



EMODnet



European Marine
Observation and
Data Network

Your gateway to marine data in Europe

Update on EMODnet Geology data products and related initiatives

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The European Marine Observation and Data Network (EMODnet) is financed by the European Union under Regulation (EU) No 508/2014 of the European Parliament and of the Council of 15 May 2014 on the European Maritime and Fisheries Fund.

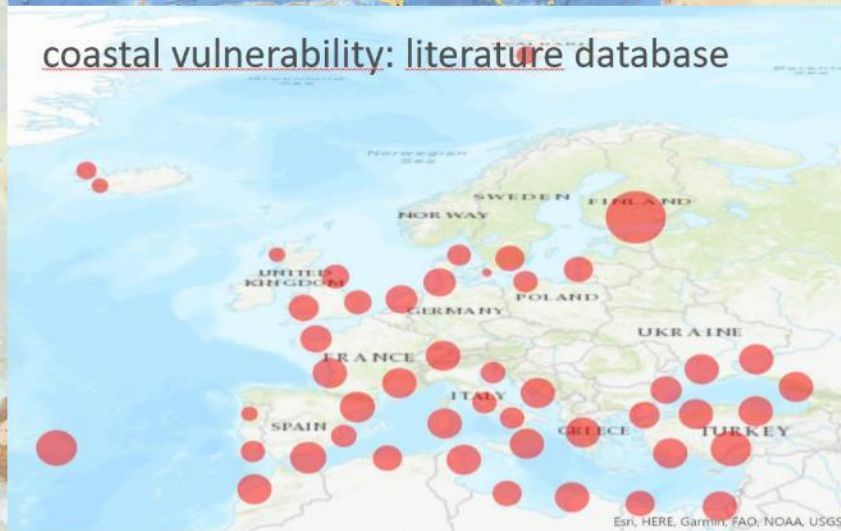
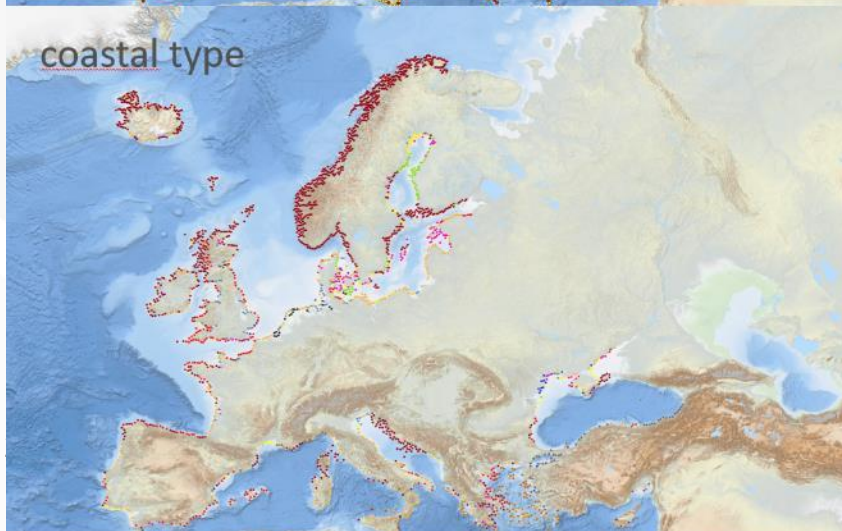
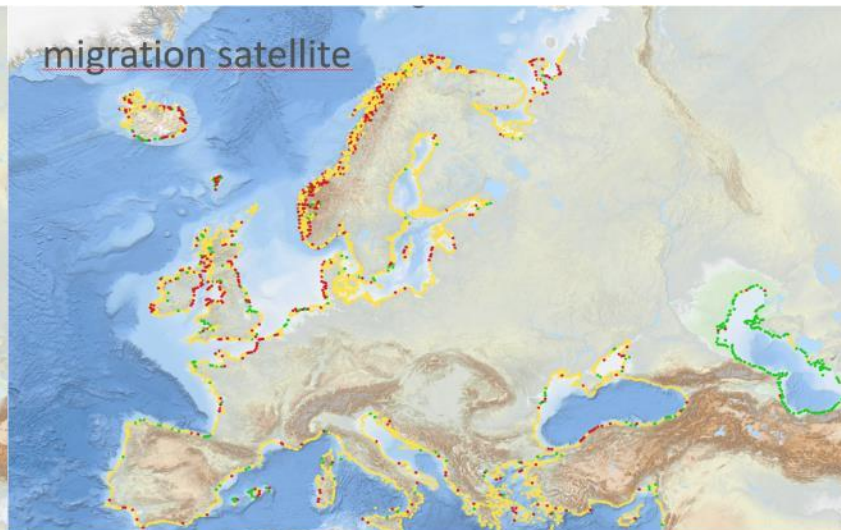


