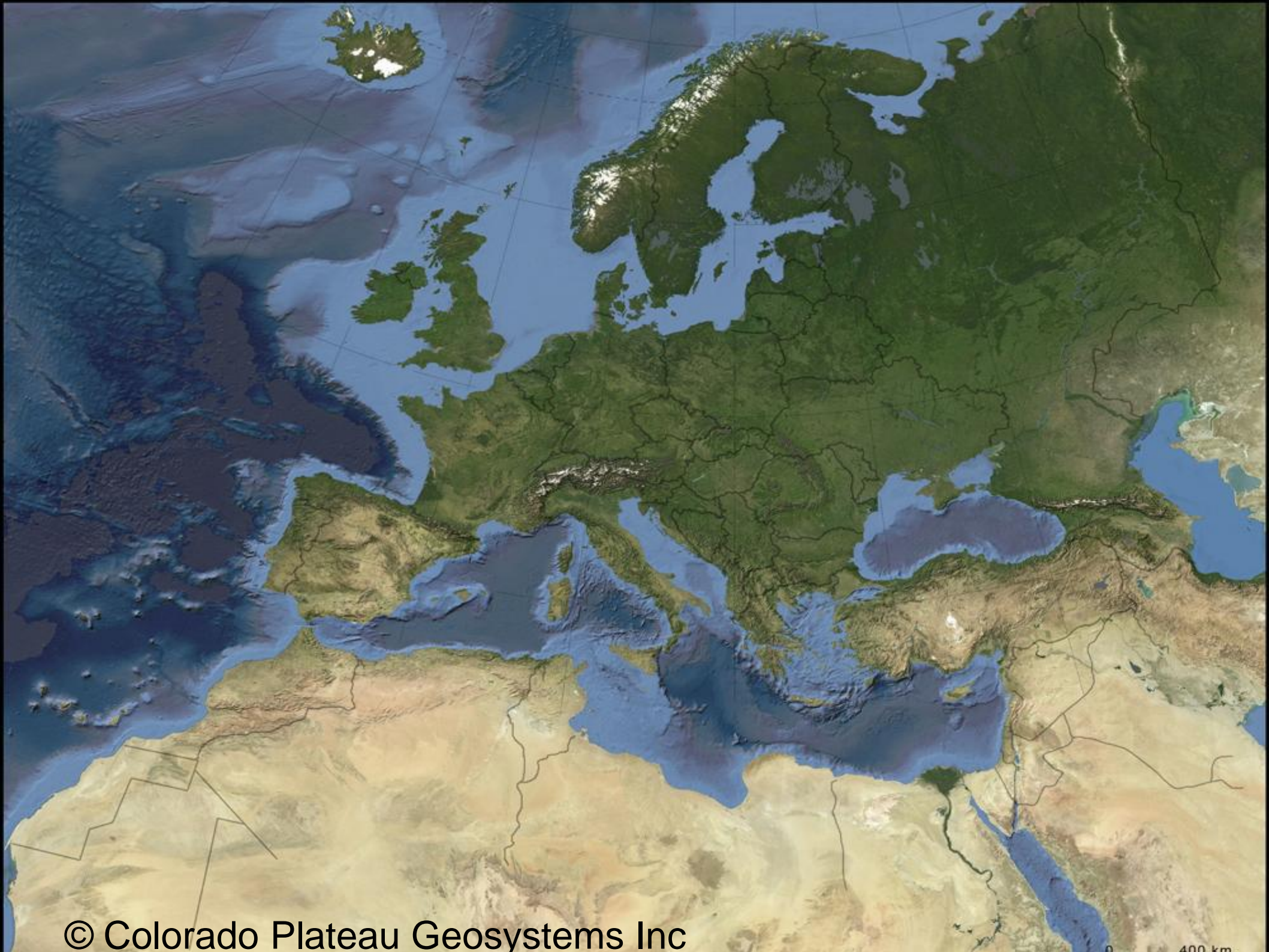
## Where exactly is Rockall?



Go back 225 million years....

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All that's left – 19 m pinnacle.....

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science

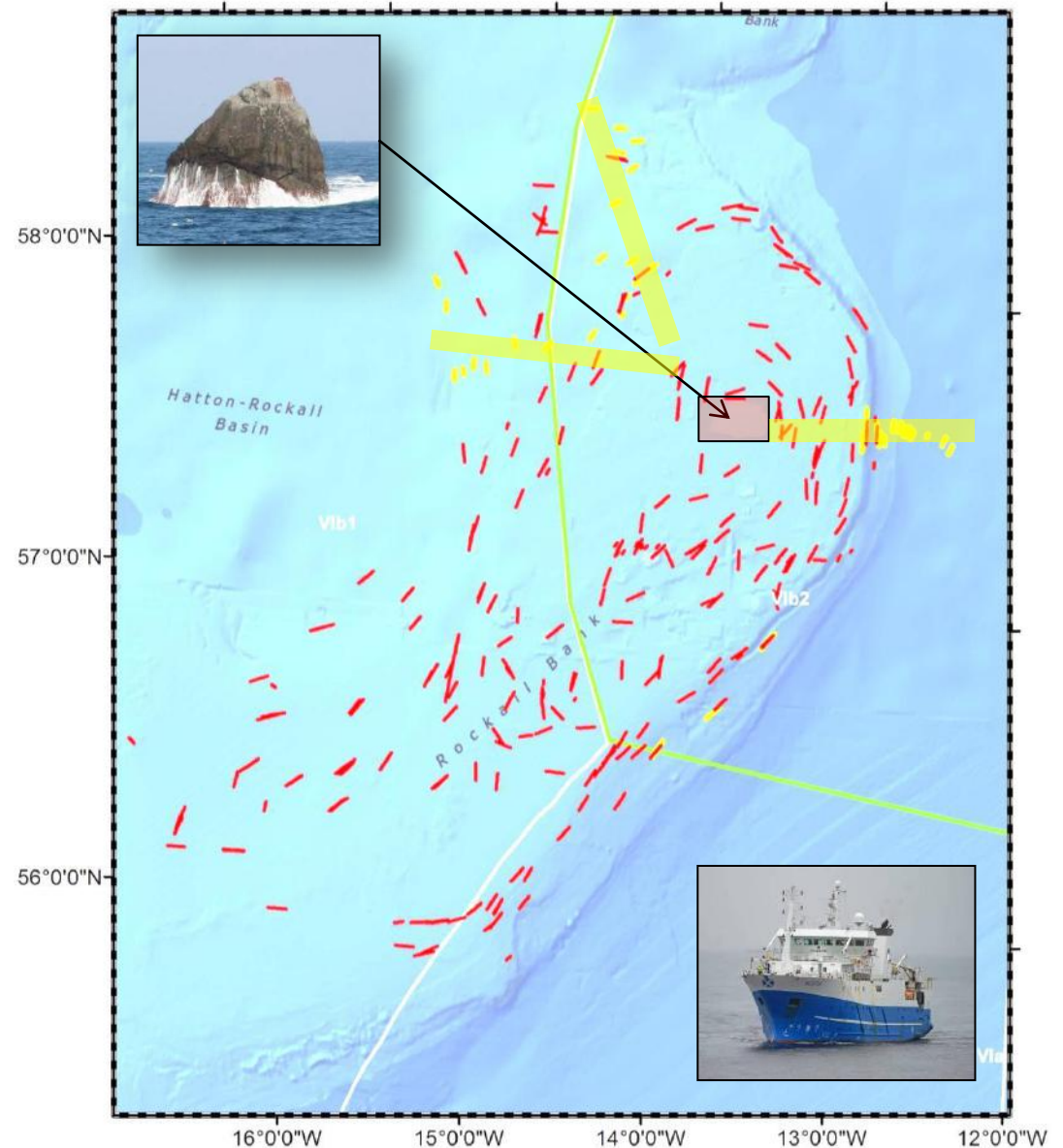


...but what lies beneath?

