



European Marine

Observation and

Data Network

EMODnet Geology: Compiling Marine Geological Data Sets to support sustainable development of marine area

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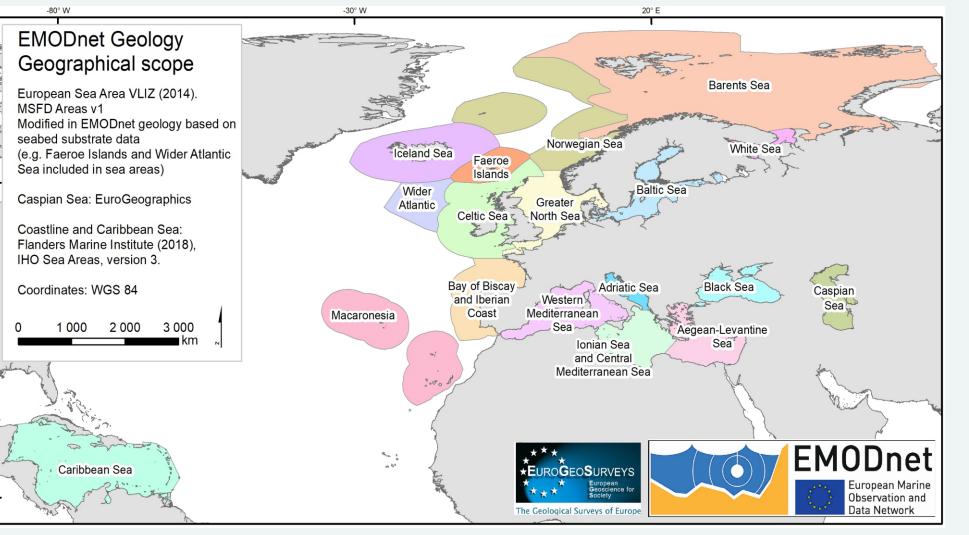
EMODnet - Geology

The European Marine Observation and In addition to European marine areas, **Data Network** (EMODnet) is a European in EMODnet Geology is currently working on situ marine data service of the European data sourcing from the Caribbean Sea. Commission. It is implemented by a network of Instituto Geológico y Minero de España more than 120 organisations across the EU (IGME) acts as a Caribbean Sea subtask with a core purpose to provide open and free leader and has strong collaboration with the access to marine knowledge at pan-European Association of Ibero-American Geological scale. Today, the EMODnet Central Portal and Mining Services (ASGMI).

provides free access to collected marine data, metadata and data products and services The target of the current phase is to organise spanning seven broad disciplinary themes map delivery at a 1:100,000 scale or finer, but (lots): bathymetry, geology, physics, chemistry, also at coarser scales to ensure maximum biology, seabed habitats and human activities. coverage. A multi-scale approach is adopted where possible. Partner updates of single-

The **EMODnet Geology** thematic lot, initiated scale products at 1:250,000 and 1:1,000,000 as a pilot project in 2009 (ur-EMODnet), is now have been encouraged and these data running its fifth contractual phase (2021- products will be uploaded by end of this 2025), coordinated by GTK, with the phase, September 2025. participation of 31 partners and 9 subcontractors from 30 countries. It has succeeded in providing full coverage data layers of all European regional seas and parts of the Caspian Sea.

EMODnet Geology Sea Regions



The geographical scope of the EMODnet Geology. The regional seas and sub-seas of Europe according to the Marine Strategy Framework Directive, and the Caribbean Sea.

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:

- Seabed 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 behavior (e.g., 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

EMODNET GEOLOGY, REPRESENTATIVE DATA PRODUCTS

For complete maps and legends visit the **EMODnet Central Portal**: <u>https://emodnet.ec.europa.eu/en.</u>

