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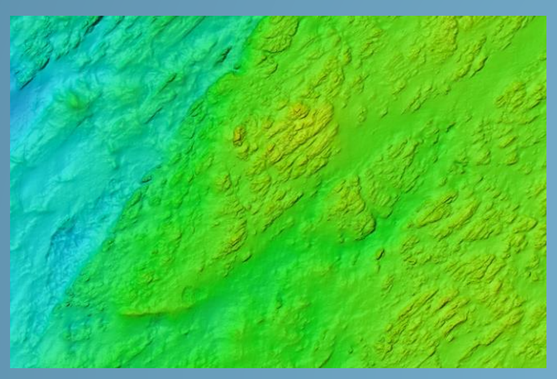
SEACAMS2:

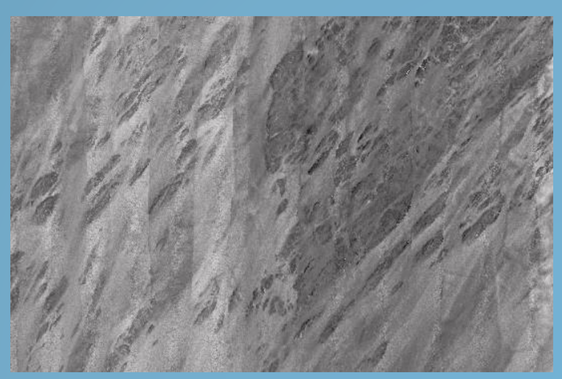
Mapping and monitoring benthic biotopes in marine development areas

AIMS: **To investigate the potential for acoustic data to be used for mapping and monitoring biotopes of interest to developers and regulators in regions of marine renewable energy development.**

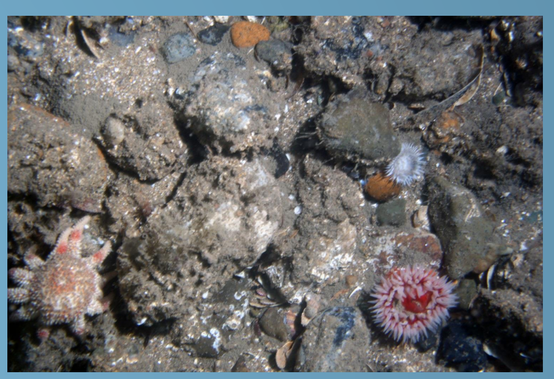
RATIONALE:

- Modern advances in acoustic technology and processing techniques mean physical characteristics of the seabed can be mapped over large, continuous areas.
- The links between the physical benthic environment and biological communities are not fully understood, and as a result, mapping of ecologically distinct regions is still challenging, requiring intensive sampling or predictive modelling.
- Various temperate reef habitats are ecologically important, but challenging to map with confidence.





Multibeam echosounders can produce high resolution maps of the seabed. As well as bathymetry, information about the physical composition of the seabed can be derived from the backscatter data produced.



Temperate reef habitats in many forms can support rich and unique communities, and are of conservation importance. Such habitats are of interest to developers and regulators, but are currently difficult to map and monitor.

METHODS:

- Acoustic surveys using multibeam echo sounder (MBES) and sidescan sonar (SSS) will be conducted over known and predicted stony reef and *Sabellaria spp.* reef biotopes in the North Wales region.
- Grab and video sampling will confirm the biotopes present.
- Acoustic data will be classified using various methods to test the potential for acoustic data to accurately map ecologically distinct areas.
- The accuracy and precision of mapping techniques will be assessed for the purposes of habitat mapping and monitoring for environmental impact assessment.

OUTCOME:

- Capabilities to rapidly map and monitor specific biotopes across large areas using remote sensing would lead to improved sustainable management of marine areas.
- The results will contribute to robust environmental impact assessment protocols and economic impact for the marine renewable energy industry

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