

BE-AWARE II Task D: Project Resource Database

Chris Moulton

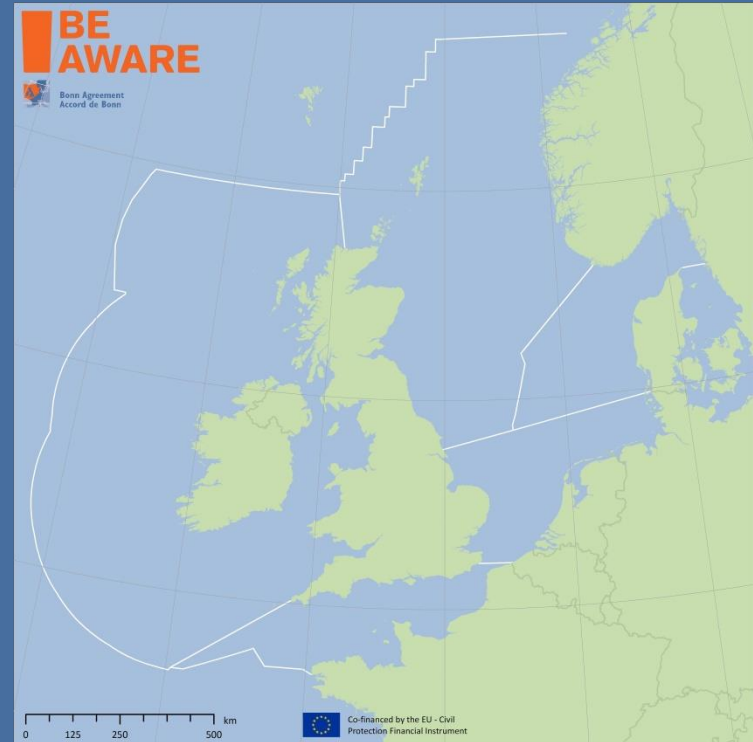
Bonn Agreement Secretariat

Project Resource Database

- Collection of data in line with the Data Request Note
- Expected results: A centrally-held database with georeferenced data, where applicable, containing the data required for the project
- Data to meet requirements for analysis at a regional scale

Data Request Note

- Project Partner Countries
 - Response capability
 - Scenario modelling
 - Selected socioeconomic features
- Bonn Agreement Secretariat & COWI
 - Habitat mapping
 - Socioeconomic sites
 - Spawning/nursery areas for fish
 - Marine mammal areas
 - Protected areas
 - Bird Areas



Data Request Note

- Project Partner Countries

- Response capability

- Vessels
 - Dispersant

- Scenario modelling

- Vessel Traffic Services
 - Emergency Towing Vessels
 - Dispersants

Traffic Separation Scheme

Night Response Capabilities

Additional Response Vessels

- Selected socioeconomic features

- Shellfish/Seaweed harvesting
 - Aquaculture
 - Tourism sites
 - Coastal Facilities with water intake
 - Heritage sites

Data Request Note – Project Partners

Data Set			
Response Equipment - Vessels	RE - Vessels	Completed?	Y/N
Response Equipment - Dispersants	RE - Dispersant		Y
Reference Scenario - Scenario 1 - 2011: Existing Risk Reducing and Response Measures	Scenario 1		
Reference Scenario - Scenario 2 - 2020: Risk Reducing and Response Measures already planned	Scenario 2		
Risk Reduction Scenario Measure - Scenario 3 - Vessel Traffic System in Selected Areas	Scenario 3		
Risk Reduction Scenario Measure - Scenario 4 - Traffic Separation Schemes in Selected Areas	Scenario 4		
Risk Reduction Scenario Measure - Scenario 5 - AIS Guard Rings and Virtual Buoys in Selected Areas	Scenario 5		
Risk Reduction Scenario Measure - Scenario 6 - Vessel Traffic Management in Selected Areas	Scenario 6		
Risk Reduction Scenario Measure - Scenario 7 - Mandatory Pilotage in Windfarms	Scenario 7		
Risk Reduction Scenario Measure - Scenario 8 - Improved Night Visibility	Scenario 8		
Response Measure Scenario - Scenario 9 - Further use of Dispersants	Scenario 9		(Y)
Response Measure Scenario - Scenario 10 - Additional Response Equipment as Suggested by Project Partners	Scenario 10		(Y)
Further information - Geoportal links	Geoportals		

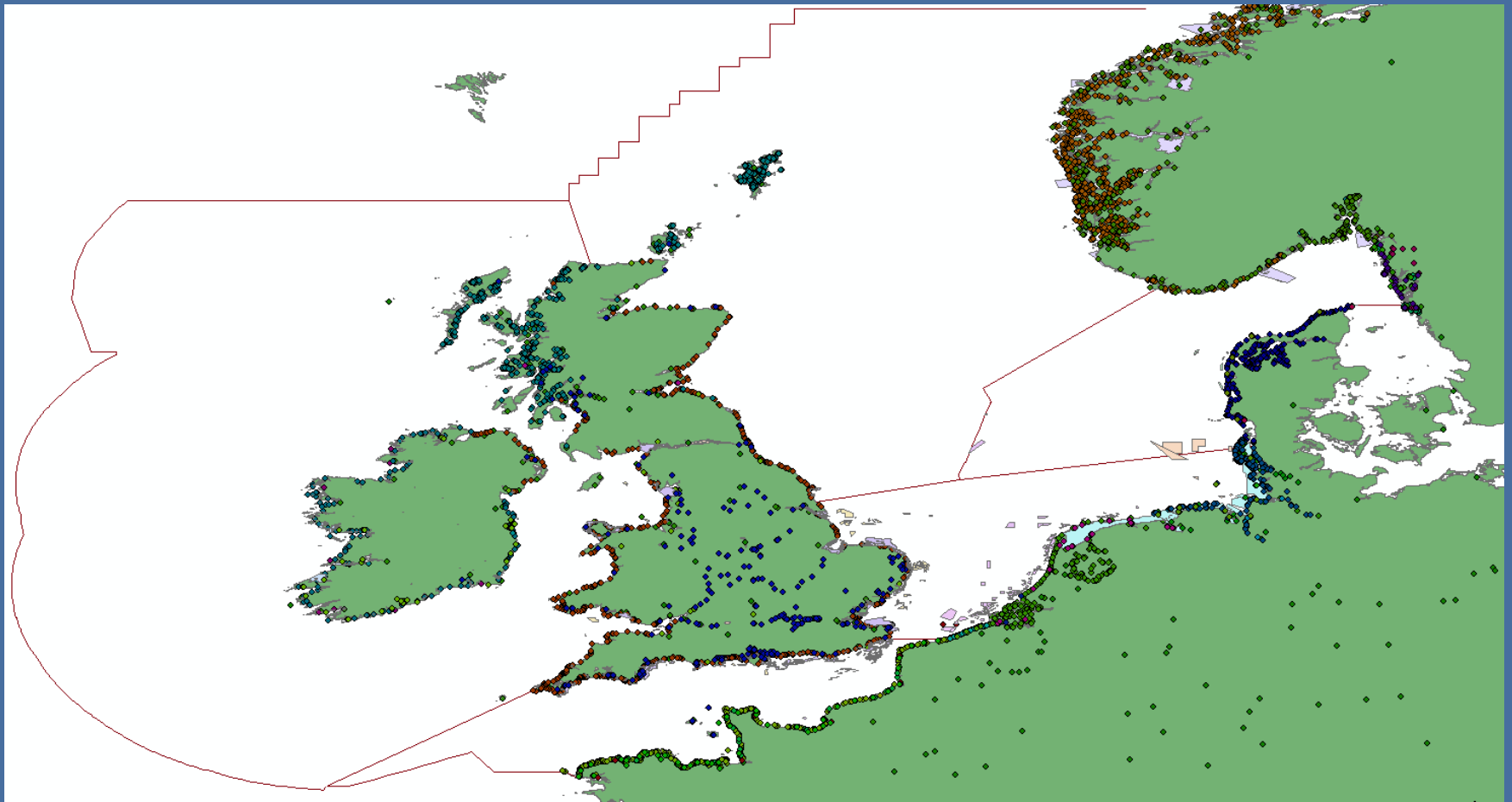
Country	Name of vessel	Name of dispersant	Location (Airport/Port)	Latitude (Decimal degrees)	Longitude (Decimal degrees)	Dispersant stock (Tonnes)	Operational radius (km)	Mobilisation time (hh:mm)	Cruising speed (knots)	Sprayed area/time (m²/hr)
Belgium	none	Slick Gone NS	Jabbeke	51.1856N	003.0847E	10		06:00		
Belgium										
Belgium										
Belgium										
Belgium										
Belgium										
Belgium										
Belgium										
Belgium										
Belgium										

