

EMODnet-Geology

21st MODEG Meeting
EMODnet Secretariat Office, Ostend, Belgium
19-20 February 2014

Alan Stevenson (Project Co-ordinator, British Geological Survey)



EMODnet

EMODnet-Geology

- Contract signed 16 October 2013
- 4.2 million euros awarded for 36 months; project ends 15 October 2016
- 36 partners from 30 countries including all European seas.
- Building on preparatory phase, but with more detail (1:250,000 scale) and added information (e.g coastal behaviour, Quaternary geology)



EMODnet

EMODnet-Geology partners

UK - British Geological Survey – Natural Environment Research Centre (BGS-NERC); University of Sussex; Centre for Aquaculture, Fisheries and Aquaculture Science, UK (CEFAS)
Finland - Geological Survey of Finland – Geologian tutkimuskeskus (GTK)
Sweden - Geological Survey of Sweden – Sveriges Geologiska Undersökning (SGU)
Norway - Geological Survey of Norway – Norges Geologiske Undersøkelse (NGU)
Denmark & Greenland - Geological Survey of Denmark and Greenland – De Nationale Geologiske Undersøgelser for Danmark og Greenland (GEUS)
Faroe Islands - Jarðfeingi (Faroe Islands Geological Survey)
Iceland - Íslenskar orkurannsóknir – Iceland GeoSurvey
Estonia - Geological Survey of Estonia - Eesti Geoloogiakeskus (GSE)
Latvia - Latvijas Vides Geoloģijas un Meteoroloģijas Centrs (LVGMC)
Lithuania - Lithuanian Geological Survey (LGS)
Poland - Polish Geological Institute – National Research Institute (PGI-NRI)
Netherlands - Geological Survey of the Netherlands (TNO)
Belgium - Royal Belgian Institute of Natural Sciences – Geological Survey of Belgium (GSB)
France - Bureau de Recherches Géologiques et Minières (BRGM, France), IFREMER
Ireland - Geological Survey of Ireland (GSI)
Spain - Geological Survey of Spain – Instituto Geológico de España (IGME)
Portugal - Instituto Português do Mar e da Atmosfera (IPMA)
Italy - Istituto Superiore per la Protezione e la Ricerca Ambientale – Servizi Geologico d'Italia (ISPRA)
Slovenia - Geological Survey of Slovenia (GeoZs)
Croatia - Geological Survey of Croatia - Hrvatski Geoloski Institut (HGI)
Montenegro - Geological Survey of Montenegro – Zavod za Geoloska Istrazivanja (GEOZAVOD)
Albania - Geological Survey of Albania (GSA)
Greece - National Center for Sustainable Development, Greece (EKBA); Hellenic Centre for Marine Research (HCMR)
Bulgaria - Institute of Oceanology – Bulgarian Academy of Sciences (IO-BAS)
Romania - National Research and Development Institute for Marine Geology and Geoecology, Romania (GeoEcoMar); Geological Institute of Romania (GIR)
Turkey - Dokuz Eylül University, Turkey
Cyprus - Geological Survey of Cyprus
Malta - Malta Ministry of Transport and Infrastructure, Continental Shelf Division
Russia - AP Karpinsky Russian Geological Research Institute (VSEGEI)
Germany - Federal Institute for Geosciences and Natural Resources – Bundesanstalt Geowissenschaften und Rohstoffe, Germany (BGR)
Ukraine - Prychornomorske State Regional Geological Enterprise, Ukraine



EMODnet

Main deliverables at 1:250,000 scale

- Sea-bed substrate including rate of accumulation of recent sediments
- the sea-floor geology (bedrock geology) and all boundaries and faults that can be represented at the 1:250,000 compilation scale with information on the lithology and age of each geological unit
- geological events and probabilities (landslides, volcanic activity, earthquake epicentres)
- Minerals (including aggregates, oil and gas)
- Coastal type and behaviour supplemented by information on coastal erosion or sedimentation and the rate at which it occurs.
- All interpretative products will be based on primary information owned by the project partners, supplemented with other information in the public domain.
- Where the most up-to-date geological information is held on third-party websites, arrangements will be made for web-mapping services to provide these data to the EMODnet-Geology portal.
- All map outputs added to One-Geology Europe



- WP1. Project Management (October 2013-October 2016)
- WP2. Geological data specification and sourcing (October 2013-January 2014)
- WP3. Sea-bed substrate (February 2014-October 2014). Led by GTK, Finland. Includes case study led by CEFAS, UK)
- WP4. Sea-floor geology. Led by BGR, Germany
- WP5. Coastal behaviour. Led by TNO, The Netherlands
- WP6. Geological events and probabilities. Led by ISPRA, Italy
- WP7. Minerals. Led by GSI, Ireland
- WP8. Web services and technology. Construction phase October 2013-October 2014
- WP9. Dissemination.
- WP10. Liaison with EMODnet lots and other related groups/projects.
- WP11. Project analysis and sustainability (July 2016-October 2016)

WP1. Project Management

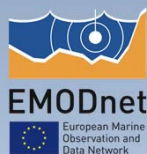


 **EMODnet**

- First bi-monthly report delivered to Secretariat on 17 January
- Kick-off meeting held in Lisbon on 21-22 January attended by representatives from 31 of our 36 partners. Also attended by Jacques Populus Co-ordinator of Physical Habitats lot.
- Next meeting 30 September – 1 October 2014 in Malta

Workpackage 2. Geological data specification and sourcing

Led by BGS, United Kingdom



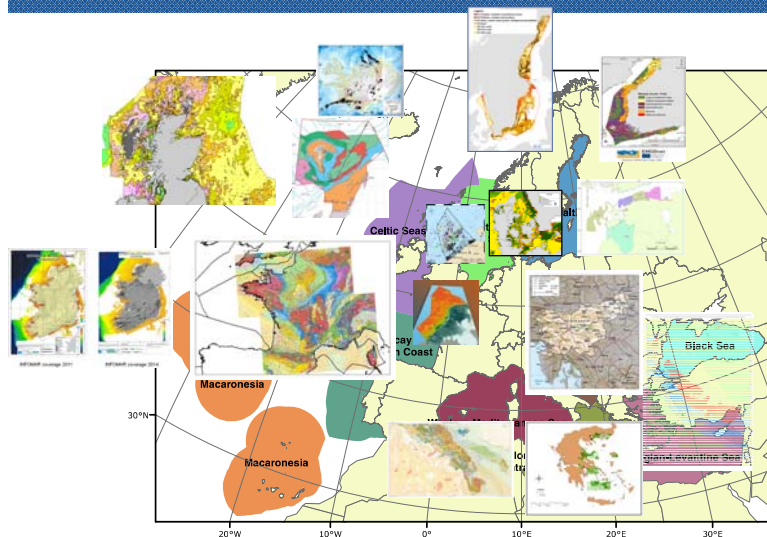


Input: Data and interpreted information for all of the geological requirements specified in the tender documents

Objectives: To prepare and provide access to information required to deliver 1:250,000 maps of sea-bed substrates etc.

Method: Comprehensive audit and evaluation of national geological spatial datasets that can be compiled at 1:250,000 scale.