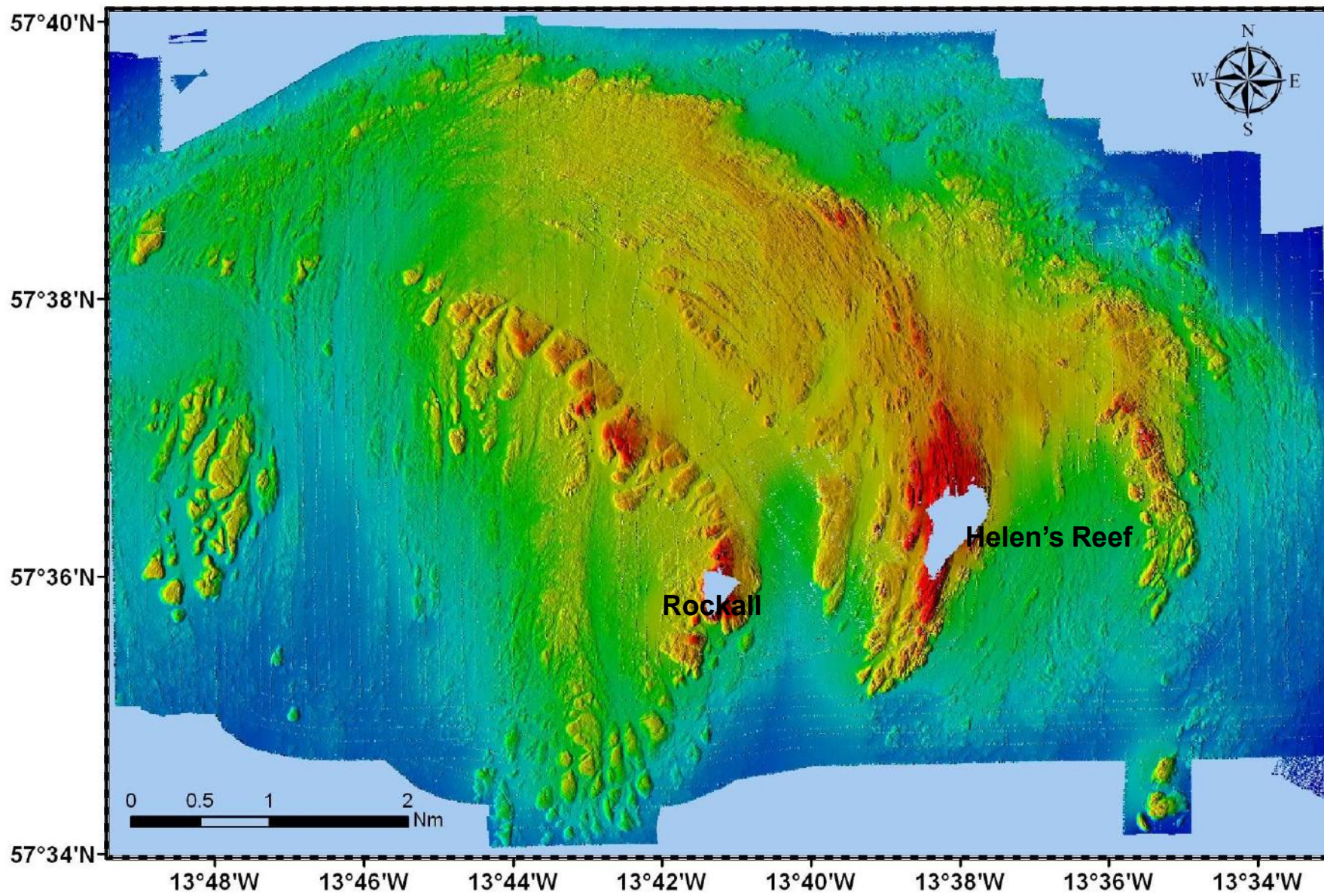


# MRV Scotia and the OFFCON project

- Long history of trawl (fish stock assessment ) surveys
- 2 Scotia surveys in 2011 and 2012
  - Map the area around Rockall (multibeam)
  - Document the fish and benthic communities from the Rock to the Trough
  - Trawl survey with integrated benthic sampling nets

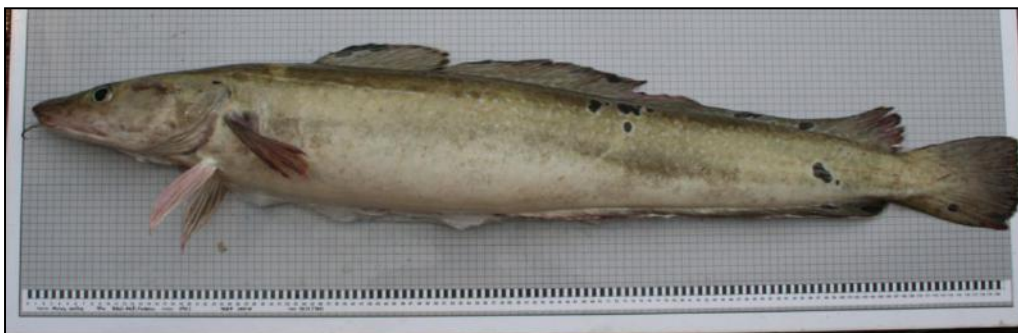
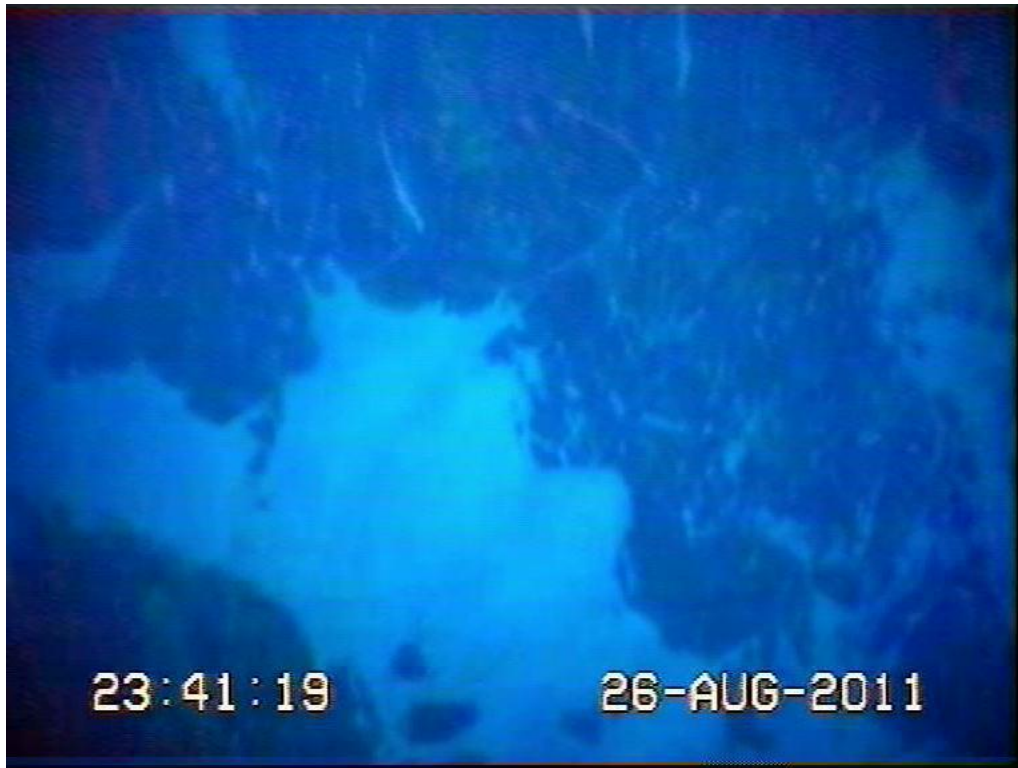


