EMODnet Geology – Discover Europe's seabed geology

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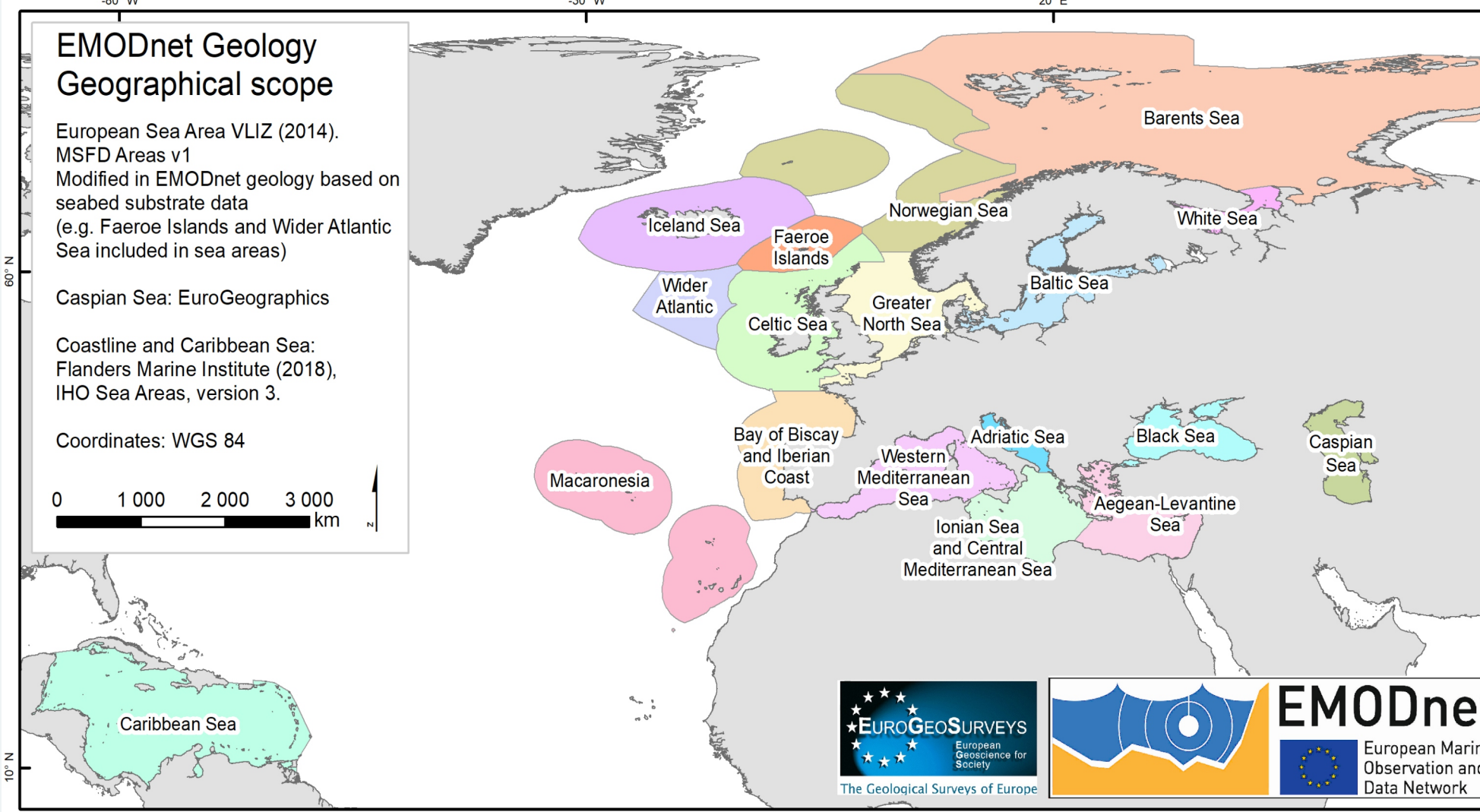
FINMARI Researcher Day 2024

EMODnet - Geology

The **European Marine Observation and Data Network** (EMODnet) is a long term marine data initiative funded by the European Maritime, Fisheries and Aquaculture Fund (EMFAF). It consists of more than 120 organisations assembling marine data, products and metadata to make these fragmented resources more accessible to public and private users, relying on quality-assured, standardised and harmonised marine data which are interoperable and free of restrictions on use. EMODnet is currently in its fourth phase and had the EMODnet Central Portal fully centralised in January 2023. EMODnet provides easy and free access to marine data, metadata and data products and services spanning seven broad disciplinary themes (lots): bathymetry, geology, physics, chemistry, biology, seabed habitats and human activities.

The **EMODnet Geology** thematic lot, initiated as a pilot project in 2009 (ur-EMODnet), is now running its fifth contractual phase (2021-2025), coordinated by GTK, with the participation of 31 partners and 9 subcontractors from 30 countries. It has succeeded in providing full coverage of all European regional seas and parts of the Caspian Sea. We are currently working on data sourcing from the Caribbean Sea. The target of the current phase is to organise map delivery at a 1:100,000 scale or finer, but also at coarser scales to ensure maximum pan-European coverage. A multi-scale approach is adopted where possible. Partner updates of single-scale products at 1:250,000 and 1:1,000,000 have been encouraged and these data products will be uploaded by end of this phase.
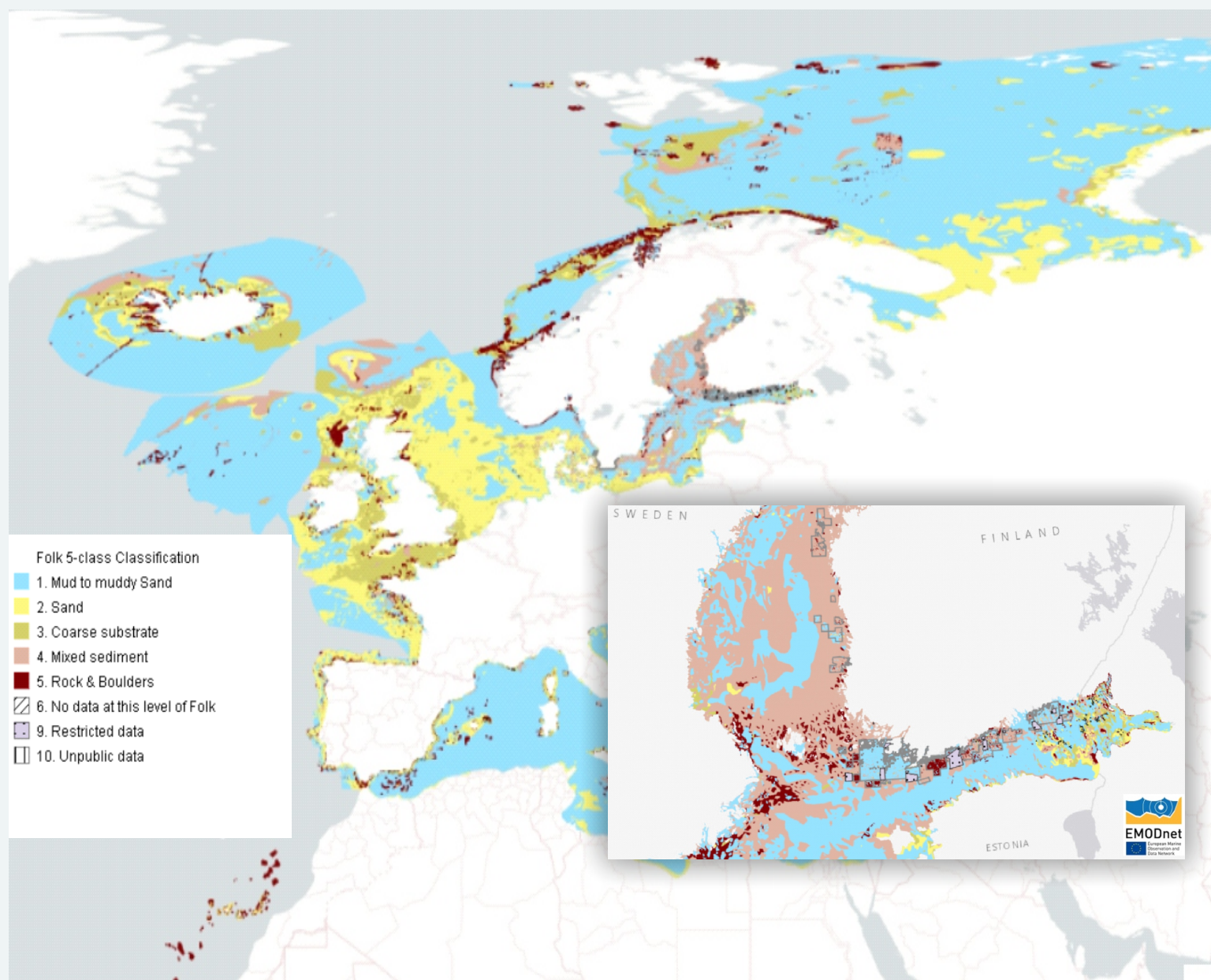