Name of vessel	Location (Local Port/Airport)	Latitude (Decimal degrees)	Longitude (Decimal degrees)	Length (m)	Width (m)	Max speed (knots)	Cruising speed (knots)	Draught (m)	Call signal	Recovery system	Recovery rate m²/h
Zeehond	Ostend	51.2292N	002.9297E	39,5	10	13	3,45		ORDO	NA	NA
Zeehond	Ostend	51.2292N	002.9297E	30,08	9,1	11	3,2		ORBO	NA	NA
Ter Streep	Ostend	51.2292N	002.9297E	49,55	9,6	13	3,7		ORDJ	NA	NA
Zeeschelde	Antwerp	51.2615N	004.3627E	30,08	9,32	11	3,2		ORBT	NA	NA
Castor	Zeebrugge	51.3361N	003.2092E	53,5	9,5	21	3,19		ORJT	NA	NA
Booms											
Booms											
Storage											
Storage											
Storage											
Skimmers											
Skimmers											
Skimmers											
Pumps											
Pumps											
Pumps											

(1) The mentioned vessels are vessels of opportunity. They are not dedicated response vessels but will be equipped with mobile units (containers) containing response equipment.
 The terms for the mobilisation and use are laid down in an agreement between DG environment and DAB Vloot (Zeehond, Ter Streep, Zeeschelde) and Navy (patrol vessel Castor).
 The storage of the response equipment (HNS and oil response) is at the civil protection in Jabbeke who is also the key player for the transport to port.
 (2) Floating tanks 2*100T
 (3) Floating tanks 2*50T
 (4) storage capacity on land.

Scenario name	Area name	Response effect Efficiency (0-1)	Initial investment (EUR)	Lifetime (Years)	Running costs (EUR/Year)
Improved Night Visibility					
Improved Night Visibility					
Improved Night Visibility					
Improved Night Visibility					
Improved Night Visibility					
Improved Night Visibility					
Improved Night Visibility					
Improved Night Visibility					
Improved Night Visibility					
Improved Night Visibility					

Selected Socioeconomic features



Habitat mapping

Shoreline and Coastal Habitats

- Exposed rocky shores and reefs
- Sheltered rocky shores and reefs
- Littoral chalk communities
- Sandy beaches
- Shingle beaches
- Muddy beaches
- Tidal sand and mud flats
- Salt marshes
- Estuaries
- Large shallow inlets and bays
- Coastal lagoons (open to the sea)
- Underwater sandbanks
- Biogenic reefs
- Maerl beds
- Seagrass beds

Open Sea Habitats

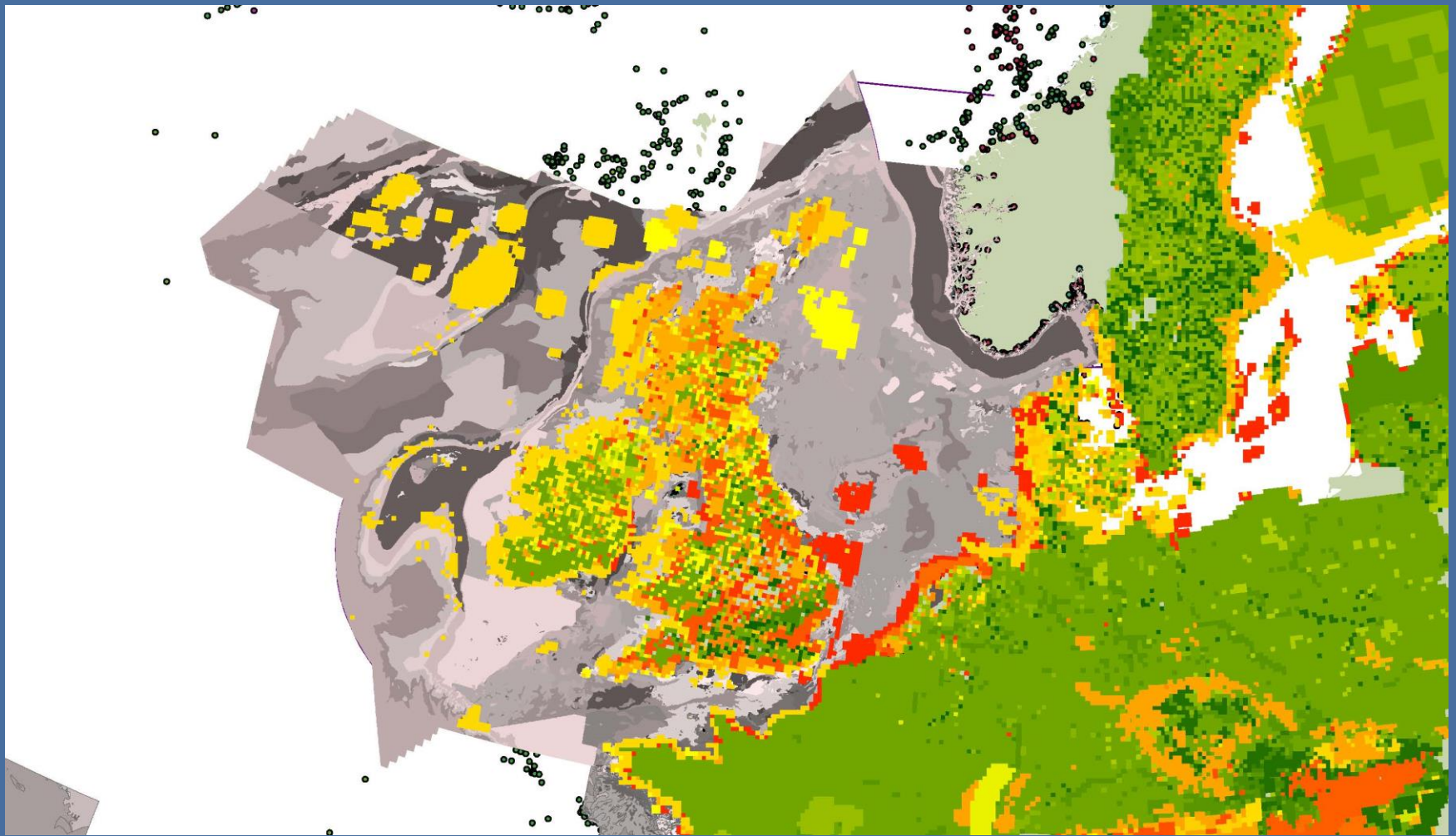
- Open water (<20m)
- Deep sea floor (>20m)
- Deep sea water column (>20m)
- Seamounts
- Coral gardens and sponge aggregations
- Carbonate mounds
- Lophelia pertusa reefs
- Sea-pen and burrowing megafauna

