

INSPIRE Data Themes of directly related to the Marine environment

Hydrography - Hydrographic elements, including **marine areas**.

Elevation - Digital elevation models for land, ice and ocean surface. Includes terrestrial elevation, **bathymetry** and **shoreline**.

Oceanographic geographical features – Physical conditions of oceans (currents, salinity, wave heights, etc.). – *As required in MSFD4_GeographicalAreasDescription and these are especially important in the coastal zone, which is the main geographical location at which they have a direct impact on human populations!*

Sea regions - *MSFD4_GeographicalAreasID - Physical conditions of seas and saline water bodies divided into regions and sub-regions with common characteristics.*

Geographical grid systems - Harmonised multi-resolution grid with a common point of origin and standardised location and size of grid cells. *Grid systems are key to reporting spatial data in the Marine Strategy Framework Directive for GES.*

Protected sites - Area designated or managed within a framework of international, Community and Member States' legislation to achieve specific conservation objectives. *Many protected sites exist in the near-shore marine environment + new drive for Marine Protected Areas offshore.*

Area management/restriction/regulation zones and reporting units – “Areas managed, regulated or used for reporting at international, European, national, regional and local levels. ... regulated fairways at sea ... areas for the dumping of waste, river basin districts ... and **coastal zone management areas.**” *Many waste dumping areas are located offshore, river basin districts extend into near-shore coastal waters, etc.*

Agricultural and Aquaculture facilities - *Near-shore and off-shore aquaculture facilities will almost certainly have far different data needs (features, location grids, etc.) than on-shore farming.*

Environmental monitoring facilities - *Marine environmental monitoring is the primary focus of MSFD for establishing GES.*

Natural risk zones - *Coastal flood plains are an obvious ‘risk zone’ for which various combinations of data are needed for planning, monitoring and mitigation, e.g. DTMs, bathymetry, meteorological models, etc.*

Bio-geographical regions - Areas of relatively homogeneous ecological conditions with common characteristics.

Habitats and biotopes - Geographical areas characterised by specific ecological conditions, processes, structure, and (life support) functions that physically support the organisms that live there. Includes **terrestrial and aquatic areas** distinguished by geographical, abiotic and biotic features, whether entirely natural or semi-natural.

Species distribution - Geographical distribution of occurrence of animal and plant species aggregated by grid, region, administrative unit or other analytical unit. *[Species distribution in the marine and coastal environment is not only an important topic, but one that is the focus of various national, regional and international biodiversity laws and conventions.]*

Energy resources – “... including depth/height information on the extent of the resource”. *[Offshore and near-shore windfarms?]*

Mineral resources - *Mineral abstraction is another coastal and off-shore process that has can have serious negative impact on coastal regions.*

INSPIRE Data Themes of with indirect links to the Marine environment

Coordinate reference systems - Systems for uniquely referencing spatial information in space as a set of coordinates (x, y, z) and/or latitude and longitude and height, based on a geodetic horizontal and vertical datum. *[What about off-shore and near-shore vertical datums pertinent to coastal information?]*

Land cover - Physical and biological cover of the earth's surface including artificial surfaces, agricultural areas, forests, (semi-) natural areas, wetlands, water bodies. *[Terrestrial land cover often has a direct impact on health and use of coastal zones, as is especially true for coastal wetlands and water bodies located near to the coast. Also important is the definition of a ‘water body’.]*

Geology - Geology characterised according to composition and structure. Includes bedrock, aquifers and geomorphology. *[What about coastal geomorphology?]*

Land use - Territory characterised according to its current and future planned functional dimension or socio-economic purpose (e.g. residential, industrial, commercial, agricultural, forestry, recreational). *[Many of these types of ‘land use’ directly or indirectly impact on, or occur in, the coastal zone.]*

Human health and safety - Geographical distribution of dominance of pathologies (allergies, cancers, respiratory diseases, etc.), information indicating the effect on health (biomarkers, decline of fertility, epidemics) or well-being of humans (fatigue, stress, etc.) linked directly (air pollution, chemicals, depletion of the ozone layer, noise, etc.) or indirectly (food, genetically modified organisms, etc.) to the quality of the environment. *[Pathogens occurring off-shore, for example in shell fish, have a direct impact on ‘health and safety’, as does general coastal water pollution.]*

Utility and governmental services - Includes utility facilities such as sewage, waste management, energy supply and water supply, administrative and social governmental services such as public administrations, civil protection sites, schools and hospitals. *[All of the underlined facilities have coastal implications when the facilities occur in coastal zones.]*

Production and industrial facilities - Industrial production sites, including installations covered by Council Directive 96/61/EC of 24 September 1996 concerning integrated pollution prevention and control and water abstraction facilities, mining, storage sites. *[Pollution prevention and control is a serious issue for many coastal regions and*

managers, especially where heavy industry or dense population centres are situated near to coastlines.]

INSPIRE Data Themes relevant in the coastal zone

Geographical names - Names of areas, regions, localities, cities, suburbs, towns or settlements, or any geographical or topographical feature of public or historical interest. [*Of concern here should be ensuring that geographical names can be attached to relevant boundaries, even where the named region occurs offshore, i.e. where land-based boundary descriptive means may not apply.*]

Administrative units - Units of administration, dividing areas where Member States have and/or exercise jurisdictional rights, for local, regional and national governance, separated by administrative boundaries.

Addresses - Location of properties based on address identifiers, usually by road name, house number, postal code.

Cadastral parcels - Areas defined by cadastral registers or equivalent.

Transport networks - Road, rail, air and water transport networks and related infrastructure. Includes links between different networks.

Orthoimagery - Geo-referenced image data of the Earth's surface, from either satellite or airborne sensors.

Statistical units - Units for dissemination or use of statistical information.

Buildings - Geographical location of buildings.

Soil - Soils and subsoil characterised according to depth, texture, structure and content of particles and organic material, stoniness, erosion, where appropriate mean slope and anticipated water storage capacity.

Population distribution - demography - Geographical distribution of people, including population characteristics and activity levels, aggregated by grid, region, administrative unit or other analytical unit.