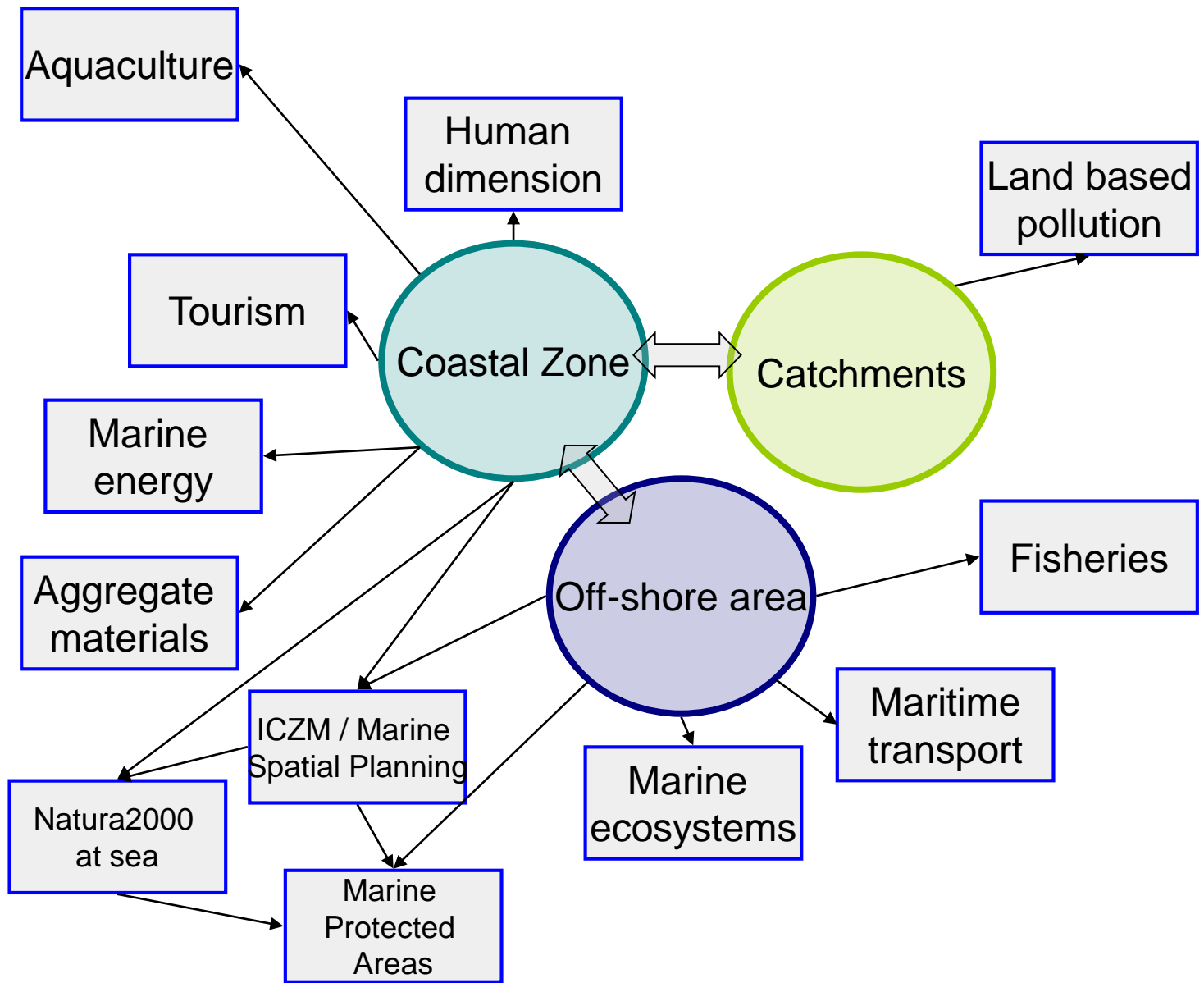


Statistical units for coastal accounts

Andrus Meiner, EEA

EEA expert workshop, 12 May 2011



Coastal accounts and ecosystem approach

Coasts as human ecosystems: Europe's coasts are result of interaction of human and natural processes

- Natural systems
 - River basins and coastal waters
 - Coastal sediment systems (cells)
 - Marine (sub)regions
 - Coastal ecosystems (broad scale types)
- Human systems
 - Coastal regions (statistical units)
 - Governance (coastal management plans)
 - Development and resource use (economic sectors)



Ecosystem approach in accounting practice

- **Data availability**

- Spatial data coverage to populate coastal units across sea/land interface
- Sufficient and balanced representation of human and natural coastal processes

- **Policy relevancy**

- Spatial management units use ecosystem-based approach
- Policy concepts and related reporting data flows

- **Methodology used for accounting**

- Spatial accounting units (data model) is adequately representing the reality
- Sound assumptions for models and frameworks for data integration

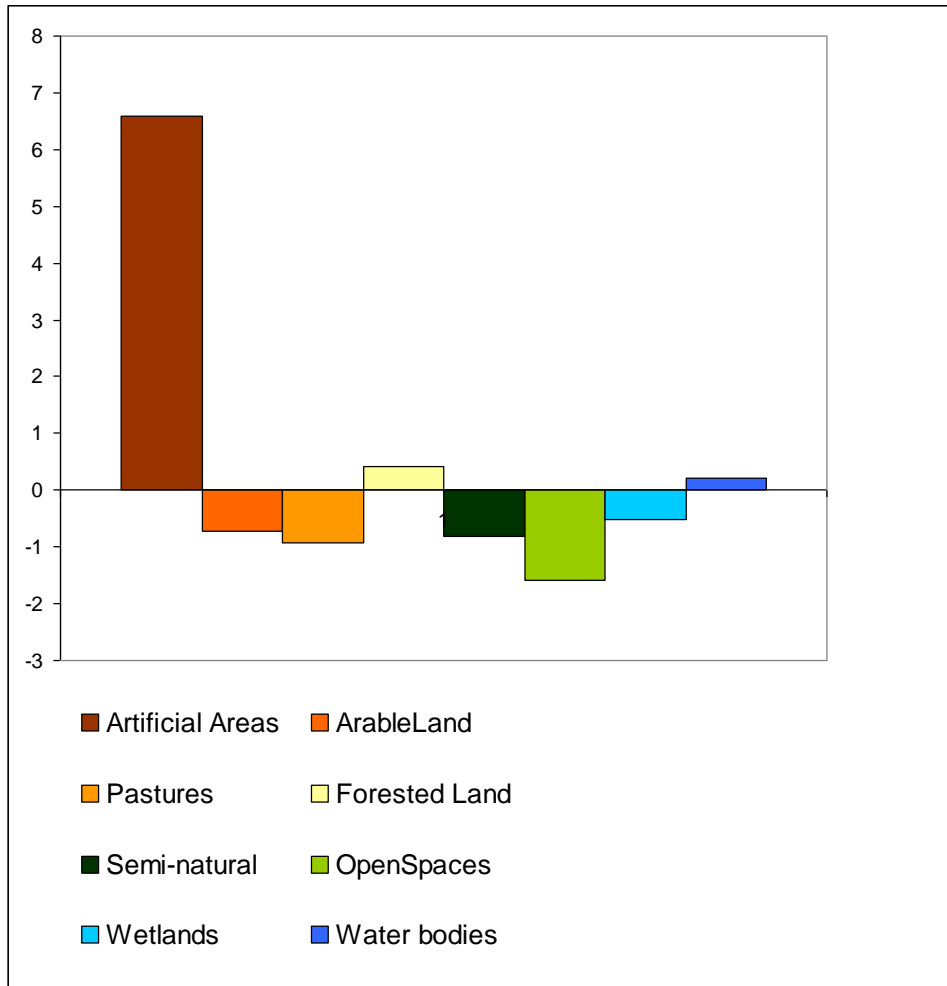
Spatially explicit accounting for ecological value and pressures