Habitat data sources

- EEA (Article 17 – Habitat Distribution)
- EUROSION (European initiative for sustainable coastal erosion management)
- EMODnet
 - JNCC (Joint Nature Conservation Committee) (EU / UK Seamap)
 - MESH (Mapping European Seabed Habitats)
 - OSPAR



Habitat data



Bird areas

- Important breeding areas (including offshore feeding areas around breeding colonies)
- Important moulting areas
- Important staging areas for birds
- Included species:

- Red throated Diver (*Gavia stellata*)
- Great Northern Diver (*Gavia immer*)
- Red-necked Grebe (*Podiceps grisegena*)
- Shag (*Phalacrocorax aristotelis*)
- Gannet (*Morus bassanus*)
- Common eider (*Somateria mollissima*)
- Velvet scoter (*Melanitta fusca*)
- Red-breasted Merganser (*Mergus serrator*)
- Great Skua (*Catharacta skua*)
- Common Gull (*Larus canus*)
- Herring Gull (*Larus argentatus*)
- Kittiwake (*Rissa tridactyla*)
- Common tern (*Sterna hirundo*)
- Razorbill (*Alca torda*)
- Little auk (*Alle alle*)

- Black-throated Diver (*Gavia arctica*)
- Great Crested Grebe (*Podiceps cristatus*)
- Cormorant (*Phalacrocorax carbo*)
- Fulmar (*Fulmarus glacialis*)
- Scaup (*Aythya marila*)
- Common scoter (*Melanitta nigra*)
- Goldeneye (*Bucephala clangula*)
- Goosander (*Mergus merganser*)
- Little gull (*Larus minutus*)
- Lesser Black-backed Gull (*Larus fuscus*)
- Great Black-backed Gull (*Larus marinus*)
- Sandwich tern (*Sterna sandvicensis*)
- Guillemot (*Uria aalge*)
- Black Guillemot (*Cepphus grylle*)
- Puffin (*Fratercula arctica*)

Bird area data sources

- BirdLife International
- BTO (British Trust for Ornithology)
- JNCC
- OBIS (Ocean Biogeographic Information System)
- Contracting Parties



Bird areas



Marine mammal areas

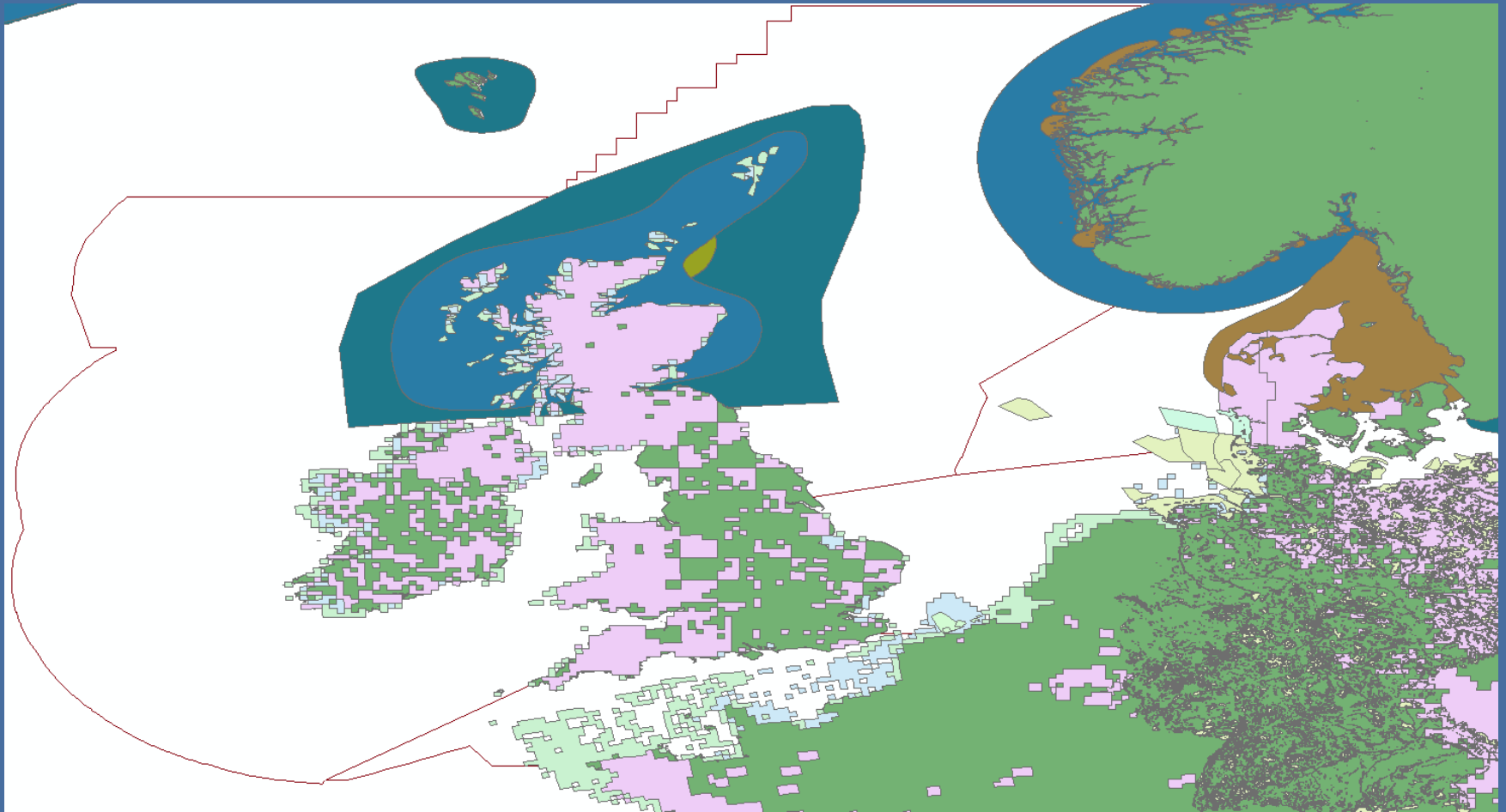
- Coastal feeding grounds for otters
- Breeding, moulting and haul-out sites for Harbour and Grey Seals

Marine mammal areas data sources

- EEA
- EurOBIS (European Ocean Biogeographic Information System)
- JNCC
- Norway
- OBIS-SEAMAP (Ocean Biogeographic Information System Spatial Ecological Analysis of Megavertebrate Populations)
- SMRU (Sea Mammal Research Unit)