# The Rock and Helen's reef



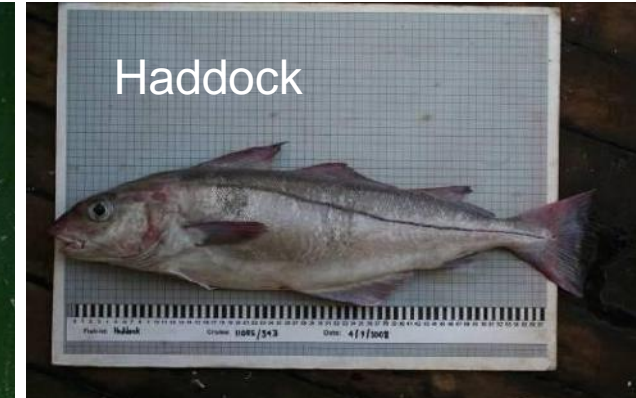


# The Rock and Helen's Reef





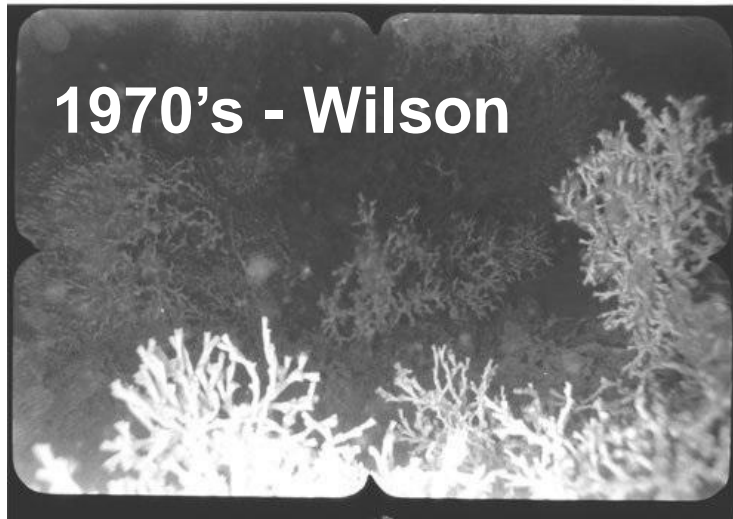
# The fish communities of the plateau



**Species poor relative to European continental shelf**



# The plateau and the *Lophelia pertusa* reefs



Present day



# Mapping *Lophelia pertusa* reefs using towed video

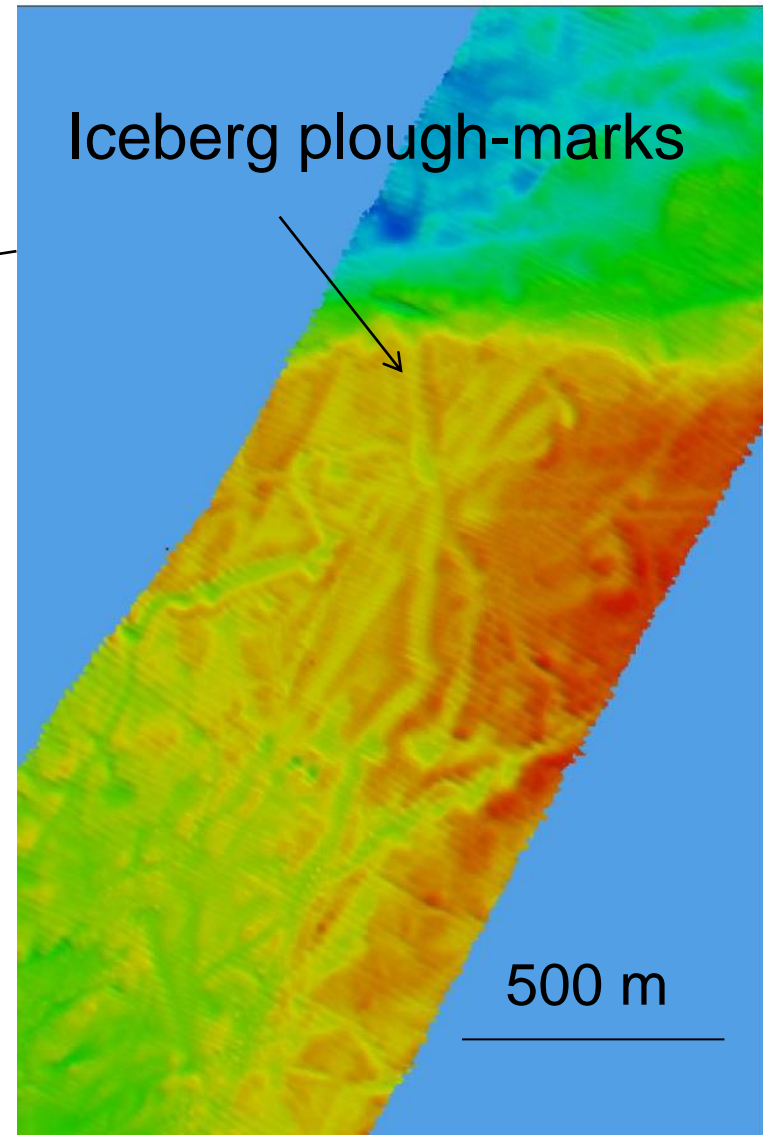
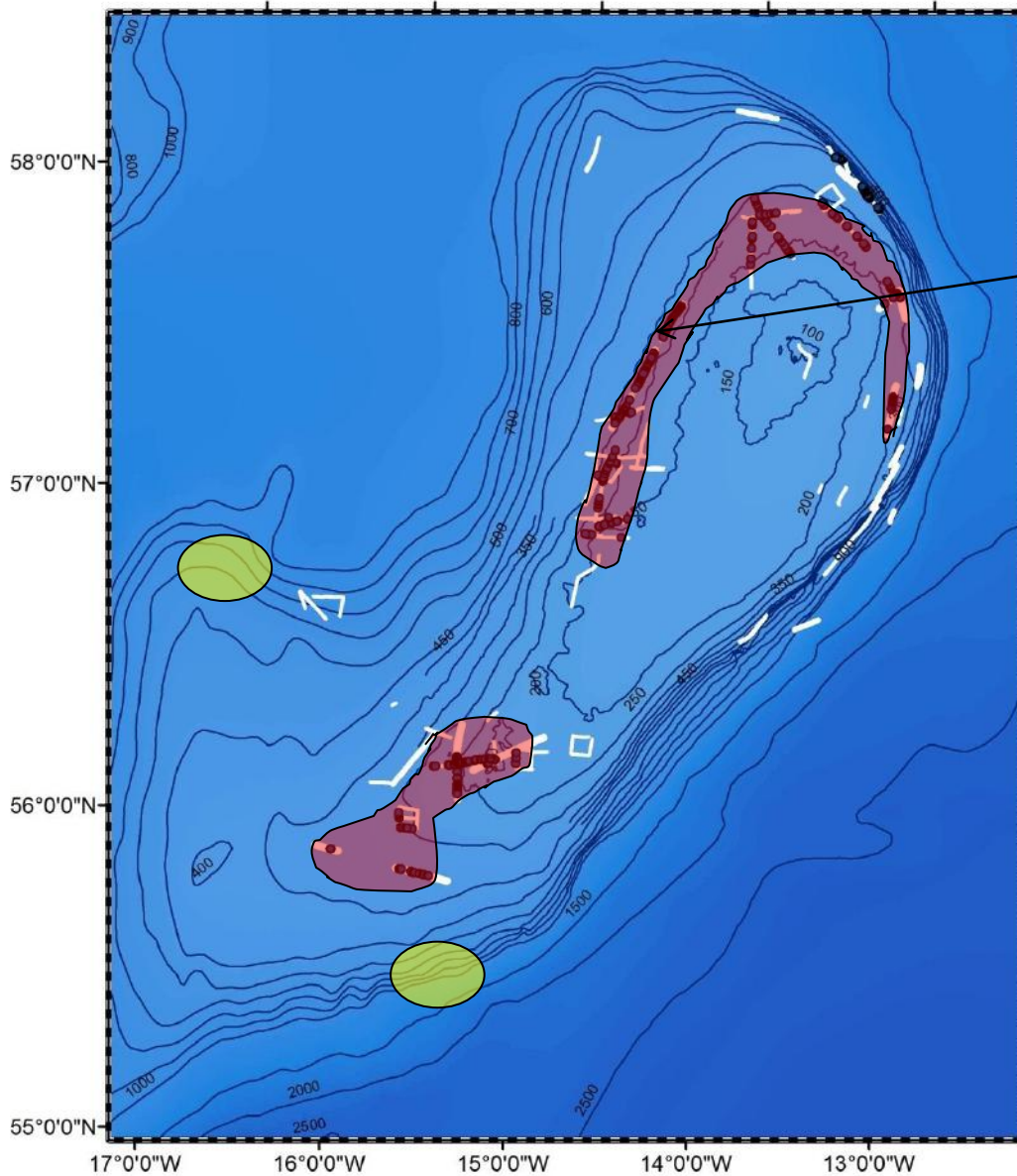
marinescotland  
science