Modular approach

- expand from change in physical stocks to ecosystem functions and services
- broaden spatial extent from land to coastal waters and to the sea (TW, EEZ and High seas)



Land accounting in 10 km coastal zone



Net land cover change within the 0-10 km coastal zone 2000-2006 (preliminary results based on 15 MS)

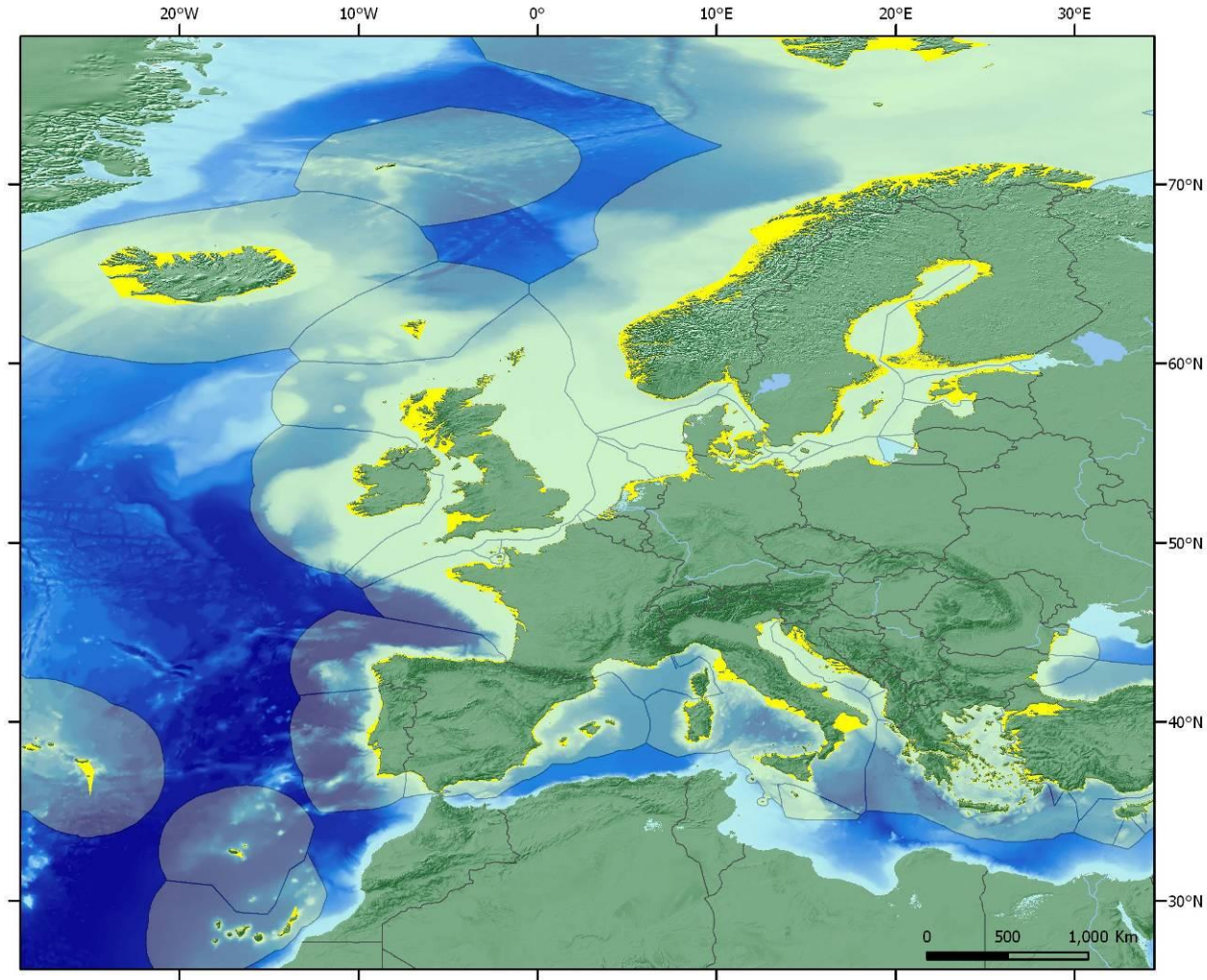
Proposal step 1

Starting with known e.g. coastal land

- Basic ingredients for delineation
 - **Coastal catchments** to address ecosystems integrity
 - **Dominant landscape types** for broad-scale ecosystems
 - **Elevation zones** to address vulnerability
- Keep in mind the need to assimilate data on
 - **human population density**
 - status of key **habitat types**
 - **socio-economic drivers**
 - governance perspective – **coastal management units**