Marine mammal areas



Spawning/Nursery areas for fish

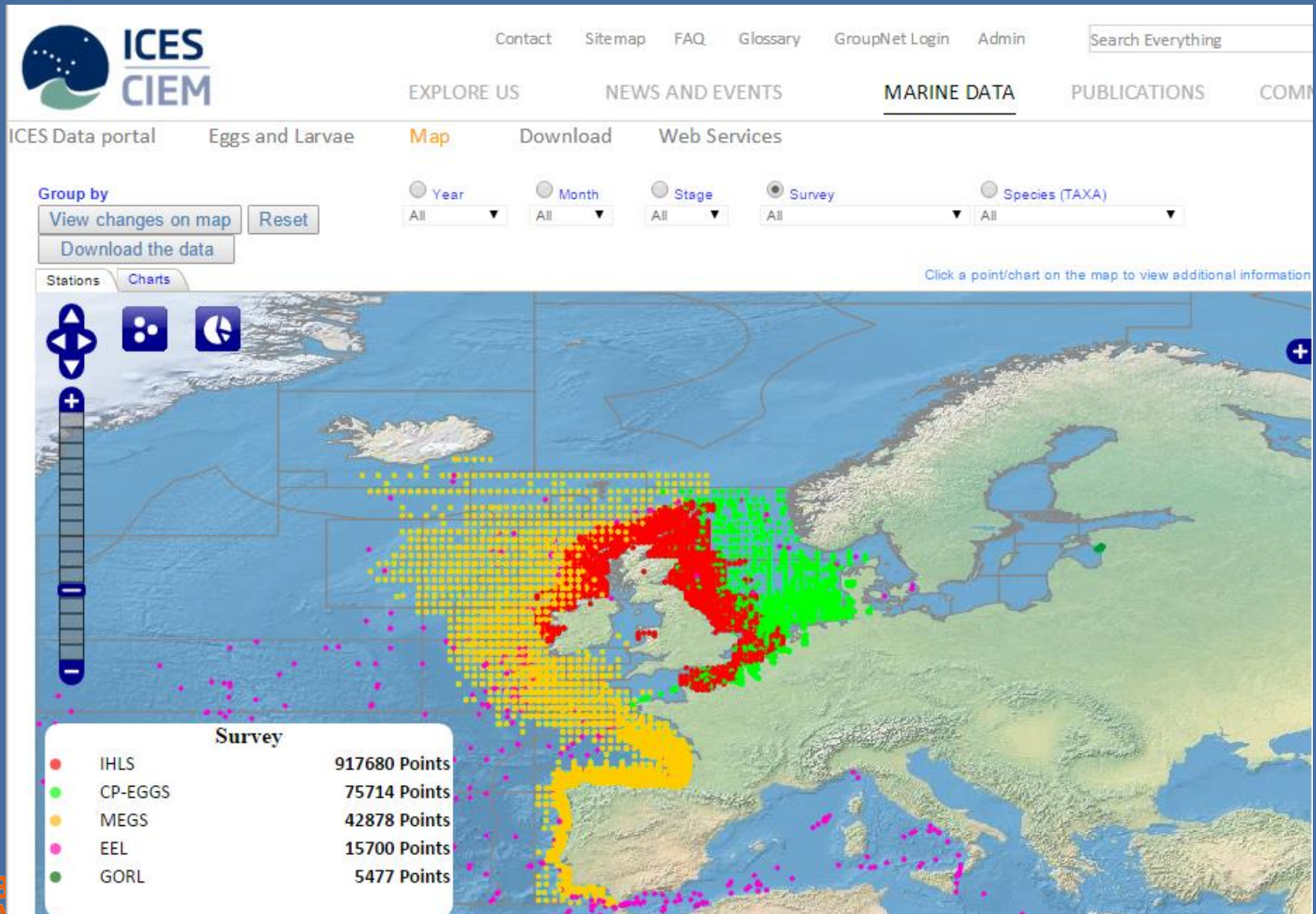
- Herring (*Clupea harengus*)
- Sprat (*Sprattus sprattus*)
- Cod (*Gadus morhua*)
- Saithe (*Pollachius virens*)
- Sandeels (*Ammodytes marinus*)
- Whiting (*Merlangius merlangus*)
- Norway pout (*Trisopterus esmarkii*)
- Horse mackerel (*Trachurus trachurus*)
- Blue whiting (*Micromesistius poutassou*)
- European hake (*Merluccius merluccius*)
- Sole (*Solea sole*)
- Mackerel (*Scomber scombrus*)
- Haddock (*Melanogrammus aeglefinus*)
- Plaice (*Pleuronectes platessa*)

Fish spawning and nursery areas data sources

- ICES (International Council for the Exploration of the Sea)



Spawning/Nursery areas for fish



Protected areas

- EC and Birds Directive sites (SACs and SPAs, Natura 2000)
- RAMSAR Convention sites
- OSPAR Convention sites