Each partner to present primary data available to the EMODnet-Geology Project



Workpackage 3. Sea-bed substrate

Led by GTK, Finland



EMODnet **Sea-bed substrate**

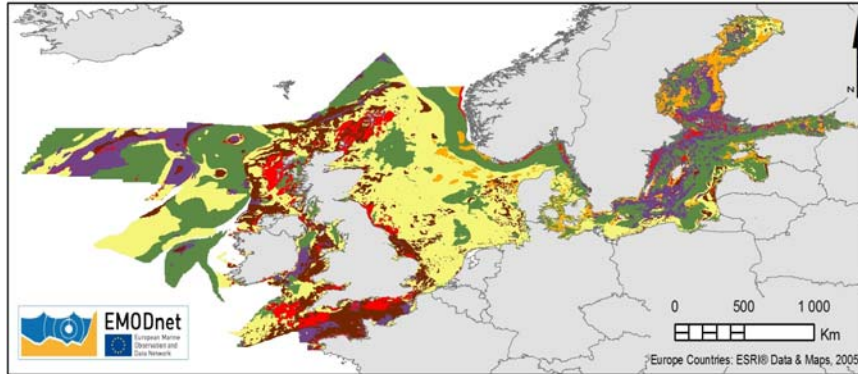
- Sea-bed substrate information/map (Scale 1:250,000 with an index map)
 - Confidence assessment
- Quaternary geology of the sea floor
- The rate of accumulation and sedimentation on the sea floor
 - Point source
- CEFAS, Case study: Maps of seabed substrate from acoustic and ground-truthing data.
- Links with COST action SPLASHCOS to consider palaeolandscapes



EMODnet

Sea-bed substrate

- Maps, no raw data



EMODnet

Index map

Identify from: <Top-most layer>

WP3_INDEX_EMODNET_1
Surficial sediments - grain size overview map
Sediments (grain size)

Location: 3.846084 59.083757 Decimal Degrees

Field	Value
OBJECTID	166
SHAPE	Polygon
Code	NO-001
Name of the map	Surficial sediments - grain size overview map
Owner	NGU
Contact email	liv.plassen@ngu.no
Q_Scale	3000000
Grain size classification	NGU geo-class.
Originality	Compilation
RS_Equipment	00011
RS_Coverage	No remote sensing
RS_Position	Charts > 100 m
RS_Year	1970-1990
GT_Device	1110
GT_Coverage	Every substrate class not sampled
GT_Density	0
GT_Description	Unknown
GT_Position	Charts > 100 m
GT_Year	1970-1990
I_Method	100
I_Polygon	Combination of the charac. bottom types over a large area
I_Accuracy	No accuracy assessment
Comments	
SHAPE_Length	28.042488
SHAPE_Area	22.593619

Identified 2 features

Info
• Sc
• St



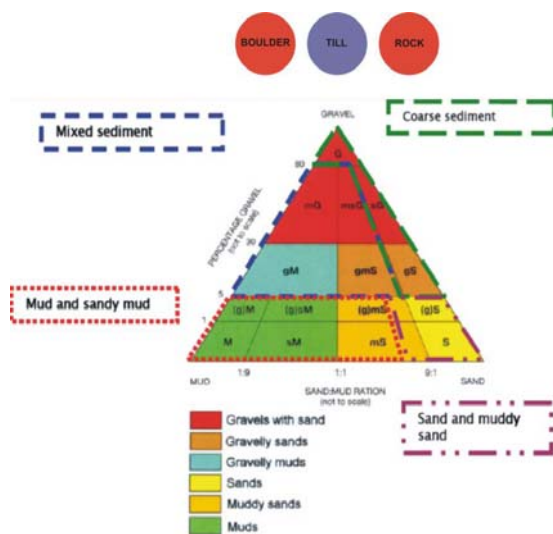
EMODnet Harmonisation – Sediment classes

- Sediment maps are interpreted according to national standards
 - Different classification schemes
 - Different grain size limits
- Maps need to be "translated" into a shared scheme
- Integration with hydrographic, chemical and biological studies



EMODnet

Harmonisation – Sediment classes



- Modified FOLK:
 - Habitat maps
 - 4 substrate classes:
 - Mud to sandy mud
 - Sand to muddy sand
 - Coarse sediment
 - Mixed sediment
 - 4 subcategories
 - 3 additional classes
 - Boulder
 - Till/diamicton
 - Bedrock)
- Uppermost 30 cm



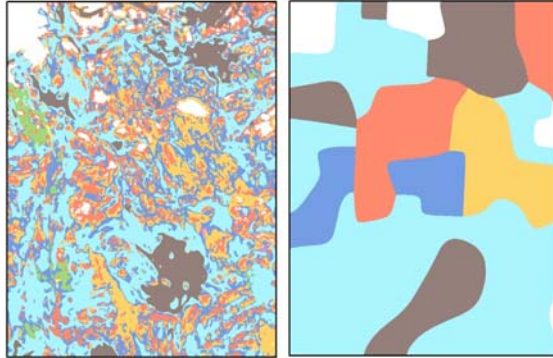
EUSeaMap Substrate	Finnish data
	Mud
Mud to sandy mud	Clayey mud/muddy clay
	Clay
Sand to muddy sand	Glacial clay and silt
	Secondary sand
Coarse sediment	Gravel
Mixed sediment	Glacioaquatic sediments
Diamicton	Diamicton (till)
Boulders	
Rock	Bedrock



The screenshot shows a 'Identify' window with the following content:

- Identify from:** WP3_Substrate_020310_v2
- Location:** 26.837296 60.310736 Decimal Degrees
- Field | Value**

OBJECTID	631
SHAPE	Polygon
CODE	FI-001
C_Grain	Bulk of the sediment
Reclassif	Expert -based prediction
Method	Reclassification on the grounds of expert-based prediction
Sample_n	0
O_substrate	10. Soft bottom and hard bottom equally distributed
Relation	>
Prime_FOLK	1. Mud to sandy mud
Till	No
Boulders	No
Bedrock	No
Comments	Mud and Till&Bedrock
References	
SHAPE_Length	26.532078
SHAPE_Area	0.20113

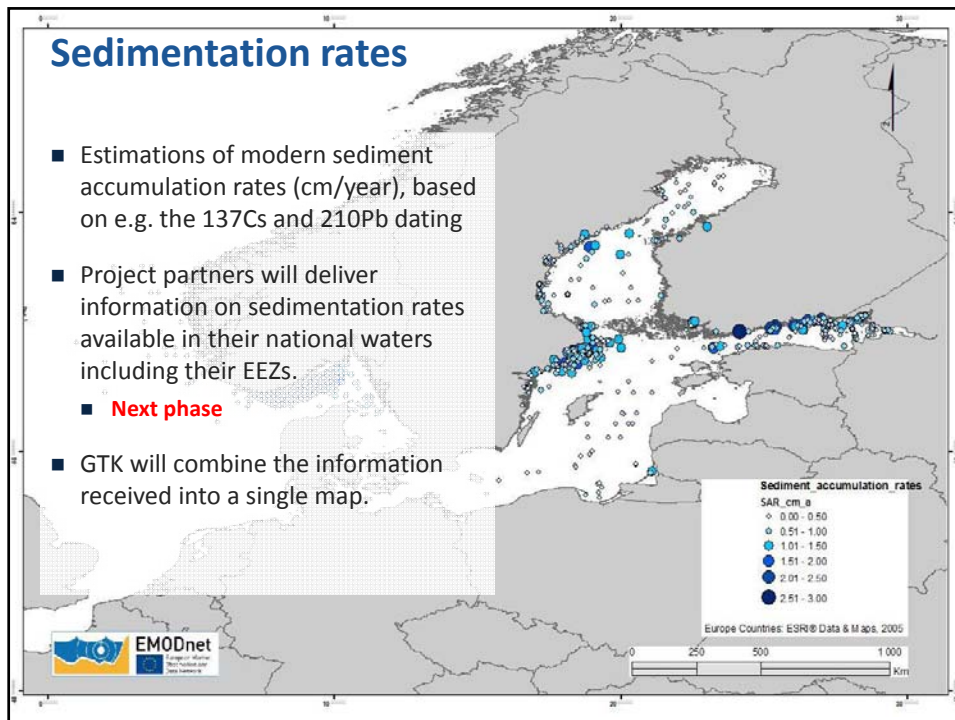



EMODnet-Geology confidence assessment (BGS) was based on:

- Sample density,
- Seismic Survey Tracks,
- Multibeam Echosounder Data,
- Digital Bathymetry
- Side Scan Sonar Survey track lines

This will be studied during the next phase of the project.