Coastal waters and EEZ

Source: BIOMES - Marine Ecosystem Services, JRC/IES, contact Camino Liqueste



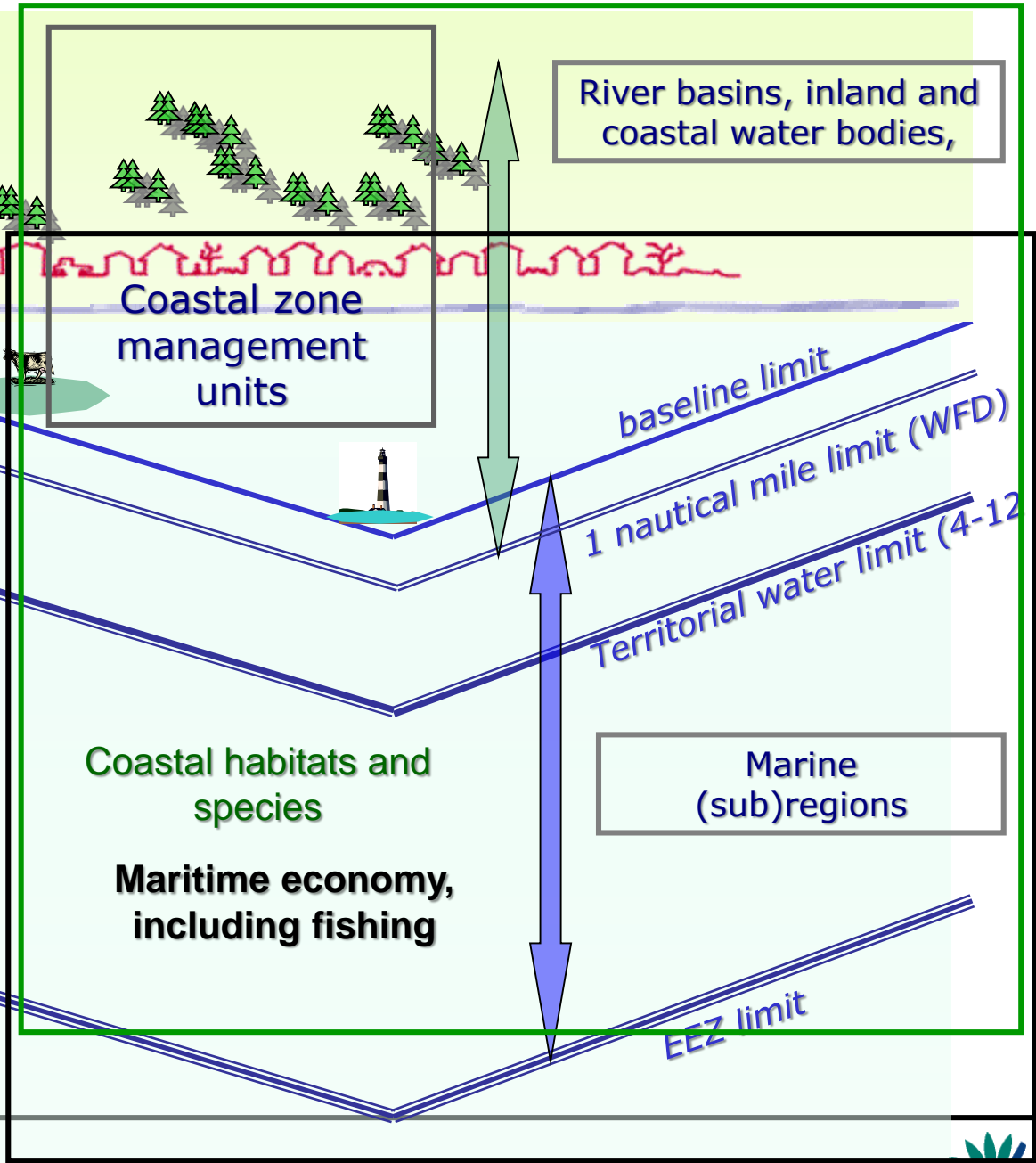
Proposal step 2

... continue to include the sea

- Starting point: coastal accounting units on land
 - Add coastal waters (e.g. WFD water bodies)
- Towards marine accounts
 - Add marine compartments / sub-regions
 - Use broad-scale seabed habitat types



GENERAL applicability of EU policy for delineation of coastal spatial units



Sub-basins and coastal waters

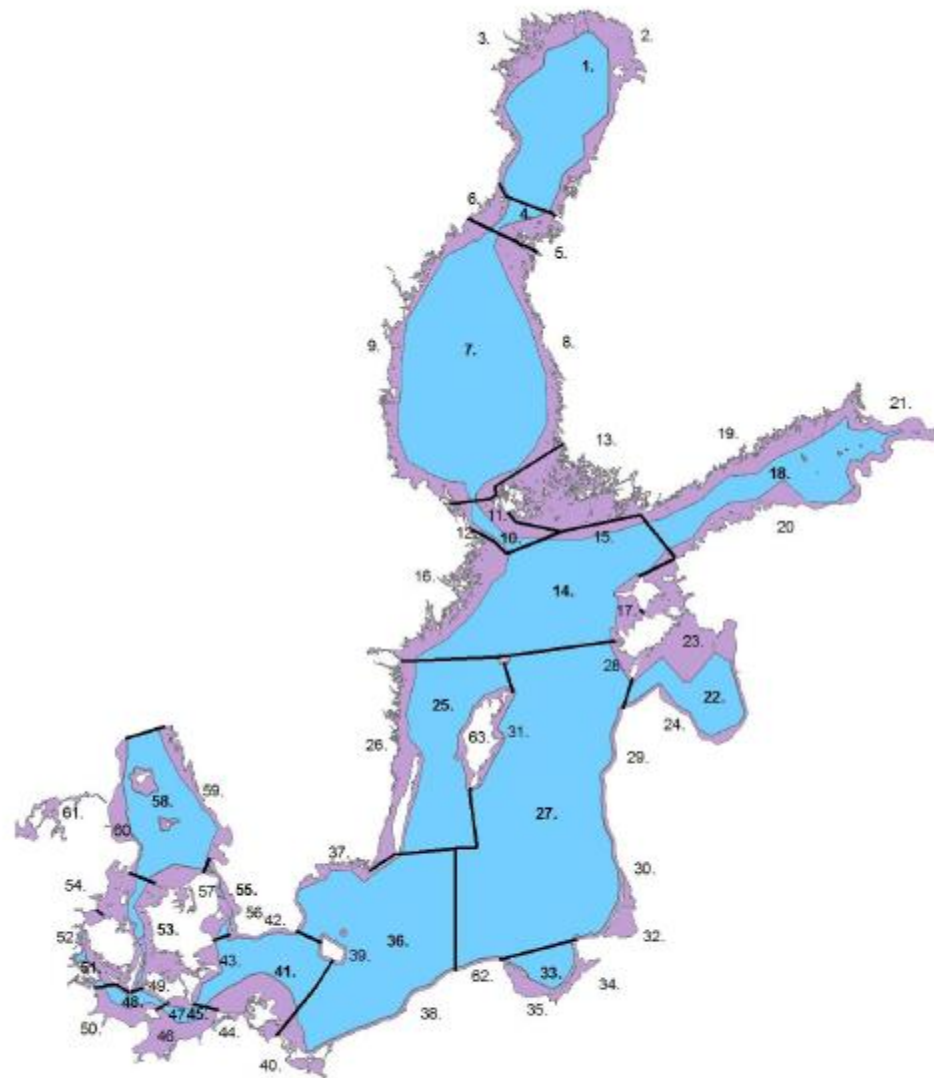


Figure 3. HELCOM sub-basins (black lines, numbers in bold) and coastal waters up to the baseline + 1 nautical mile (pink area). Coastal waters have been further divided to national coastal waters. Area names are given on the next page.