EMODnet Geology sea regions
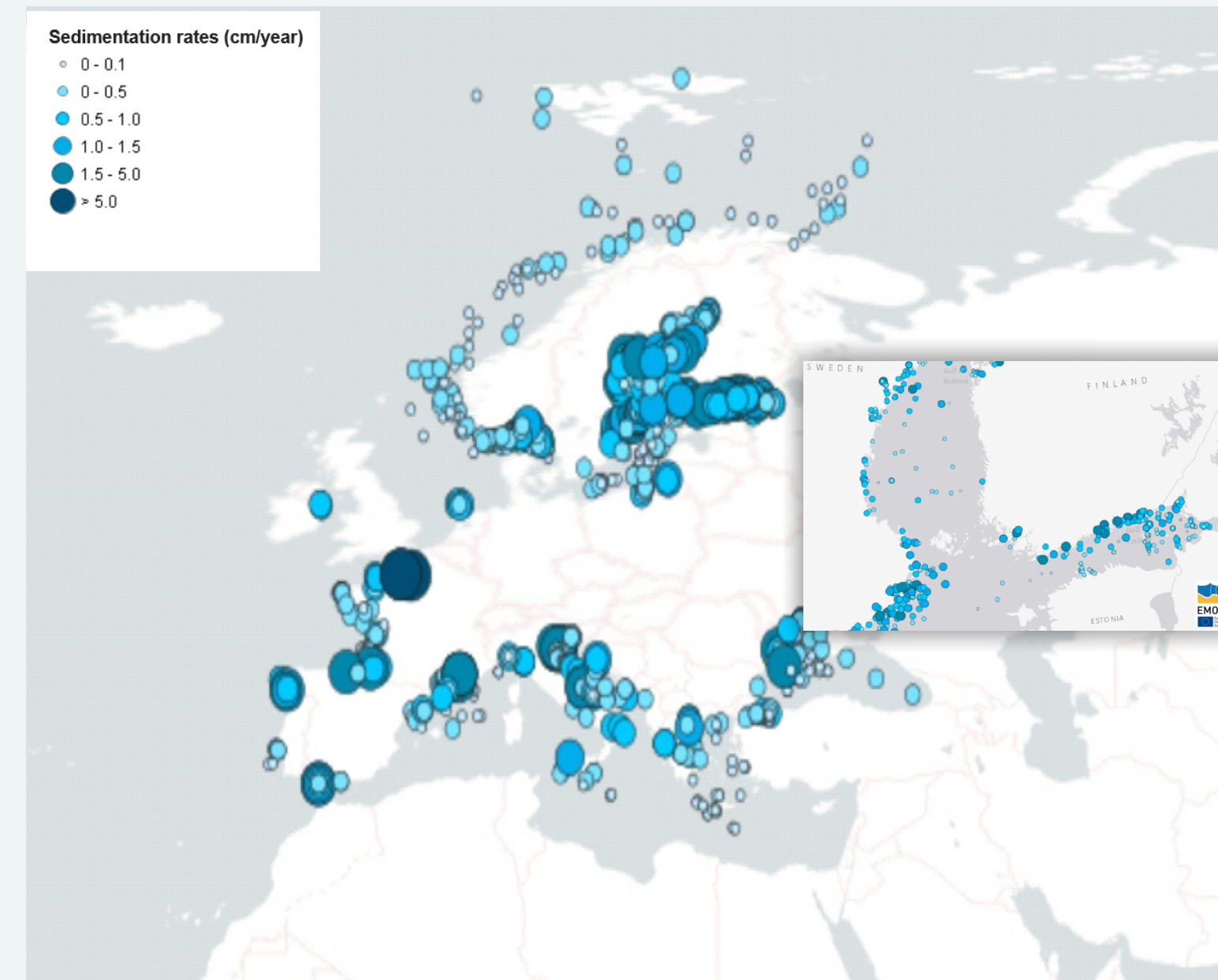
EMODnet Geology products

The geology data compiled in the frame of the project, are available through the EMODnet Central Portal: https://emodnet.ec.europa.eu/en

