British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

Seabed and Seabed Habitat Mapping Initiatives in Europe

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The Atlantic – a Shared Resource,
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EMODnet
(European Marine Observation and Data Network)

- Established in 2007 by the European Commission DG Mare

  - As part of the Integrated Maritime Policy Action Plan to support 'Marine Knowledge 2020' and the aims of the Marine Strategy Framework Directive to achieve good environmental status in European waters by 2020

  - Preparatory phase (2009-2012) delivered 1:1 million scale maps of parts of the European seas for bathymetry, geology, chemistry, biology, physical properties and broadscale habitats (EUSeaMap)

  - Full EMODnet to start in 2013: 37 geology partners from 30 countries covering all European seas built on national sea-bed mapping programmes (e.g INFOMAR, MAREANO, MAREMAP)

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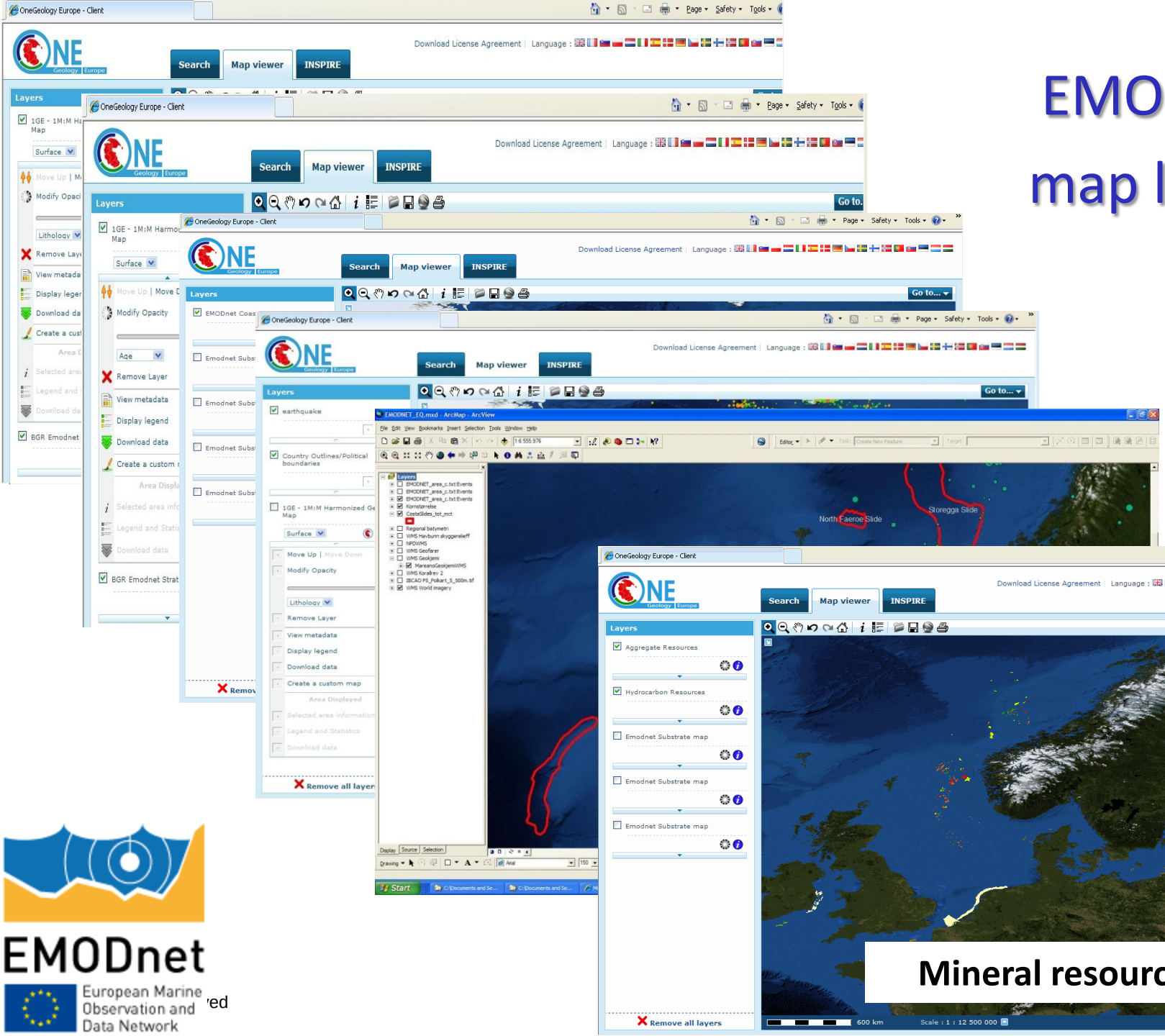
EMODnet map layers