EMODnet

Schedule

- **Background data (coastline, boundary areas) to Partners by end February 2014**
- **Index map: March 2014**
 - GTK will send guidelines by 5.2.2014
- **Harmonisation: May 2014**
 - GTK will send guidelines by 5.3.2014
- **Combination & Generalization: August 2014**
 - GTK will send guidelines by 30.5.2014
- **Combined Sea-bed substrate data for checking to partners September 2014**
- **Data delivered to the EMODnet Habitat Mapping Project by November 2014**
- **Confidence, Quaternary, Accumulation after October 2014**

Workpackage 4. Sea-floor geology

Led by BGR, Germany



EMODnet

Workpackage 3

Input

Interpreted information on the sea-floor geology (bedrock + Quaternary geology) including the lithology and stratigraphy of the geology of the regional seas included in the proposal.

Objective

To compile and harmonise all available sea-bed geology (outcrop/Quaternary?) and sub-Quaternary) information at a scale of 1:250,000.



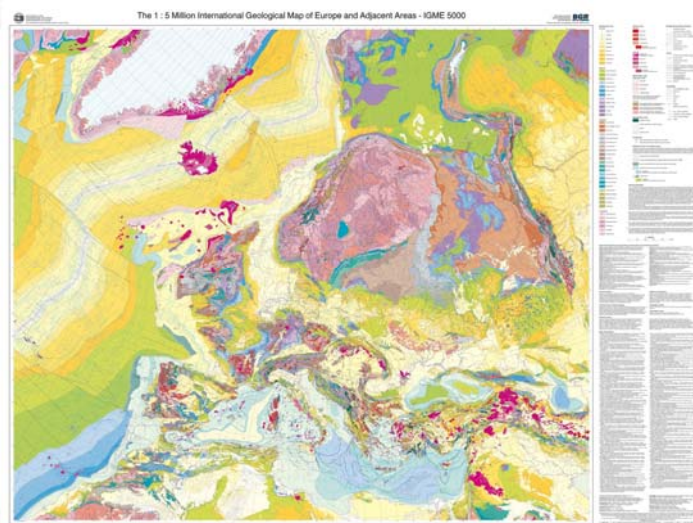
Method

Collect and compile all sea-bed geology + geologically interpreted geophysical maps available in each participating country and resolve **any major boundary issues at 1:250,000** scale to deliver the sea-floor:

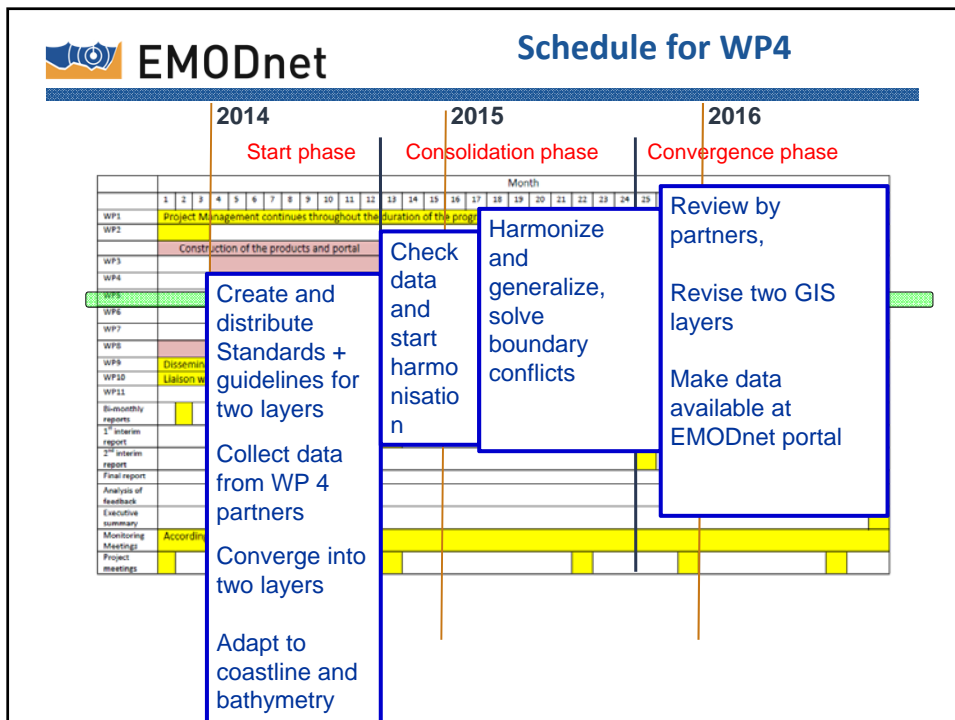
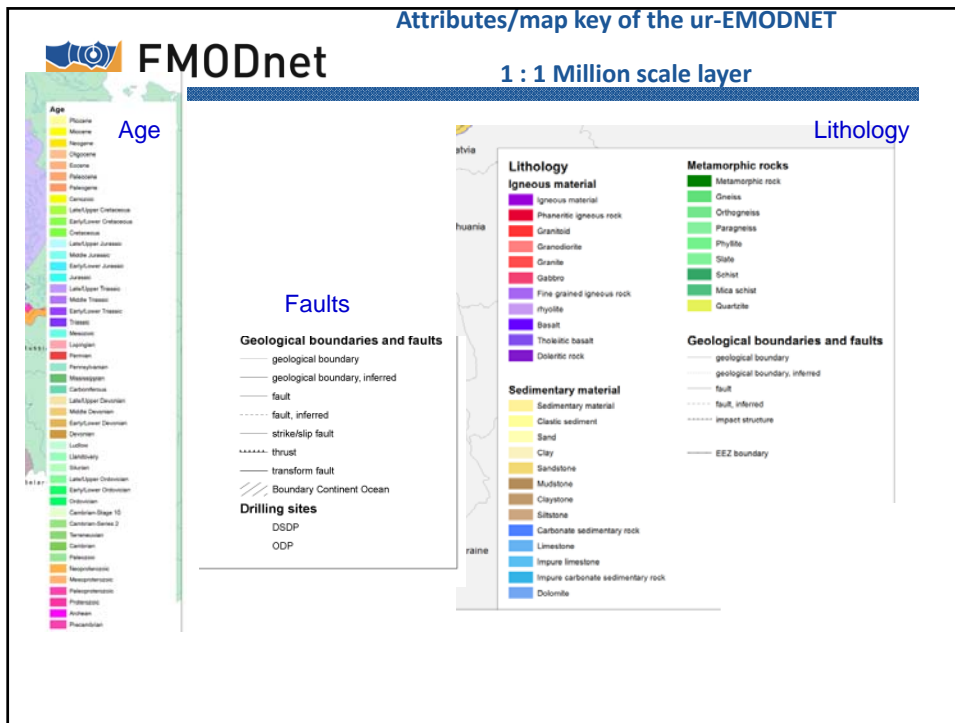
->Pre-Quaternary geology (age, lithology, genesis), boundaries and faults

-> For Quaternary: Age, lithology, geomorphologic and glacial elements, faults

Use of the OneGeology/INSPIRE vocabulary



IGME 5000: 1: 5 Million International Geological Map of Europe and Adjacent Areas - final version for the internet. - BGR, Hannover. Asch, K. (2005).