Coastal water types

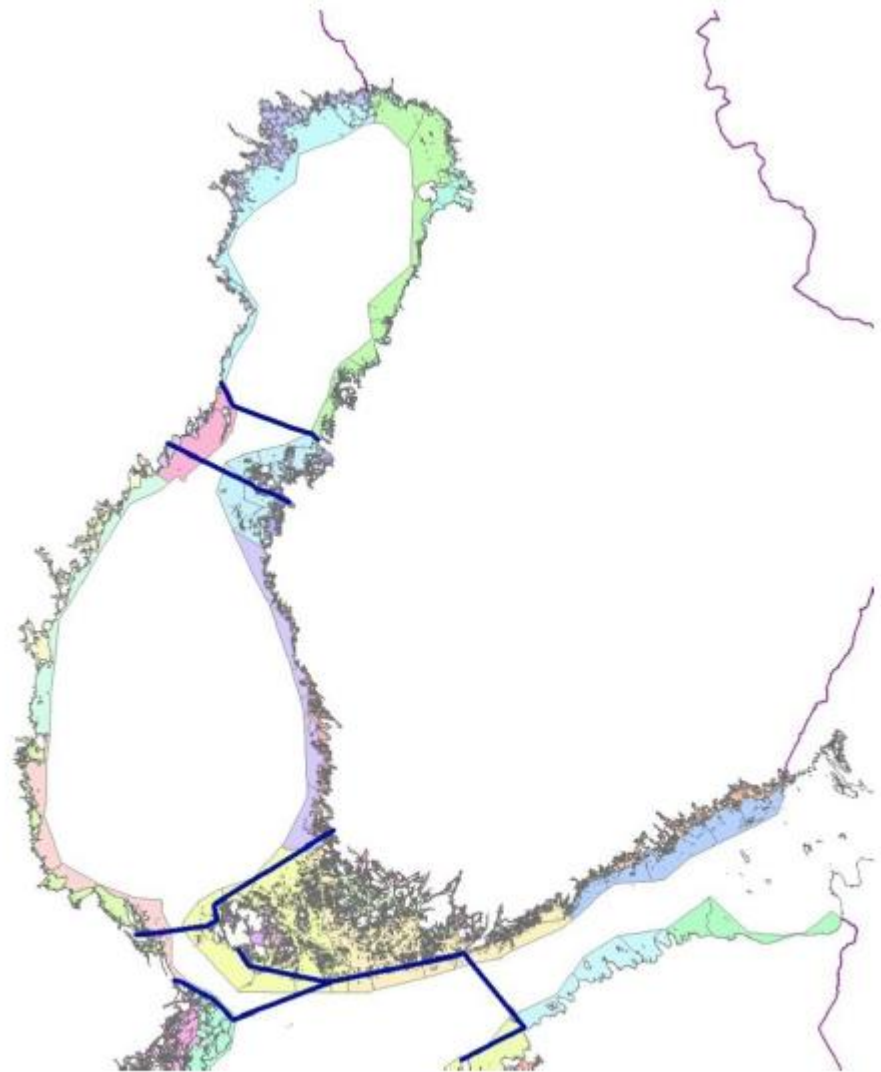
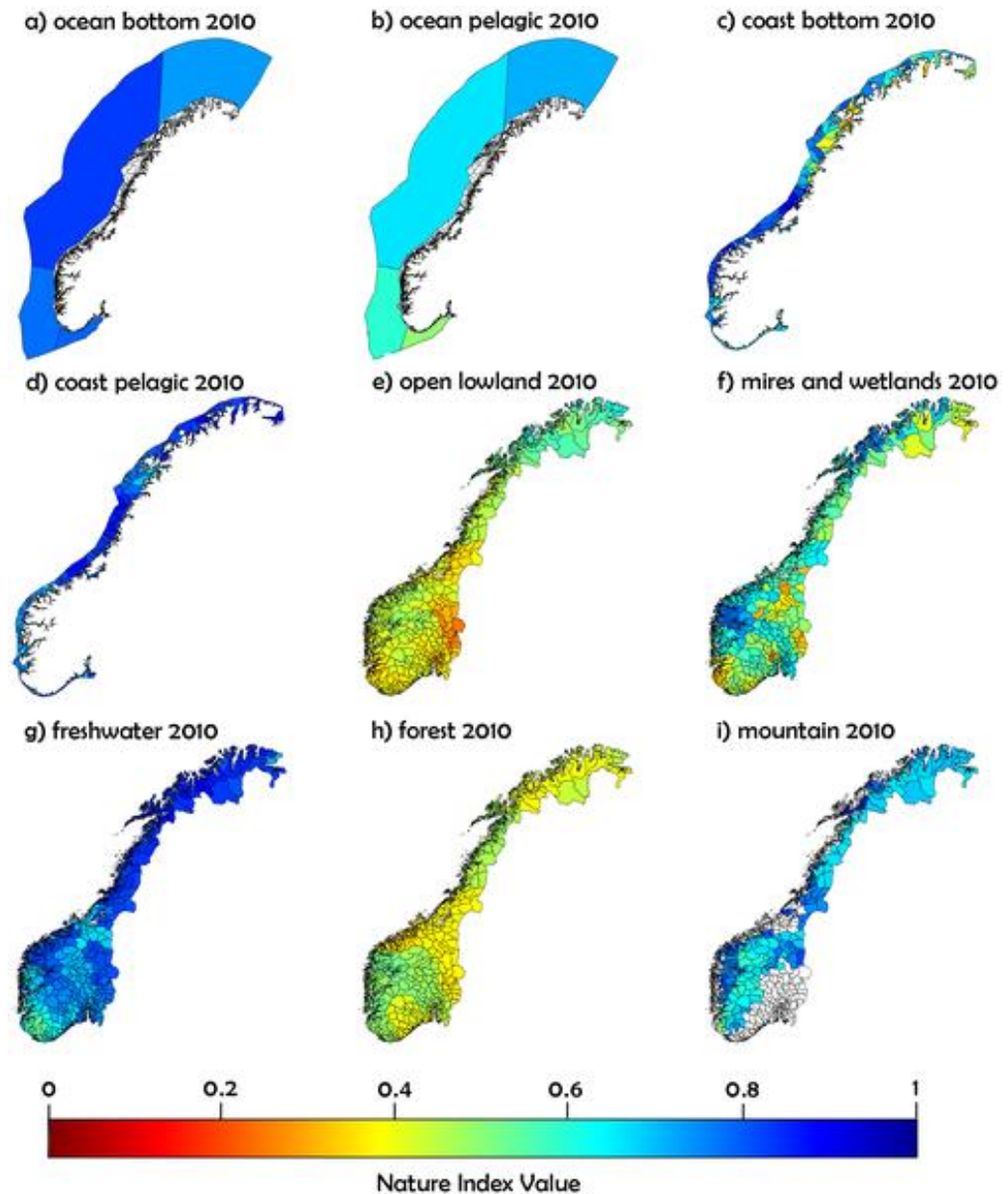


Figure 4. The northern HELCOM sub-basins (blue lines) and the water types of the EU WFD (coloured areas) in northern Baltic Sea.