EMODnet

European Marine Observation and Data Network

Layers

- [x] Emodnet Substrate map
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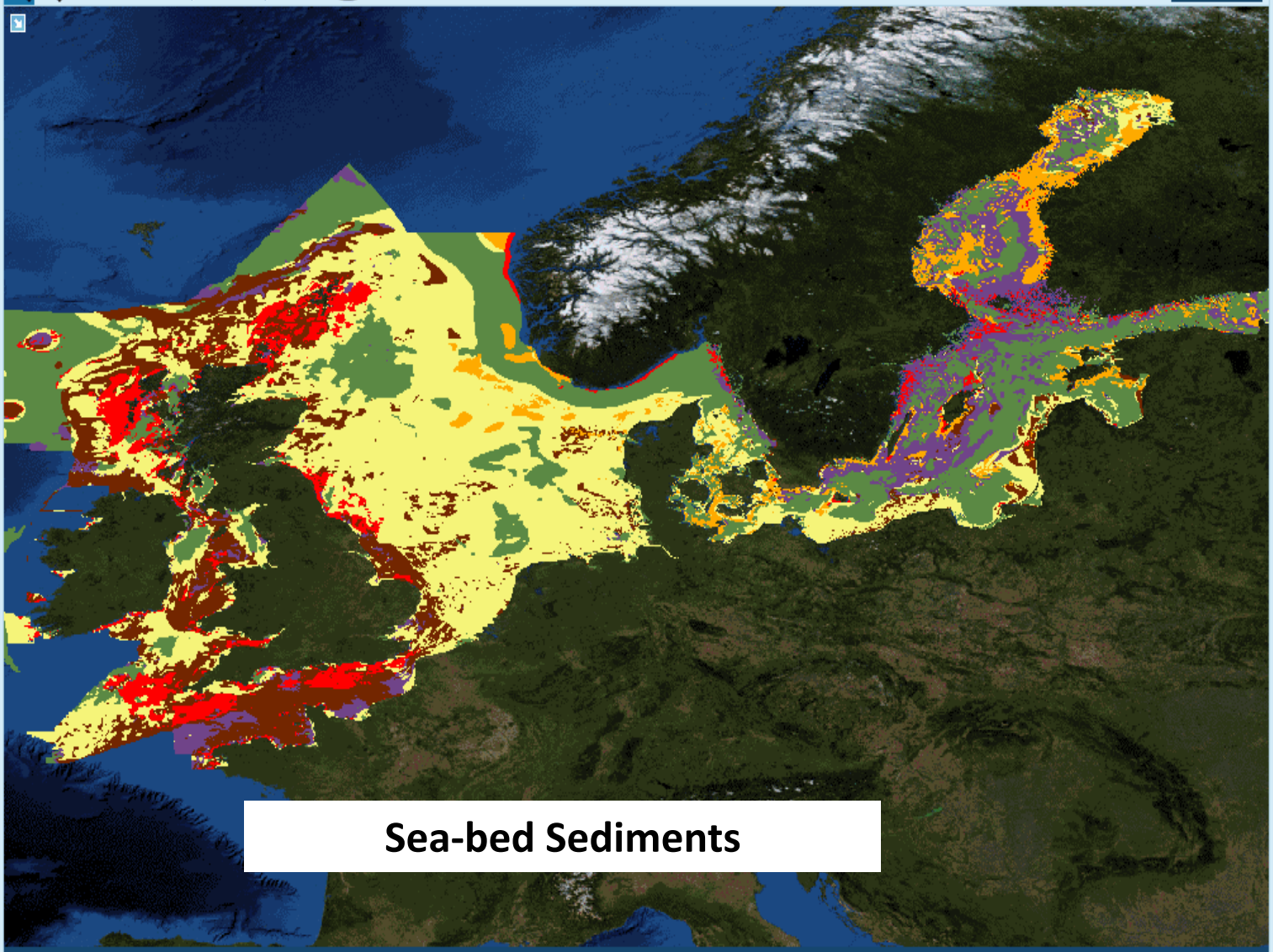
Remove all layers