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Full-coverage and partial-coverage output – Russian data on shelf

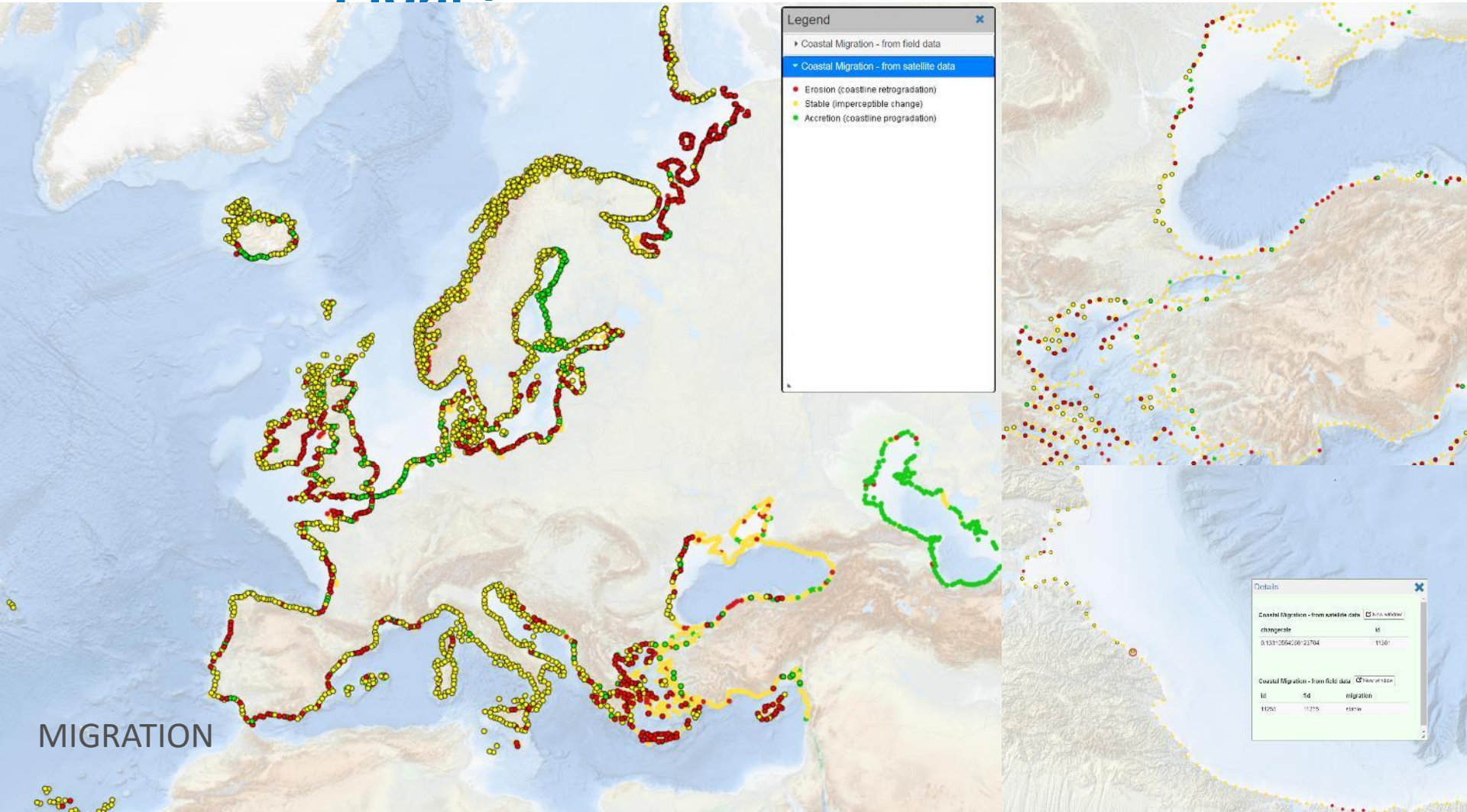




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QC complicated: finding balance between accuracy/precision and time period – use Lidar?