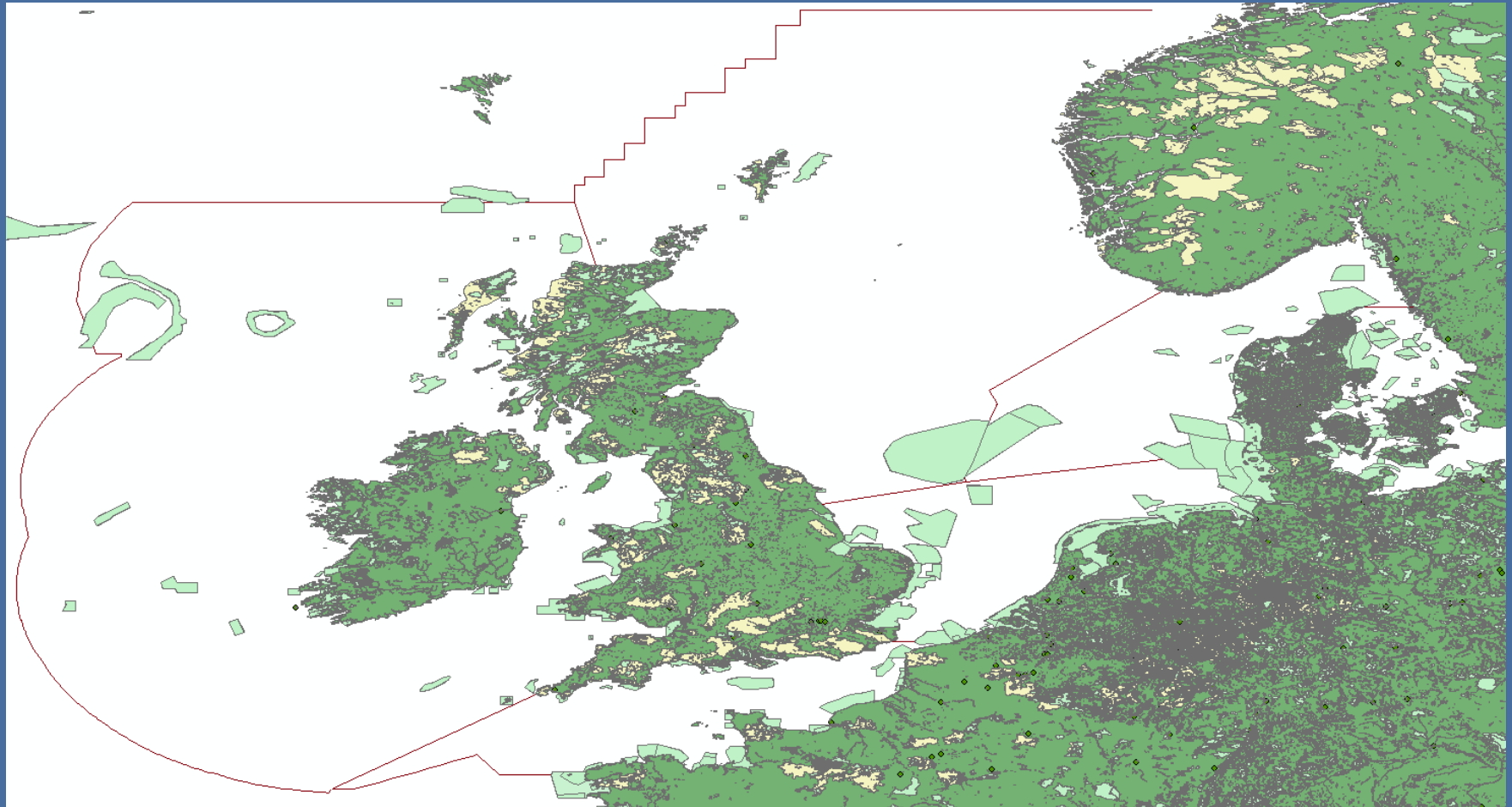


Protected areas data sources

- EEA
- Norway
- OSPAR
- Protected Planet
- Ramsar (Convention on Wetlands of International Importance)
- UNESCO



Protected Areas



Socioeconomic Features

Location of:

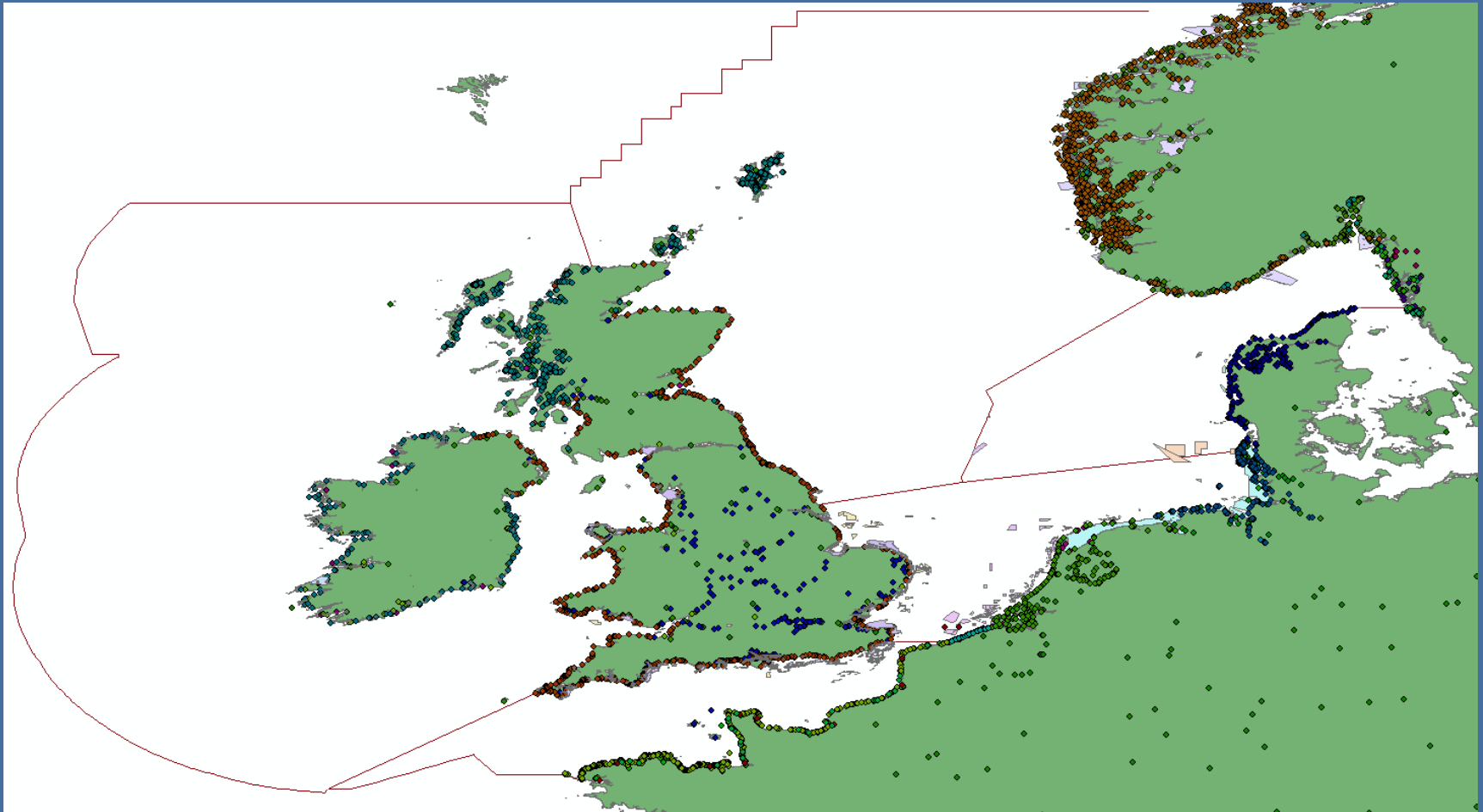
- Ports
- Fishing harbours
- Tourism activity
- Densely populated town and communities
- Offshore fisheries and coastal fisheries, Aquaculture, Shellfish/Seaweed harvesting
- Cruise liner stops
- Mineral extraction areas
- Wind farms