- Sea-bed substrate (surface sediment), Sedimentation rates and Seabed erosion index
- Sea-floor geology – lithology and age (bedrock geology beneath the surficial sediment: Quaternary units and pre-Quaternary)
- Geomorphological features of the sea-floor
- Coastal behaviour (migration, type and vulnerability)
- Geological events and probabilities (e.g. submarine landslides, volcanic centres, earthquakes)
- Mineral occurrences (e.g. oil and gas, aggregates, metallic minerals)
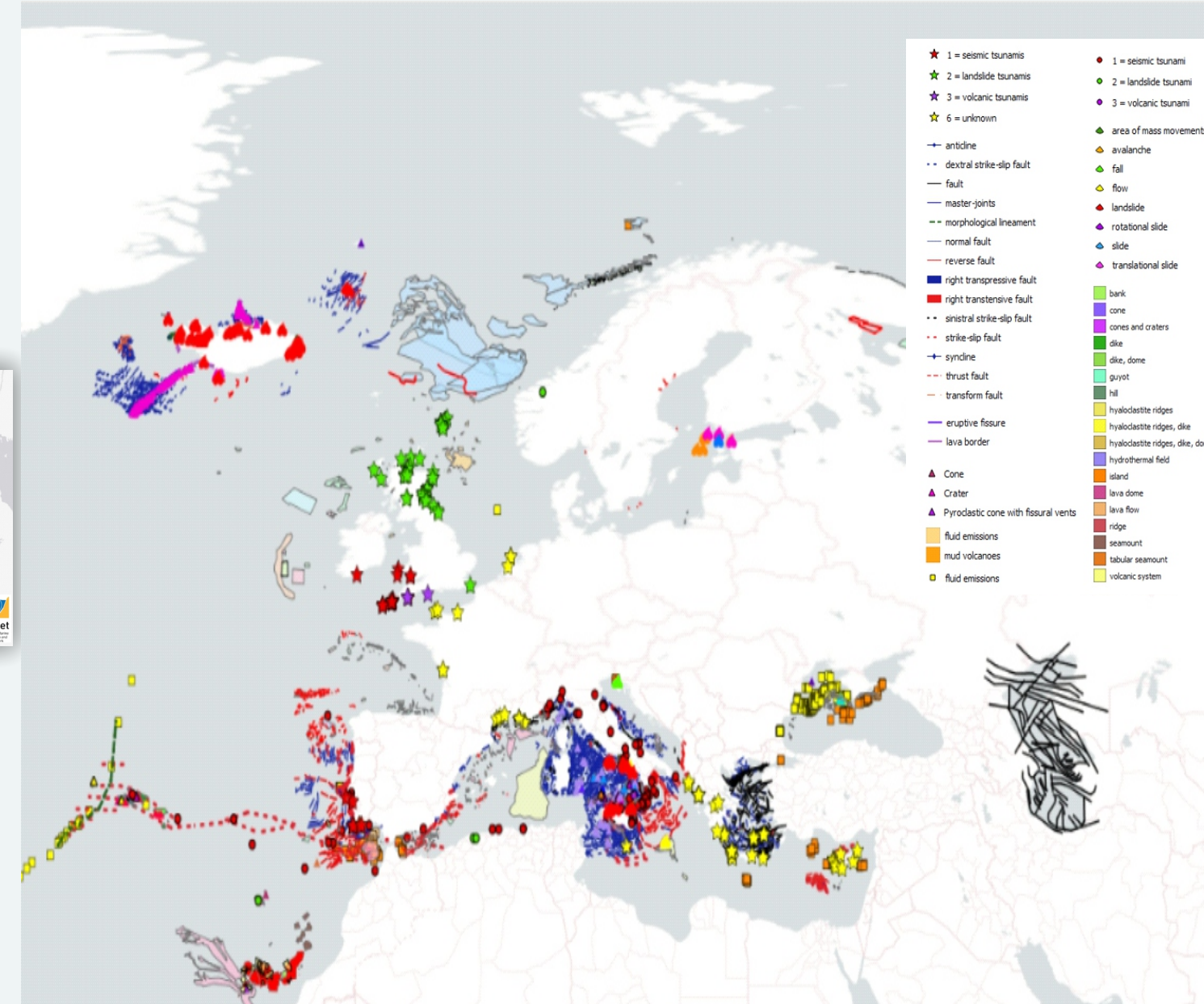- Submerged landscapes

Representative Datasets - for complete maps and legends please visit our website https://emodnet.ec.europa.eu/en
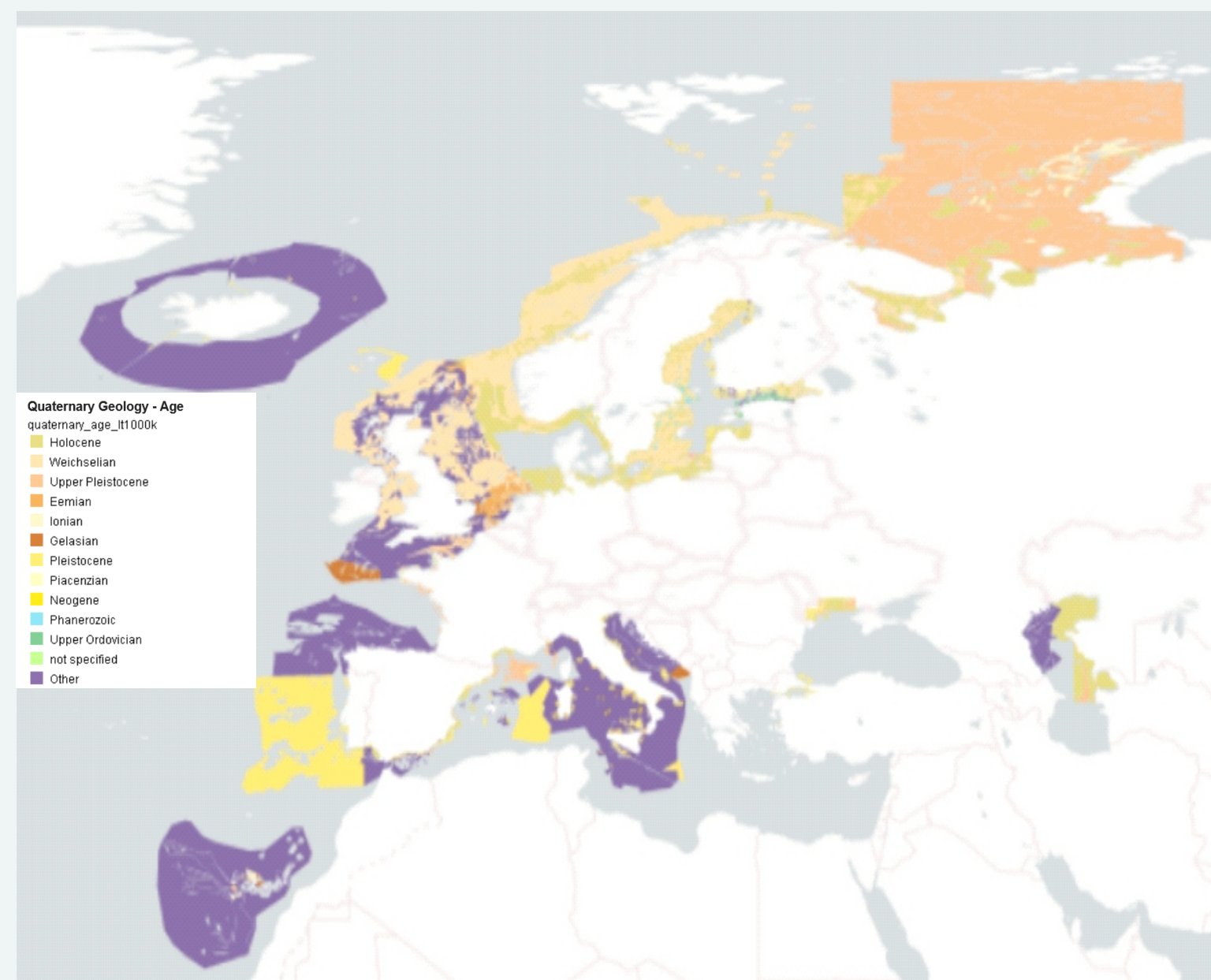