Go to...



Sea-bed Sediments

600 km Scale : 1 : 12 500 000 SRS : WGS 84 X : 10.99 Y : 59.33

European geoscience programmes

- European Consortium for Ocean Research Drilling (ECORD)
  - European contribution to the Integrated Ocean Drilling Program (IODP)
    - Climate & ocean change; biosphere frontiers; deep processes and their impact on Earth's surface; Earth processes and hazards on human timescales
    - Established group that aims to develop improved infrastructures and increase activities in e.g Arctic
- Deep Sea and Sub-Sea Frontiers Initiative (DS^3F)
  - Produced White Paper on challenges of climate change; geohazards; ecosystems; resources
- North Atlantic Group (NAG)-TEC (European Geological Surveys & industry)
  - Compiling tectonostratigraphic atlas ; standardising nomenclatures; assessing which data gaps are important to broadscale understanding of Atlantic region and regional exploration priorities

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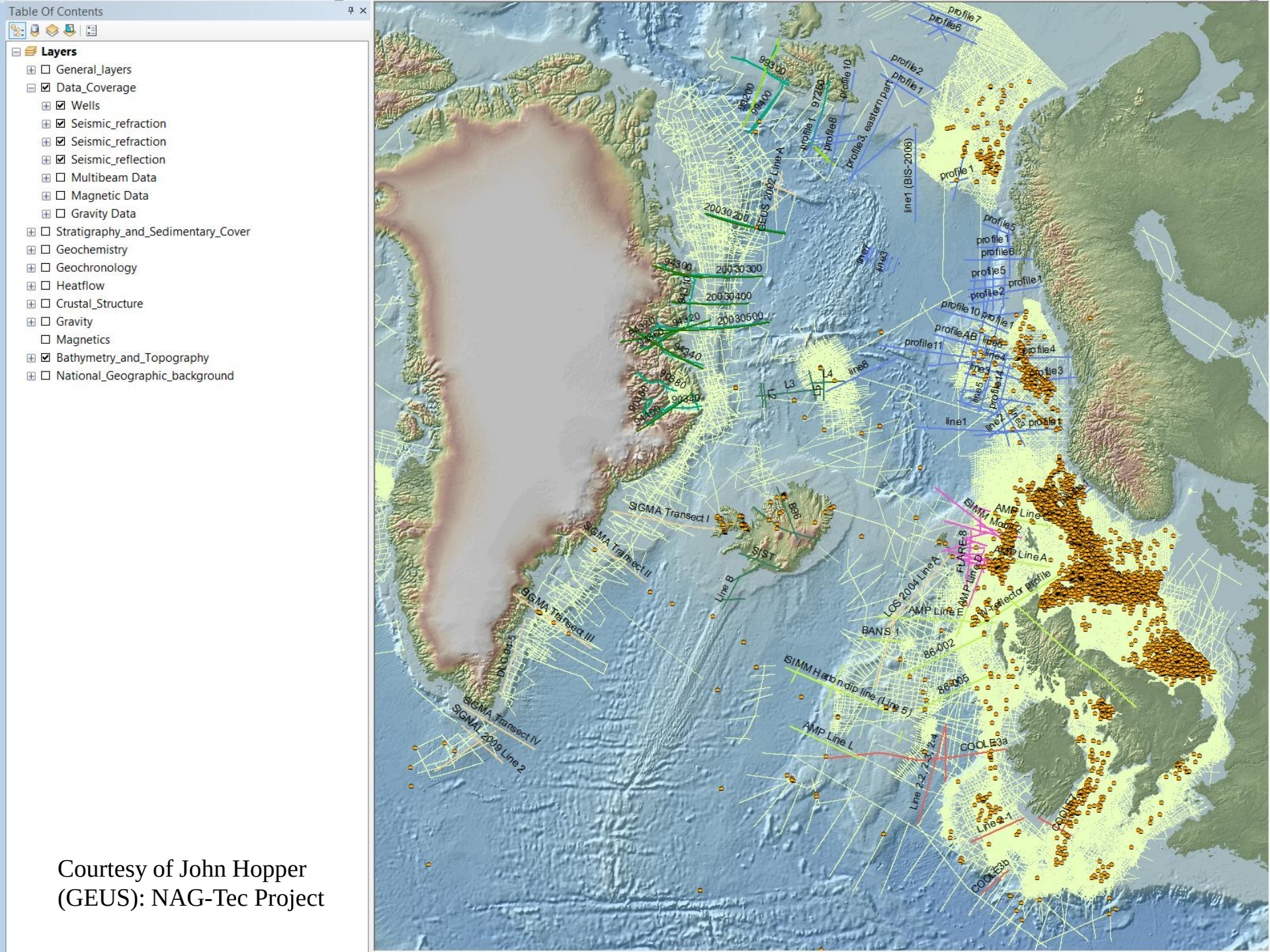
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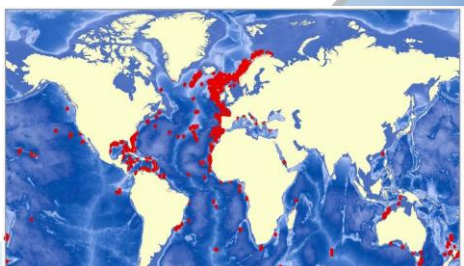
Courtesy of John Hopper
(GEUS): NAG-Tec Project

