

BALANCE

Session 2: Towards marine landscapes in the Baltic Sea

BALANCE Conference

25-26 October 2007

Copenhagen, Denmark

David Connor

Joint Nature Conservation Committee, UK

Denmark
Estonia
Finland
Germany
Latvia
Lithuania
Norway
Poland
Sweden



A wider European perspective

- National programmes
- International programmes
 - MESH & UKSeaMap
- Mapping for policy & legislation
 - OSPAR Convention
 - EC Habitats Directive
- Future needs
 - Marine Strategy Directive
 - Maritime Blue Book

Ireland

Full coverage geophysical survey

Phase I – Irish National Seabed Survey

1999-2006

€32m

200 to >4000m depth

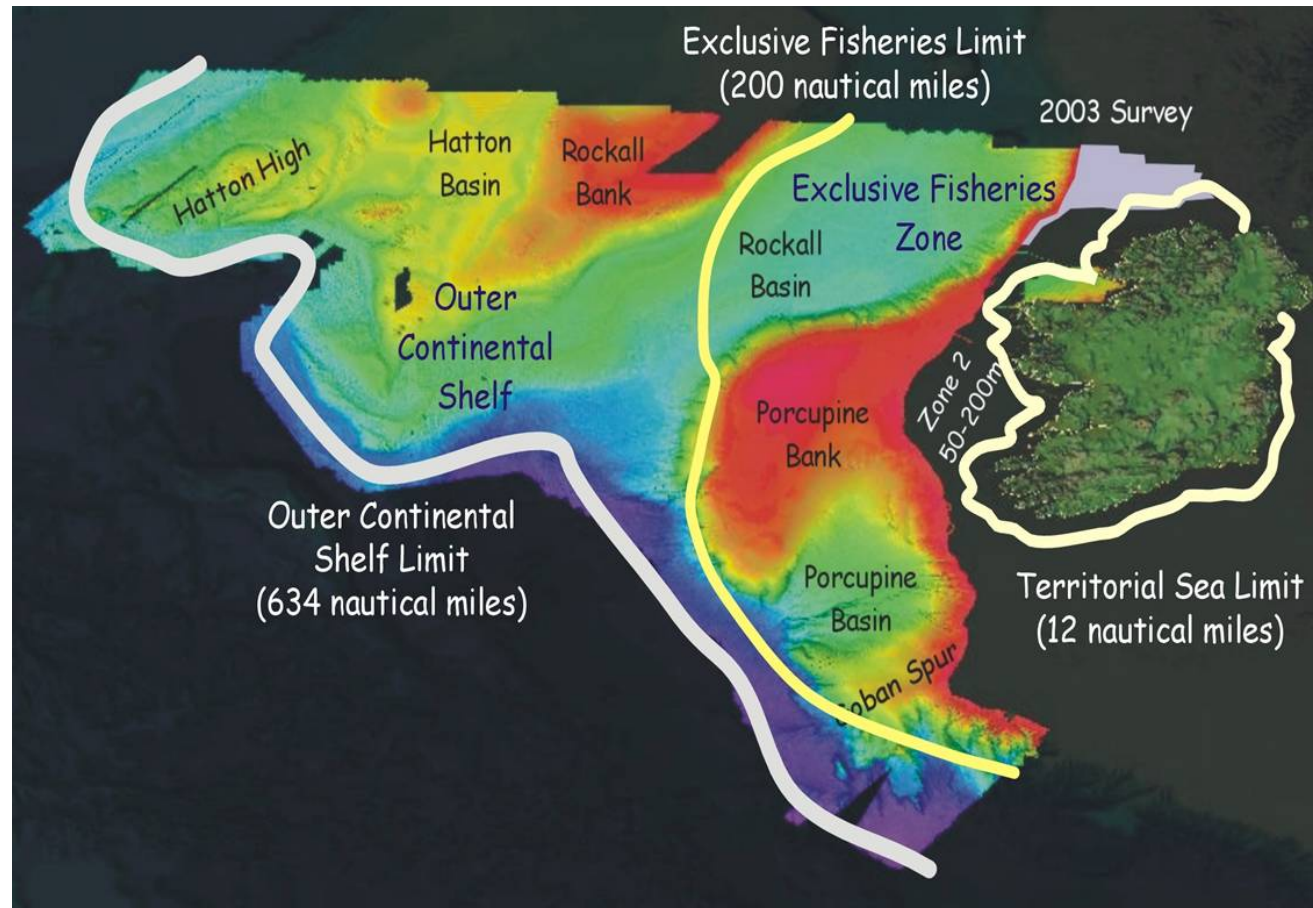
520,000 km²

Phase II – InfoMar

2006-2020

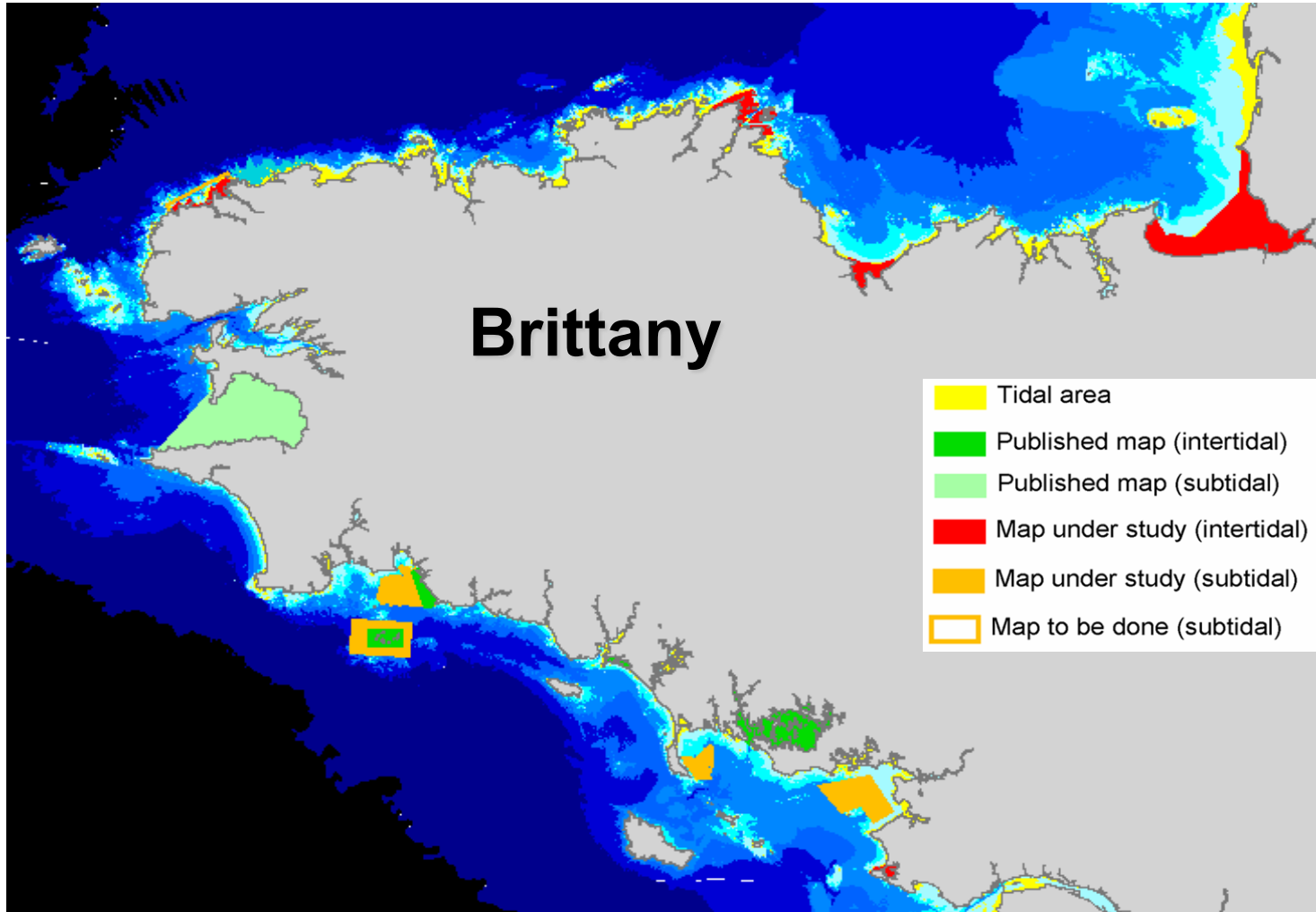
€70m

0 to 200m depth



France

REBENT: High resolution near-shore mapping



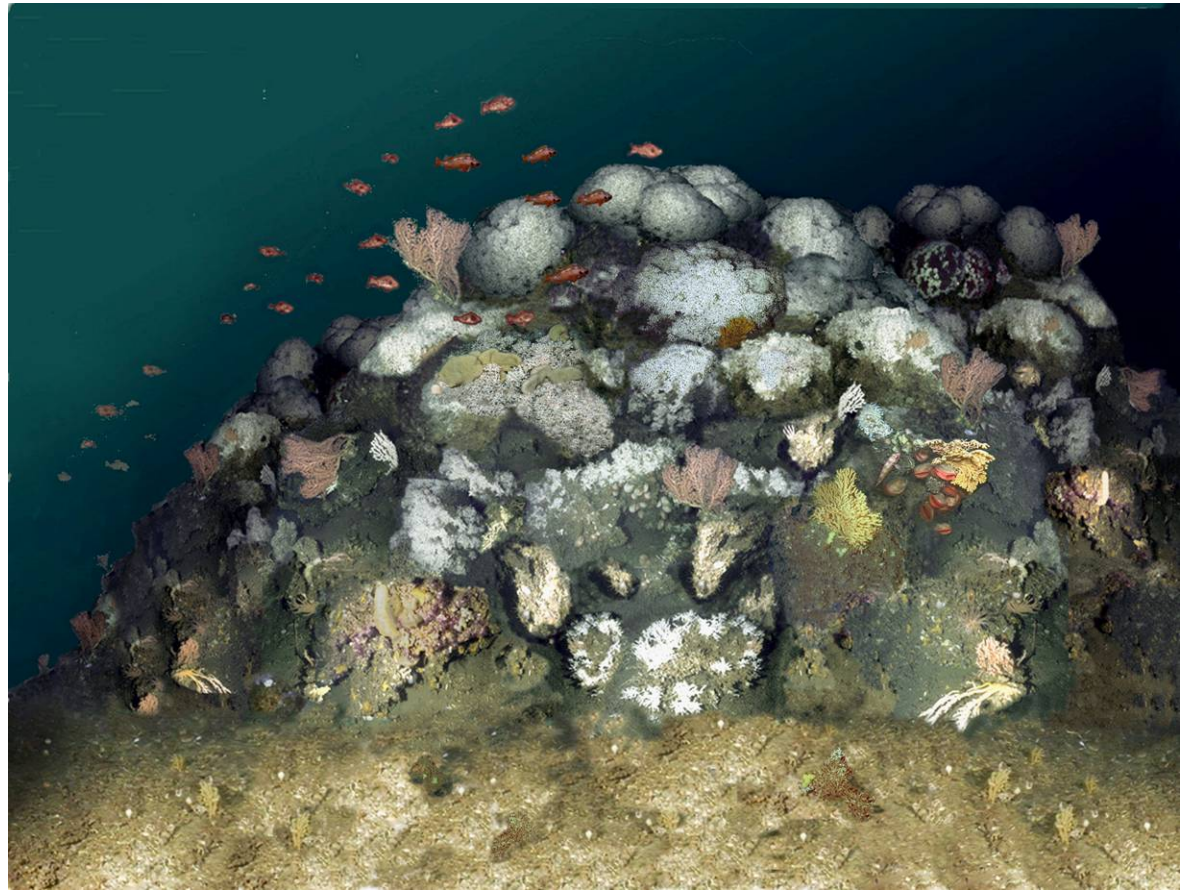
Norway

Cold-water corals & fisheries

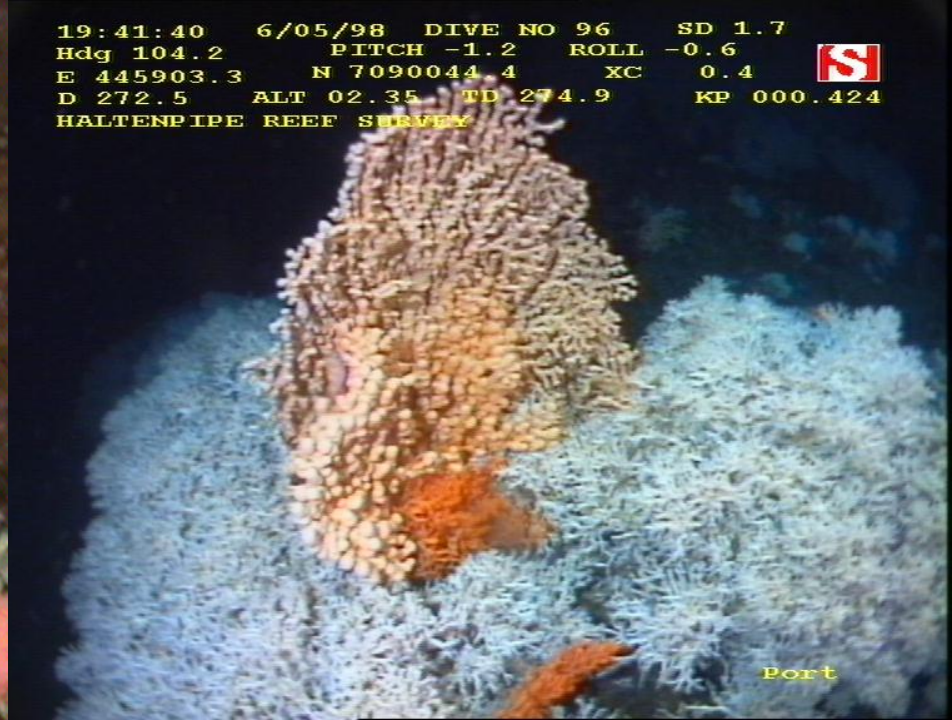
Cold-water coral mapping –
Lophelia pertusa reef