Norway example: Nature Value Index framework

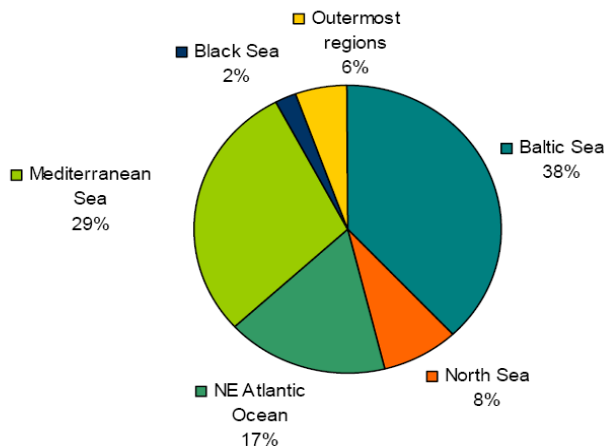


Annex – examples of coastal units

Socio-economic data

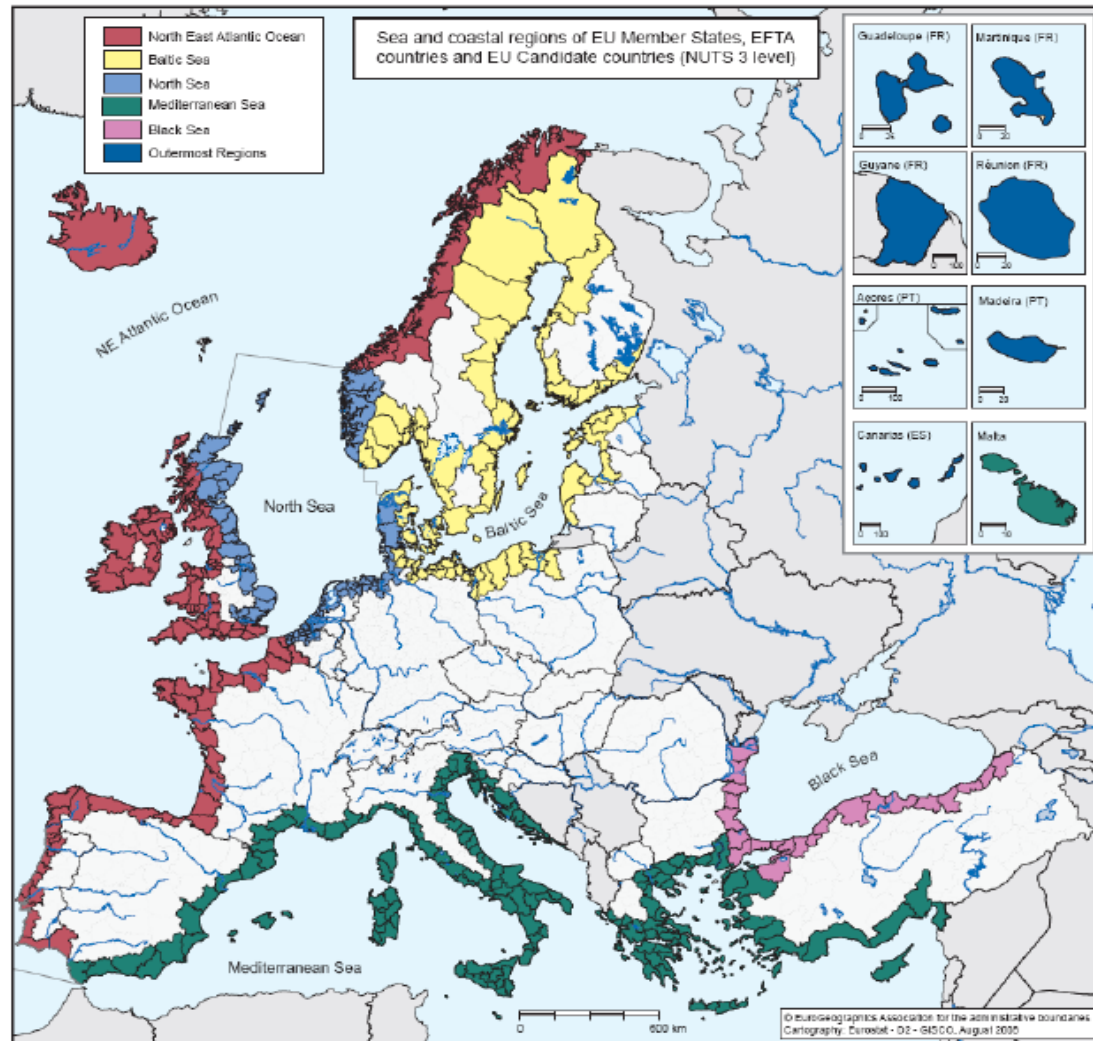
EUROSTAT Coastal regions of EU Sea basins

Relative size of sea basin catchments



Source: Eurostat, Regio database

Source: Eurostat, GISCO



Water legislation

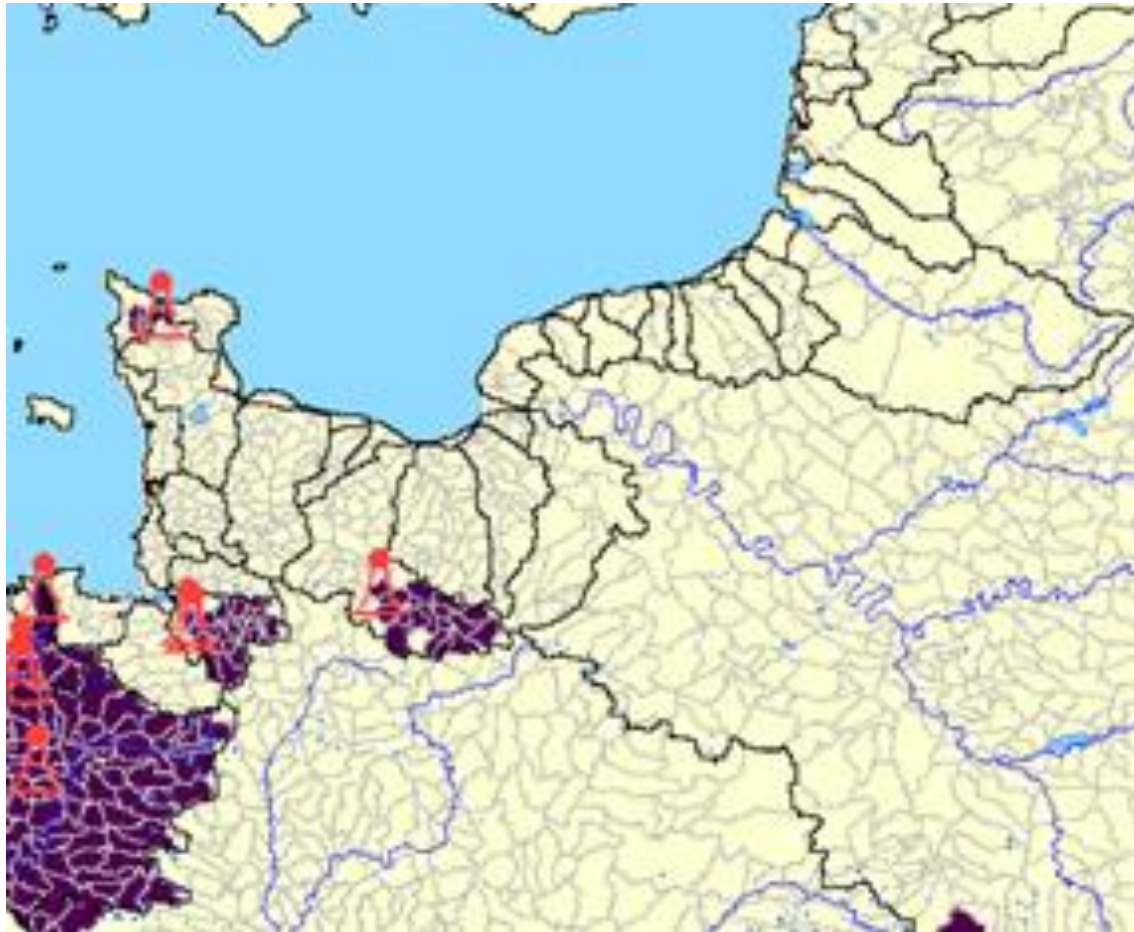
EU Water Framework Directive: River basin districts include a stretch of coastal water



Source: France's river basin districts boundaries courtesy Ministère de l'Écologie et du Développement Durable, Direction de l'Eau, 2004.

