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7.17 *Bio-geographical regions*

Definition:

(INSPIRE, 2007) Areas of relatively homogeneous ecological conditions with common characteristics.

Description:

Data component description:

Bio-geographical regions show the extent of areas with common characteristics, usually based on climatic, topographic and geobotanical information. Thus the bio-geographical regions show areas with relatively homogeneous ecological conditions. Included in this theme is vegetation map data. The determination of structure and composition of the vegetation is based essentially on stands of ecosystems and their correlation with particular site conditions, commonly based on plant-sociological classification. Vegetation can be mapped either as actual/existing or potential vegetation cover. The classification of potential vegetation depicts the potential distribution of the main natural plant communities. The mapping is based essentially on remaining stands of natural or near-natural ecosystems corresponding to the actual climatic and edaphic conditions. Several high-level data exists for Pan-European level, large-scale data with fragmented systems, resolution and coverage.

Once produced, the bio-geographical data and potential vegetation map data potential vegetation maps are relatively stable and regarded as reference data/maps. Mapping of existing vegetation at local level needs to be updated to depict changes in vegetation.

- **Nomenclature:** The high-level and pan-European data follow agreed nomenclatures. Concerning local and regional data, there exist a broad variety of nomenclatures, e.g. in vegetation mapping.
- **Span in accuracy:** Bio-geographical regional data commonly small-scale data, e.g. in 1: 1 mill or smaller. Vegetation data are commonly more detailed, at local level medium precision data, 1: 50.000 or better. Common scales used are 1:25.000 and 1: 10.000.
- **Clarification about definition, boundary to other INSPIRE themes:** Boundary between land cover and bio-geographical regions.

Scope, use examples:

The data are used for comparisons and assessments of biodiversity and conservation, at international, national even regional levels. Data in the form of detailed data are being used in land management and local land use planning. The European Bio-geographical regions are used for Natura 2000 national proposals validations, which are performed for whole regions.

Knowledge about the extent of local and regional biogeographical regions, e.g. in the form of vegetation maps, may be used to identify climatic, topographic or geological characteristics, as there is a correlation between certain species and such factors. Looking at geology, it is one of the important factors conditioning biodiversity, either directly (moss, lichen, plants directly developing on bare, weathering rock) or indirectly, via soil and the geology derived major and trace elements it contains. Vegetal biotopes are quite frequently strictly correlated to the existence of subjacent acidic, calcareous or ferro-magnesian (basaltic, ophiolitic for instance) rocks. There are even very element specific plants such as *Armeria maritima* ssp. *halleri* that is one of the few plants that develops on zinc reach soils, making it a very useful indicator for oxydised zinc deposits exploration in Western europe. The survey of vegetal communities is a precious tool for geological mapping. Geobotany is a scientific speciality (see for instance: <http://www.cstars.ucdavis.edu/papers/html/ustinetal1998b/>).

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Vegetation – potential vegetation

- Classification system/ nomenclature
- Name of class
- Code of class
- Date of last verification
- Source

Example data:

- **Bio-geographical regions** Europe is divided into eleven broad bio-geographical zones. The data is a polygon data set with the major bio-geographical regions. The boundaries should be considered to be ambiguous as they are generalisations that have been fit with political boundaries. Scale 1: 10 mill
- **Potential vegetation** The determination of structure and composition of the potential natural vegetation is based essentially on remaining stands of natural or near-natural ecosystems and their correlation with particular site conditions. The classification of natural (potential) vegetation depicts the potential distribution of the main natural plant communities corresponding to the actual climatic and edaphic conditions. Harmonised pan-European data exists, scattered data with a variety of classification systems exist at lower levels. Coverage: Pan-European: Existing dataset in small scale.
- **Ecological regions** [Digital Map of European Ecological Regions](#)
The Digital Map of European Ecological Regions DMEER- delineates and describes ecological distinct areas in Europe, on the basis of updated knowledge of climatic, topographic and geobotanical European data, together with the judgement of a large team of experts from several European nature related Institutions and the WWF. The objective of the map of ecological regions in Europe is to show the extent of areas with relatively homogeneous ecological conditions, within which, comparisons and assessments of different expressions of biodiversity are meaningful. Coverage: Pan-European: Existing dataset in small scale.
- The bio-geographical regions for the European Seas are not finally agreed on. To date various models from the EEA, ICES and OSPAR/HELCOM are discussed and have to be added after designation.

Important feature types and attributes:

Bio-geographical/ ecological region

- Classification system/ nomenclature
- Name of class
- Code of class
- Date of last verification
- Source

Links and overlaps with other themes:

Bio-geographical regions may link with biodiversity themes such as the INSPIRE themes Species distribution, and Habitats and biotopes, but may also link to the themes Land cover, Geology, Soil, Mineral resources and Area management/ restriction/ regulation zones and reporting units.

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Reference documents:

CNIG: Annexe 5 – Liste des données géographiques de référence en domaine littoral (France)

European Biogeographical regions

<http://dataservice.eea.eu.int/dataservice/metadetails.asp?id=308>

European Community Biodiversity Clearing House Mechanism

<http://biodiversity-chm.eea.eu.int/>

Geobotany: <http://www.cstars.ucdavis.edu/papers/html/ustinetal1998b>

<http://www.plant-talk.org/country/europe.html>

Karte der natürlichen Vegetation Europas/Map of the Natural Vegetation of Europe. U. Bohn, G. Gollub, H. Hettwer, Z. Neuhäuslová, T. Raus, H. Schlüter & H. Weber. 2004. Landwirtschaftsverlag, Münster. Interactive CD-ROM at scale of 1:2,500,000 with explanatory text (in German and English), legend and maps. The project headed by the Bundesamt für Naturschutz, Germany, started in 1979 with more than 100 participating scientists from 31 European countries.

LÖBF: OSIRIS-Datenmodell (Germany)

NATURE-GIS Guidelines: Data Infrastructure for Protected Areas. Editor: Ioannis Kannelopoulos (EC – JRC) with the support of GISIG and the contribution of the NATURE-GIS Partners.

Norwegian feature catalogue and standards

O. Polunin & M. Walters. 1985: A guide to the vegetation of Britain and Europe.. Pp. 238. Oxford University Press.

The Diversity of European Vegetation. An overview of phytosociological alliances and their relationships to EUNIS habitats. J.S. Rodwell, J.H.J. Schaminée, L. Mucina, S. Pignatti, J. Dring & D. Moss. 2002. EC-LNV. Report EC-LNV nr 2002/054, Wageningen.

Vegetation Mitteleuropas mit den Alpen in ökologischer, dynamischer und historischer Sicht. H. Ellenberg, 5th edition, 1996. Ulmer, Stuttgart. [Standard work on the vegetation of central Europe but also of value elsewhere; earlier version is available in English from Cambridge University Press as 'Vegetation Ecology of Central Europe' (1988)]

Végétation du Continent Européen. P Ozenda. 1994. Pp. 271. Delachaux et Niestlé, Switzerland.