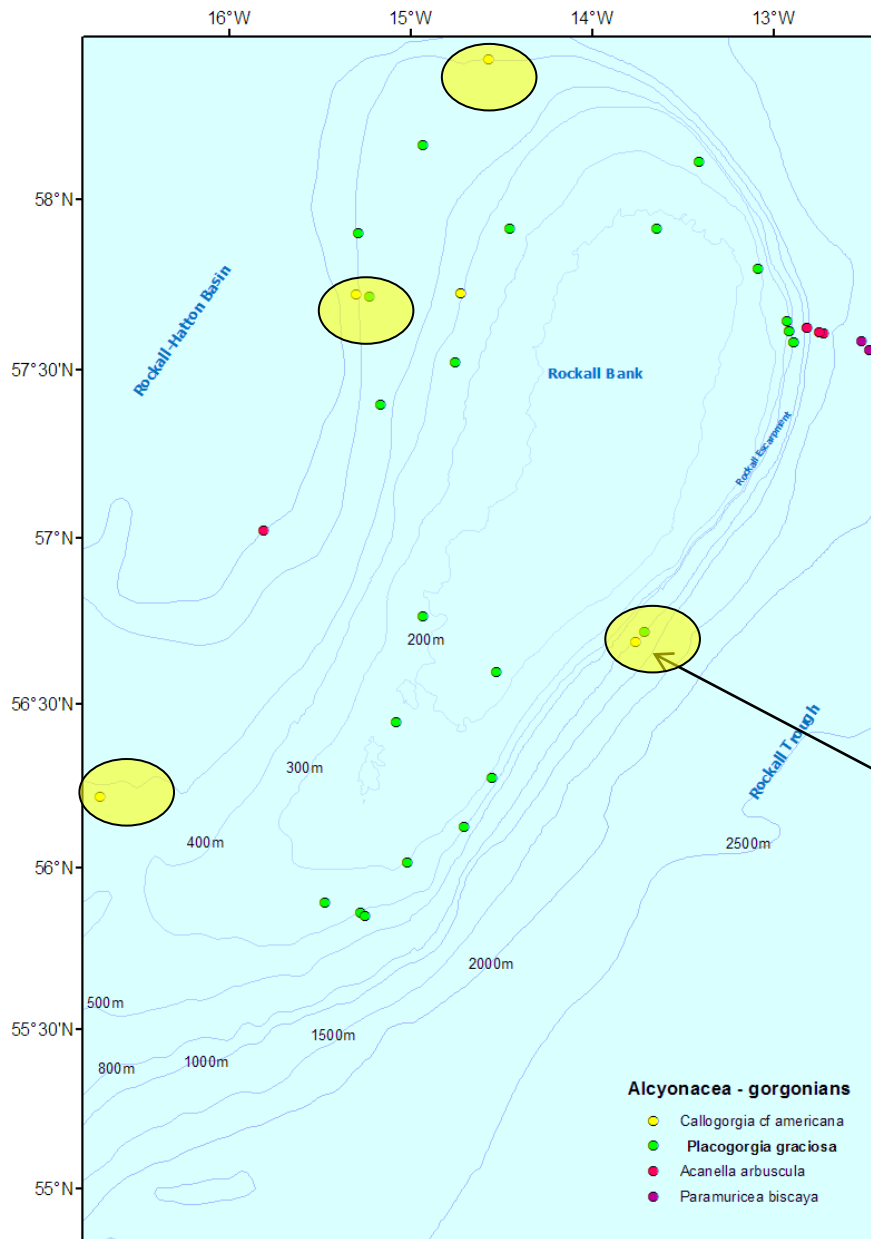
Over 600 km of transects  
from 150 m to 1000 m



# Mapping Lophelia – multibeam and video

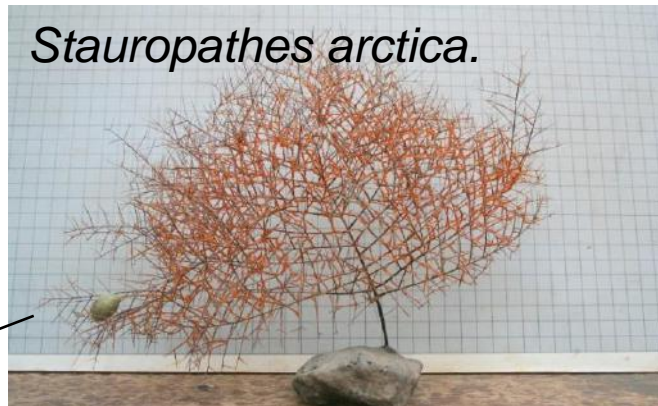
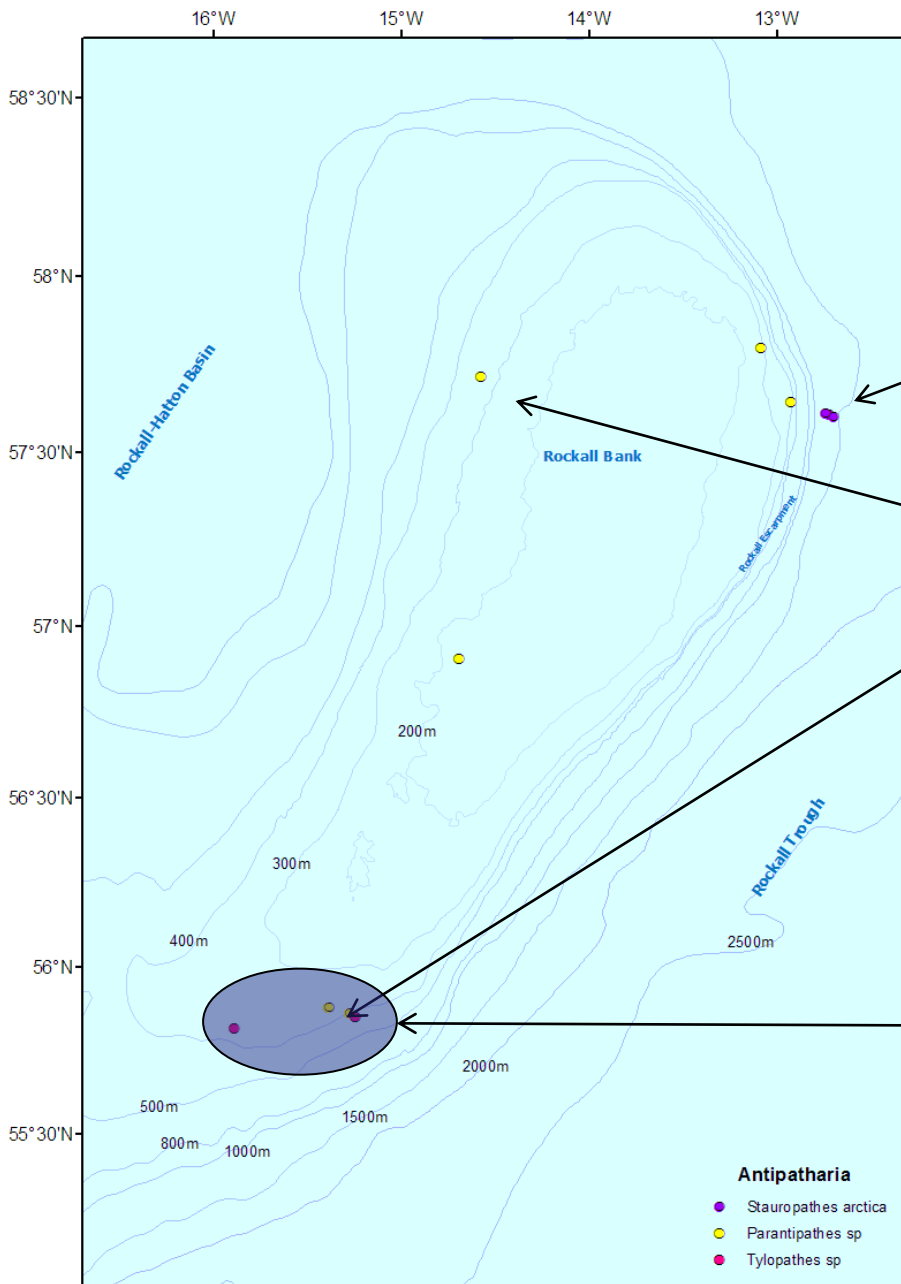