Extensive use of multibeam
echosounder and deep-water
video

Reveals damage to coral reef
from bottom trawling




19:41:40 6/05/98 DIVE NO 96 SD 1.7
Hdg 104.2 PITCH -1.2 ROLL -0.6
E 445903.3 N 7090044.4 XC 0.4
D 272.5 ALT 02.35 TD 274.9 KP 000.424
HALTENPIPE REEF SURVEY



03:44:34 16/05/98 DIVE NO 1 SD 2.1
Hdg 248.4 PITCH -3.6 ROLL -01.9 
E 304014.1 N 6997570.3 XC 8.8
D 219.5 ALT 01.16 TD 220.6 KP -000.054

IMR STOREGGA

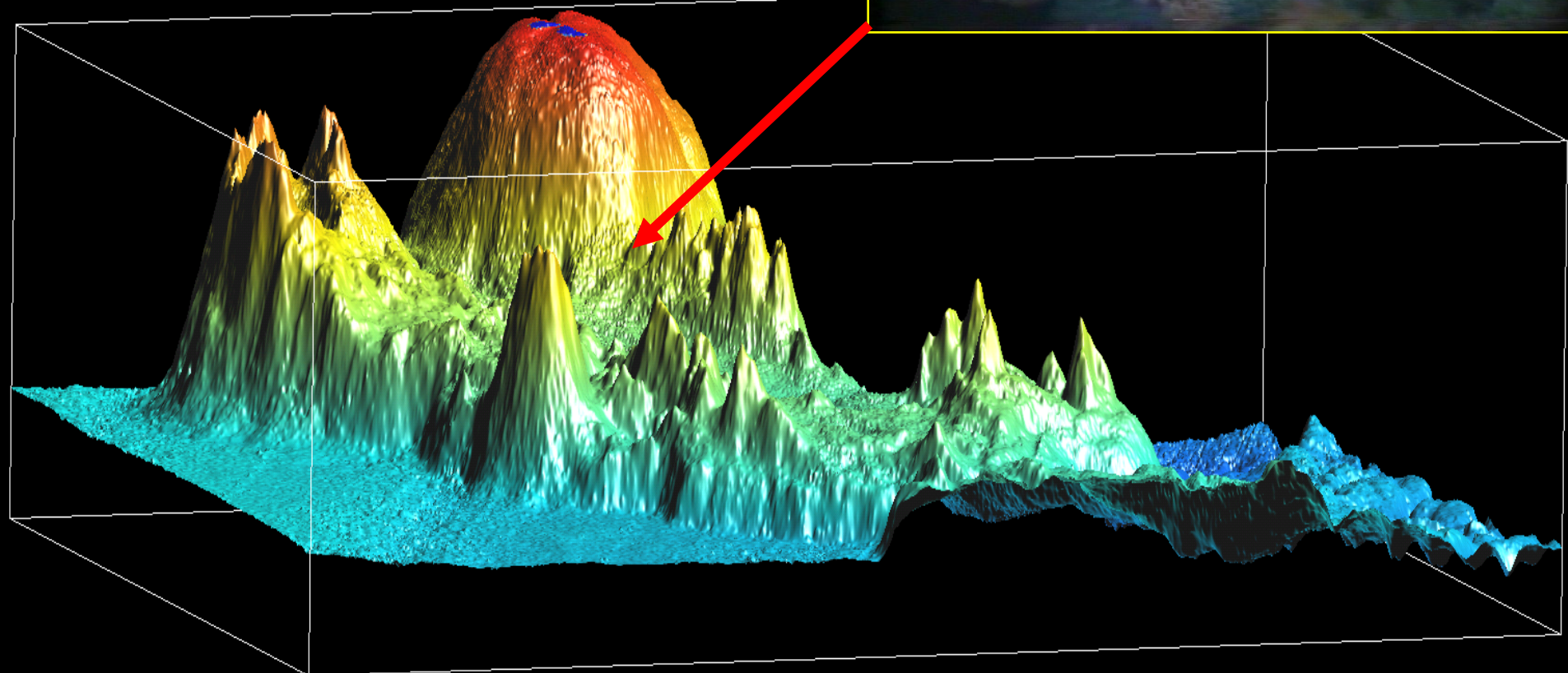


08:43:19 16/05/98 DIVE NO 2 SD 1.9
Hdg 227.1 PITCH -6.9 ROLL -00.7 
E 306273.0 N 6999535.8 XC -4.4
D 320.2 ALT 01.44 TD 321.8 KP 004.316