Socioeconomic features data sources

- NGI (National Geospatial-Intelligence Agency)
- Contracting Parties

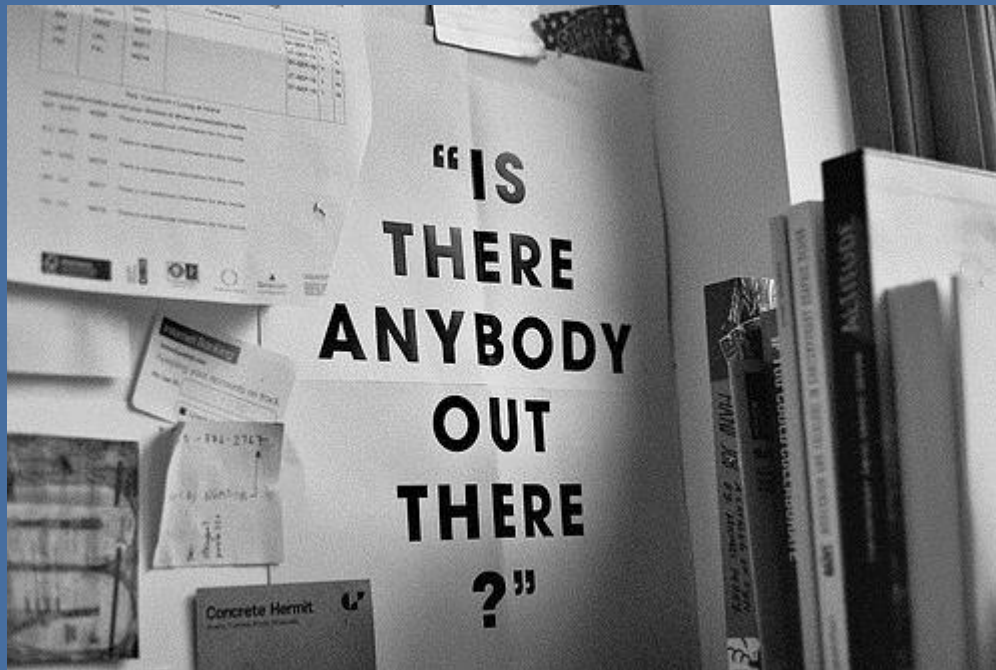


Socioeconomic Features



Case Studies

- Data was not always available to respond to the data request note



Case Study 1 – Shoreline Classification

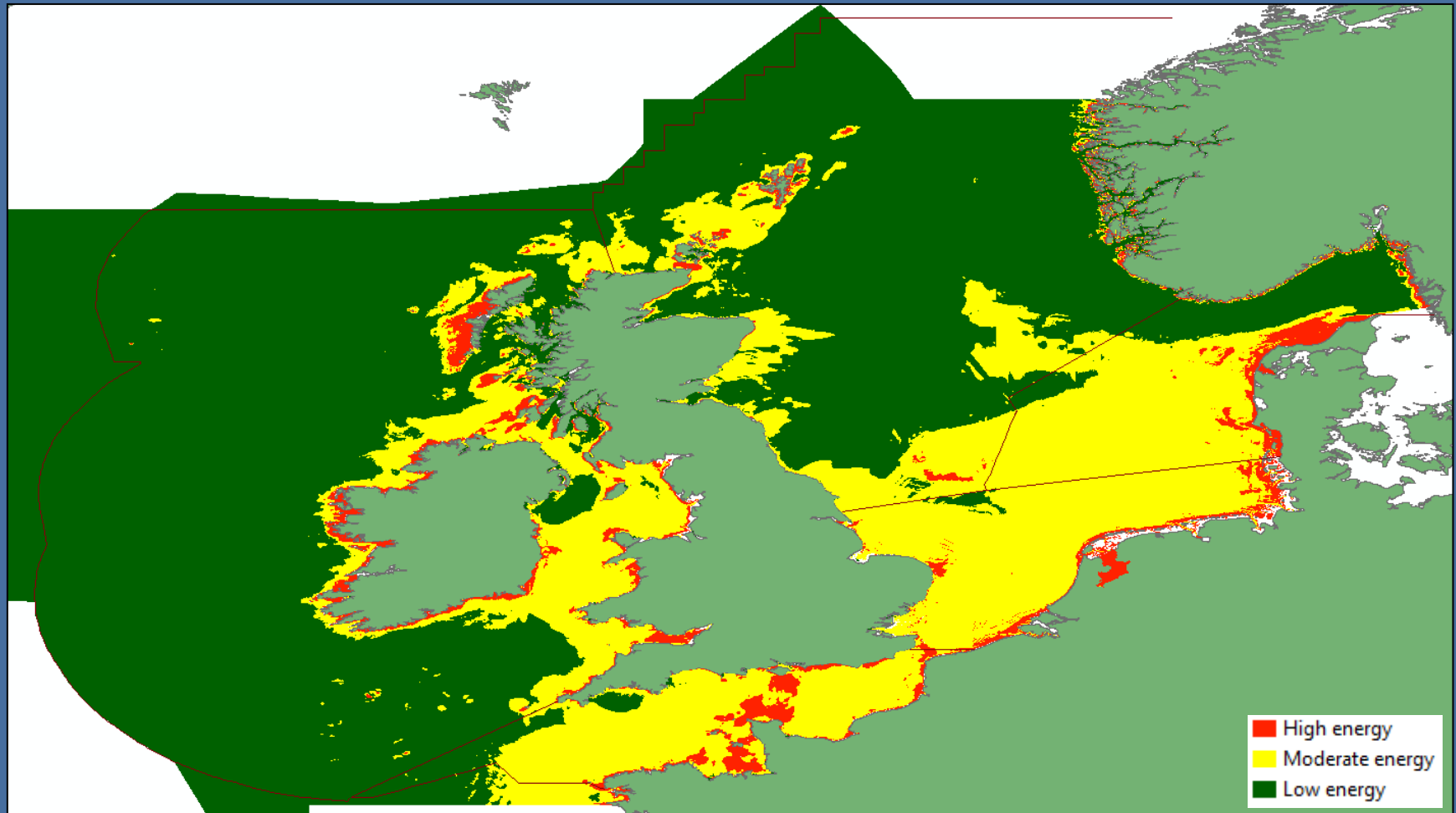
- Shoreline Classification – Habitat Mapping

“Shoreline and Coastal Habitats

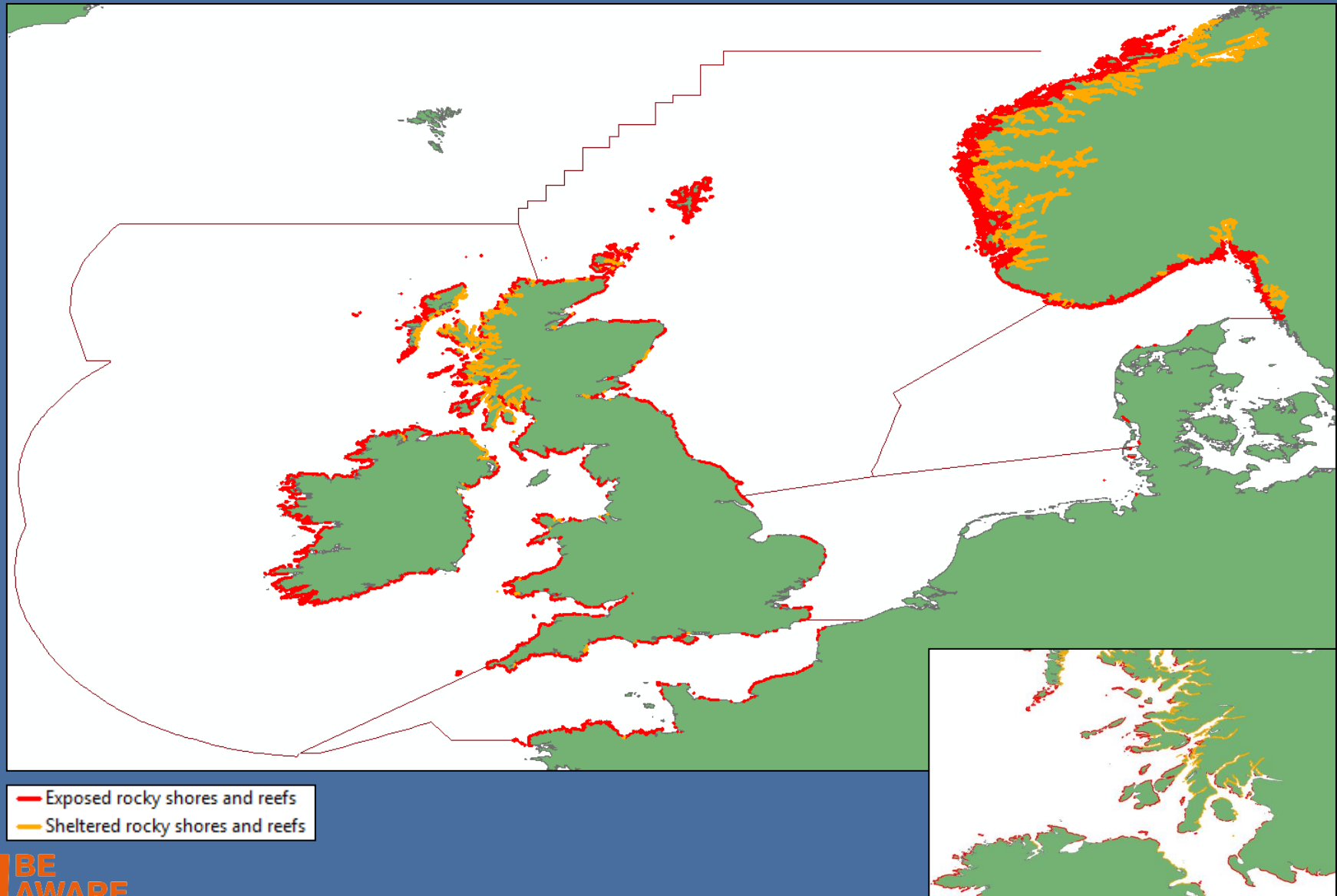
- *Exposed rocky shores and reefs*
- *Sheltered rocky shores and reefs”*

- ...wave exposure, habitat and species data...were used to identify numeric boundaries in the seabed kinetic wave energy layer which were equivalent to the energy classes used in the EUNIS habitat classification. EUNIS splits infralittoral and circalittoral rock into three energy classes: high, moderate and low.