# Gorgonian corals

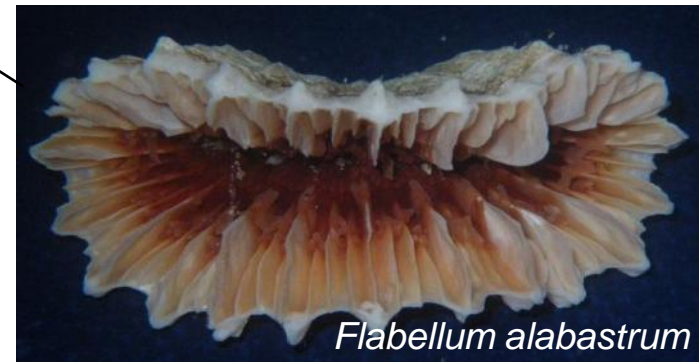
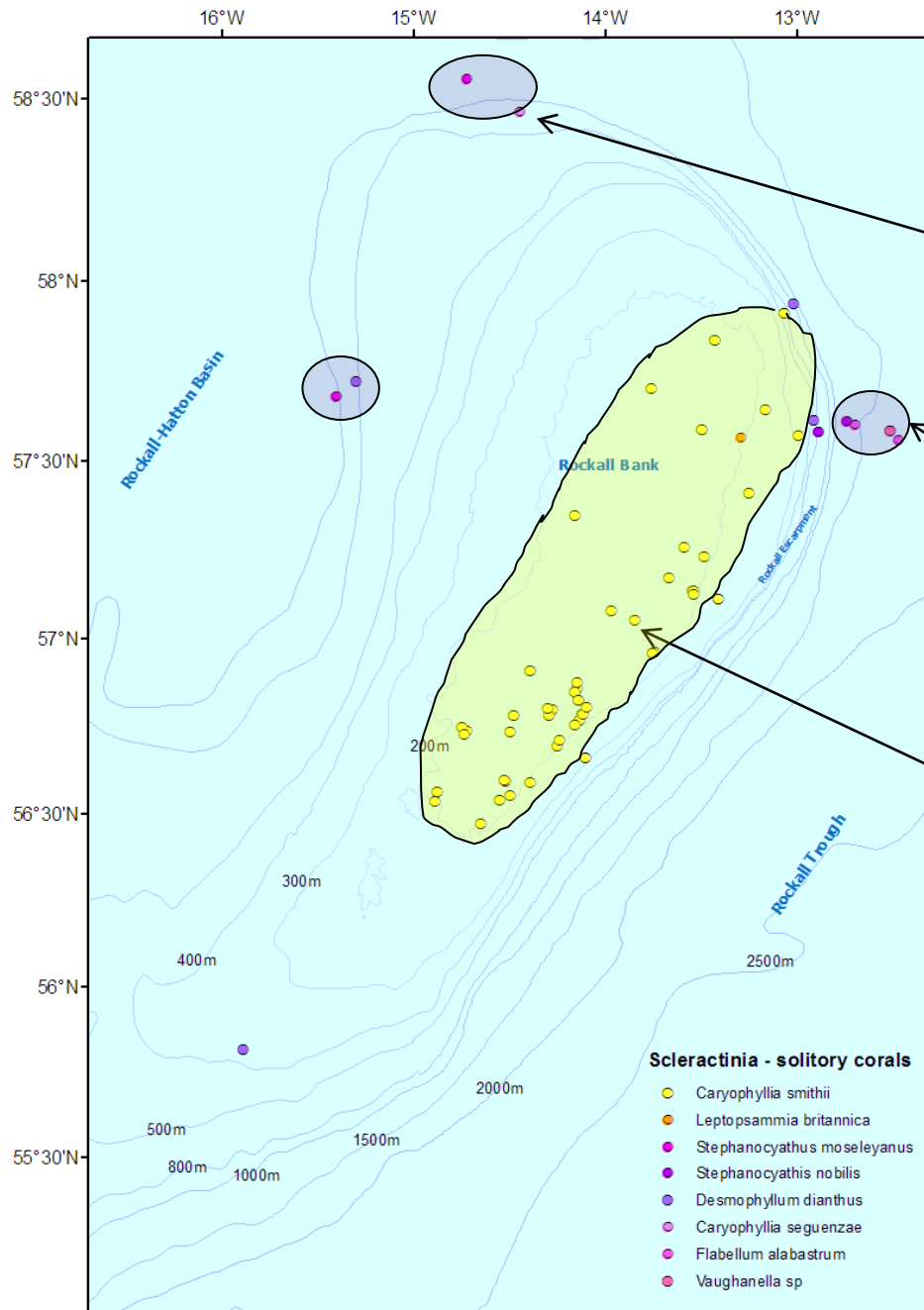