IMR STOREGGA



Hesteskoen, Norway



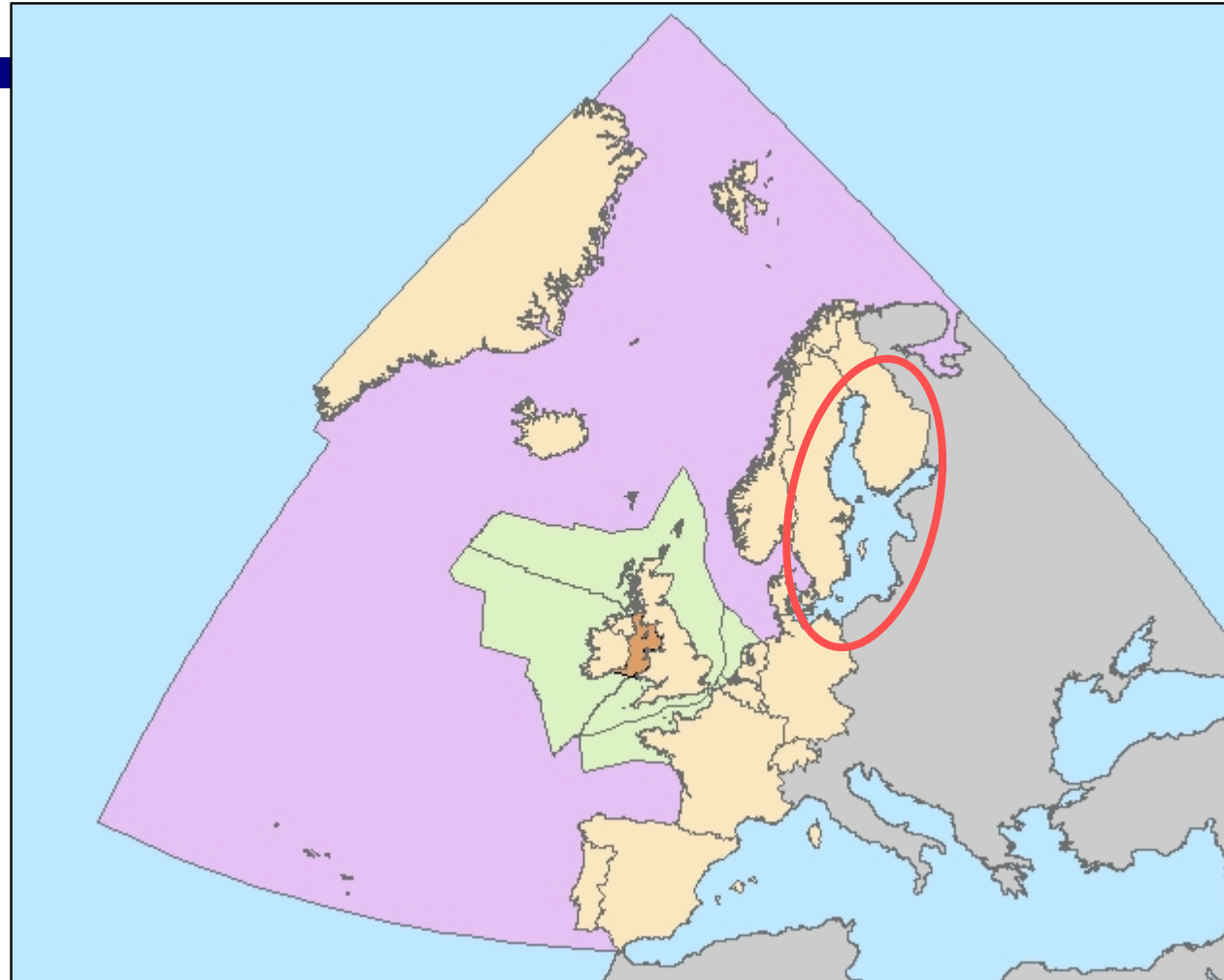
International mapping programmes

**UKSeaMap: UK
continental shelf**

**MESH: Interreg NWE
sea areas**

**OSPAR priority habitat
mapping: OSPAR area**

BALANCE: Baltic Sea





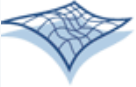
The development of a framework for Mapping European Seabed Habitats

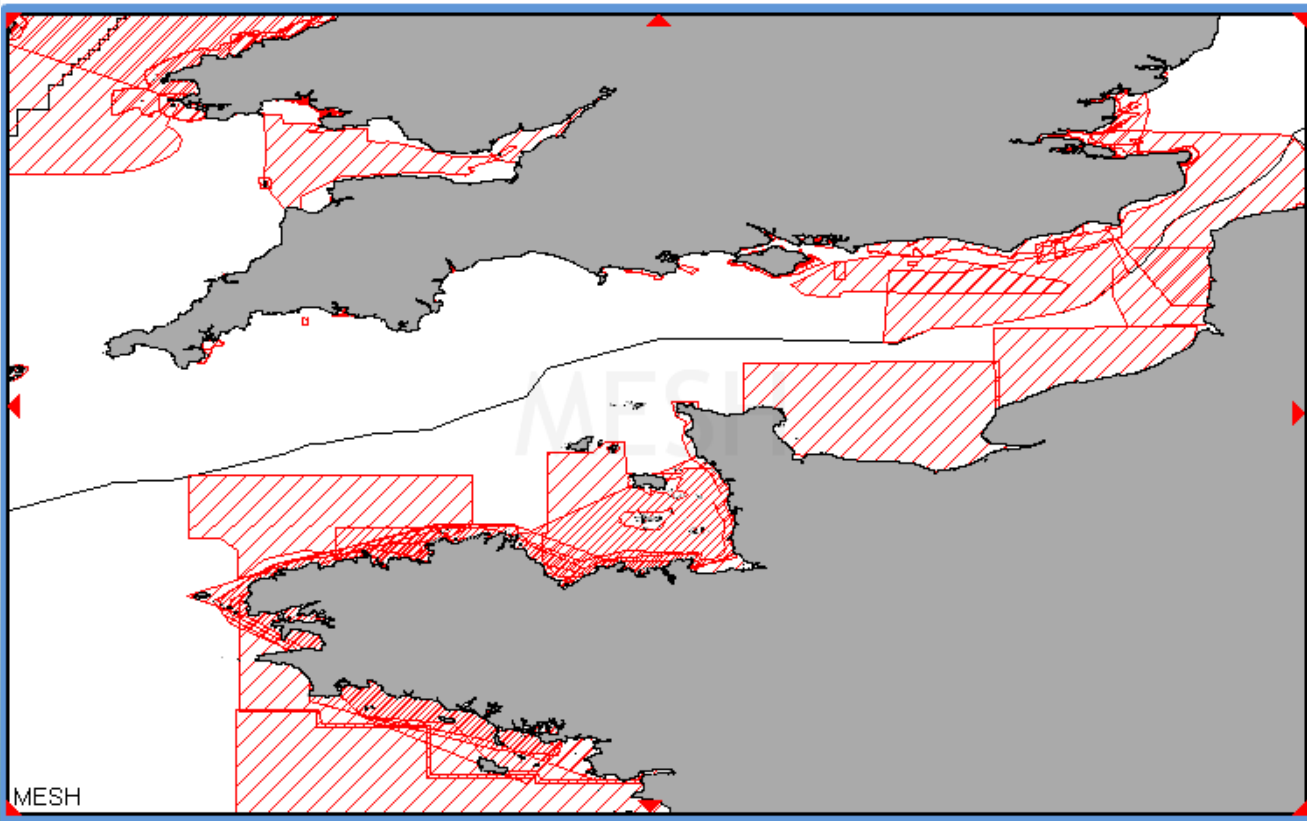
Mapping page - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites Home Mail Print Word PDF People

Address <http://www.searchmesh.net/default.aspx?page=1516&Action=DYNAMIC&MapName=D:/websites/mapping/MapserverService/Map/MESHexternal.map&MapLayersToShow=> Go Links

 **MESH** MAPPING EUROPEAN SEABED HABITATS [about](#) | [help](#) | [new map query](#) | [print](#) | [www.searchmesh.net](#) [Give feedback](#)