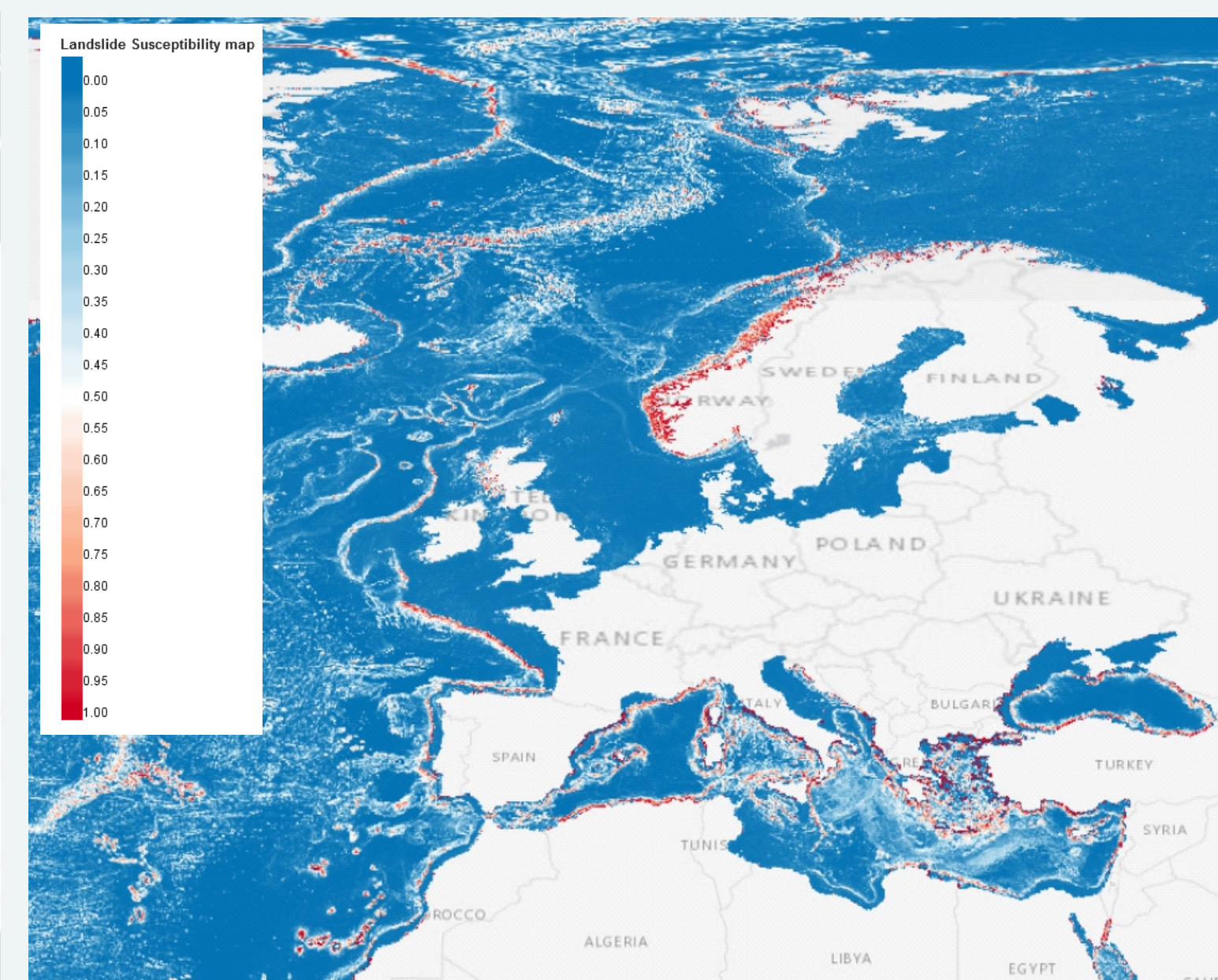Seabed substrate 1:1M (Folk 5-class)
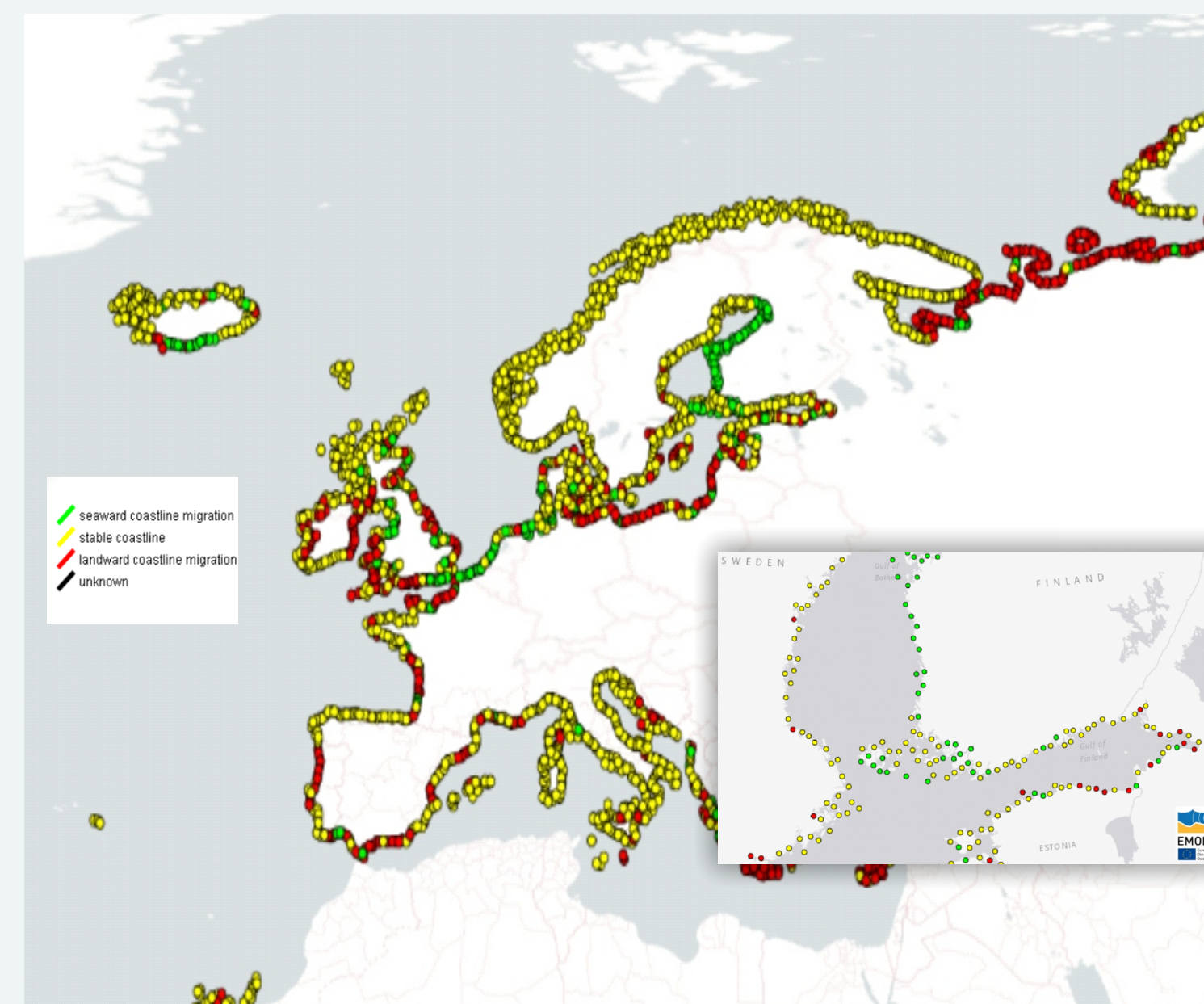