# Black (Antipatharian) corals

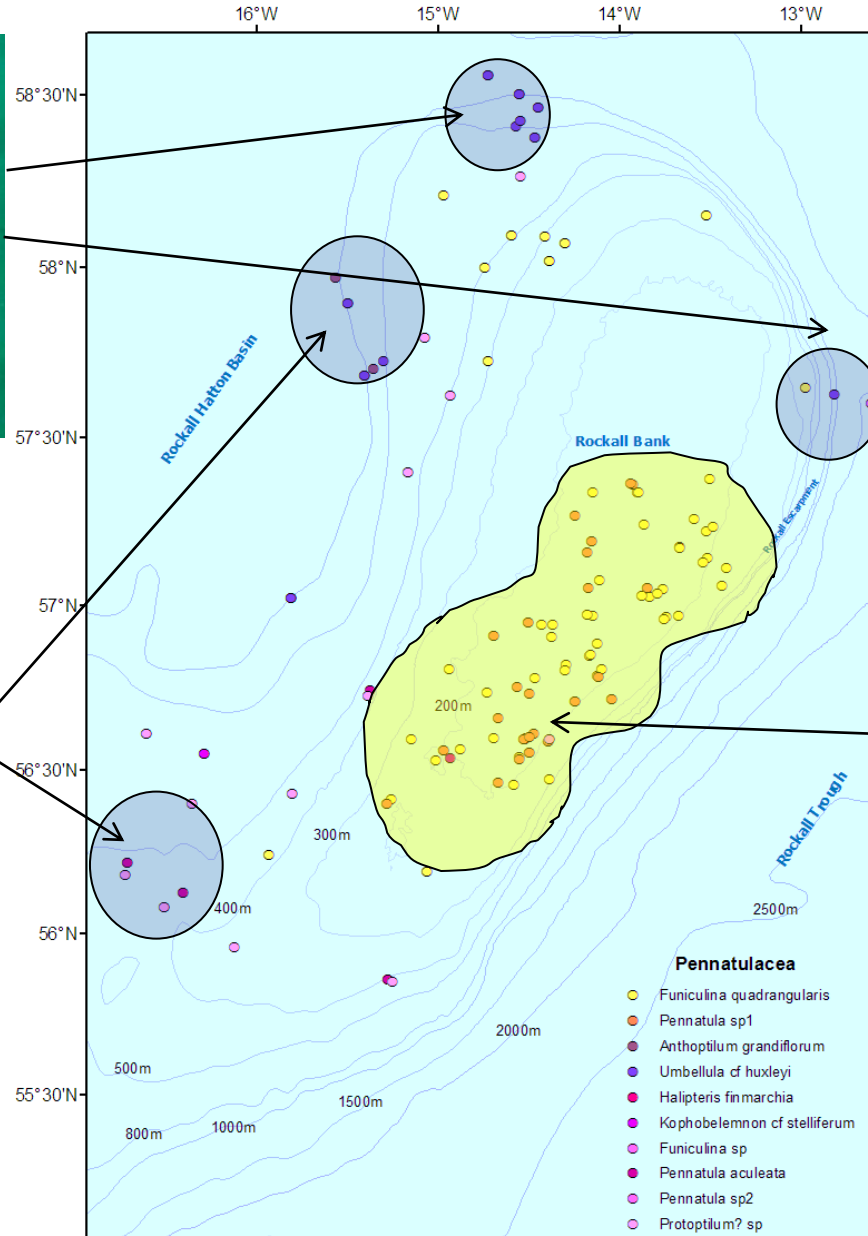


# Cup-corals





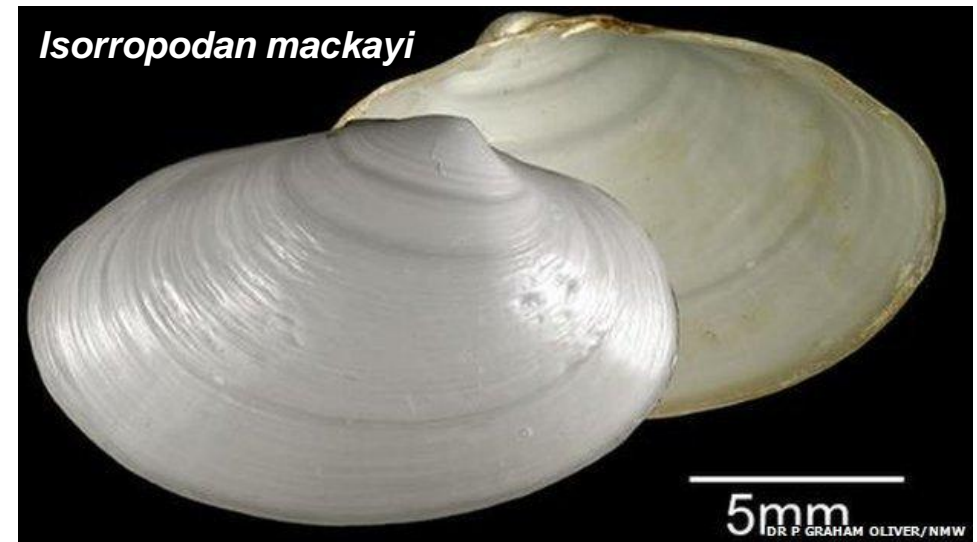
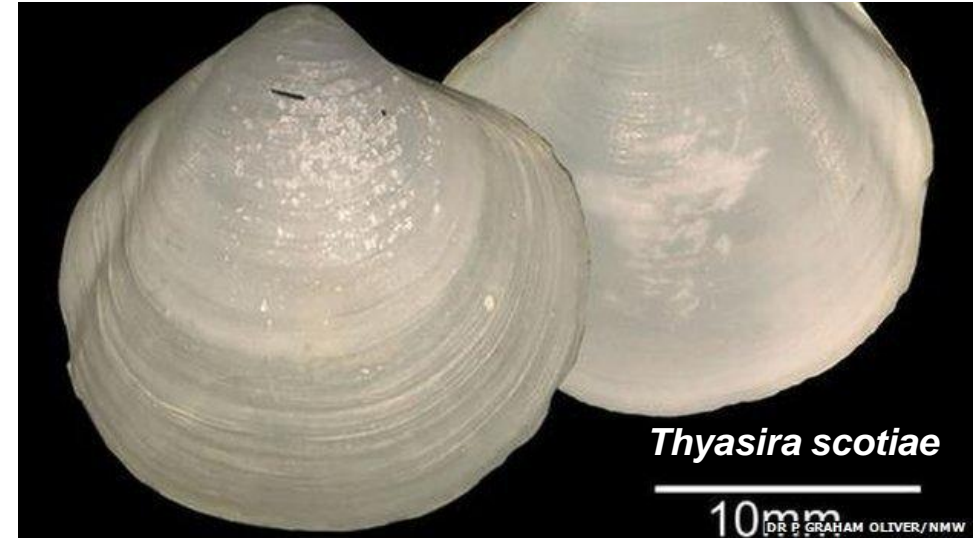
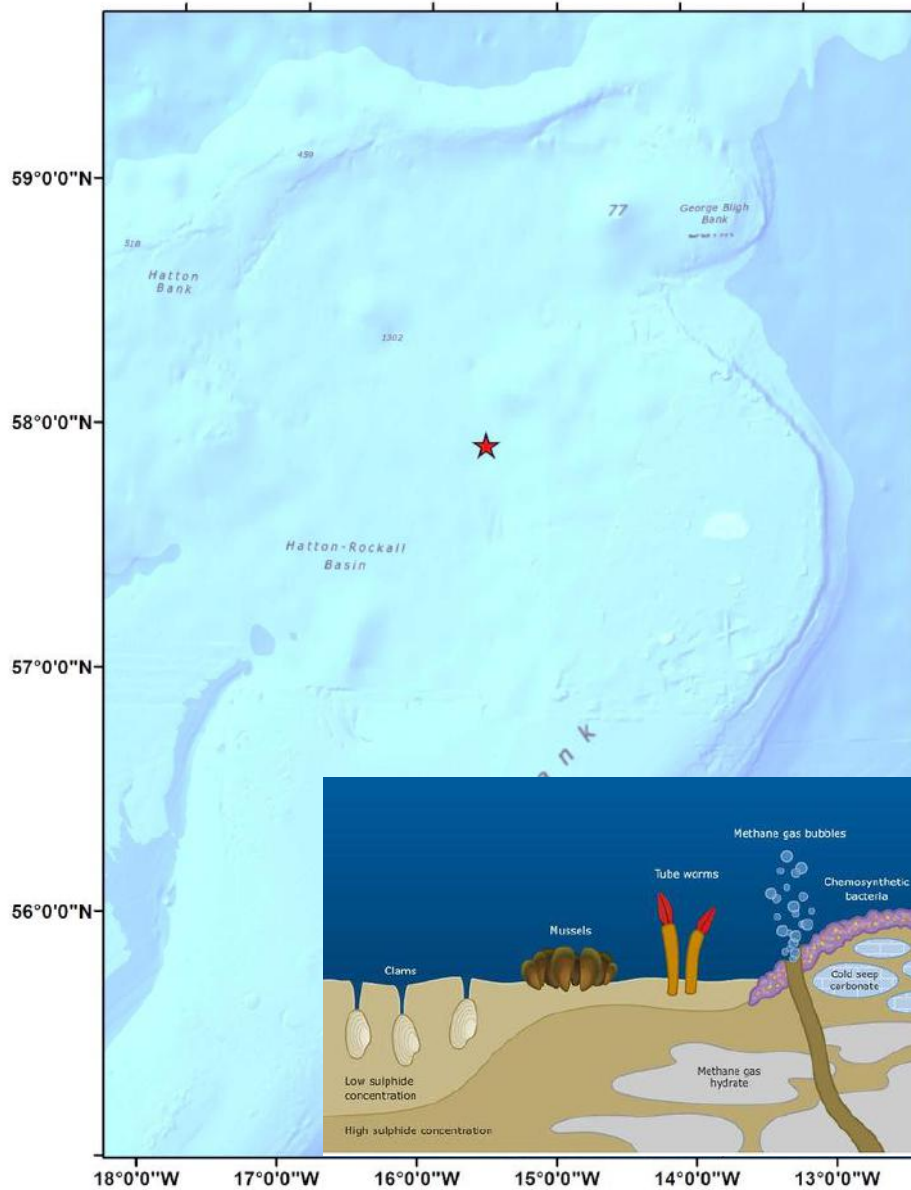
# Seapens (Pennatulacea)