MESH

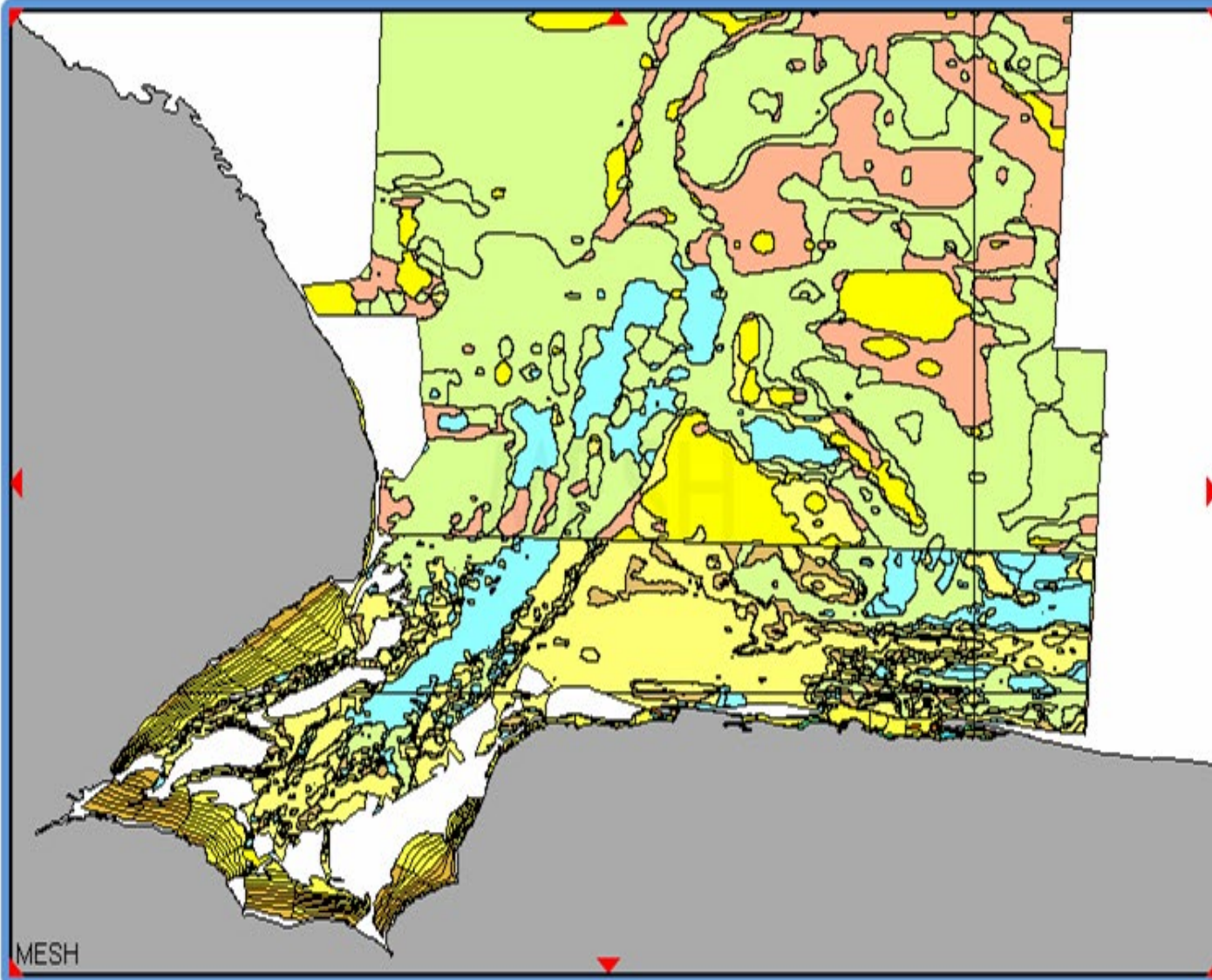
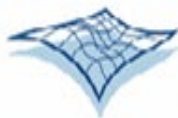
Location Find Legend Info Layers Help

Display a layer by clicking the leftmost check box next to it.
Allow Info to be displayed for a layer by clicking the rightmost check box next to it.
Double click on the layername for info about the data layer

- Habitats
 - EUNIS habitats
 - Original habitat
 - Confidence assessment
- MESHModelledOutputs
- Physical
- Boundaries
- StudyAreas
 - Habitat mapping data
 - Habitat modelling data
 - Seabed imagery
- ValidationSamples
- SeabedImages
- LatLongOverlay
- SignaturesCatalogue

Habitat maps online at:

www.searchMESH.net/webGIS



[Location](#)
[Find](#)
[Legend](#)
[Info](#)
[Layers](#)
[Help](#)

- A3.1 - Atlantic and Mediterranean high en
- A3.2 - Atlantic and Mediterranean modera
- A3.3 - Atlantic and Mediterranean low ene
- A3.7 - Features of infralittoral rock
- A4 - Circalittoral rock and other hard subs
- A4.1 - Atlantic and Mediterranean high en
- A4.2 - Atlantic and Mediterranean modera
- A4.3 - Atlantic and Mediterranean low ene
- A4.7 - Features of circalittoral rock
- A5 - Sublittoral sediment
- A5.1 - Sublittoral coarse sediment
- A5.2 - Sublittoral sand
- A5.3 - Sublittoral mud
- A5.4 - Sublittoral mixed sediments
- A5.5 - Sublittoral macrophyte-dominated
- A5.6 - Sublittoral biogenic reefs
- A5.7 - Features of sublittoral sediments
- A6 - Deep-sea bed
- A6.1 - Deep-sea rock and artificial hard su
- A6.2 - Deep-sea mixed substrata
- A6.3 - Deep-sea sand
- A6.4 - Deep-sea muddy sand
- A6.5 - Deep-sea mud
- A6.6 - Deep-sea bioherms
- A6.7 - Raised features of the deep-sea bed

MESH

MESH Guide to Habitat Mapping

What is habitat mapping?

What do I want to map?

How do I collect my data?

How do I make a map?

How good is my map?

How can I use my map?



Released September 2007
www.searchMESH.net/mapping-guide

Patchy data coverage

the Sea Region
ERREG III B



Mapping page - Microsoft Internet Explorer

File Edit View Favorites Tools Help



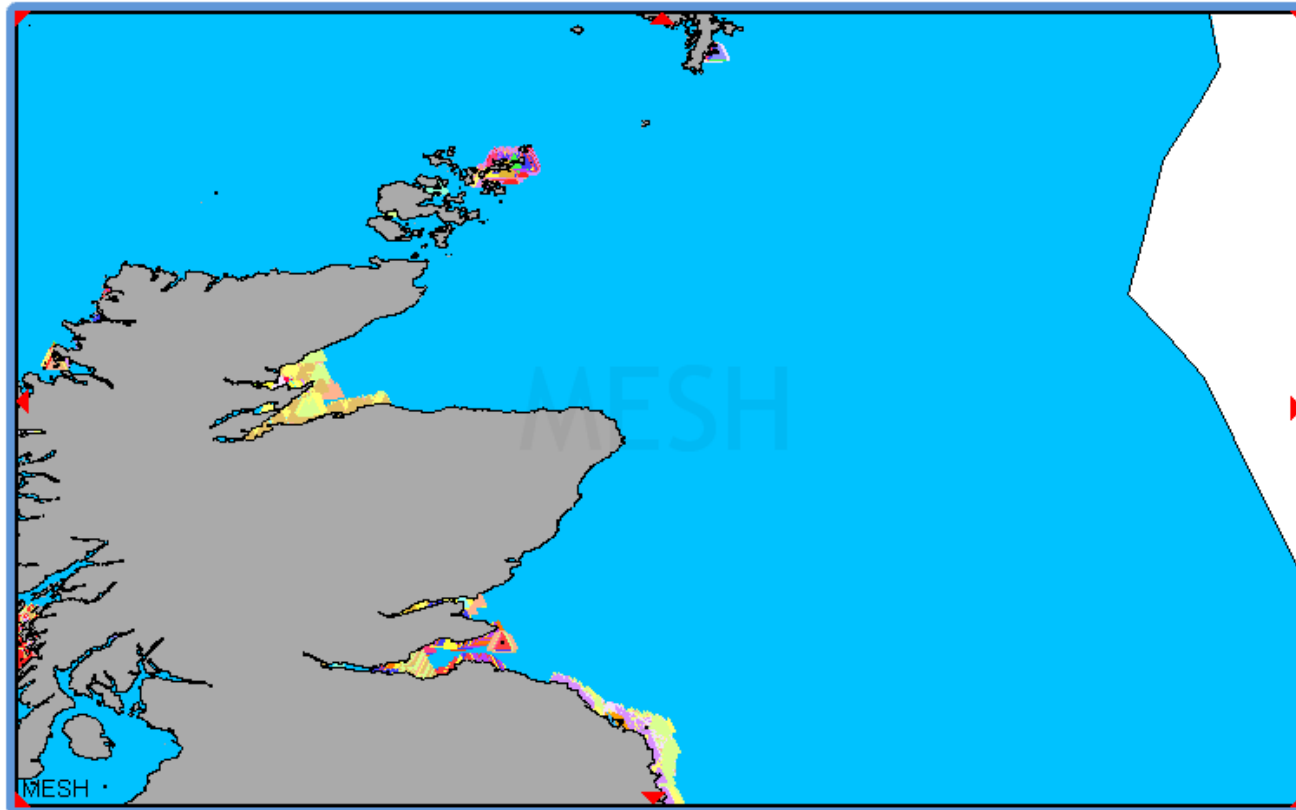
Address <http://www.searchmesh.net/default.aspx?page=1516&Action=DYNAMIC&MapName=D:/websites/mapping/MapserverService/Map/MESHexternal.map&MapLayersToShow=> Go Links >>



