

## EU Baseline Glossary and short compendium

### Second part: EU BASELINE Glossary

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Work package no.: 1.2.2A  
Date: 15/03/2011



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The European Topic Centre on Biological Diversity (ETC/BD) is a consortium of nine organisations under a Framework Partnership Agreement with the European Environment Agency  
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# EU 2010 Biodiversity Baseline: Glossary of technical terms

This document has been written in order to provide technical support to readers of EEA Technical report No. 12/2010: *EU 2010 Biodiversity Baseline*<sup>1</sup>. This is given in the form of detailed elaborations and explanations of specialised words, terms and expressions found within the text of Report No. 12/2010.

This glossary is based on a number of existing tools and references (e.g. EEA glossary, UNEP and CBD references, etc; see the ‘References’ section of this report). It should be noted that all of these sources may provide slightly different definitions of the same terms; this is because they can often have slightly different meanings according to the context in which they are found. Because it is important to reflect this, some terms are given more than one definition in the pages which follow.

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Citation: X

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<sup>1</sup> Condé, S., L. Jones-Walters, A. Torre-Marín and C. Romão. (2010) *EU 2010 Biodiversity Baseline*. - EEA Technical report No. 12/2010. <http://www.eea.europa.eu/publications/eu-2010-biodiversity-baseline/>

### **Acidification**

A change in the environment's natural chemical balance; caused by an increase in the concentration of acidic elements (UNEP, 2007).

### **Afforestation**

The establishment of a forest, stand or tree crop on an area not previously forested, or on land from which forest cover has very long been absent (EEA, 2011. Definition source: IUFRO Silva term database).

### **Assessment**

The analysis and review of information derived from research for the purpose of helping someone in a position of responsibility to evaluate possible actions or think about a problem. Assessment means assembling, summarising, organising, interpreting, and possibly reconciling pieces of existing knowledge and communicating them so that they are relevant and helpful to an intelligent but inexperienced decision-maker (Parson, 1995).

### **Baseline**

The starting point (a certain date or state) against which the changes in the condition of a variable or set of variables are measured (CBD, 1997).

### **Biochemical Oxygen Demand (BOD)**

The amount of oxygen used for biochemical oxidation by a unit volume of water at a given temperature and for a given time. BOD is an index of the degree of organic pollution in water. (EEA, 2011. Definition source: ETC/CDS. General Environmental Multilingual Thesaurus (GEMET 2000)).

### **Biodiversity or biological diversity**

The variability among living organisms from all sources including, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems (CBD, 1992).

### **Biodiversity loss**

The long-term or permanent qualitative or quantitative reduction in components of biodiversity and their potential to provide goods and services; to be measured at global, regional and national levels (CBD, 2005).

### **Biogeographical region**

A region displaying similarities in climate, altitude and geology associated with habitats and species which are typically found together. From an ecological perspective, Europe can be divided into nine land and four marine biogeographical regions

(EC, 2009).

### **Biological resources**

Organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential use or value for humanity (EEA, 2009).

### **Climate change**

Any change in climate over time, whether due to natural variability or as a result of human activity. (The UN Framework Convention on Climate Change defines climate change as "a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.") (UNEP, 2007).

### **Connectivity**

A measure that describes how connected or spatially continuous the environmental matrix is. Connectivity within the matrix enables the movement of species between patches and the functioning of the ecological system within a landscape (Forman, 1995 in IEEP, 2007).

### **Conservation status (of a natural habitat)**

The sum of the influences acting on a natural habitat and its typical species that may affect its long-term natural distribution, structure and functions as well as the long-term survival of its typical species (EEC, 1992).

### **Conservation status (of a species)**

The sum of the influences acting on the species concerned that may affect the long-term distribution and abundance of its populations (EEC, 1992).

### **CORINE Land Cover**

The CORINE (Coordination of information on the environment) programme was initiated in the European Union in 1985. The CORINE databases and several of its programmes have been taken over by the EEA. One of these is an inventory of land cover in 44 classes, and presented as a cartographic product, at a scale of 1:100 000 (EEA, 2009).

### **Critical load (of a nutrient)**

The maximum load that a given system can tolerate before failing (EEA, 2011. Source: GRAHAWa).

### **Crop wild relative (CWR)**

A wild plant taxon that has an indirect use derived from its relatively close genetic relationship to a crop; this relationship is defined in terms of the CWR belonging to gene pools 1 or 2, or taxon groups 1 to 4 of the crop (Maxted et al., 2006 in CWRSG, 2011).

### **Cultural services**

The nonmaterial benefits people obtain from ecosystems through spiritual enrichment, cognitive development, reflection, recreation and aesthetic experience (MA, 2005).