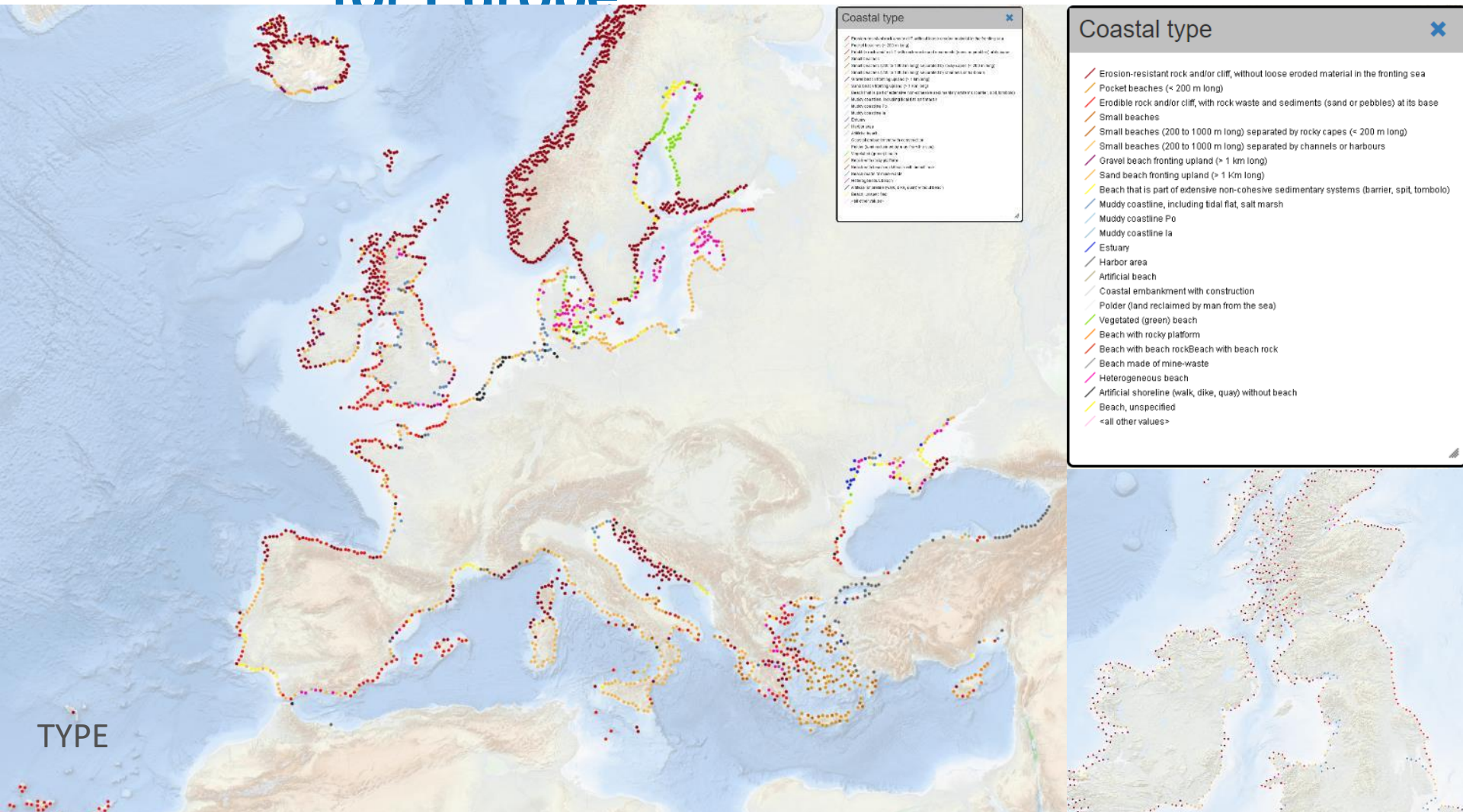




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Version 2 will be INSPIRE compliant, also embedded in Geological Service for Europe



Coastal type

- Pocket beaches (< 200 m long)
- Erodeable rock and/or cliff, without loose eroded material in the fronting sea
- Erodeable rock and/or cliff, with rock waste and sediments (sand or pebbles) at its base
- Small beaches
- Small beaches (200 to 1000 m long) separated by rocky capes (< 200 m long)
- Small beaches (200 to 1000 m long) separated by channels or harbours
- Gravel beach fronting upland (> 1 km long)
- Sand beach fronting upland (> 1 km long)
- Beach that is part of extensive non-cohesive sedimentary systems (barrier, spit, tombolo)
- Muddy coastlines, including tidal flat, salt marsh
- Muddy coastline Po
- Muddy coastline Ia
- Estuary
- Harbor area
- Artificial beach
- Coastal embankment with construction
- Polder (land reclaimed by man from the sea)
- Vegetated (green) beach
- Beach with rocky platform
- Beach with beach rock
- Beach with beach rock
- Beach made of mine-waste
- Heterogeneous beach
- Artificial shoreline (walk, dike, quay) without beach
- Beach, unspecified
- <all other values>