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Modelling



Map navigation and layer control interface.

Location Find Legend Info Layers Help

Tooltips:

Display a layer by clicking the leftmost check box next to it.
Allow Info to be displayed for a layer by clicking the rightmost check box next to it.
Double click on the layername for info about the data layer

- Habitats
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- SignaturesCatalogue

Mapping website copyright MESH partnership 2005-2006

Done

Internet

start



Microsoft PowerPoint ...

Mapping page - Micro...



Seabed features

UKSeaMap
Seabed landscapes

Iceberg
plough-
mark zone

Shelf sand
plain

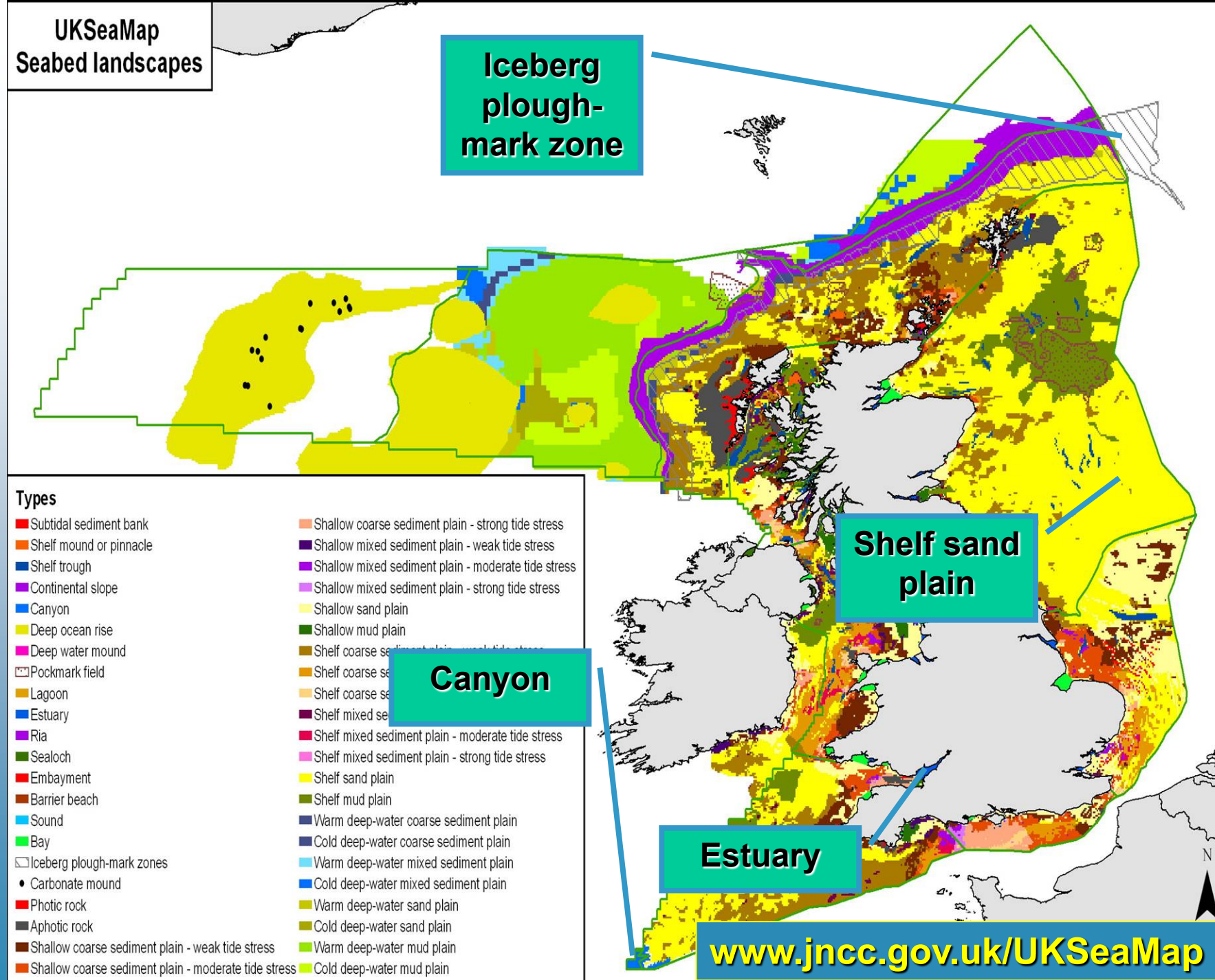
Canyon

Estuary

Types

- Subtidal sediment bank
- Shelf mound or pinnacle
- Shelf trough
- Continental slope
- Canyon
- Deep ocean rise
- Deep water mound
- Pockmark field
- Lagoon
- Estuary
- Ria
- Sealoch
- Embayment
- Barrier beach
- Sound
- Bay
- Iceberg plough-mark zones
- Carbonate mound
- Photic rock
- Aphotic rock
- Shallow coarse sediment plain - weak tide stress
- Shallow coarse sediment plain - moderate tide stress
- Shallow coarse sediment plain - strong tide stress
- Shallow mixed sediment plain - weak tide stress
- Shallow mixed sediment plain - moderate tide stress
- Shallow mixed sediment plain - strong tide stress
- Shallow sand plain
- Shallow mud plain
- Shelf coarse sediment plain - weak tide stress
- Shelf coarse sediment plain - moderate tide stress
- Shelf coarse sediment plain - strong tide stress
- Shelf mixed sediment plain - weak tide stress
- Shelf mixed sediment plain - moderate tide stress
- Shelf mixed sediment plain - strong tide stress
- Shelf sand plain
- Shelf mud plain
- Warm deep-water coarse sediment plain
- Cold deep-water coarse sediment plain
- Warm deep-water mixed sediment plain
- Cold deep-water mixed sediment plain
- Warm deep-water sand plain
- Cold deep-water sand plain
- Warm deep-water mud plain
- Cold deep-water mud plain