WP 4 needs:

- Information about the Quaternary and pre-Quaternary maps/data you can provide

Feb 2014: we provide a form to list your appropriate data for WP 4

Feb 2014: We provide a draft vocabulary for the Attributes of the Quaternary and pre-Quaternary layer for you to review and check for missing terms

Spring: we provide ASAP guidelines for the input of your data

- Data in Arc GIS, optimally shape file, WSG 84
- of age, lithology, genesis, faults
- according to the INSPIRE conformal vocabulary similar to the one used in EMODNET first phase

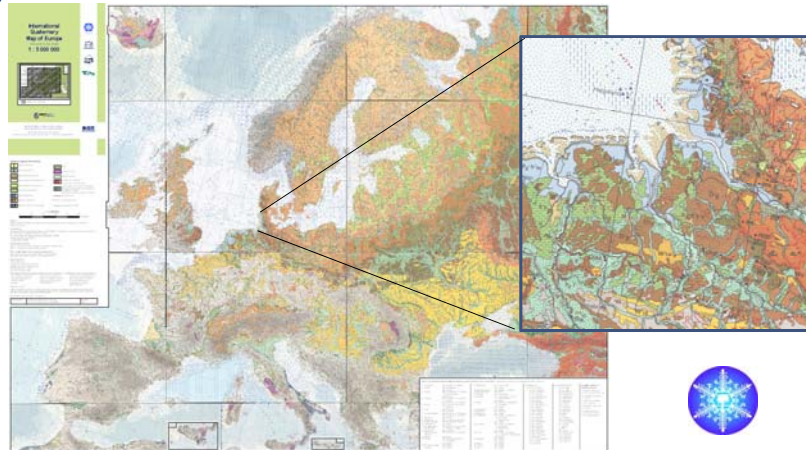


- Collect available Quaternary maps of EMODNET partners
- Should include age, lithology, genesis, faults, geomorphology, last glacial maxima (if available),
- Create synergies with IQUAME 2500 project of CGMW/IQUAME/BGR

 **EMODnet**

CGMW + INQUA + BGR (coordination) international consortium (14 countries to date):

Review of the International Quaternary Map of Europe 1 : 2,5 Million (IQAME 2500)



 **EMODnet**

IQAME Age correlation

Cohen, K.M. & Gibbard, P. (2011)	ISC age (IUGS)	INSPIRE value
Holocene	Holocene	Holocene
Upper Pleistocene	Upper Pleistocene	Late/Upper Pleistocene
Middle Pleistocene	Ionian	Ionian
Lower Pleistocene	Calabrian, Gelasian	Calabrian, Gelasian

Northern Europe	Alps	East Europe 1	East Europe 2	INSPIRE value
Weichsel	Würm	Valdai		Weichselian
Eem		Mikulino		Eemian
Riss	Saale	Moscow	Dnepr	Saalian
Holstein		Likhvin		Holsteinian
Elster	Mindel	Oka	Berezina	Elsterian
Cromer C		Muchkap		„Cromerian complex“
Cromer B	Günz	Don		„Cromerian complex“
Cromer A				„Cromerian complex“

Workpackage 5. Coastal behaviour

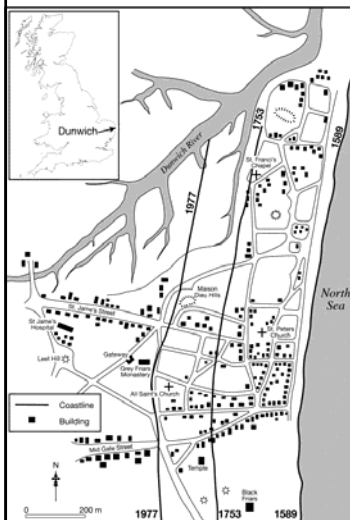
Led by TNO, The Netherlands



EMODnet

Information on the type and behaviour of coastal landforms

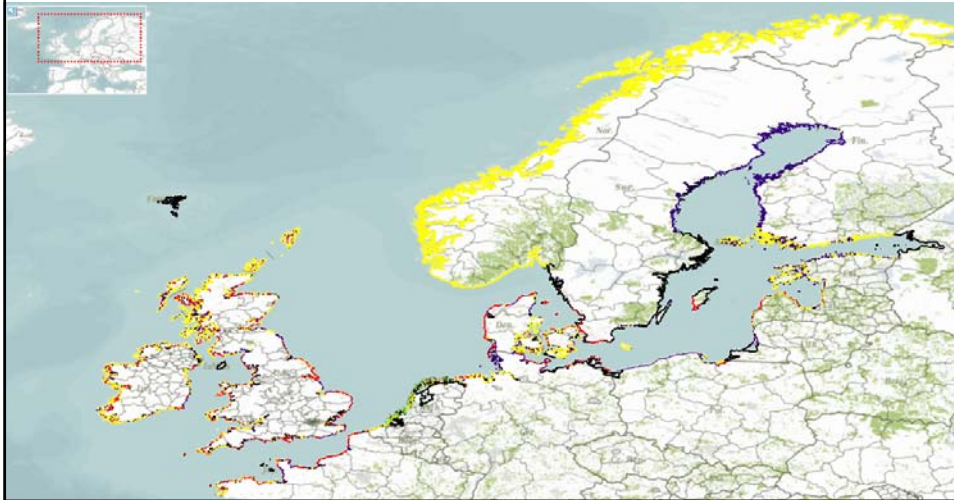
fringing all European seas





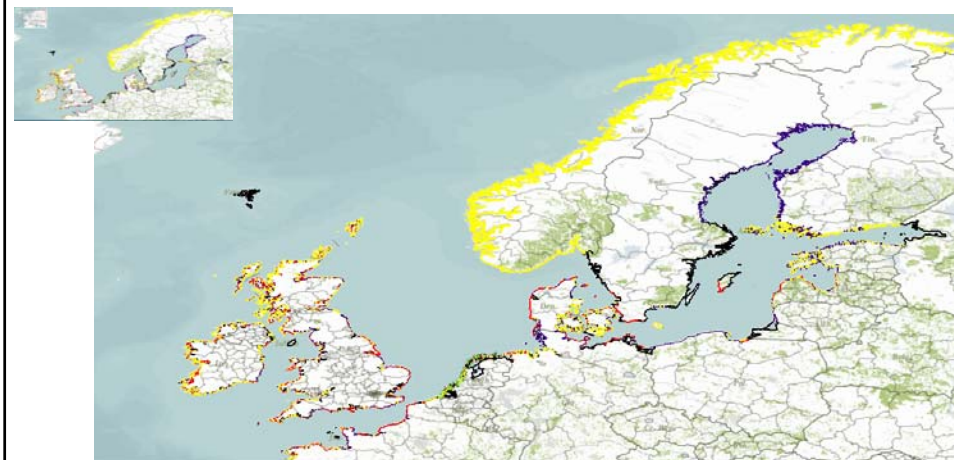
EMODnet

Phase 1: Existing information from EUROSION updated
and supplemented



EMODnet

Experiences: EUROSION a very helpful start; final
deliverable too simple for some, too detailed for
others





EMODnet

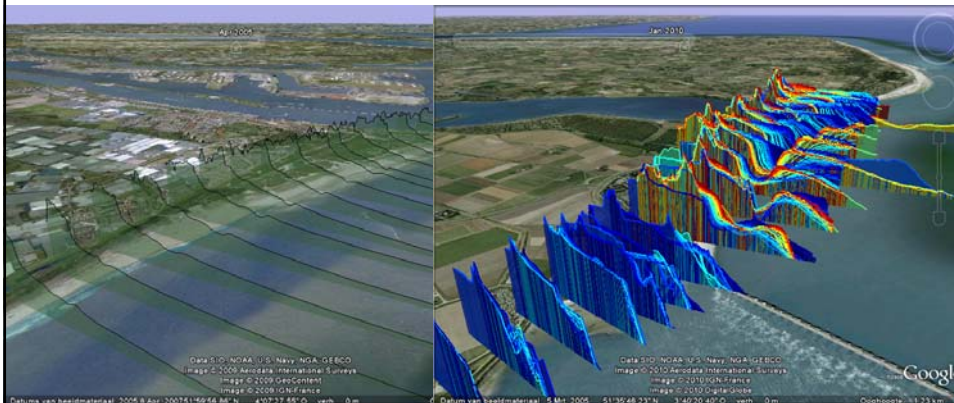
Objective: Classify the coastal behavior and typology of each country represented in the project partnership



EMODnet

Method

Classify all coastal types in each country at 1:250,000 scale including information on rates of sedimentation and erosion. The central parameter in the final coastal-behavior product is (rate of) shore-normal coastline migration.