Pocket beaches (< 200 m long

Muddy coastline P

Muddy coastline la

Vegetated (green) bea

Beach with rocky platform

Beach with beach rock

Beach made of mine-wast

Coastal embankment with construction Polder (land reclaimed by man from the sea

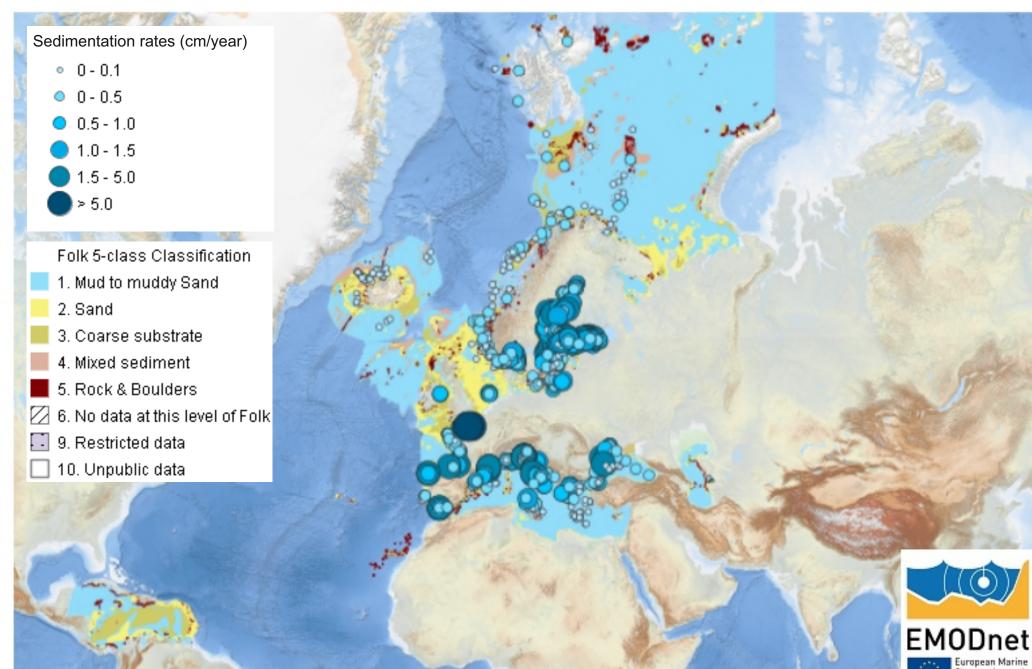
Artificial shoreline (walk, dike, guay) without beach

Estuary

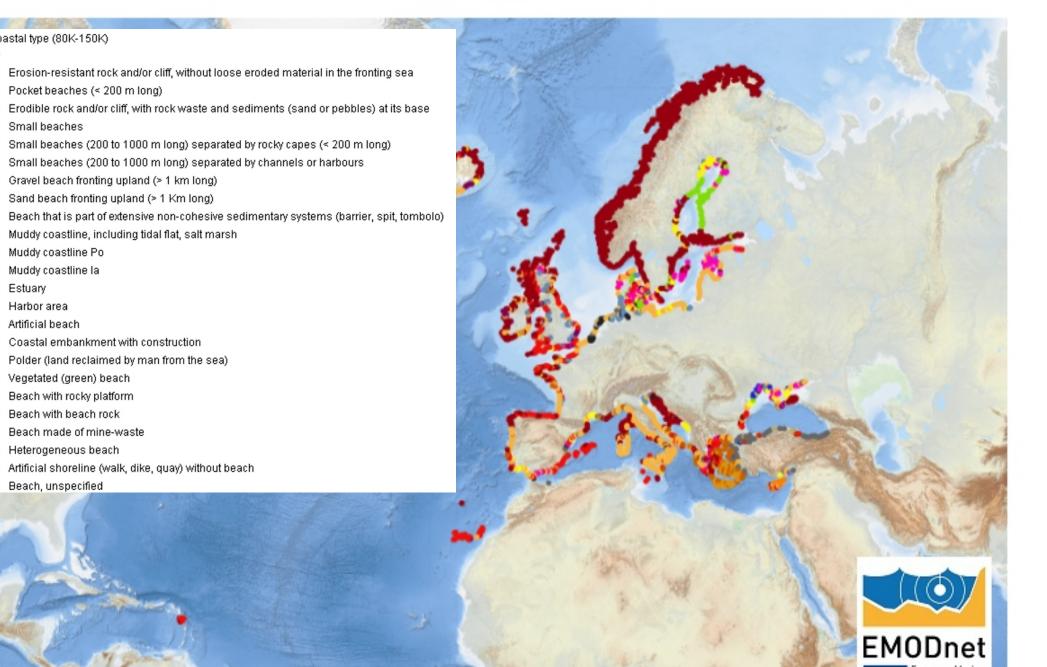
Harbor are:

Artificial beach

Seabed substrate & Sedimentation rate



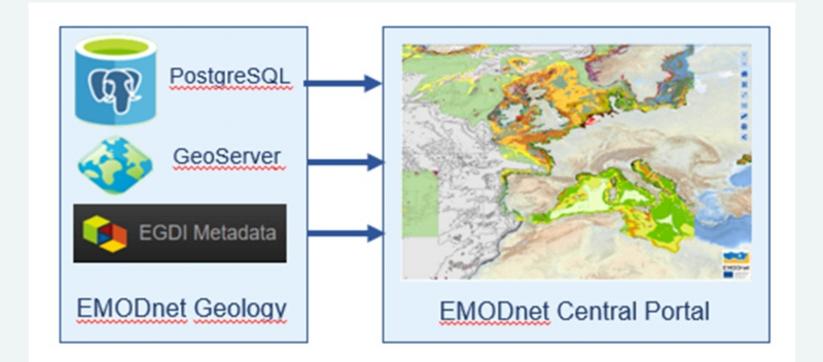
Coastal type



Data services

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

EMODnet Geology 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.