Coastal type

- Erosion-resistant rock and/or cliff, without loose eroded material in the fronting sea
- Pocket beaches (< 200 m long)
- Erodeable rock and/or cliff, with rock waste and sediments (sand or pebbles) at its base
- Small beaches
- Small beaches (200 to 1000 m long) separated by rocky capes (< 200 m long)
- Small beaches (200 to 1000 m long) separated by channels or harbours
- Gravel beach fronting upland (> 1 km long)
- Sand beach fronting upland (> 1 km long)
- Beach that is part of extensive non-cohesive sedimentary systems (barrier, spit, tombolo)
- Muddy coastlines, including tidal flat, salt marsh
- Muddy coastline Po
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- Estuary
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- Beach, unspecified
- <all other values>

TYPE



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Need for data to increase coverage beyond case studies (we're now adding FMOD-PACF)

VARIABLE	Ranking of coastal vulnerability index				
	Very low	Low	Moderate	High	Very high
Geomorphology	Rocky, cliffed coasts Fiords Fiands	Medium cliffs Indented coasts	Low cliffs Glacial drift Alluvial plains	Cobble beaches Estuary Lagoon	Barrier beaches Sand Beaches Salt marsh Mud Flats Deltas Mangrove Coral reefs
Coastal Slope (%)	>0.115	0.115 – 0.055	0.055 – 0.035	0.035 – 0.022	< 0.022
Relative sea-level change (mm/yr)	< 1.8	1.8 – 2.5	2.5 – 3.0	3.0 – 3.4	> 3.4
Shoreline erosion/accretion (m/yr)	>2.0 Accretion	1.0 – 2.0	-1.0 – +1.0 Stable	-1.1 – -2.0 Erosion	< -2.0
Mean tide range (m)	> 6.0	4.1 – 6.0	2.0 – 4.0	1.0 – 1.9	< 1.0
Mean wave height (m)	<0.55	0.55 – 0.85	0.85 – 1.05	1.05 – 1.25	>1.25