Data and information: EUROSION as starting point

Data and information: Other existing initiatives

Coastal Erosion and Protection in Europe

Edited by Enzo Pranzini, and Allan T. Williams

Europe has a long history of managing coastal erosion through a variety of protection strategies. Examples include the defenses of the Venice lagoon, Mediterranean beaches and reclaimed land in the Netherlands. Climate change is now creating enhanced risks of coastal erosion through storms and rising sea levels, with many initiatives being developed to improve coastal protection.

This book provides a comprehensive review of the entire coastline of Europe, from Scandinavia and the Baltics to the British Isles and north-west Europe, the Iberian Peninsula, the Mediterranean and the Black Sea. It provides a comparative analysis of erosion problems and solutions across European countries, with particular attention to demographic and economic factors influencing coastal erosion in each country and to technical and administrative criteria influencing defence projects design. Each chapter discusses the following topics:

- coastal morphology and wave climate
- natural and anthropogenic factors in the erosion process
- the evolution of coastal protection in the country or region.

Erosion processes and the protection of works are described in light of the 1950s-economic evolution and pressures in each country, including land use changes, land reclamation, river bed quarrying, river damming, harbour construction, use of coastal areas, changing climate, and political and administrative assessments. Lavishly illustrated in full colour throughout, the book represents a definitive reference work on its subject.

Selected Table of Contents
 Preface 1. Introduction 2. Russia 3. Sweden 4. Baltic States 5. Poland 6. Denmark 7. Germany 8. Netherlands 9. Belgium 10. Great Britain 11. Ireland 12. France 13. Spain 14. Portugal 15. Italy 16. Eastern Adriatic 17. Albania 18. Greece 19. Bulgaria 20. Romania 21. Ukraine 22. Conclusion.

To Be Published February 2013 | 480 pages | HB: 978-1-84971-559-9 | £120.00

About the Editors
 Enzo Pranzini is Professor of Physical Geography at the university of Florence, Italy. He is president of the Italian National Group for the Research on Coastal Environment, and editor of the Italian Journal "Studi Costieri".
 Allan Williams is Professor of Physical Geography at Swansea Metropolitan University, UK. He is author or co-author of over 300 publications, including Beach Management (Earthscan, 2009).

Contributors: George Alexandreski, Dargio Andjuz, Edward J. Anthony, Ben Anwar, Simon Elliot, Aleksandra Capovcan, Roger M. Charlier, Boris Chubarenko, Andrew Cooper, Martin Dolin, Vasilija Dragovic, Robert W. Duck, Oscar Ferreras, ezetimier Furumicic, George Giblin, Yusef G. Ghorobakh, Vladimir Gornik, Giovanni Grillo, Isabella Guibolini, Henry Hanson, Jürgen Harren, Mirkož A. Kumpinski, Robin Kuylenstierna, Marina Kuylenstierna, János Lajtha, Magnus Larson, Namigul Mammadov, Ana Mestas, Frank van der Meulen, Karel Orlik, Nicolas Pagan, Michael N. Phillips, Stephen Price, Roger Pomeroy, Zorfin E. Poulos, Kenneth Pye, Daniel Rychert, Przemyslaw Sobczak, Alberto Sanchez-Arcilla, Klaus Schwenker, Detlef Stemann, Aleksandra Stojanovic, Andrija Zemanic, Stevan Zivanovic, Kurt and Ursel von Zizew, Udo Werner and Ineke Wouda.

About the source material

The information on the website is based on a large number of publications, including:

- Global IPCC Reports (including Special Reports)
- EU Reports of the European Environment Agency, the EU Joint Research Centre, EU Research projects
- National National Communications under the United Nations Framework Convention on Climate Change, National studies (IPB Review, Reports Assessment Agreements, Dutch Delta Programme, etc.)
- Scientific journals: Climate Research, Climatic Change, Geophysical Research Letters, Global Environmental Change, International Journal of Climatology, Journal of Hydrology, Journal of Sustainable Tourism, Mitigation and Adaptation Strategies for Global Change, Mountain Research and Development, Natural Hazards, Nature Climate Change, Regional Environmental Change, Scandinavian Journal of Hospitality and Tourism, Science, Water Research, Water Resources Research

Contact: info@emodnet.eu | www.emodnet.eu

Home | About this initiative | About the source material

Centre for Climate Adaptation

Europe in a changing climate

All about climate change, vulnerabilities, impacts and adaptation: click on a country or choose from the list below

Europe overall	
Albania	Luxembourg
Austria	Macedonia
Belarus	Malta
Belgium	Moldova
Bosnia	Montenegro
Bulgaria	Netherlands
Croatia	Norway
Cyprus	Poland
Czech Republic	Portugal
Denmark	Romania
Estonia	Russia
Finland	Serbia



Data and information: Examples of country info

Coastal-erosion-Croatia

Vulnerabilities-Current situation

The Croatian coastline is mostly composed of karst rocks. These rocks are more prone to karstification and are more susceptible to erosion. The coastline is also characterized by a high density of small, irregularly shaped bays and inlets. The coastline is also characterized by a high density of small, irregularly shaped bays and inlets. The coastline is also characterized by a high density of small, irregularly shaped bays and inlets.

The Adriatic Sea is microtidal with a tidal range of about 0.5 m. The average height of the sea level is usually between 0.5 and 1.5 m while the average depth is about 100 m.

There are numerous gravel pits and quarries along the coast, which are a source of sediment. The only source of sediment is the Adriatic Sea. The only source of sediment is the Adriatic Sea. The only source of sediment is the Adriatic Sea.

About 6% of the coastal zone is protected by dunes. The coastal zone is also characterized by a high density of small, irregularly shaped bays and inlets. The coastal zone is also characterized by a high density of small, irregularly shaped bays and inlets.

Vulnerabilities-Future situation

The vulnerability of the Croatian coastal zone to erosion has been assessed to be high. At a sea level rise of 20 cm, the Croatian coastline will be exposed to erosion processes. In the predominant part of the coast, the coast flooding due to the sea level increase will be experienced only in the low-lying areas, which includes the majority of small beaches. These changes will as a whole have a relatively small impact on the economic activities such as agriculture, fishery, tourist industry and the residential sector. It is highly probable that the increase in the sea level and the resulting increase in groundwater table will not affect the agricultural activity in the low-lying coastal areas. The sea level increase could cause saline water intrusion into the ground and surface waters in the coastal belt, and this could negatively affect the potable water supply and agriculture. The impact on groundwater and increase in intrusion are difficult to evaluate because of insufficient data, but it is realistic to expect that they will not be high.

Coastal-erosion-Latvia

Vulnerabilities

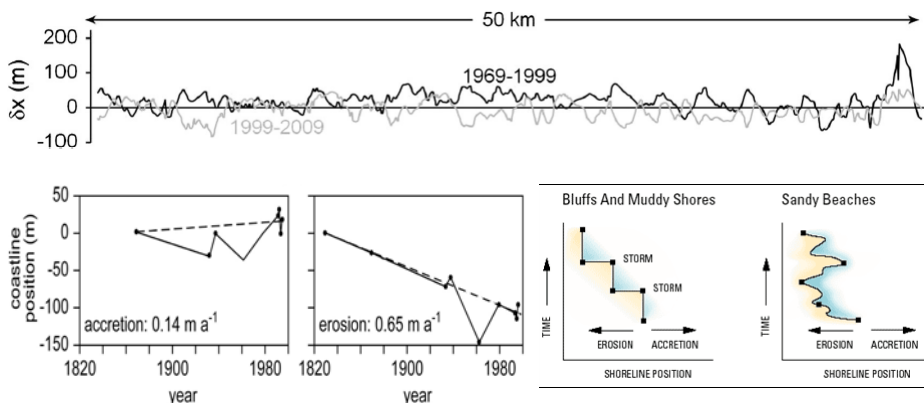
The total length of the Latvian coastal zone is 496.5 km. It mainly consists of sandy beaches and dunes. Gravel, pebble or boulder covered beaches are more rare and there are hardly any steep coasts. In the areas of sand accumulation beyond the beach, 1-4 m high dunes with typical vegetation have formed. Beyond these, there is typically a belt of grey dunes and forest-covered coastal dunes dominated by pine trees. There is little urban development along the coast due to restrictions in the Soviet period, the developed area closer than 500 m from the shore is about 11% (1).