Sediment accumulation rates cm/a
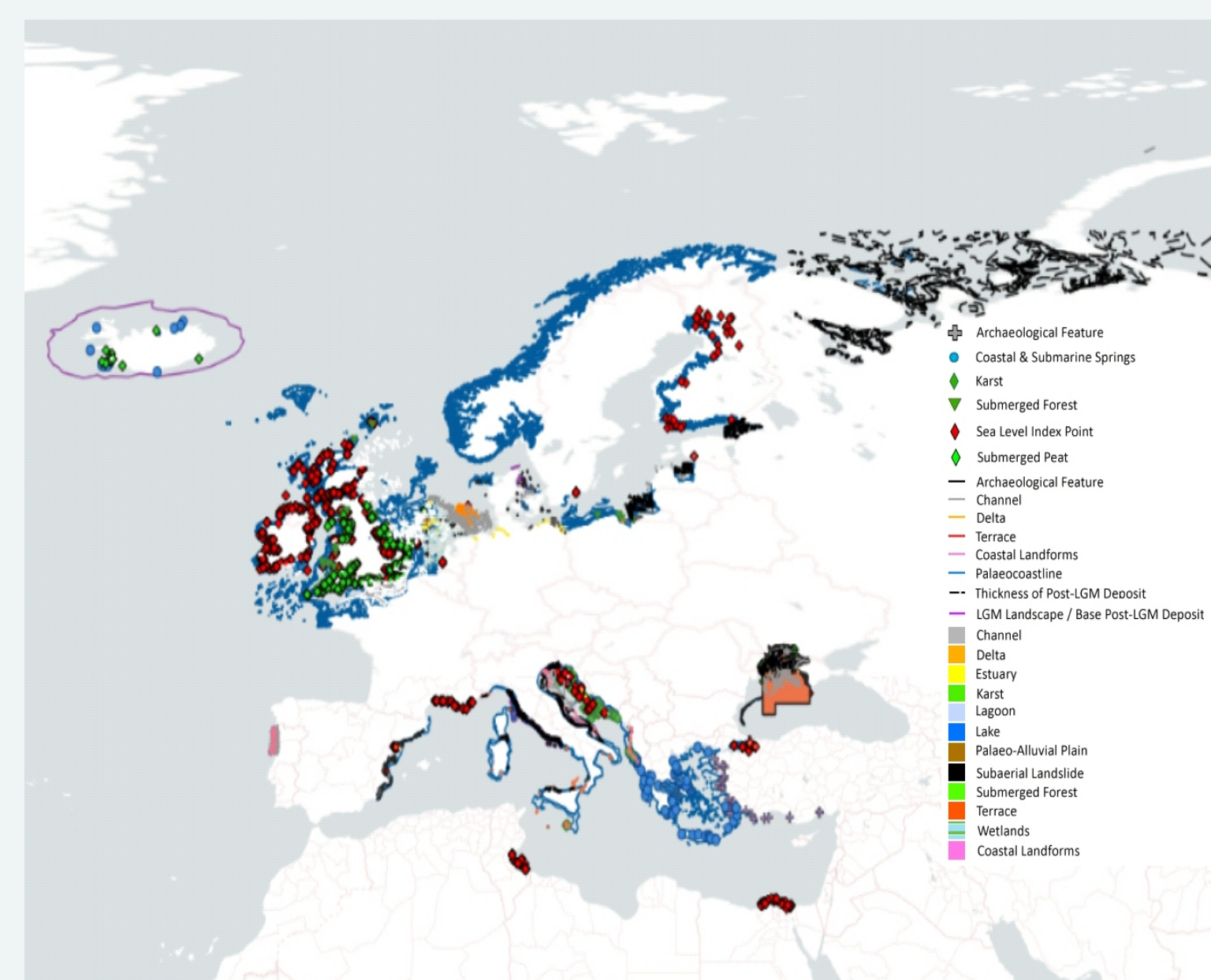

Geological event and probabilities