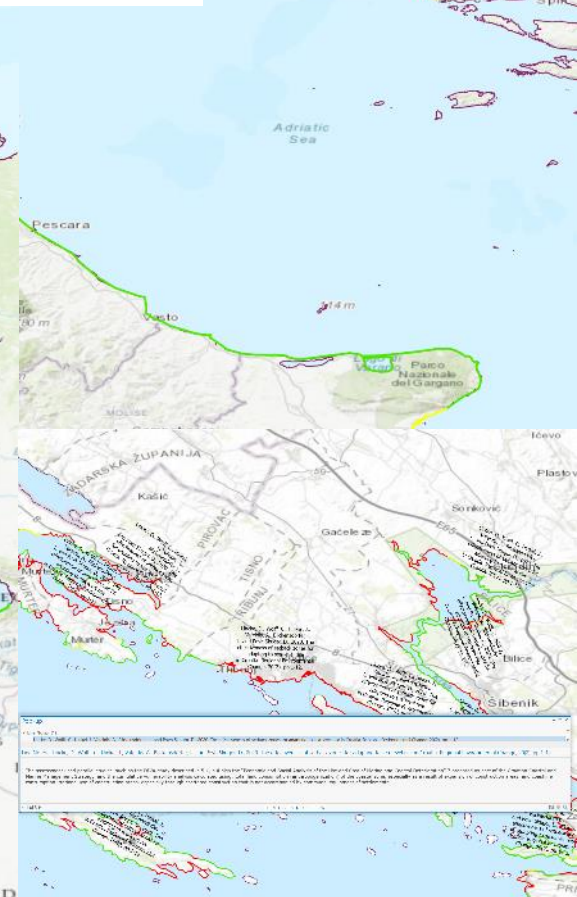
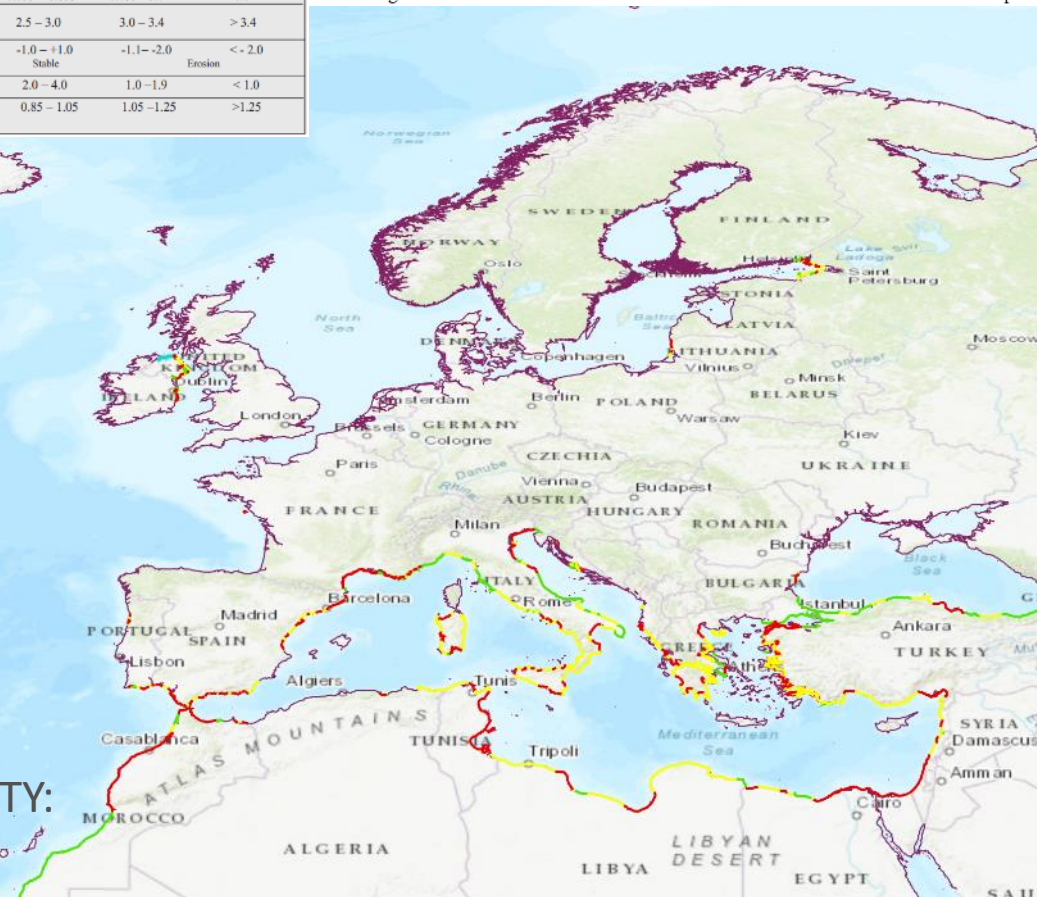
Annual tropical storm prob. (%)
Annual hurricane prob. (%)
Hurricane frequency-intensity index
Mean forward velocity (m/sec)
Annual mean no. extratropical cyclones
Mean hurricane surge (m)



Task 5.1 Coastal Vulnerability and Climate Change (lead: BRGM). Demonstrating how coastal vulnerability assessments and coastal adaptation to sea-level rise can be supported by geological and hydrogeological information, in combination with EMODNET, Copernicus Services and Space Geodesy, by: a) instigating a cluster of European sites concerned by concentrated pollutants and nutrients submarine and coastal groundwater discharge b) explaining and projecting spatiotemporal patterns of vertical ground motion in European coastal areas, and their contribution to relative sea-level changes; c) improving coastal vulnerability assessments addressing coastal evolution at decadal to centennial timescales and sea-level rise impacts.



**VULNERABILITY:
ONLINE EOY**





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Geology of coastal ribbon: inventory

Explanatory text concerning the Excel inventory used to get an overview of available coastal-ribbon data and data products

Sytze van Heteren , Kristine Asch, Andrea Fiorentino, Carlo Innocenti, Anu Kaskela, Simone Orefice, Heather Stewart

Context

In line with the tender specification on ensuring compatibility with terrestrial efforts at the sea-land interface, the EMODnet Geology consortium will broaden the scope of its coastal work. Aside from coastal behaviour, information on both the geology (age, lithology) and geomorphology of the coastal ribbon will be collated.

Main challenge: defining the extent of the coastal ribbon onland: how far inland do we go?