## *7.18 Habitats and biotopes*

**Definition:**

(INSPIRE, 2007) 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.

**Description:**

The "Habitats and biotopes" category of spatial data defined in the INSPIRE Directive is one of several themes in a wider grouping of biological organisms and biological communities - biodiversity. Includes habitats and biotopes as areas and their boundaries. Common to all spatial data that falls under this category is characterisation of the distribution of geographical areas being functional areas for living organisms, biotopes being the spatial and biotic environment of a biotic community/biocoenosis, while habitats being the spatial environment of specific species.

Both climatic, geological, chemical and biological conditions affect distribution of species and communities, thus distribution and conditions of habitats and biotopes. Some species have strict specific requirements to the environment, while others are accepting broad ranges in environmental conditions. Thus biotopes and habitats may vary broadly between different organisms. Some species changes biotopes throughout the year, by changes in seasons or due to migration. Some biotopes/habitats are depending on management, e.g. all kinds of cultural landscapes. Time series in mapping may be used to identify changes in biotopes/habitats.

Description of living areas for any kind of biota, usually used as a term for describing areas used by zoo-biota. Habitats commonly follow geobotanical/ bio-geographical regions/ vegetation types. In rough terms land cover classes and vegetation classes represent terrestrial habitats. Habitats can also be described at more detailed levels e.g. hedgerows, creeks etc. At sea differences in temperature, salinity, current, depth, topography, seabed geology or sediment conditions may form different habitats. Habitats and biotopes data can be made both by mapping in the field, remote sensing and aerial photography interpretation or modelling.

Different documents and communities follow different definitions for habitats and biotopes. An example is the Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora. EUNIS has been developed as an international nomenclature for habitats. Different countries or communities have different classification systems. There may be difficulties in mapping accurately certain habitat classes between national nomenclatures and also between national and European nomenclatures. To find common European definitions and nomenclatures need to take into account both national systems and the different definitions used by international communities.

Habitats and biotopes does only include areas represented by natural boundaries and classified according to their ecological or physical condition. Habitats and biotopes being designated as protected sites is not included, they fall under another category of INSPIRE themes, namely "Protected sites", as these represent administrative area regulation and not ecologically founded boundaries.

The terms natural or semi-natural needs clarification, artificial landscapes being habitats (cultural landscapes like town areas, cultivated land, orchards, pastures etc) may be defined to be out of the scope of the theme.

**Scope, use examples:**

Assessment of changes in landscape and effects of wildlife and plant life. Linked to Habitats Directive. The habitats designated to the Directive are mentioned in the “area regulation” data component.

A selection of valuable habitats have been designated according to the Habitats and Birds Directives. In the marine environment a selection of valuable habitats have also been designated according to the OSPAR and HELCOM conventions.

Is being documented and used for identifying biotic diversity within areas or countries, both geographical distribution, variety and representation frequency. It is being used for planning of protection and management of biodiversity in natural, semi-natural and artificial environments. Users are both governments, professional environmental organisations, but also the practical land and resource managers being farmers or fishermen. Wide variety of different classification systems and levels of detail in mapping.

- Scale: An indication of common mapping scales: from 1: 5000 to 1: 1.000.000
- Community policies: 6EAP, Habitats and Birds Directive, CAP.
- Initiatives: NATURA2000, The RAMSAR database, CORINE biotopes and others.

**Example data:**

**Biotope sites**: Areas of ecological/ biodiversity interest areas, recorded under the Natura programme. Sites of special ecological interest in Nature conservation recorded whether protected or not.

> **Attributes:** site surface statistics, habitat data, mammals, birds, amphibians, fish, invertebrate, plant, Site designation status
> **Coverage:** EU Countries and Phare Countries, Finish date collection 1995. Updates?

**Important feature types and attributes:**

Biotope (area)

- Classification/Nomenclature system
- Category hierarchy level
- Category name
- Category code
- Mapping date: verification date
- Species or typical species found in the biotope
- Site description

Habitat (area)

- Classification/Nomenclature system
- Category hierarchy level
- Category name
- Category code
- Mapping date: verification date
- Species/species group to which the habitat refer
- Site description

Nomenclature should as far as possible follow internationally agreements.

**Links and overlaps with other themes:**

Habitats and Biotopes may link with biodiversity themes such as the INSPIRE themes Bio-geographical regions and Species distribution, but may also link to the themes Land cover, Land use, Geology, Soil and Mineral Resources.

**Reference documents:**

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

EUNIS, http://eunis.eea.eu.int/

Habitat classification system: http://eunis.eea.eu.int/upload/EUNIS_2004_report.pdf

Habitat types: http://eunis.eea.eu.int/upload/EUNIS_2004_list.pdf

LÖBF: OSIRIS-Datenmodell (Germany)

Marine Landscape reference documents at BALANCE web-site http://www.balance-eu.org/

NATURA 2000: Identification & GIS Classification of Flora Habitants in Significant Reservation Areas (Greece)

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

Norwegian feature catalogue contain specification and UML model for biological diversity. URL: http://www.statkart.no/sosi/UMLfullmodell/Bioma/Bioma.htm

Rote Liste der gefährdeten Biotoptypen Deutschlands" (Riecken et al. 2006, Naturschutz und Biologische Vielfalt 34