Country	Scopus hit
United Kingdom	142
Italy	78
France	77
Portugal	72
Spain	48
Netherlands	44
Turkey	34
Greece	31
Denmark	24
Germany	20
Poland	20
Belgium	12
Sweden	12
Belgium	7
Belgium	6
Belgium	5
Norway	5
Sweden	4
Belgium	3
Croatia	3
Lithuania	3
Georgia	2
Ukraine	2
Cyprus	1

Beach erosion may negatively affect tourism. It is estimated that as a result of the rise in sea level, around 17% of beaches in the average scenario will disappear (3). It is estimated that as a result of the rise in sea level, up to 50% in the 'worst-case' scenario will disappear (3).



Deliverables: The central parameter in the final coastal-behaviour product is (rate of) shore-normal coastline migration; to eliminate the impacts of short-lived and/or local events, average values over a period of 10 years are preferred



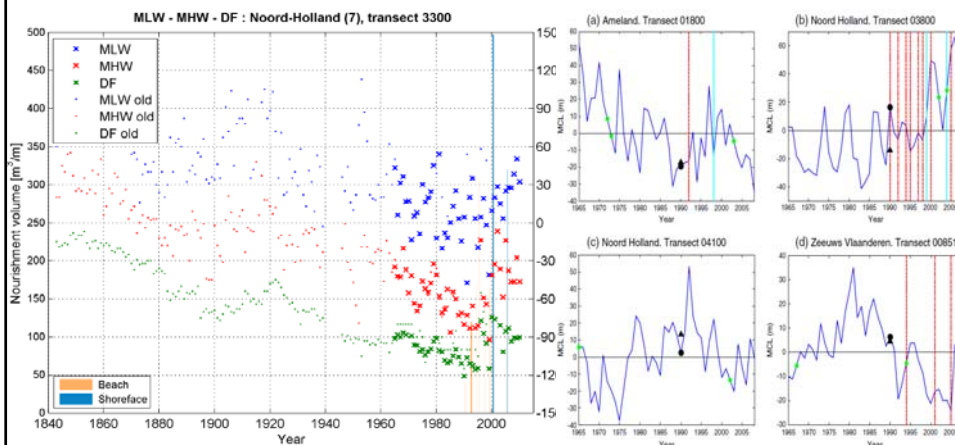
EMODnet

Deliverables: A template for very-high-resolution information that was developed during Phase 1 will be applied to the coastline of each country where possible



EMODnet

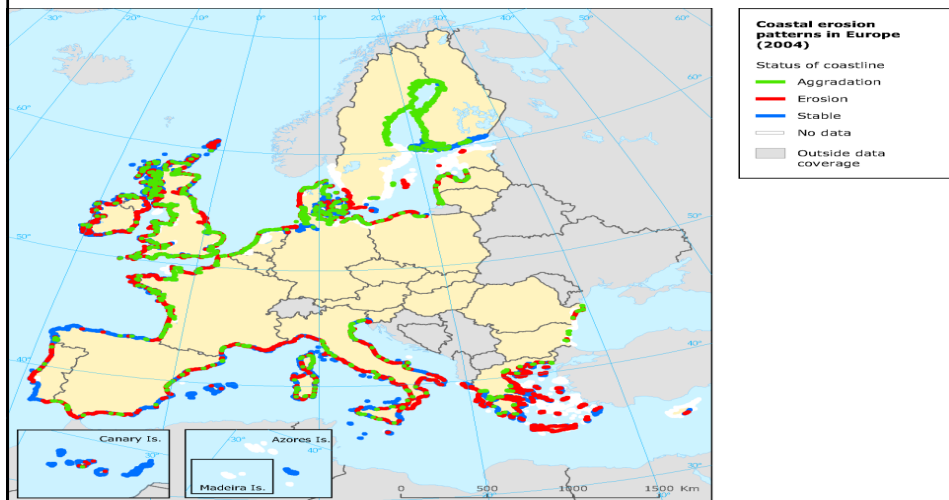
Risks: Absence of high-resolution coastal behavior information; variability of coastal-behaviour indicators in different countries and through time; different lengths of time series





EMODnet

Fully populated GIS layer of coastal typology and behaviour
information; guidance on harmonized coastal monitoring



EMODnet

Output and proposed steps

- **All:** Overview of data/knowledge (+ owner) on coastal behavior/type
- **All:** Overview of relevant “grey” literature that is difficult to find
- **All:** Complete list of coastal types in source language and with translation into English (we want to get ideas for a full set of coastal types, leave room for (documented) national/regional differences → no EUROSION straightjacket)
- **All:** wish list → what is needed to make output nationally relevant?
- **Cherith and Sytze:** Think about coastal behavior in light of associated risk → dependent on resilience and socio-economic value
 - resilience → degree of change that coasts are able to withstand while keeping their integrity
 - value → areas that would suffer the most from coastal change

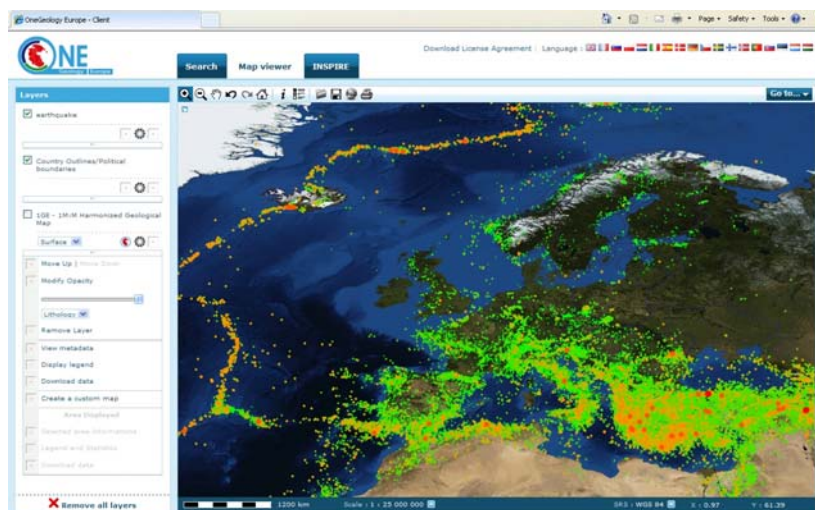
Workpackage 6. Geological events and probabilities

Led by ISPRA, Italy



EMODnet

Earthquake data



Courtesy of European Mediterranean Seismological Centre (EMSC)



Objectives

- To **identify** and **map** areas of **mineral deposits** in each of the participating countries based on information available to the project partners

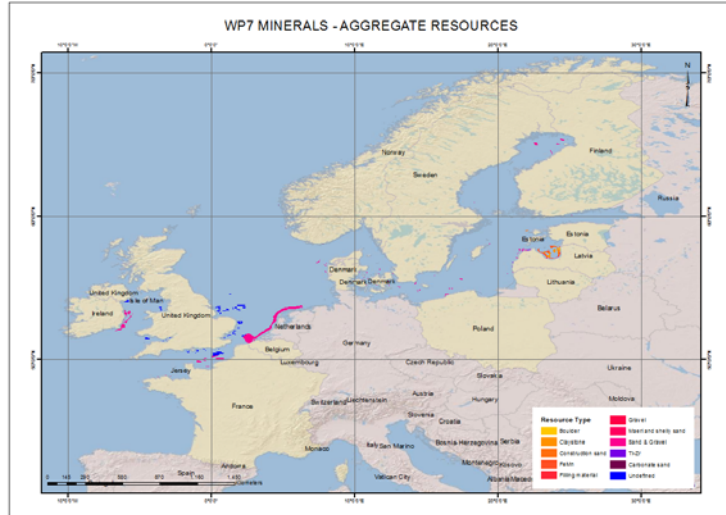
For this GSI will distribute a Task guide with example data tables and instructions