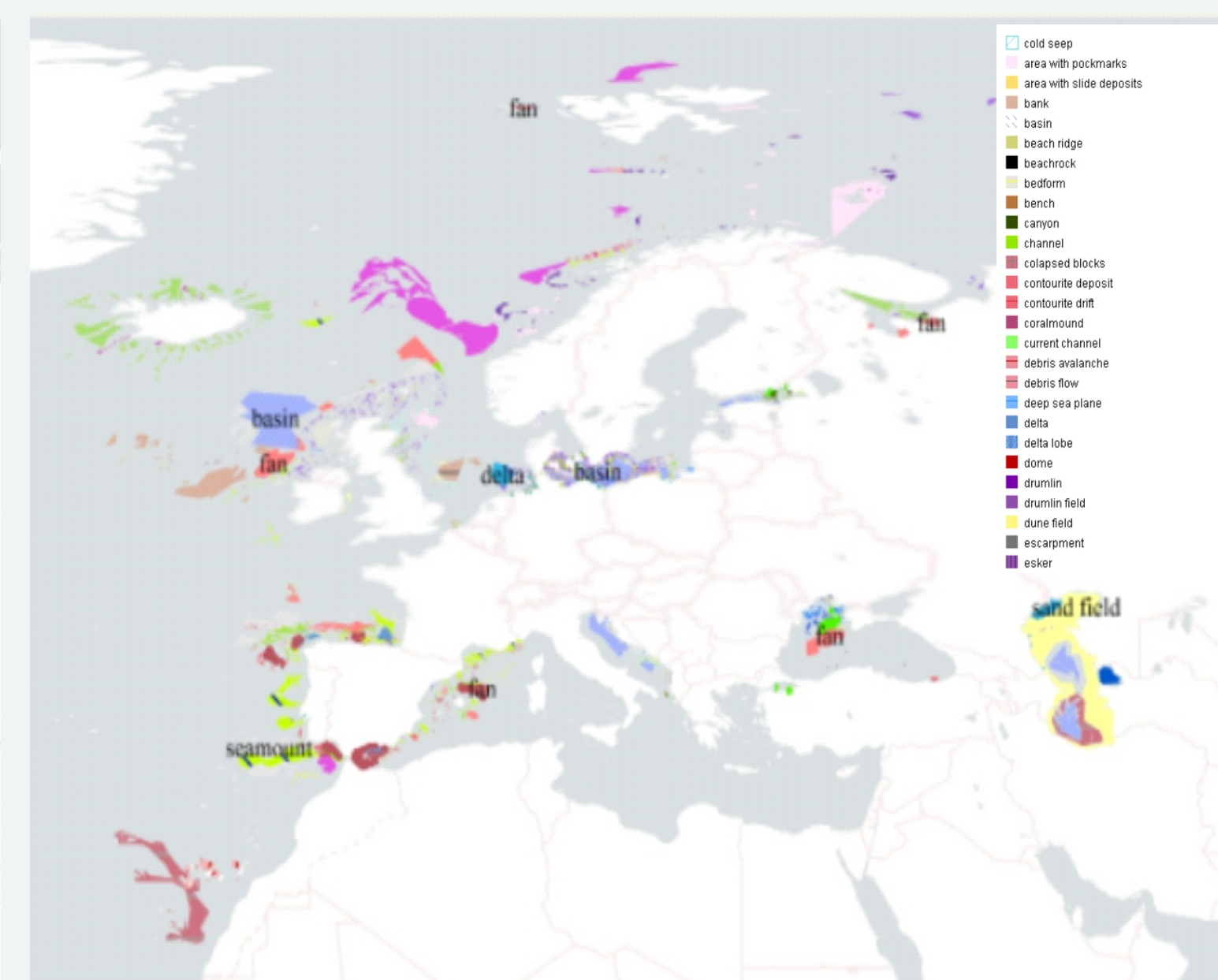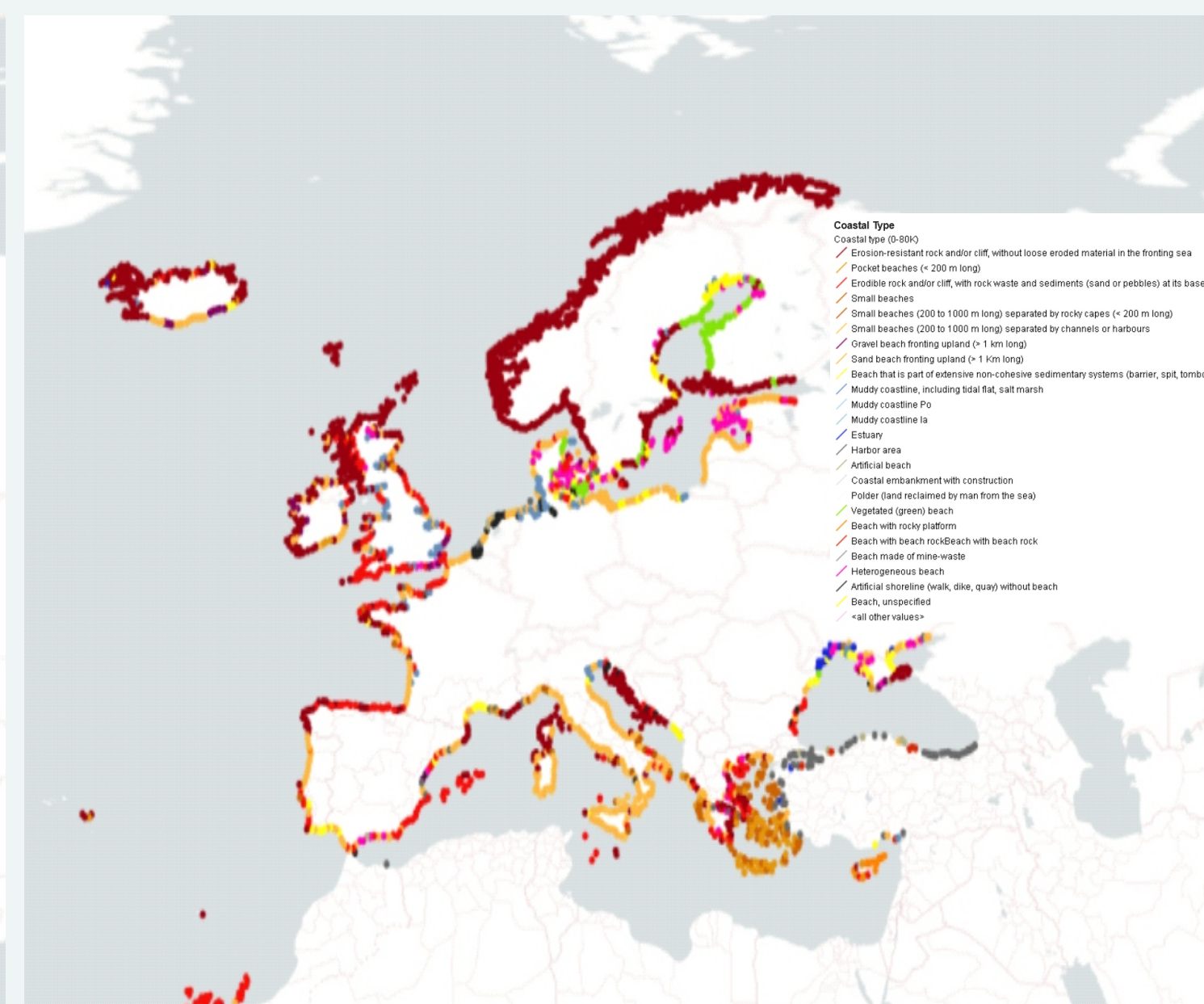