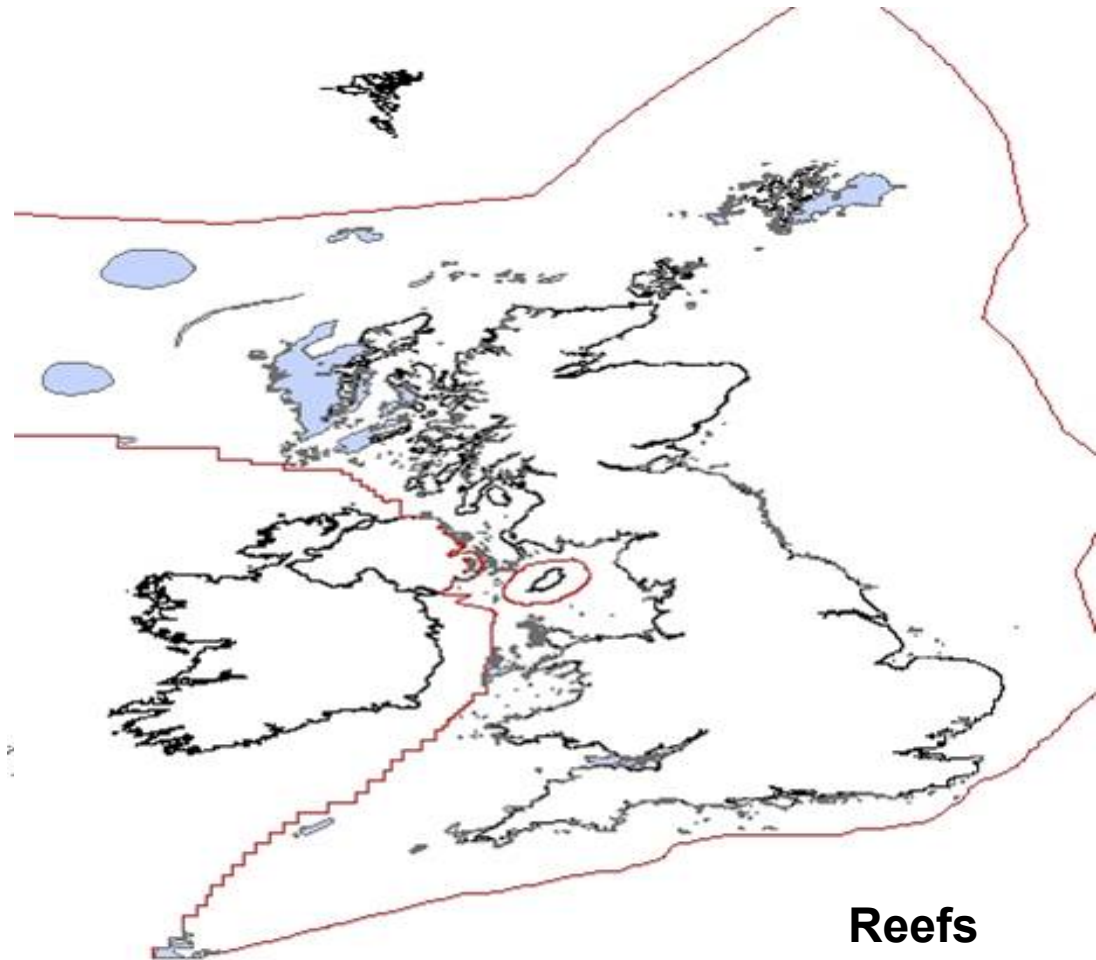
www.jncc.gov.uk/UKSeaMap



Habitats Directive Annex I habitats

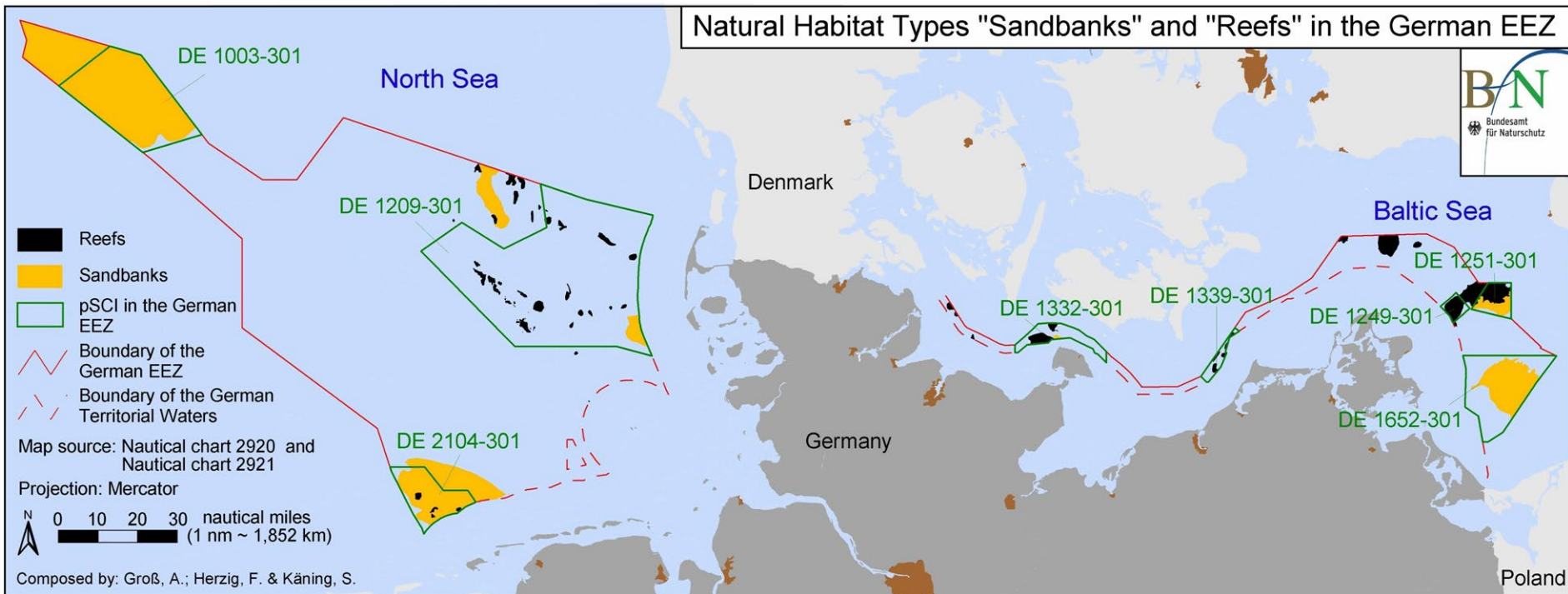
FCS – Favourable Conservation Status assessments