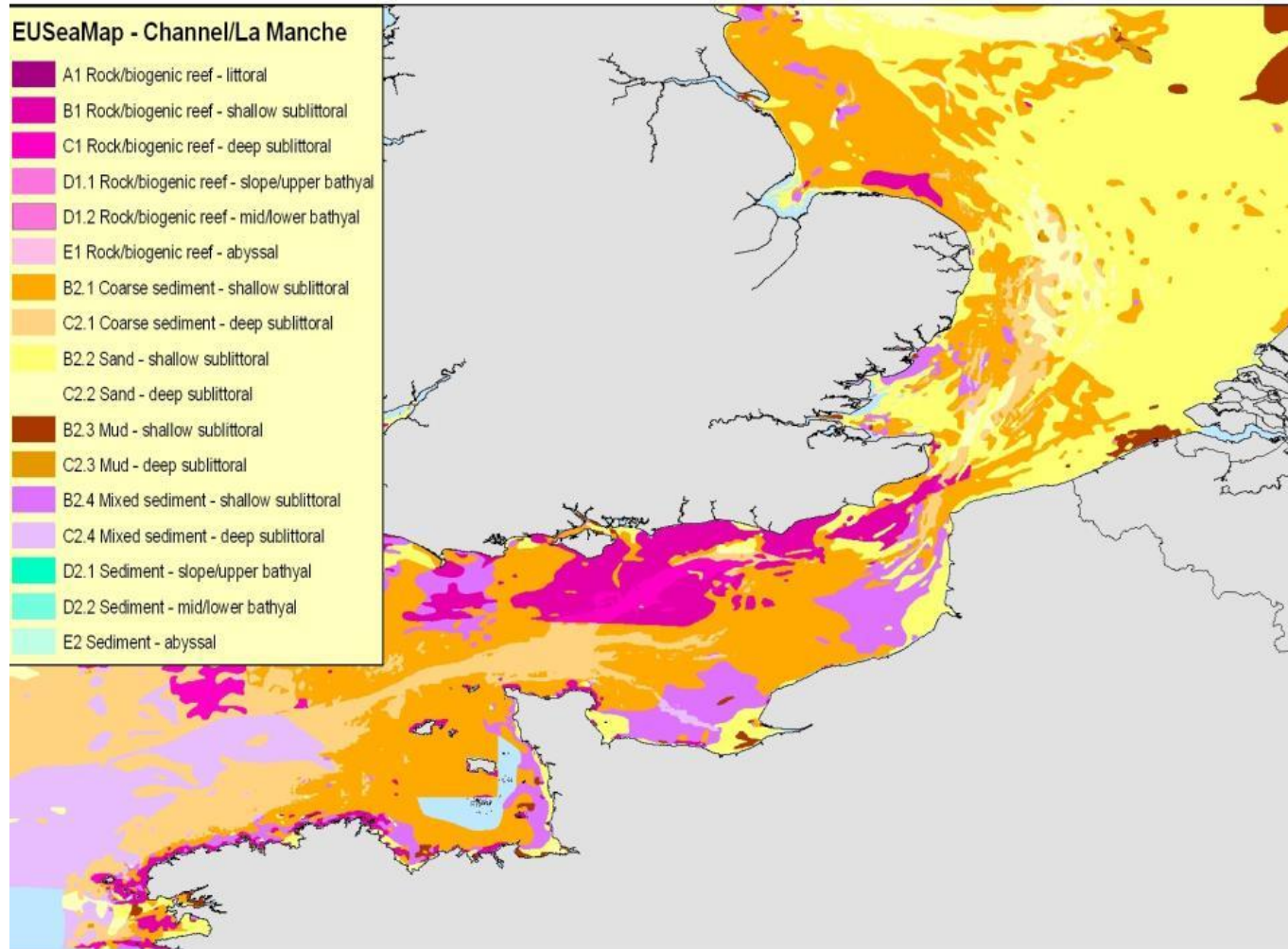
River catchments

Coastal catchments and lower courses of large basins



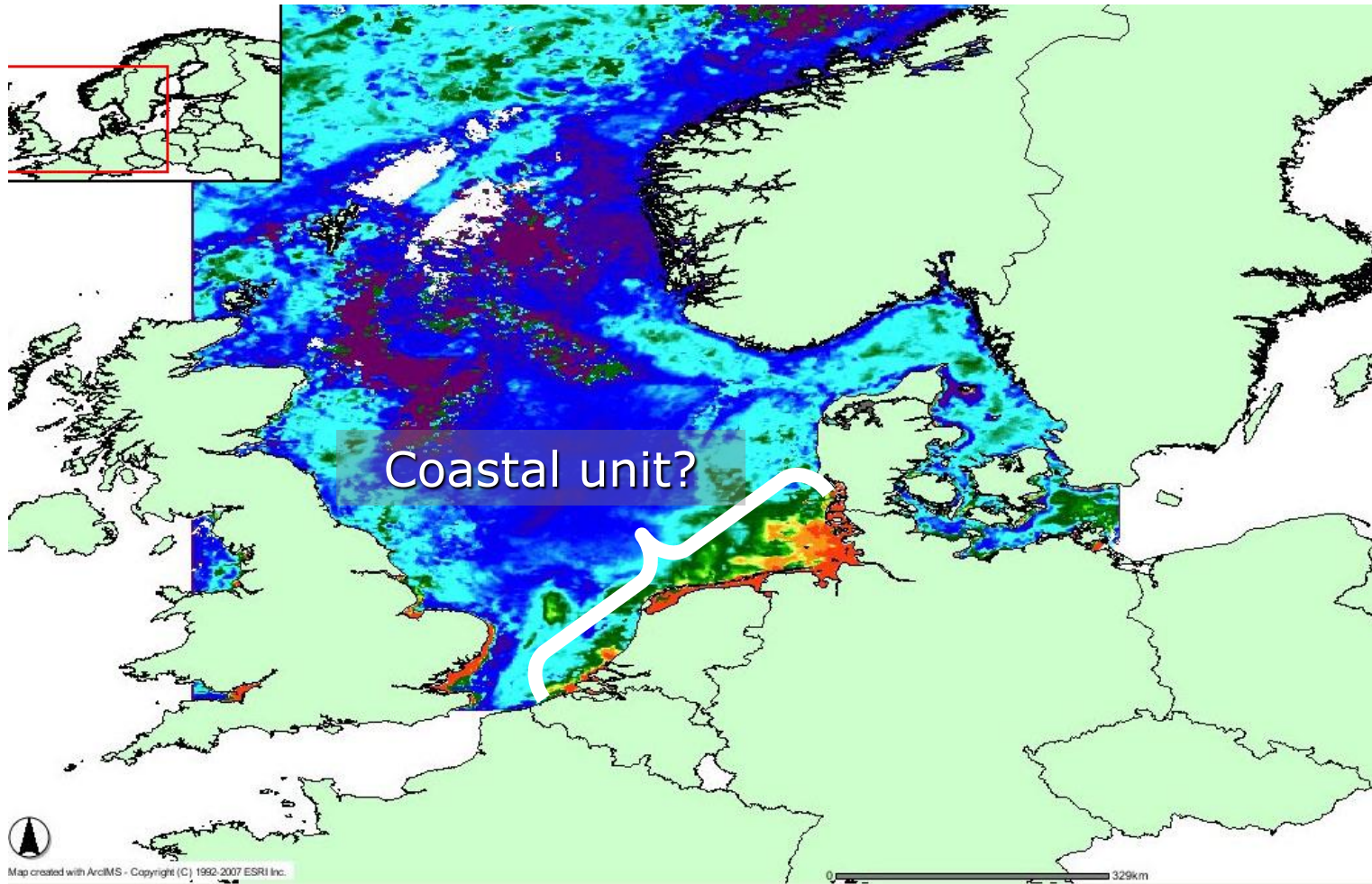
Seabed landscapes

Broad-scale seabed habitat maps (EMODnet / EUSeaMap)



Coastal water quality

Algal biomass distributions (GMES/MARCOAST MERIS data)