#### **Driver**

Any natural or human-induced factor that directly or indirectly causes a change in an ecosystem (MA, 2005).

### **Ecological Footprint**

A measure of how much biologically productive land and water an individual, population or activity requires to produce all the resources it consumes and to absorb the waste it generates using prevailing technology and resource management practices. The Ecological Footprint is usually measured in global hectares. Because trade is global, an individual or country's Footprint includes land or sea from all over the world. Ecological Footprint is often referred to in short form as Footprint (not footprint) (Global Footprint Network, 2011).

### **Ecological status**

An expression of the quality of the structure and functioning of aquatic ecosystems associated with surface waters, classified in accordance with Annex V of the Water Framework Directive (EC, 2000). The definition of ecological status looks at the abundance of aquatic flora and fish fauna, the availability of nutrients, and aspects like salinity, temperature and pollution by chemical pollutants. Morphological features, such as quantity, water flow, water depths and structures of the river beds, are also taken into account (EC, 2010).

### **Ecosystem (see more details in EEA, 2010; p. 119)**

A dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit. (UNEP, 2007).

### **Ecosystem services**

The benefits that people obtain from ecosystems. These include *provisioning services* such as food and water; *regulating services* such as flood and disease control; *cultural services* such as spiritual, recreational, and cultural benefits. Since people do not directly use *supporting services* such as nutrient cycling, people do not obtain 'benefits' from them and they may not strictly be part of ecosystem services defined as 'the benefits people obtain from ecosystems'. Much work is currently ongoing related to definition and classification of ecosystem services (see also Balmford *et al.*, 2008). The concept 'ecosystem goods and services' is synonymous with ecosystem services (EEA,

2009).

### **Ecosystem type**

Categorisation of ecosystems in units that have similar, specific biotic and abiotic features (EEA, 2009).

### **Endemic (see more details in EEA, 2010; p. 118)**

Native to and restricted to a specific geographic area (EEA, 2011).

### **Eutrophication**

The increase in additions of nutrients to freshwater or marine systems, which leads to increase in plant growth and often to undesirable changes in ecosystem structure and function (MA, 2005).

### **Fragmentation**

The breaking-up of continuous tracts of ecosystems creating barriers to migration or dispersal of organisms and reducing the size of homogenous areas. Fragmentation may be induced by human activities (e.g. road infrastructures, dams) or by natural processes (EEA, 2011. Source: EEA multilingual environmental glossary).

### **Habitat**

- (1) The physical location or type of environment in which an organism or biological population lives or occurs (EEA, 2011).
- (2) Terrestrial or aquatic areas distinguished by geographic, abiotic and biotic features, whether entirely natural or semi-natural (UNEP, 2007).

### **High Nature Value Farmland**

Comprises the 'hot spots' of biodiversity in rural areas and is usually characterised by extensive farming practices (EEA, 2011. Source: EEA multilingual environmental glossary).

### **Invasive alien species (IAS)**

Non-native species whose introduction and/or spread outside their natural past or present ranges pose a threat to biodiversity (BISE, 2011).

### **Land abandonment**

- (1) Concept applied to land where the traditional or recent use by agriculture or any other rural economic activity has stopped (Pinto Correia, 1993).
- (2) Change in land use from the traditional or recent pattern to another less intensive pattern (Baudry, 1991).

### **Land conversion**

The change from one land use to another.

### **Land cover**

(1) The physical coverage of land, usually expressed in terms of vegetation cover or lack of it. Related to, but not synonymous with *land use* (MA, 2005).

(2) Land cover corresponds to a (bio)physical description of the earth's surface. It is that which overlays or currently covers the ground. This description enables various biophysical categories to be distinguished - basically, areas of vegetation (trees, bushes, fields, lawns), bare soil, hard surfaces (rocks, buildings) and wet areas and bodies of water (watercourses, wetlands) (EEA, 2011. Source: European Commission).

### **Land use**

(1) The human use of a piece of land for a certain purpose (such as irrigated agriculture or recreation). Influenced by, but not synonymous with *land cover* (MA, 2005).

(2) The spatial aspects of all human activities on the land and the way in which the land surface is adapted, or could be adapted, to serve human needs (EEA, 2011. Source: GOOD).

### **Low-input farming**

A system of farming based on restricted use of chemical fertilisers, pesticides and herbicides (AgricultureDictionary, 2011).