Description/deliverables

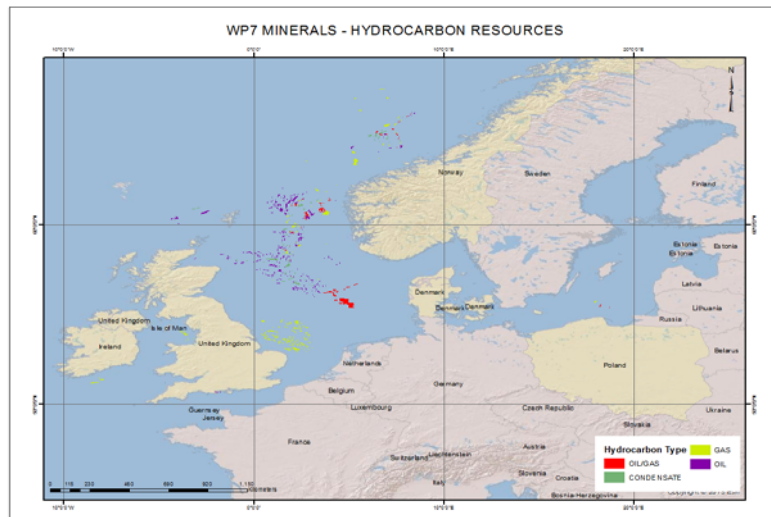
- Compile all mineral locations at 1:250,000 million scale
- Deliver to the GSI who will **standardise** and **federate** all data
- A GIS layer will be delivered in the OneGeology-Europe **portal**



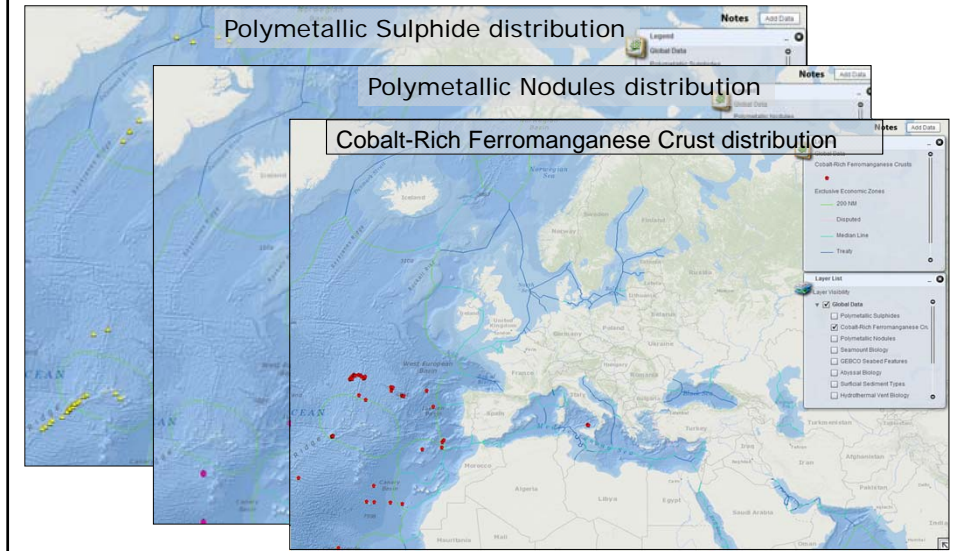
- The main types of mineral deposits that occur on and beneath the seafloor, within national EEZs are:
 - aggregates
 - hydrocarbons
 - gas hydrates
 - placer, phosphorite & evaporite deposits
 - polymetallic sulphides,
 - polymetallic nodules
 - cobalt rich crust.
- Information on marine minerals in the European regional seas, will include third-party data that can be linked to EMODnet through web-mapping services, but also including overviews of all publically available information (i.e. those not held under commercial restriction)
- **WP7 is most dependent on third-party data**



countries that submitted data are highlighted



countries that submitted data are highlighted



The EC “Blue Growth- opportunities for marine and maritime sustainable growth” document outlines:

”By 2020, 5% of the world’s minerals, including cobalt, copper and zinc could come from the ocean floors. This could rise to 10% by 2030.

Global annual turnover of marine mineral mining can be expected to grow from virtually nothing to 5 billion in the next 10 years and up to 10 billion by 2030”

MARINE MINERALS

Increased interest in marine minerals worldwide

Nautilus Ventures, polymetallic sulphides Kiribati

Deep Green Resources etc, polymetallic nodules Indian Ocean/

Atlantic Strategy EU. Specific reference to marine minerals

Horizon 2020 & EU Raw Materials initiative
Specific references to mineral resources & seabed mining

Norwegian Workshop on Seabed Mining, Dec 2012

Sub Group of EGS Marine & Minerals Expert Groups – Marine Minerals

No current easy accessible web portal on this topic

WP7 can assist as “window” to data and expertise

Huge opportunity for Emodnet partners & GSO's.

Deadlines

Guidance and format from GSI by mid February

Shapefiles and index data back by end May

First updated draft of Aggregates & Oil/Gas by September Workshop

Gas Hydrates, Nodules, VMS etc format proposed September

Send this data by end October

First draft of additional minerals & updated aggregates etc by end 2014

Case studies and six monthly updates thereafter.

WP 8. Web services and technology

Led by BGS, United Kingdom



EMODnet

Potential platform for improvements to
geological information - CKAN

- Open source and free data management solution
- Publish & find datasets
 - Publish datasets via import or through a web interface. Search by keyword or filter by tags. See dataset information at a glance. Full change history lets you easily undo changes or view old versions
- Store & manage data
 - Store the raw data and metadata. Visualise structured data with interactive tables, graphs and maps. Get statistics and usage metrics for your datasets. Search geospatial data on a map by area.
- Engage with users & others
 - Federate networks with other CKAN nodes. Build a community with extensions that allow users to comment on and follow datasets.
- Customise & extend
 - Use the API's programming interface, with over 60 extensions including link checking, comments, and analytics.

Search screen and results

Text Search

Search Filters

Search Results

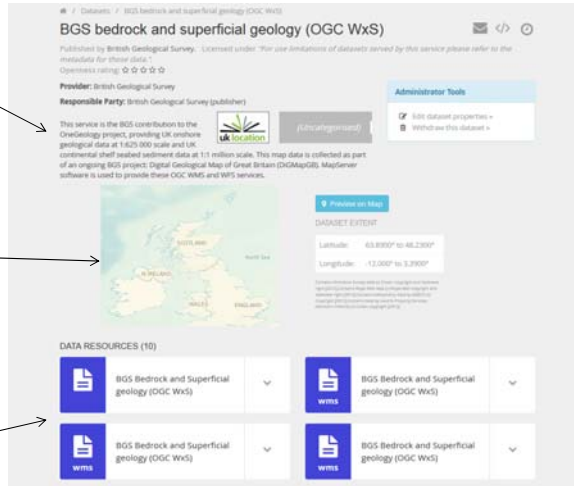
Map Search

Record details

Metadata


Dataset extent

Resources
e.g. WMS
links,
Downloads



BGS bedrock and superficial geology (OGC WxS)

Published by British Geological Survey. Access under: For use limitations of datasets served by this service please refer to the metadata for those data.

Openness rating: 

Provider: British Geological Survey

Responsible Party: British Geological Survey (publisher)

This service is the BGS contribution to the OneGeology project, providing UK onshore geological data at 1:625,000 scale and UK continental shelf seabed sediment data at 1:1 million scale. This map data is collected as part of an ongoing BGS project: Digital Geological Map of Great Britain (DGMaGB). MapServer software is used to provide these OGC WMS and WFS services.