Quaternary age

Landslide susceptibility map
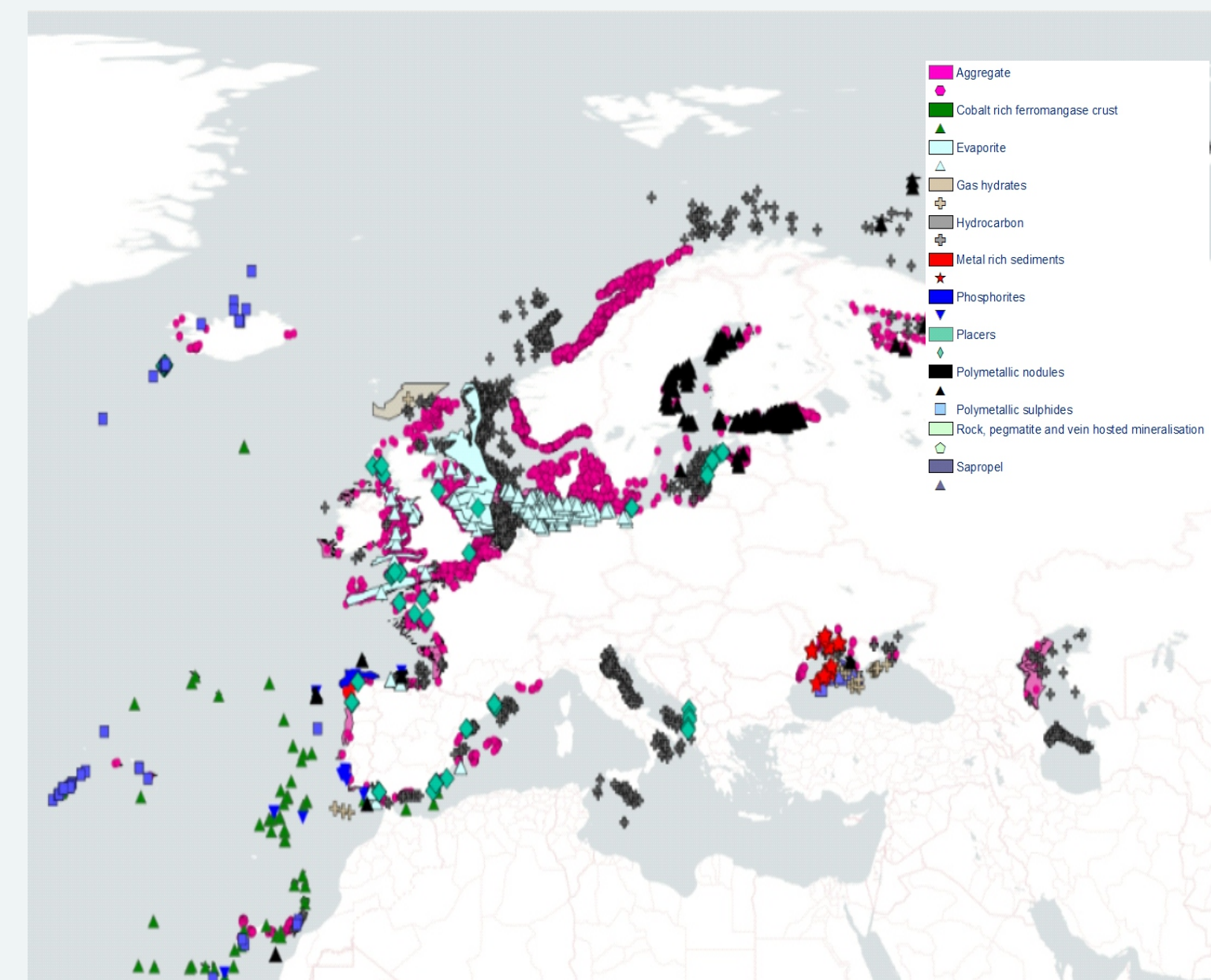

Coastal behaviour - field data
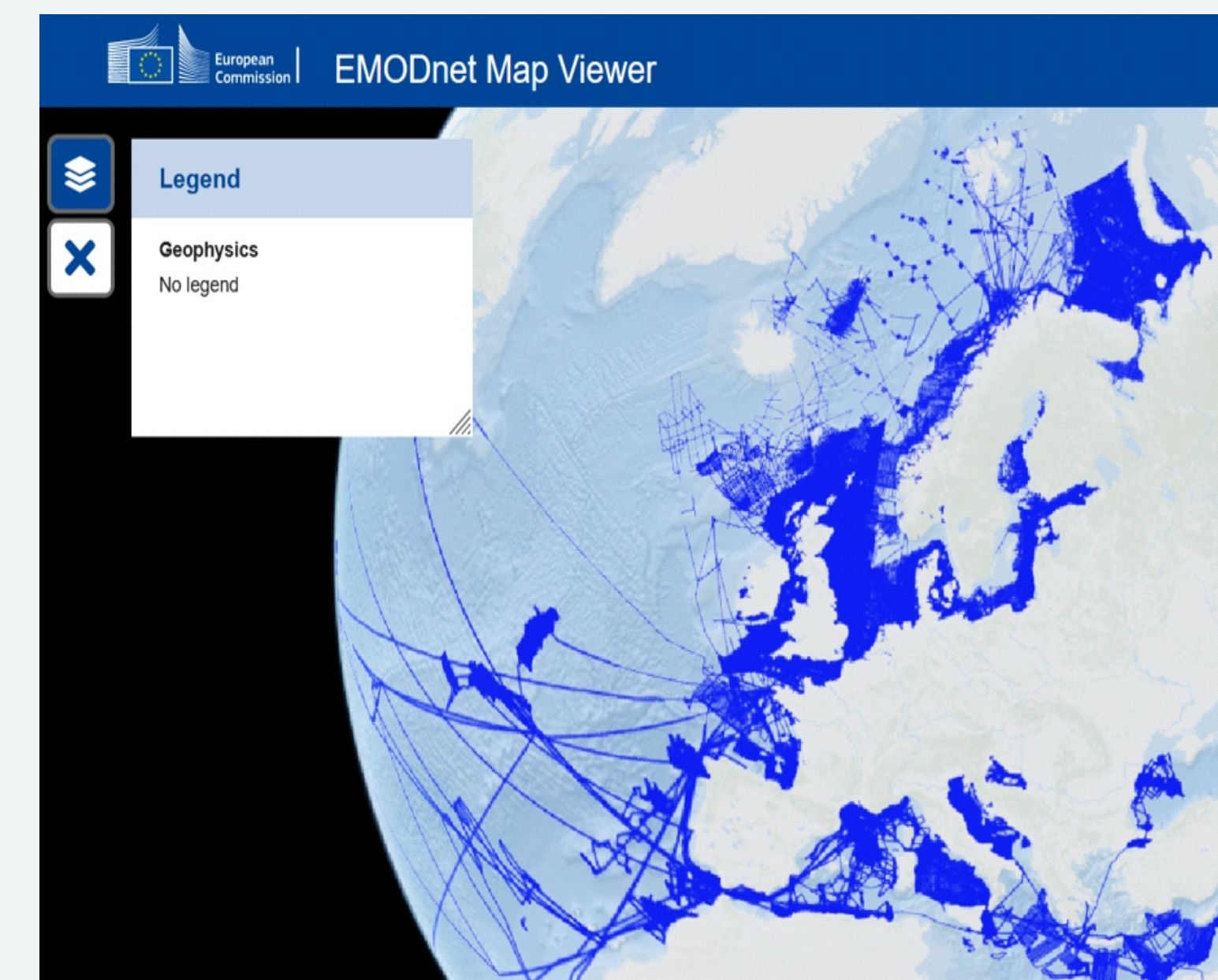

Submerged landscapes
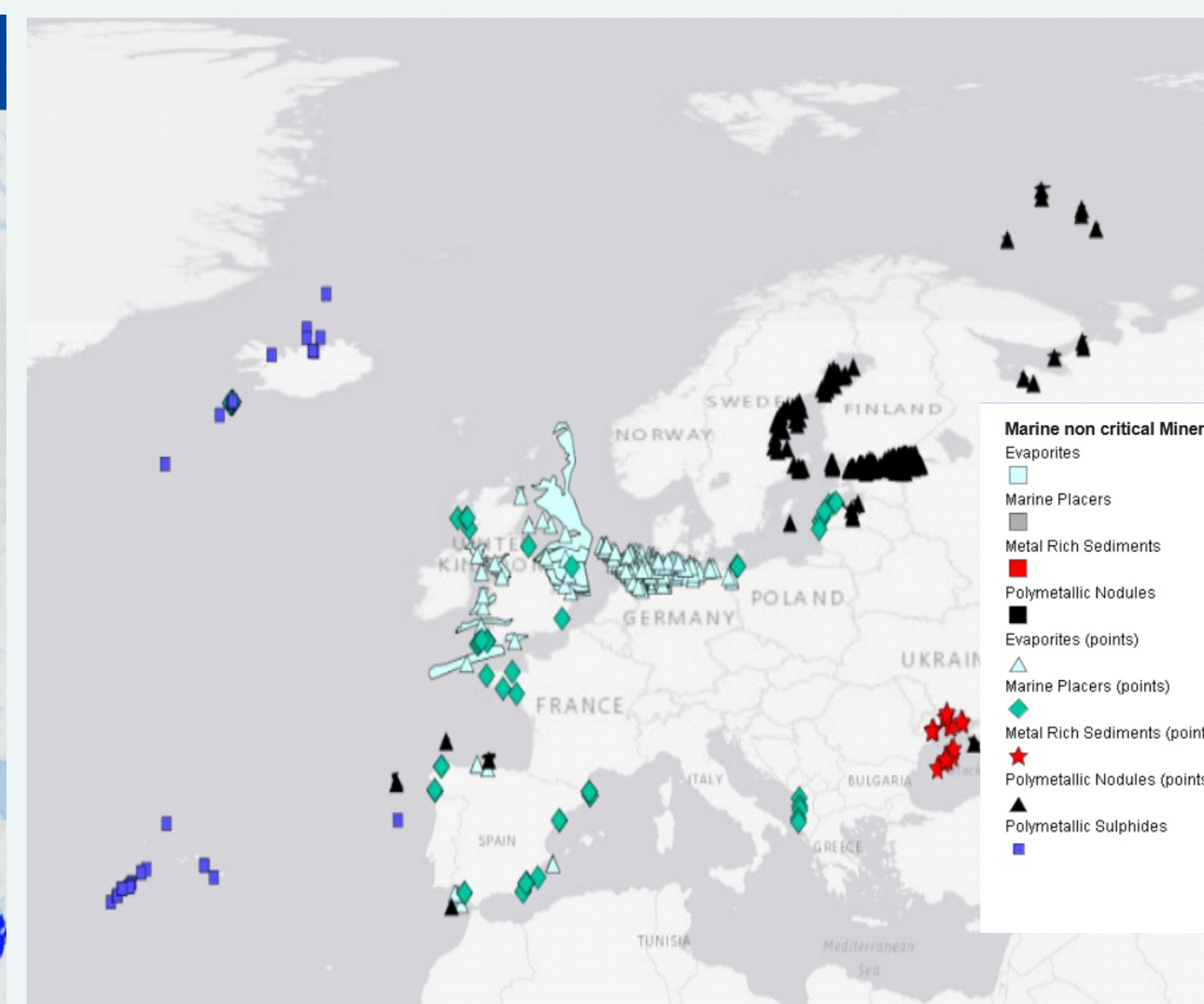

Geomorphology

Coastal behaviour - coastal type

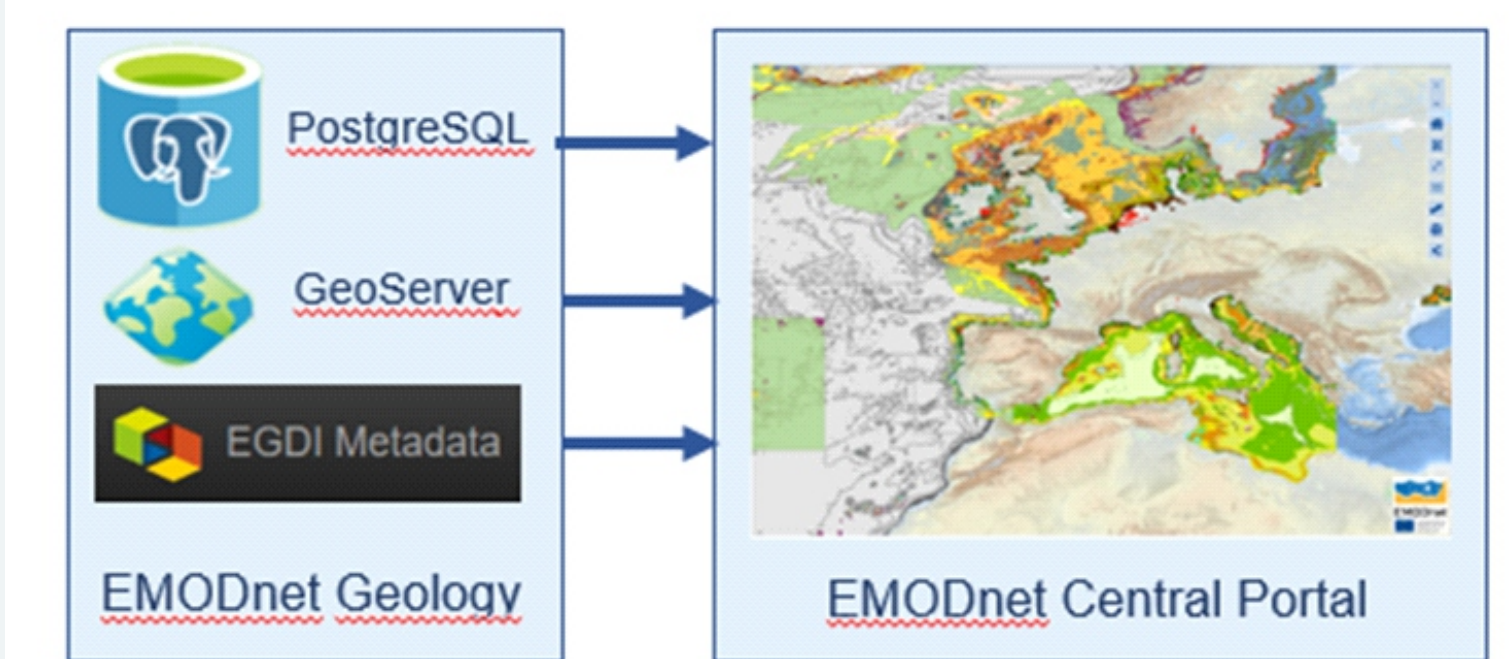Marine minerals

Metadata on geophysics (surveylines)

Selected offshore mineral occurrences

Data services (WP 9)

EMODnet Geology is an ongoing dynamic project, where existing datasets are continuously updated and completed with new data.

EMODnet focuses on providing harmonised interpreted map information rather than the underlying data. To access the raw data, you can contact the institutions described in the metadata.

The services for viewing and downloading EMODnet data are available from the EMODnet Central Portal.

In addition, the EMODnet Data Ingestion initiative (www.emodnet-ingestion.eu) has been developed, reaching out to potential data providers from the public and private sector.

Project Partners

1. Geologian Tutkimuskeskus (GTK) - Geological Survey of Finland - Lead
2. Geological Survey of Sweden (SGU)
3. Geological Survey of Norway (NGU)
4. Geological Survey of Denmark and Greenland (GEUS)
5. Iceland GeoSurvey (ISOR)
6. Geological Survey of Estonia (EGT)
7. Latvian Environment, Geology and Meteorology Centre (LEGMC)
8. Lithuanian Geological Survey (LGT)
9. Polish Geological Survey - National Research Institute (PGI-NRI)
10. Geological Survey of the Netherlands (TNO)
11. Royal Belgian Institute of Natural Sciences (RBINS)
12. Bureau de Recherces Géologiques et Minieres (BRGM, France)
13. French Research Institute for Exploration of the Sea (IFREMER)
14. Geological Survey of Ireland (GSI)