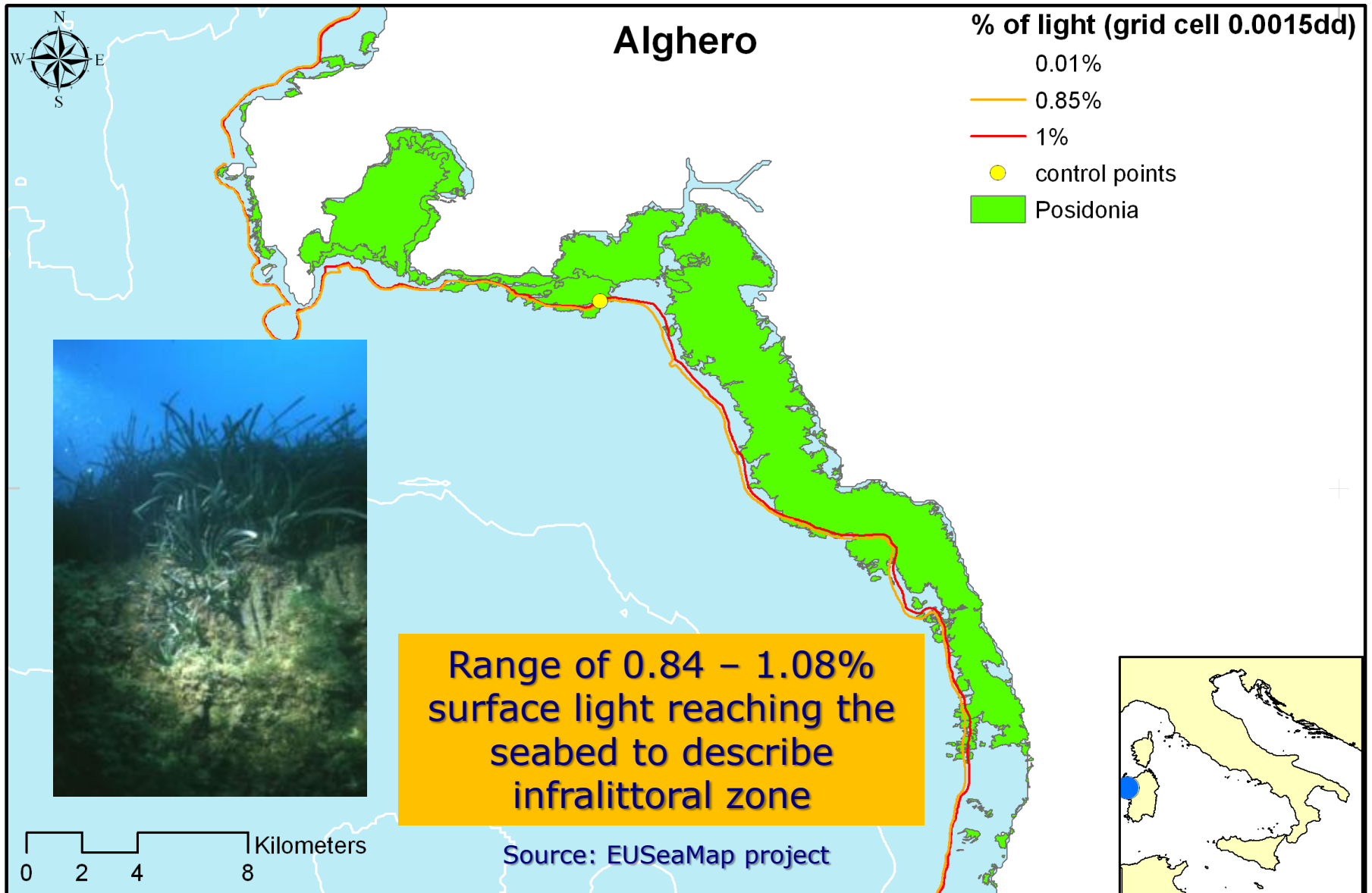


Coastal ecosystems

EU Habitats directive, status of coastal habitat types

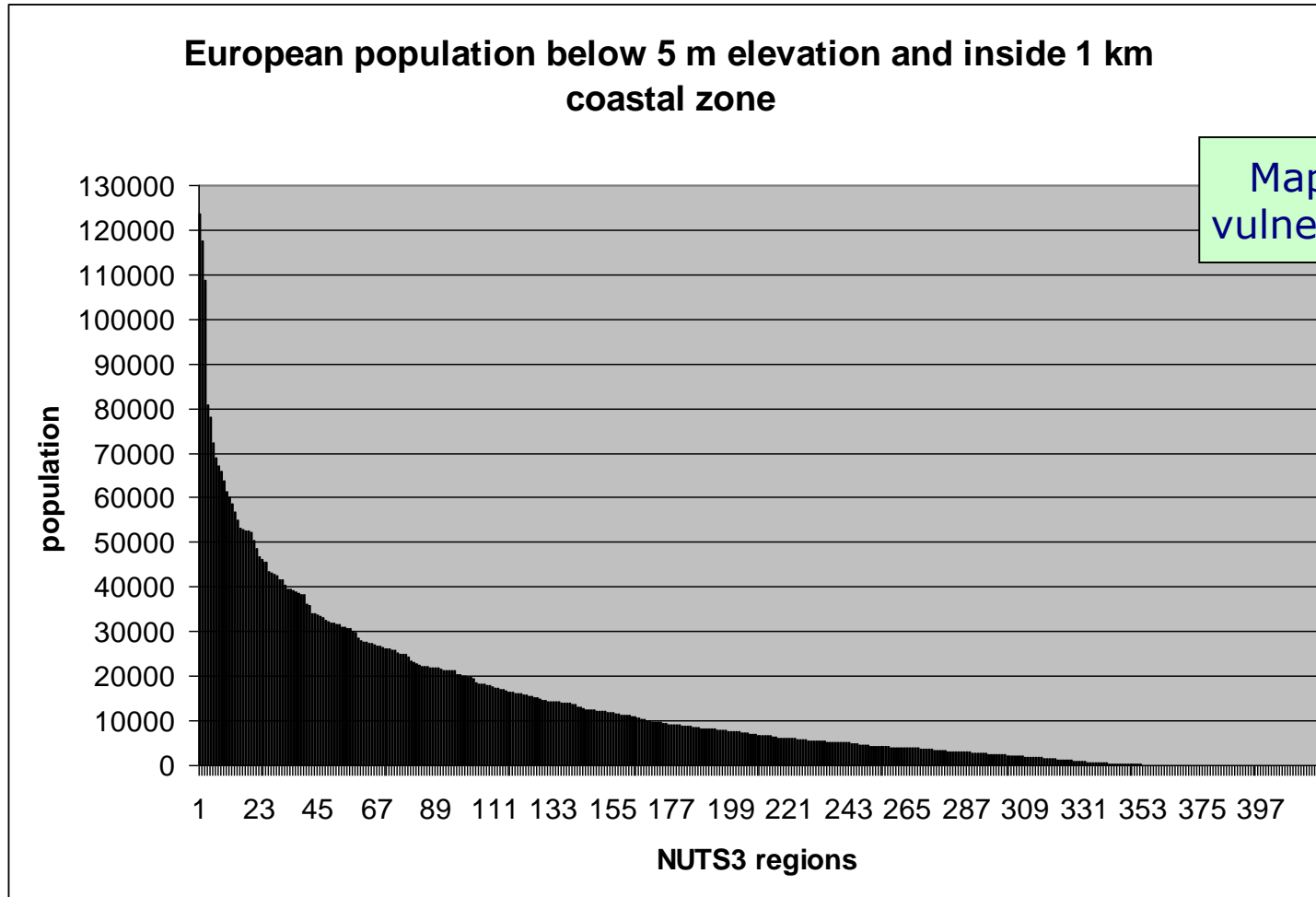
Coastal habitat type	Overall conservation status per biogeographical region				
	Baltic		Atlantic	Macaronesian	Mediterranean
	Boreal	Continental			
Sandbanks slightly covered by sea water all the time	Orange		Red	Grey	Data not available
Large shallow inlets and bays	Orange		Red	Green	Data not available
Coastal lagoons	Orange	Red	Red	Red	Red