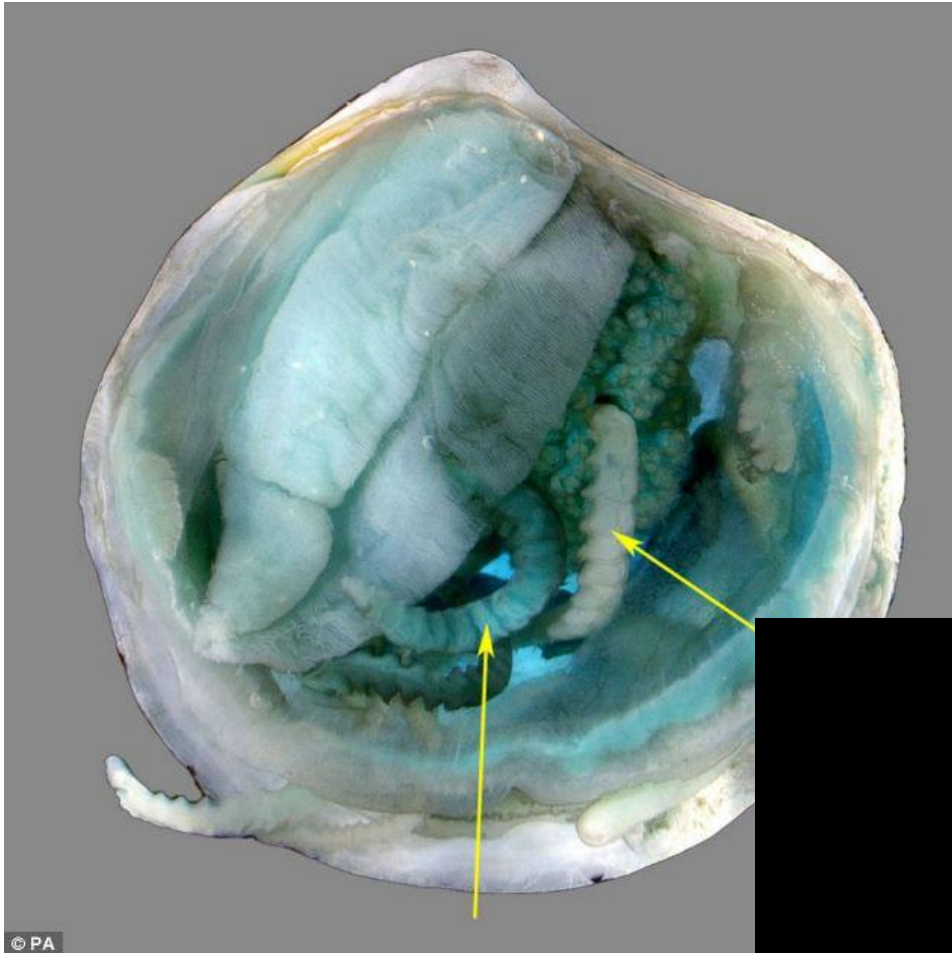


# A cold (methane) seep community.....

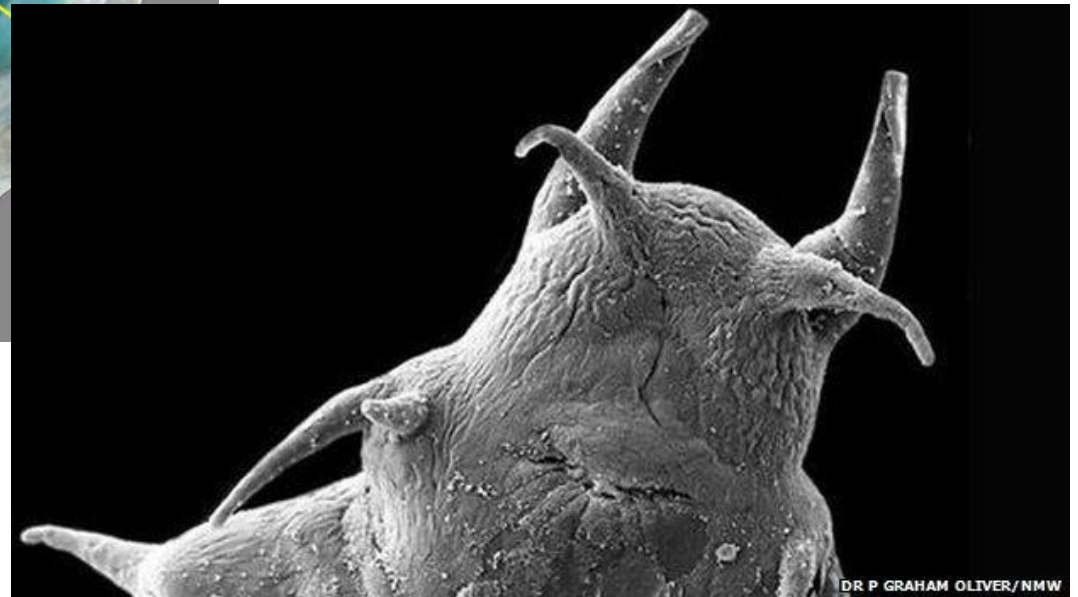


Two new species of chemosynthetic bivalves of the genera Vesicomidae and Thyasiridae

# The Cold Seep

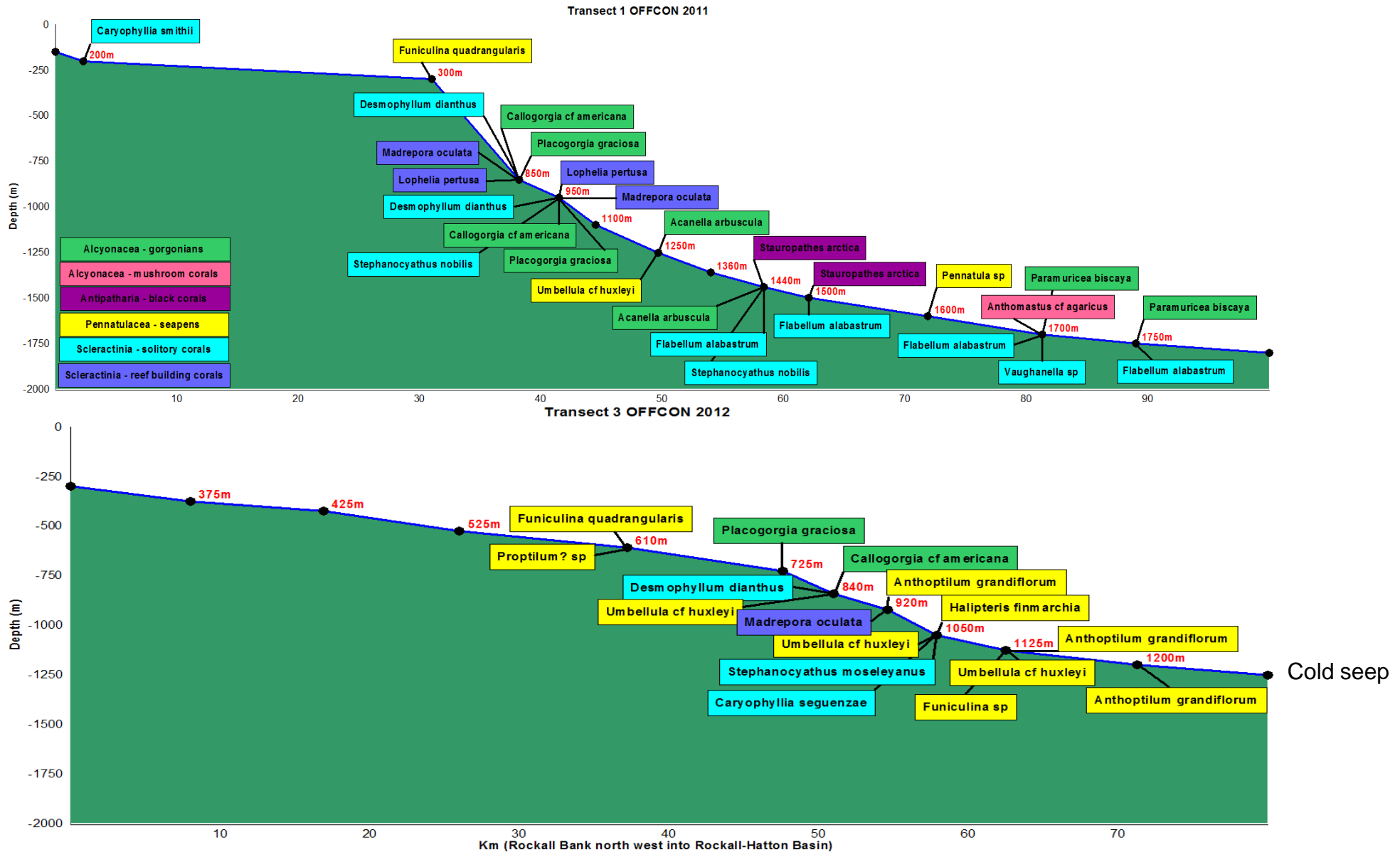


Commensal polychaete worm of the genus *Antonbrunnia* found inside *Thyasira scotiae*. Not only is this a new species, but the genus has only ever been reported from the Pacific!