Case Study 1 – Shoreline Classification



Case Study 1 – Shoreline Classification

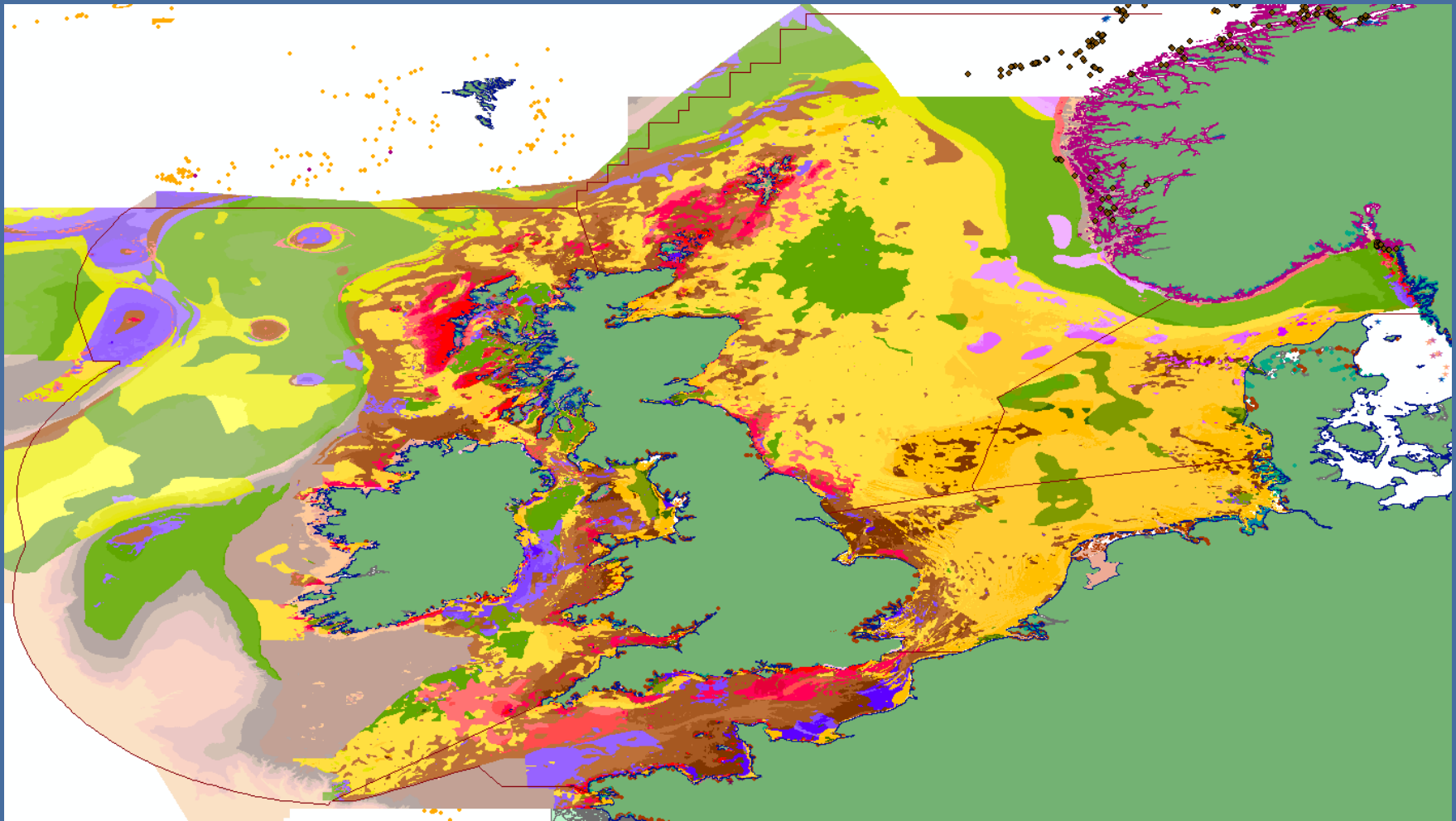


Case Study 2 - Habitat Mapping

- Habitat Mapping
 - Complete regional overview
 - Multiple sources
 - Different resolutions
 - Varying geometry



Case Study 2 - Habitat Mapping

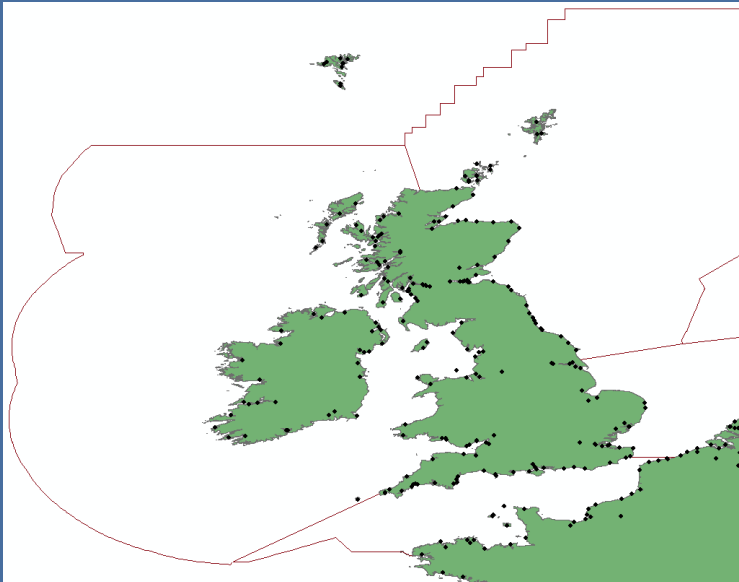


Case Study 3 - Cruise Ports

- Amalgam of multiple data sources

Cruise Europe

World port index



Gdansk

Lat: 54°22'47" N
Lon: 18°50'31" E

Port Contact
Michał Skupie
Marketing Specialist
18 Garmna ul.
80-000 Gdansk, Poland
Phone: +48 58 737 9020
E-Mail: michal.skupie@portgdansk.pl
Web: http://www.portgdansk.pl

Navigation Data
Max. Length (w/ Berth in): 200 m
Max. Draught (m): 9.5
Arrival/Departure: yes
Anchorage: Compulsory
Ship Traffic: ahead
Pilage: Compulsory
Tugs: available
Tidal Movement: 0 m

Attraction & Surroundings
Wieliczka Fortresses
The tower is the oldest element of the fortresses. The first tower was erected by Teutonic Knights during the 14th Century. Made from bricks in cylinder shape, its about 20 meters high. The addition of a crane allowed the tower to rise by itself and the Gdansk Lighthouse and Tower is one of the most beautiful architectural monuments in Gdansk. The first tower was erected in 1603 and put in service in 1608 and, according to legend, it was the first time that the most beautiful architectural monument in Gdansk was built. Main Lighthouse of Gdansk, Poland.