Mudflats and sand flats not covered by seawater by low tide	Orange	Red	Red	Grey	Red
Estuaries	Red	Red	Red	Not occurring	Data not available
Reefs	Red		Grey	Green	Orange
Boreal Baltic islets and small islands	Green		Not occurring	Not occurring	Not occurring
<i>Posidonia</i> beds	Not occurring		Not occurring	Not occurring	Orange
Atlantic salt meadows	Red	Red	Orange	Not occurring	Orange

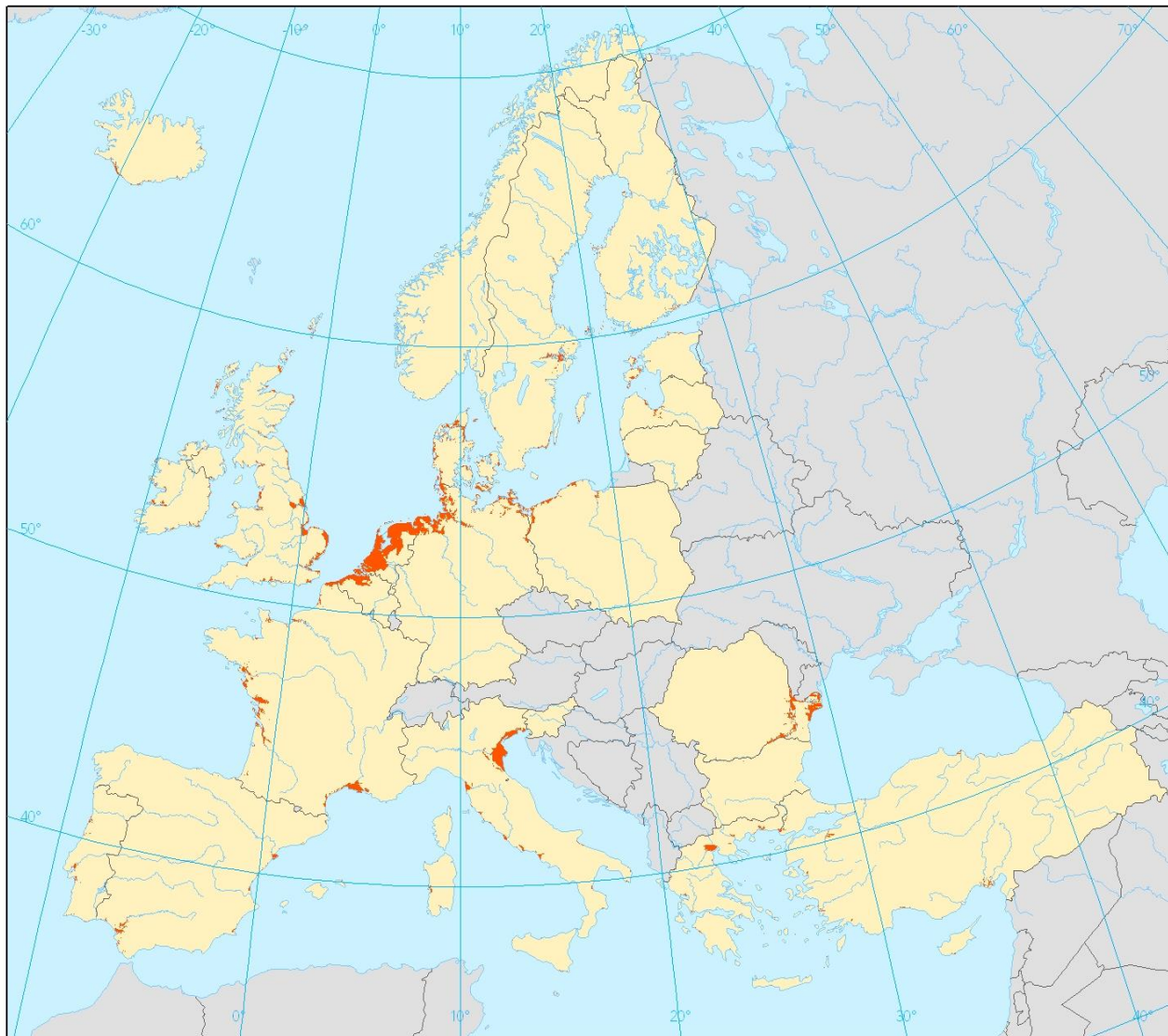
Lower limit of *Posidonia*



Zones of high risk

Elevation above sea level: coastal lowland





Lowland in coastal countries

 Below 5 m elevation