# The east and west slopes



Large areas of Rockall are rather dull  
habitat.....

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Unless you're a fisherman.....

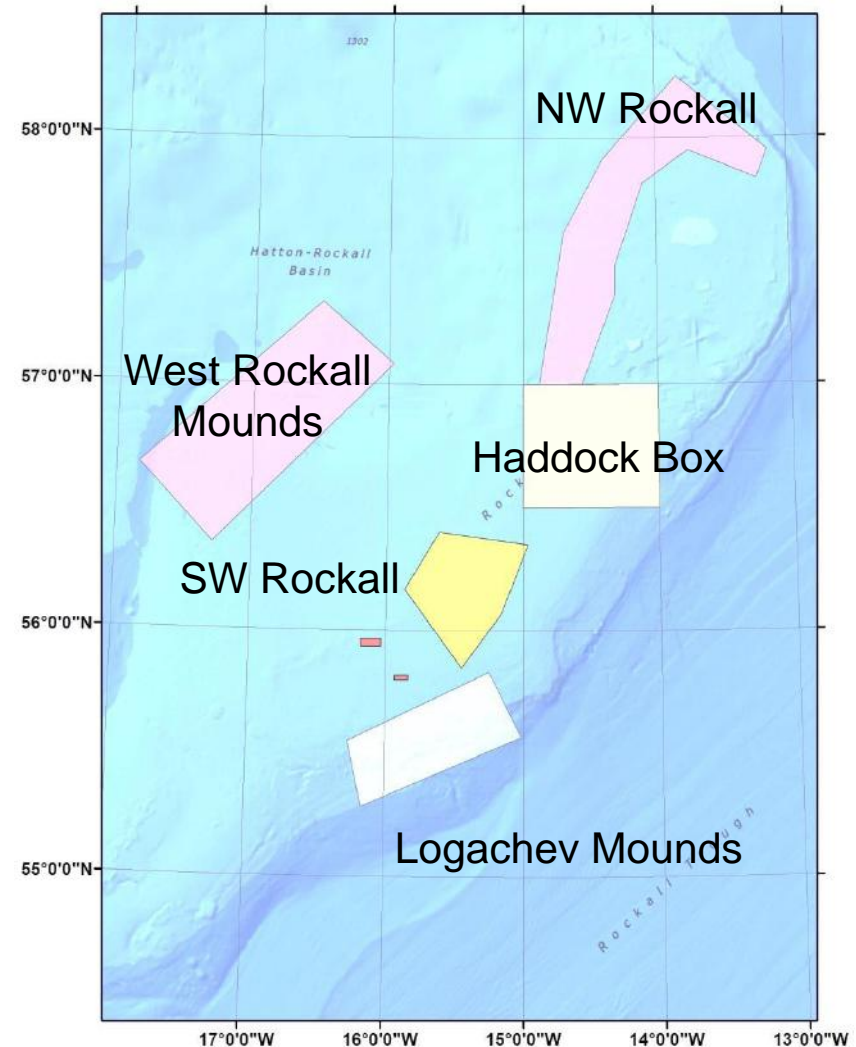


## Fishing and conservation

- **UNGA resolutions 61/105 and 64/72 - protection of vulnerable marine ecosystems (VME's)**
- **Coral reefs, deep-sea sponge aggregations and cold seeps all VMEs and all occur in the Rockall area.**
- **Little doubt bottom trawling can permanently damage or degrade such habitats**
- **Protective measures necessary – closures to bottom fisheries**
- **In 2005 the intergovernmental institution ICES formed a working group (WGDEC) with the aim of providing scientific advice on the conservation and management of VMEs.**

# Coral protection at Rockall

- **Spatial data on:**
- **Coral occurrence**
  - Scientific records
  - Fishermen's knowledge
- **Fishing activity – plotter data, VMS data**
- **Find the mutually exclusive areas – i.e. where there is little or no fishing activity and where there is good evidence of corals**
- **Advice provided to NEAFC and to EC**



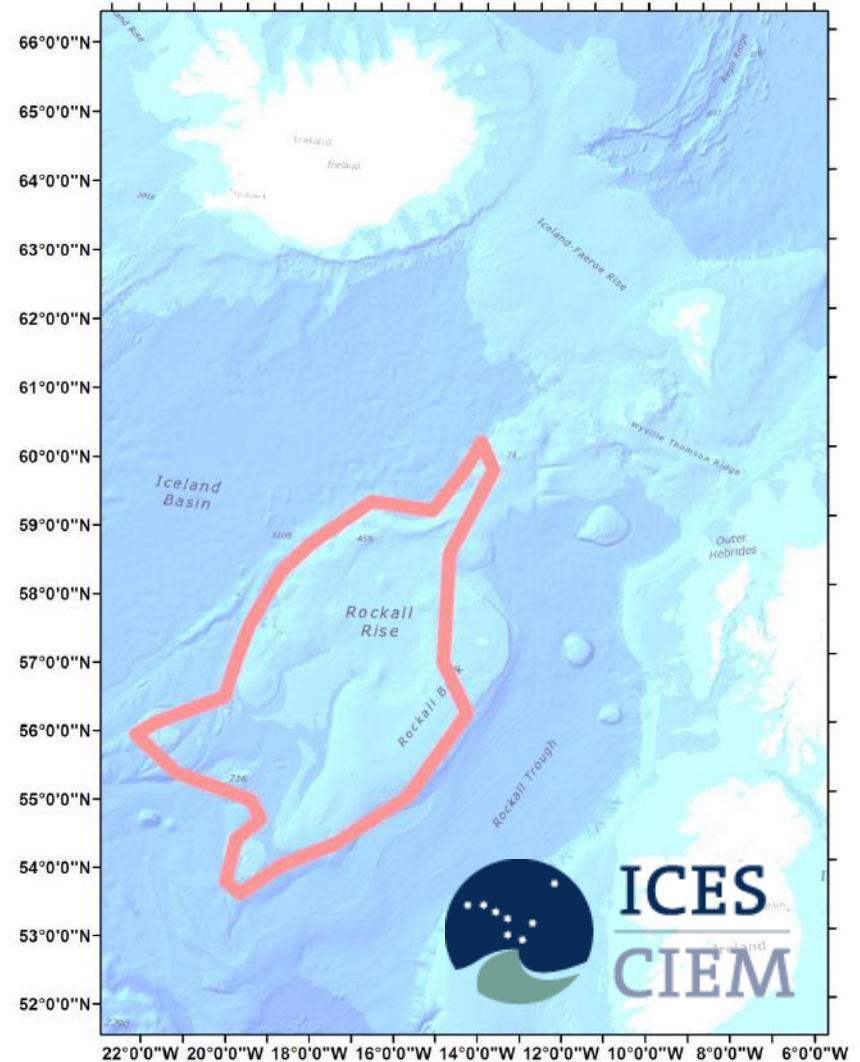


# The CBD and Ecologically and Biologically Significant Areas in the ABNJ

## EBSA criteria

- Uniqueness/rarity
- Importance for threatened or declining habitats
- Vulnerability

2013 - ICES advised Rockall fulfils these criteria and that this area be designated an EBSA



## Take home messages

- **Rockall contains unique ecosystems and species**
- **For the first time we have an idea of how these ecosystems and species are distributed in space and depth....however there is still a lot to discover**
- **Marine spatial planning is an appropriate way of assessing conservation needs and fishing interests**
  - large areas are now protected and others (such as the area around the cold seep ) will likely follow.
  - sustainable fishing should be allowed to continue in areas of the bank that we now know do not contain vulnerable habitats



Thanks to those involved in collecting the data...

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**Jim Drewery (invertebrates), Fiona McIntyre & Paul Fernandes (coral mapping), Neil Collie and Mike Stewart (video), Phil Copland (Multibeam), Finlay Burns, Rob Kynoch and the Scotia Team. Graham Oliver and Dave Mckay. Funded by SG.**

Thanks for listening....

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