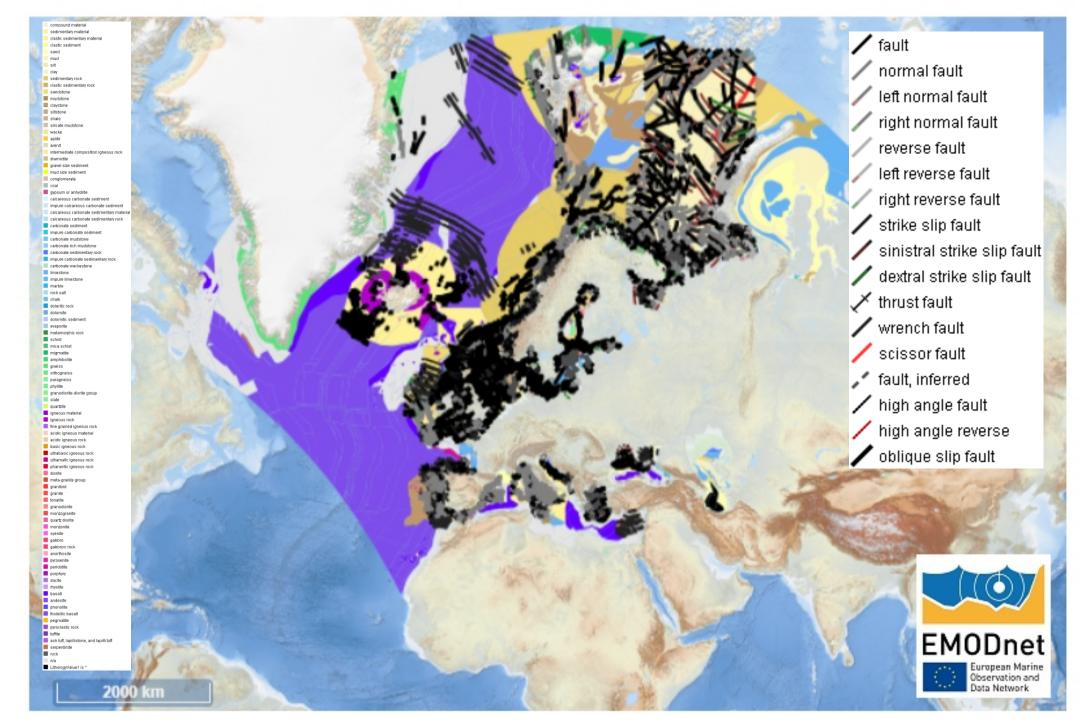


In addition, the EMODnet Data Ingestion initiative (www.emodnet-ingestion.eu) has been developed, reaching out to potential data providers from the public and private sector.