ADMINISTRATOR TOOLS

- ✎ Edit dataset properties
- 🗑️ Withdraw this dataset

Dataset extent

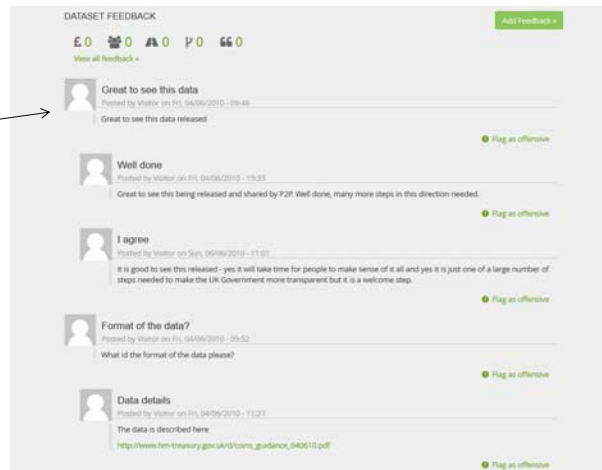
Latitude: 63.8100° to 48.2300°
Longitude: -12.000° to 3.2000°

DATA RESOURCES (10)

	BGS Bedrock and Superficial geology (OGC WxS)		BGS Bedrock and Superficial geology (OGC WxS)
	BGS Bedrock and Superficial geology (OGC WxS)		BGS Bedrock and Superficial geology (OGC WxS)

Feedback

Feedback functions



DATASET FEEDBACK

0 0 0 0 0 0 [Add Feedback](#)

[View all Feedback](#)

Great to see this data
Posted by Visitor on Fri, 04/09/2019 - 09:46
Great to see this data released Flag as offensive

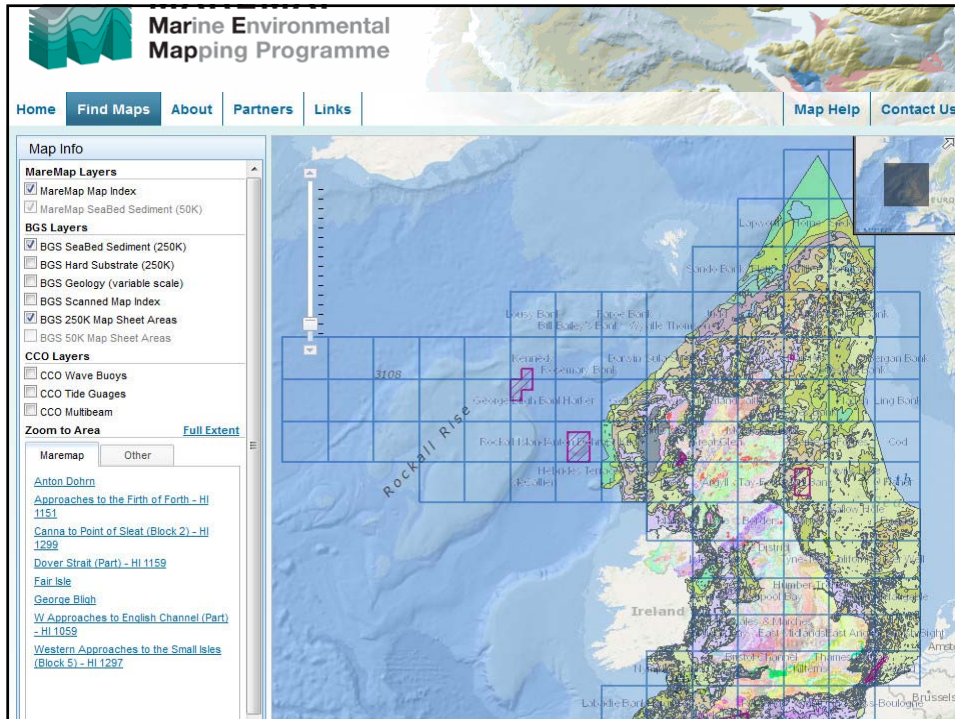
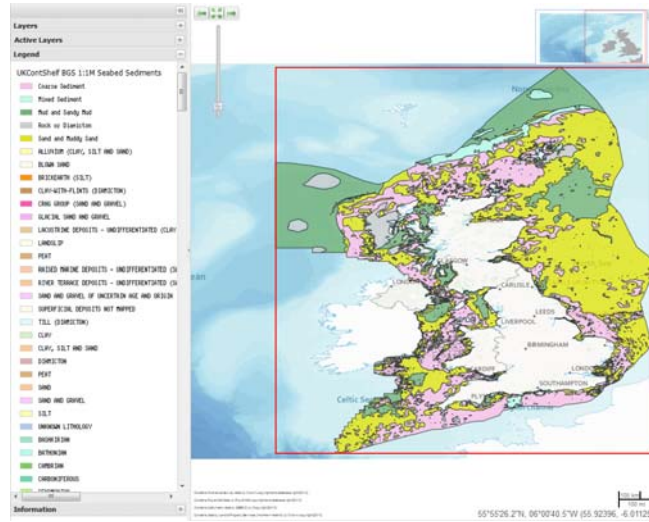
Well done
Posted by Visitor on Fri, 04/09/2019 - 19:33
Great to see this being released and shared by F2F. Well done, many more steps in this direction needed. Flag as offensive

I agree
Posted by Visitor on Sun, 04/09/2019 - 11:01
It is good to see this released - yes it will take time for people to make sense of it all and yes it is just one of a large number of steps needed to make the UK Government more transparent but it is a welcome step. Flag as offensive

Format of the data?
Posted by Visitor on Fri, 04/09/2019 - 09:52
What is the format of the data please? Flag as offensive

Data details
Posted by Visitor on Fri, 04/09/2019 - 11:27
The data is described here
http://www.hm-treasury.gov.uk/d/coins_guidance_040619.pdf Flag as offensive

Map Results



Marine Environmental Mapping Programme

Home Find Maps About Partners Links Map Help Contact Us

Map Info

MareMap Layers

- MareMap Map Index
- Maremap SeaBed Sediment (50K)

BGS Layers

- BGS SeaBed Sediment (250K)
- BGS Hard Substrate (250K)
- Scanned Map Index
- 250K Map Sheet Areas
- 50K Map Sheet Areas

Zoom to Area [Full Extent](#)

Maremap Other

[Anton Dohrn](#)

[Approaches to the Firth of Forth - HI 1151](#)

[Canna to Point of Sleat \(Block 2\) - HI 1289](#)

[Dover Strait \(Part\) - HI 1159](#)

[Fair Isle](#)

[George Bligh](#)

[W Approaches to English Channel \(Part\) - HI 1059](#)

[Western Approaches to the Small Isles \(Block 5\) - HI 1297](#)

[Clear Selection](#)

MareMap Layers

- MareMap Map Index
- Maremap SeaBed Sediment (50K)

BGS Layers

- BGS SeaBed Sediment (250K)
- BGS Hard Substrate (250K)
- Scanned Map Index
- 250K Map Sheet Areas
- 50K Map Sheet Areas

Zoom to Area [Full Extent](#)

Maremap Other

[Anton Dohrn](#)

[Approaches to the Firth of Forth - HI 1151](#)

[Canna to Point of Sleat \(Block 2\) - HI 1289](#)

[Dover Strait \(Part\) - HI 1159](#)

[Fair Isle](#)

[George Bligh](#)

[W Approaches to English Channel \(Part\) - HI 1059](#)

[Western Approaches to the Small Isles \(Block 5\) - HI 1297](#)

[Clear Selection](#)

Location: -2.033371, 56.666860
Scale: 1:1155581

Legend

Copyright | Privacy | Contacts | Terms & Conditions