Report to EC in 2007
Include distribution and extent data on
each habitat



Germany

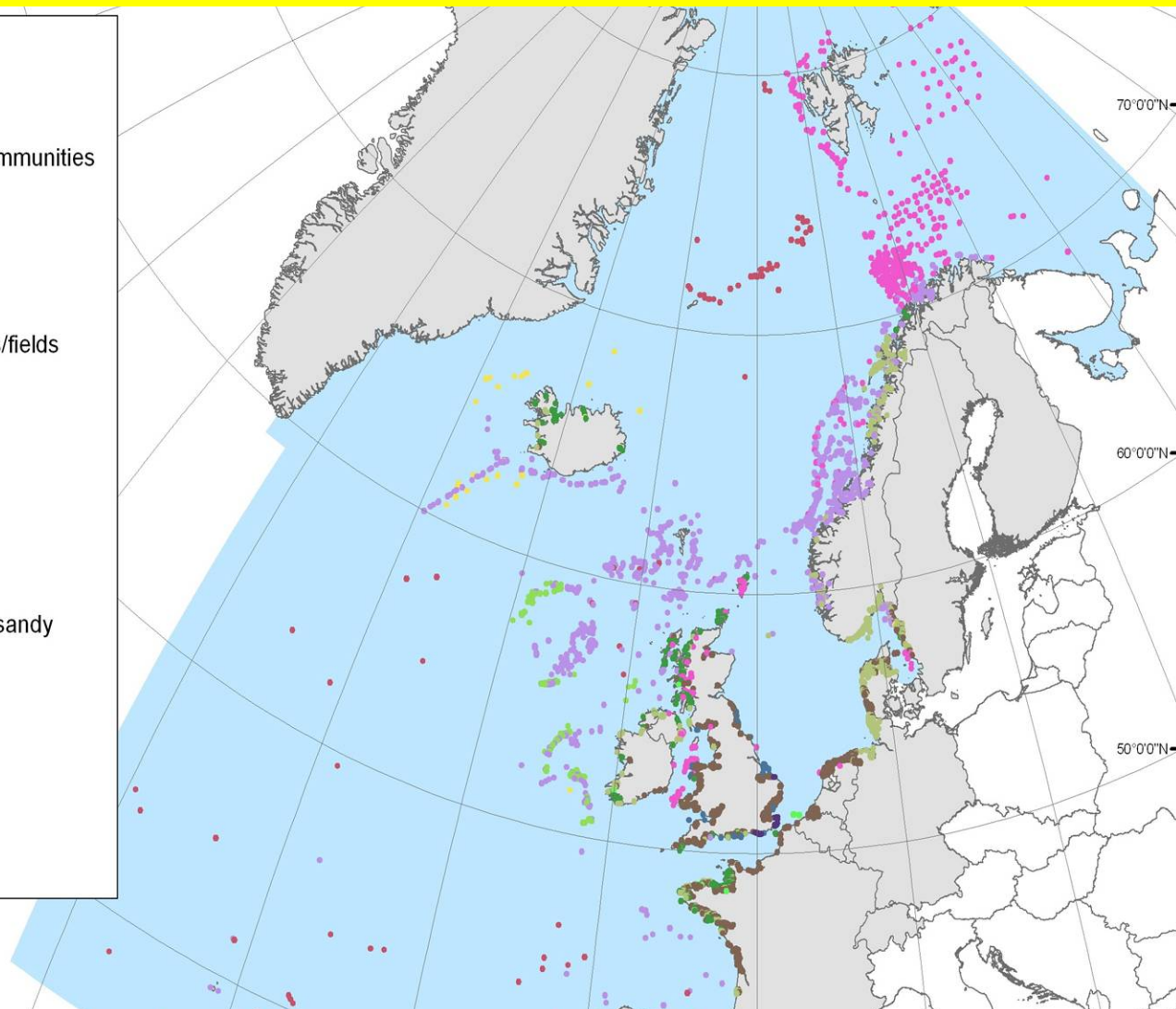
Habitats Directive Annex I mapping



Distribution of the 14 OSPAR habitats

Legend

- Zostera beds
 - Seapens and burrowing megafauna communities
 - Seamounts
 - Sabellaria spinulosa reefs
 - Ostrea edulis beds
 - Oceanic ridges with hydrothermal vents/fields
 - Modiolus modiolus horse mussel beds
 - Maerl beds
 - Lophelia pertusa reefs
 - Littoral chalk communities
 - Intertidal mudflats
 - Intertidal Mytilus edulis beds on mixed/sandy
 - Deep-sea sponge aggregations
 - Carbonate Mounds
- OSPAR Contracting Parties
- World Countries
- OSPAR Area



www.searchNBN.net/hosted/ospar/ospar.html

www.ospar.org/eng/html/welcome.html

(and follow links 'Protection and conservation of Marine Biodiversity and Ecosystems')

Marine Strategy Directive

Article 7 - assessment

Member States shall make an initial assessment of their marine waters, taking account of existing data where available and comprising the following:

an analysis of the essential characteristics and current environmental status of those waters, based on the indicative list of elements set out in Table 1 of Annex II, and covering the habitat types, the biological components, the physico-chemical characteristics and the hydro-morphology;



MSD Annex II

Habitat types

The predominant seabed and water column habitat type(s) with a description of the characteristic physical and chemical features, such as depth, water temperature regime, currents and other water movements, salinity, structure and substrata composition of the sea bed;

Identification and mapping of special habitat types especially those recognised or identified under EU legislation (habitats and birds directives) or international conventions as being of special scientific or biodiversity interest;

Habitats in areas which by virtue of their characteristics, location, or strategic importance merit a particular reference. This may include areas subject to intense or specific pressures or areas which merit a specific protection regime.

EU Maritime Blue Paper

Released 10 October 2007

The Commission will:

- **Take steps in 2008 towards a European Marine Observation and Data Network, and promote the multi-dimensional mapping of Member States' waters, in order to improve access to high quality data** (Section 3.2.3 *Data and Information*)
- **Launch a European Atlas of the Seas as an educational tool and as a means of highlighting our common maritime heritage** (Section 4.5 Raising the Visibility of Maritime Europe)

Action Plan:

- In the second half of 2008 it will also propose a programme for the development of mutually compatible and multi-dimensional mapping of seas in Member States' waters.



Presentations

- 13:10 **Benthic marine landscapes**
Zyad Al-Hamdani, The Geological Survey of Denmark and Greenland, Denmark
- 13:30 **Topographic and physiographic marine features**
Anu Reijonen, The Geological Survey of Finland, Finland
- 13:50 **Application of marine landscape maps**
Johnny Reker, The Danish Spatial and Environmental Planning Agency, Denmark
- 14:10 **Synthesis**
Jørgen Leth, The Geological Survey of Denmark and Greenland, Denmark
- 14:25 **General discussion**