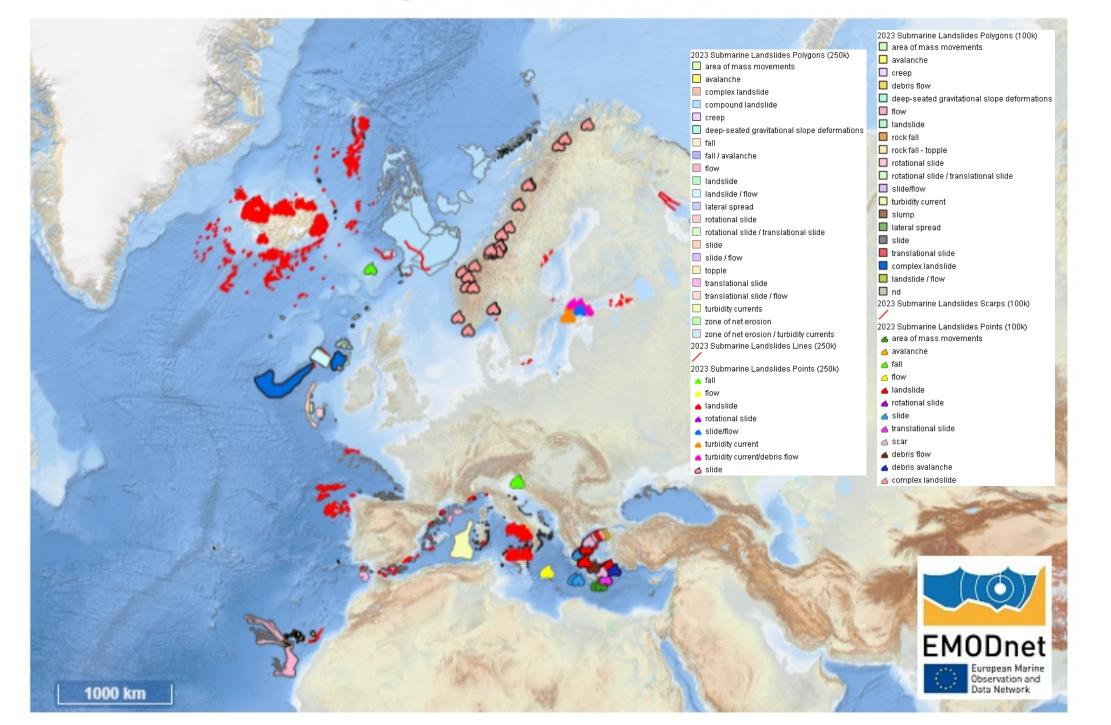
Project Partners and Subcontractors

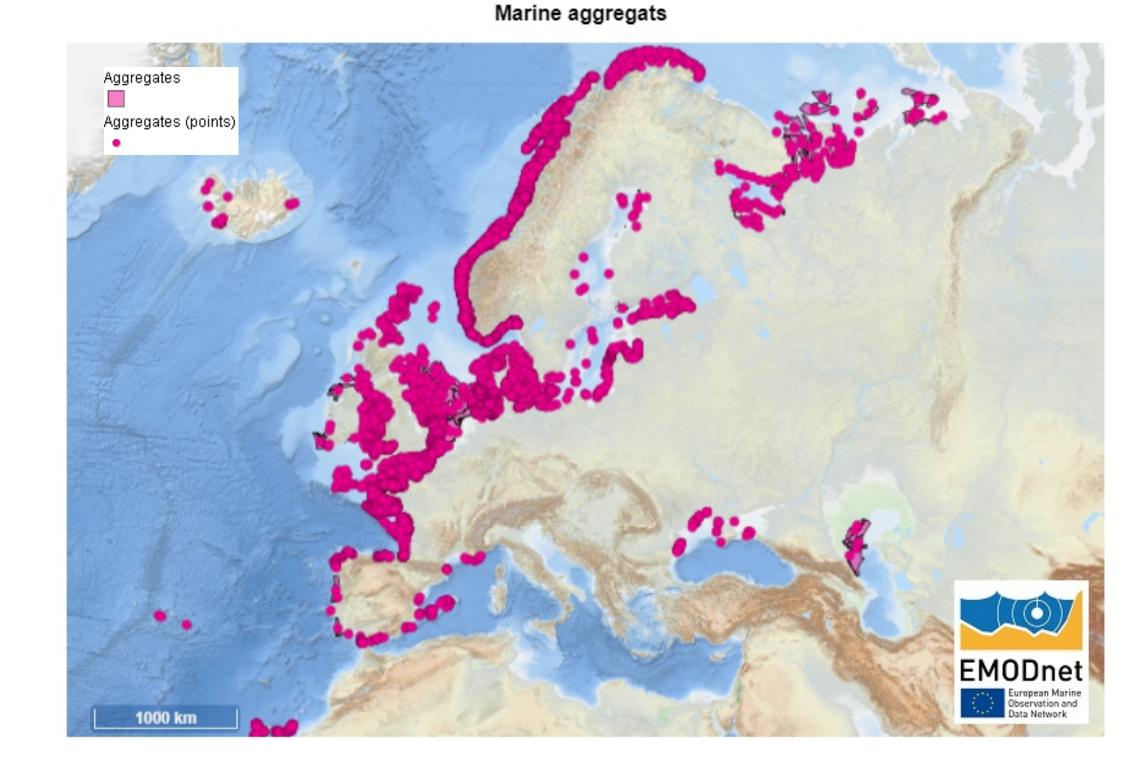
- 1. Geologian Tutkimuskeskus (GTK) Geological Survey of Finland - Lead
- 2. Geological Survey of Sweden (SGU)
- 3. Geological Survey of Norway (NGU)
- 4. Geological Survey of Denmark and Greenland (GEUS)

Pre-Quaternary Lithology & Faults



Geological events: Submarine landslides





Submerged landscapes, Paleocoastline



- 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 Mer 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)



The European Marine Observation and Data Network (EMODnet) is a longterm marine data initiative funded by the European Maritime, Fisheries and Aquaculture Fund (previously: European Maritime and Fisheries Fund). Current Contract: EASME/EMFF/2020/3.1.11/Lot2/SI2.853812_EMODnet – Geology