St Dominic's Park
St Dominic's Park in Gdansk is the largest park and cultural outdoor event in this one of the largest east events in Europe. Every year, over 100 monuments, sculptures and collections put up their most beautiful city center.



Cruise Destinations Norway



Applied lessons from BE-AWARE I

- Strict reporting formats
- Allow more time
- Iterative development
- Data compilation where possible
- Maintenance of data sourcing

Final Project Resource Database

Folder PATH listing		
C:\DATA\BONN_AGREEMENT\BE-AWARE_II		
1_Habitat_Mapping	Fishing_Raster05.12.2014	Scenario 2
-EA	Heritage_Sites	Onshore_depots_2020_scenario2.shp
-Art17	Mineral_Extraction	RE_vessels_2020_scenario2.shp
-EMODnet	-OSPAR	RE_Dispersants_2020_scenario2.shp
-EU_SeaMap	Dredging_areas	TTS_2020_scenario2.shp
-201208_EUSeaMap_Atlantic_Habitats	Ports_Fishing_Harbours	VTS_Areas_2020_Scenario2.shp
-201208_EUSeaMap_Atlantic_Habitats	-Country_Returns	Scenario 3
-Phase1_simplified_classification	-EURCS141	Scenario 4
-201208_EUSeaMap_Atlantic_Habitats	-PORT_2009_SH	Scenario 5
-201208_EUSeaMap_Atlantic_Habitats	-UK_Fishing_Harbours	Scenario 6
-EURDISCON	-SMMD_UK_Fishing_Vessel_Numbers_by_Home_Port_2007_2011	Scenario 7
-geology_geomorphology_erosiontrend	-Wps_Shapfile	Scenario 8
-Geology_Geomorphology_ErosionTrend	Shellfish_Seaweed_Harvesting	Scenario 9
-INCC	Tourism	Re_Dispersants_2020_Scenario2.shp
-UK_SeaMap	Amenity_Beaches	Seabirds
-UKSeaMap_PredictiveHabitatMap_v8_20130516	-Coastal_Alternas	-BASENET
-MESH	-Coastal_Overnight_Stays	-BUFFER_SEABIRD_NORWAY
-20131206_MESHAtlanticBroadScaleMap	-Recreational_Fishing	-DISTRIBUTION_SEABIRD_NORWAY
-OSPAR	-Towns_Communities	-Grid
-OSPARHabitats2013_Shapfiles_public	-europe-places-shape	-Shoreline types
-Shoreline_classification	-Water_Inlets	Socioeconomic_Data
-20110912_EUSeaMap_Atlantic_Energy	Windfarms	-Aquaculture_20140808
-Tidal Current energy	2011_Wind_Turbine_Locations	Beaches types
-Wave energy	2020_Wind_Turbine_Locations	Harbours
-UNEP-WCMC	Country_Returns	-Emergency harbours
-WCMC-013-014-SeagrassPointsPolygons2005	-BE	-Emergency harbours
2_Bird_Areas	Socioeconomic_data	-Fishing harbours
-BirdLife_International	Amenity Beaches	-SPS harbour terminals
-All_Shapfiles	-Marinas	-harvest plan help
-BOTW	-Surf clubs	-Tourist fishing small businesses
-BTO	-DE	-TSS
-Germany	-be_aware_data_from_vps	-traffic_sep_geo
-details for vogel_index	Socioeconomic_data	-Z_Marina
-sensitivity model result data	-Aquaculture	OSPAR_BONN
-INCC	-VTS Germany	Bathing_Water
-BASENET	-DK	Dispersant_Extent
-BUFFER_SEABIRD_NORWAY	-Scenarios	Dispersant_Extent
-DISTRIBUTION_SEABIRD_NORWAY	Socioeconomic_Data	-SE
-OBIS	-VTS_Skav	Socioeconomic_Data
-obis-seamap_search_results_53aa8c581170_20140625_20110	-EMSA	-Energy_Plants
3_Marine_Mammal_Areas	-FR	-VTS_Områden
-Charting_Progress	Socioeconomic_Data	-UK
-EA	-Special_areas_of_conservation	Socioeconomic_data
-article17_species_distribution_extraction	-IE	-Aquaculture
-article17_species_distribution_v2	Socioeconomic_data	Heritage_Areas
-EurOBIS	-TRASH	-Marinas
-L-Other	-NL	-Shellfish
-INCC	-Scenarios	-Brownout Scenarios
-Norway	-TSS	
-Mammals	-13NZ83146_Ampassing_clearways_TNvdW	
-OBIS-SEAMAP	Socioeconomic_Data	
-obis-seamap_search_results_53ac21c20da36b_20140806_82532	-Voordelta Zeeland	
-SMBU	-NO	
-All_Shapfiles	-Aquaculture	
4_Spawning_Nursery_Fish	-Corals	
-CZIAS	-Cruise destinations Norway	
-FAO_Species_Distribution	-Fish distribution	
-ICES	-Fishery	
-EggsAndLarvae_FullDownloadAllFields_shapfile	-Fishing grounds_active fishing gear	
-Norway	-Fishing grounds_passive fishing gear	
-Fish distribution	-Tourist fishing small businesses	
5_Protected_Areas	-Fishery_other	
-EA	-Fishing grounds_active fishing gear	
-Natura2000_end2013_Shapfile	-Fishing grounds_passive fishing gear	
-PublicNatura2000end2013_mdb	-Tourist fishing small businesses	
-Norway	-Harbours	
-Protected (listed) objects and sites and World heritage sites	-Fishing harbours	
-dataset_100m_fredeite_kulturminner_WGS_84	-SPS harbour terminals	
-OSPAR	-Places of refuge	
-OSPAR_MPA-GIS_2013-shp	-Kelp	
-ProtectedPlanet	-Big help from IMR	
-WOPA_june2014_Public	-Big help from Naturbase_Norwegian Environment Agency	
-Ramsar	-harvest plan help	
-SiteBoundaries_Dec2013SHP	-Mammals	
-UNESCO	-Marin preservation plan	
Socioeconomic_Features	-Nature types according to directorate of nature index	
-Aquaculture	-NBeksport	
-Cruise_Ports	-Other	
-Fisheries	-Naturbase_oter_2014_09_30	
-ICESCatchDataset	-Particular sensitive features in the Norwegian part of the north Sea	
-Fishing_effort	-Pilot boarding areas	
-Norway	-Protected (listed) objects and sites and World heritage sites	
-Fishery_other	-dataset_100m_fredeite_kulturminner_WGS_84	
-Fishing grounds_active fishing gear	-Scenario 1	
-Fishing grounds_passive fishing gear	-Onshore depots_2014.shp	
-fishing vessels density plot	-RE dispersants 2014	
-Tourist fishing small businesses	-RE_Vessels_2014.shp	
	-TTS_Area_2014.shp	
	-VTS_Area_2014.shp	
	-VTS_Area_2014.shp	

Questions?