### **Marine Trophic Index (MTI)**

The MTI or mean trophic level of fisheries landings measures the position of a species in a food web, starting with 'producers' (eg. phytoplankton, plants) at level 0, and moving through primary consumers that eat primary producers (level 1) and secondary consumers that eat primary consumers (level 2), and so on. In marine fishes, the trophic levels vary from two to five (top predators) (EASAC, 2004). A decrease in MTI represents a decline in the abundance and diversity of fish species high in the food chain, such as cod. This process also termed 'fishing down marine food webs' means that fish stocks are being overexploited and fisheries are not being sustainably managed (BIP, 2011).

### **Maximum Sustainable Yield (MSY)**

(1) The largest long-term average catch or yield that can be taken from a stock or stock complex under prevailing ecological and environmental conditions (EEA, 2011 Source: US National Marine Fisheries Services (NOOA)).

(2) The maximum use that a renewable resource can sustain without impairing its renewability through natural growth or replenishment.

### **Monitoring**

(1) To check regularly in order to perceive change in some quality or quantity. (EEA, 2011. Source: BRACK).

(2) A periodic standardized measurement of a limited and particular set of biodiversity variables in specific sample areas (CBD, 1997).

### **Native species**

Plants, animals, fungi, and micro-organisms that occur naturally in a given area or region (EEA, 2011).

### **Over-exploitation**

Overexploitation occurs when harvesting of specimens of flora and fauna species from the wild is out of balance with reproduction patterns and, as a consequence, species may become extinct (CBD, 2011).

### **Pollution**

The indirect or direct alteration of the biological, thermal, physical, or radioactive properties of any medium in such a way as to create a hazard or potential hazard to human health or to the health, safety or welfare of any living species (EEA, 2011. Source: ALL).

### **Pressures**

The physical expression of human activities that could change the status of the environment in space and time (discharge, abstraction, environmental changes, etc...) (EEA, 2011). Pressures include the release of substances (emissions), physical and biological agents, the use of resources and the use of land. The pressures exerted by society are transported and transformed into a variety of natural processes which manifest themselves in changes in environmental conditions (EEA, 2007).

### **Protected area**

A geographically defined area that is designated or regulated and managed in order to achieve specific conservation objectives (EEA, 2009).

### **Provisioning services**

The supply of goods of direct benefit to people such as timber from forests, medicinal plants, and fish from the oceans, rivers and lakes, often with a clear monetary value (CBD, 2010).

### **Reforestation**

The planting of forests on lands that have previously contained forests but have since been converted to some other use (MA, 2005).

### **Regulating services**

The range of functions carried out by ecosystems such

as regulation of climate through the storing of carbon and control of local rainfall, the removal of pollutants by filtering the air and water, and protection from disasters such as landslides and coastal storms. These services are often of great value but generally not given a monetary value in conventional markets (CBD, 2010).

### **Resilience**

The ability of an ecosystem to return to its original state after being disturbed (EEA, 2009).

### **Safe biological limits**

A limit reference point, usually the stock biomass below which recruitment will decline substantially (SeaLifeBase, 2011).

### **Species diversity**

The number and variety of species found in a given area in a region (EEA, 2011).

### **Species richness**

The number of species within a given sample, community or area (MA, 2005). (A term commonly used as a measure of species diversity, but technically only one aspect of diversity) (EEA, 2011).

### **Supporting services**

The ecosystem services that are necessary for the production of all other ecosystem services. Some examples include biomass production, production of atmospheric oxygen, soil formation and retention, nutrient cycling, water cycling, and provisioning of habitat (UNEP, 2007).

### **Target**

The explicit statement of a fixed goal or objective to be achieved at a specified point in time (EEA, 2009).

### **Threat (to biodiversity)**

The main pressures and drivers causing biodiversity loss (EEA, 2010).

### **Threat status (see more details in EEA, 2010; p. 117)**

A system for classifying species at risk of extinction based on IUCN Red List Categories and Criteria (EEA, 2010).

### **Threshold**

The minimum intensity or value of a signal that will produce a response or specified effect. Thresholds are especially useful in developing indicators that serve an 'early warning' function, i.e. provide a signal that a problem requiring policy intervention is at hand. Thresholds may be formalised within laws and regulations, or be based on scientific consensus (CBD, 1997).

A point or level at which new properties emerge in an ecological, economic or other system, invalidating predictions based on mathematical relationships that apply at lower levels. For example, species diversity of a landscape may decline steadily with increasing habitat degradation to a certain point, then fall sharply after a critical threshold of degradation is reached (MA, 2005).

### **Tipping point**

The tipping point is the critical point in an evolving situation that leads to a new and irreversible development (UNEP, 2007).

### **Trend**

A pattern of change over time, over and above short-term fluctuations (EEA, 2009).

### **Trophic level**

The average level of an organism within a food web. Plants have a trophic level of 1, herbivores 2, first-order carnivores 3, and so on (EEA, 2009).

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