Habitat mapping

- MESH/MESH Atlantic (Mapping European Seabed Habitats) and BALANCE (Baltic Sea)
  - Promote harmonised production and use of habitat maps of the Atlantic
- HERMES (Hotspot Ecosystem Research on the Margins of the European Seas)
  - Cold seeps; cold-water coral mounds and reefs; canyons; anoxic environments; open slopes
- CoralFISH
  - Assess coral ecosystem models to understand fish-carrying capacity and fishing impact on coral habitats
- GeoHab (Geology and Biology of Marine Habitats)
  - Established international network to support knowledge exchange; facilitate training; annual conference; standards/protocols.



Atlantic Ocean is global centre of deep-sea coral records

Courtesy of Prof Murray Roberts, Heriot-Watt University, UK

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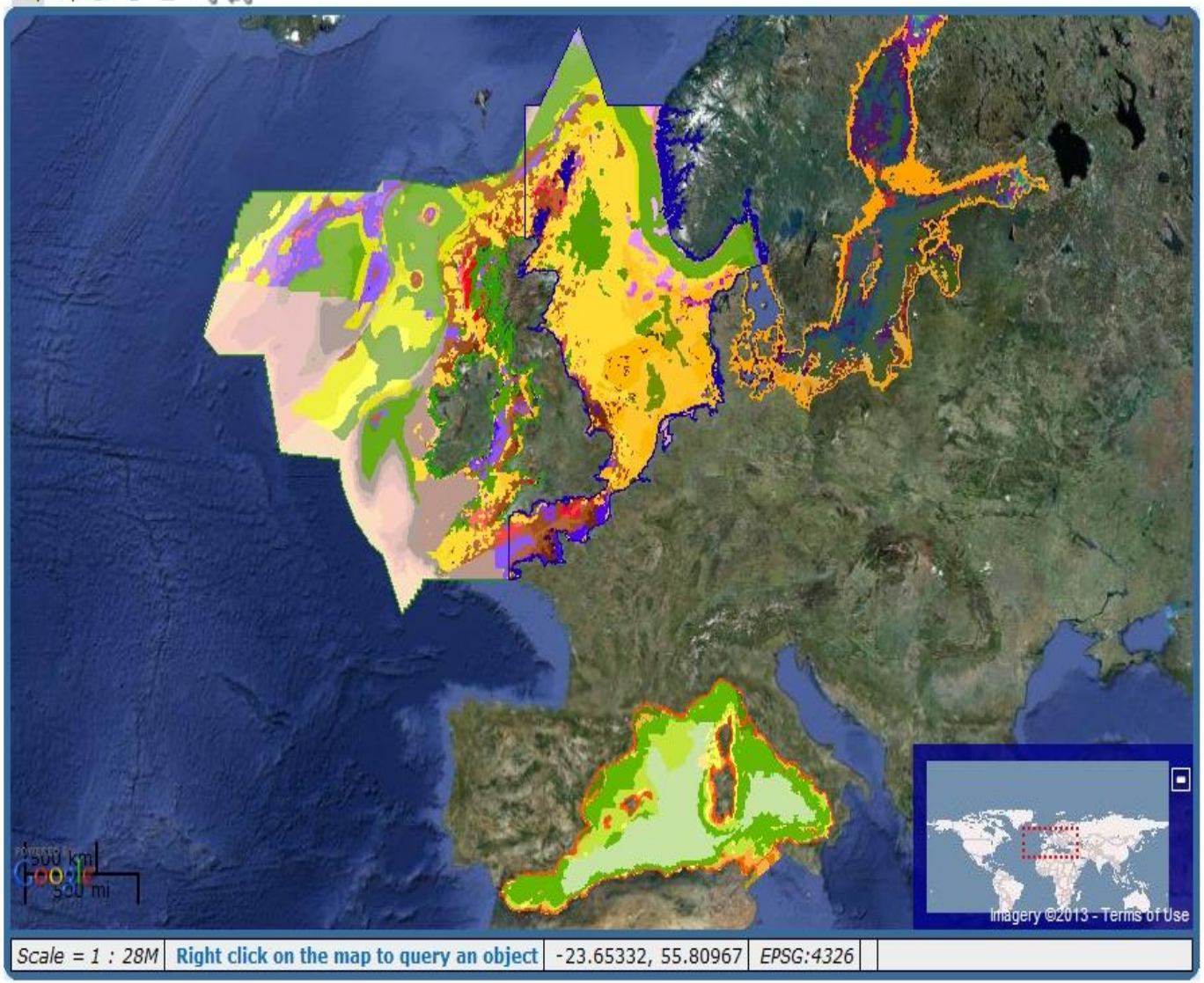
EUSeaMap

Pilot portal for broadscale modelled seabed habitats

Welcome | Map Layers | Key

Add layer(s) from other mapping portals

- **Modelled seabed habitats**
  - **Detailed classification**
    - Celtic & North Seas
    - Baltic Sea - by energy
    - Baltic Sea - by salinity
    - West Mediterranean
  - **Simplified classification**
- **Input layers**
- **Raw data**
- **Confidence**
- **Boundaries**



Scale = 1 : 28M | Right click on the map to query an object | -23.65332, 55.80967 | EPSG:4326

Recommendations

- **Policy**
  - Building sustainable structure for collection, assembly and dissemination of marine information based on integrated national activities
  - Data-sharing agreements (including commercial data and information such as vessel monitoring system data)
  - Funding models that facilitate better national integration
- **Science and Technology**
  - Continued need for more information for better understanding of geological and biological deep-sea/sub-sea processes
  - Assessment of resource potential e.g minerals, geothermal energy, gas hydrates, bioresources and the environmental impacts of exploitation
  - Quantitative/statistical assessment of detailed information to help characterise larger areas
  - Improve monitoring techniques for different parameters/greater use of autonomous systems
  - Include oceanographic information in habitat maps and predictive models

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