15. Instituto Geológico y Minero de España (IGME)
16. Instituto Português do Mar e da Atmosfera (IPMA)
17. Servizio Geologico d'Italia - Istituto Superiore per la Protezione e la Ricerca Ambientale (ISPRA)
18. Geological Survey of Slovenia (GeoZS)
19. Croatian Geological Survey (HGI)
20. Geological Survey of Montenegro (GSM)
21. Geological Survey of Albania - Shërbimi Gjeologjik Shqiptar (GSA)
22. Hellenic Survey of Geology and Mineral Exploration (HSGME, Greece)
23. Hellenic Centre for Marine Research (HCMR, Greece)
24. Institute of Oceanology - Bulgarian Academy of Sciences (IO-BAS)
25. National Research and Development Institute for Marine Geology and Geoecology (GeoEcoMar, Romania)
26. Geological Survey of Cyprus (GSC)
27. The Malta Geological Survey through the Continental Shelf Department (Malta)
28. Dipartimento Scienze Della Terra Università La Sapienza (UNIROMA, Italy)
29. Department of Geology, University of Tartu (UNITARTU, Estonia)
30. Foundation for Research and Technology Hellas - Institute of Computer Science (FORTH-ICS, Greece)
31. Stichting Deltares (The Netherlands)

Subcontractors

32. United Kingdom Research and Innovation - British Geological Survey (UKRI-BGS, UK)
33. Jardfeingi - Faroese Geological Survey
34. DEFRA - Centre for Environment, Fisheries and Aquaculture Science (DEFRA-CEFAS, UK)
35. Edge Hill University (UK)
36. Institute of Geological Sciences of National Academy of Sciences of Ukraine (IGS-NAS)
37. Dokuz Eylul University - Institute of Marine Science and Technology (IMST, Turkey)
39. Federal Institute for Geosciences and Natural Resources (BGR, Germany)
40. EMCOL Research Centre, Istanbul Technical University (ITU, EMCOL, Turkey)
41. Caspian Locus Limited Liability Company (CLLLC, Azerbaijan)