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MOST USED DEFINITIONS/DESCRIPTIONS OF KEY TERMS RELATED TO ECOSYSTEM RESTORATION

Note by the Executive Secretary

INTRODUCTION

1. The Executive Secretary is circulating herewith, for the information of participants in the eleventh meeting of the Conference of the Parties (COP) to the Convention on Biological Diversity, a compilation of most used definitions and descriptions of key terms related to ecosystem restoration.

2. The present note addresses paragraph 2 (e) of recommendation XV/2, in which the SBSTTA requested the Executive Secretary to initiate work to compile the most used definitions and descriptions of key terms related to ecosystem restoration and to highlight their links to Targets 14 and 15 of the Strategic Plan for Biodiversity 2011-2020, and Targets 4 and 8 of the Global Strategy for Plant Conservation.

3. The Executive Secretary, with the generous funding from the European Union, commissioned the Society for Ecological Restoration (SER), in collaboration with relevant partners and organizations, to collate and compile the required information. SER in collaboration with the IUCN World Commission on Protected Areas (WCPA), the IUCN Commission on Ecosystem Management (CEM), the Global Partnership on Forest Landscape Restoration (GPFLR), the Society of Wetland Scientists (SWS), the World Resources Institute (WRI), the Botanic Gardens Conservation International (BGCI) and other related organizations, including the United Nations Convention to Combat Desertification (UNCCD) and the Ramsar Convention on Wetlands, through reaching out to their members/networks, prepared this note.

4. The document is circulated in the form and language in which it was received by the Secretariat of the Convention on Biological Diversity.

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* UNEP/CBD/COP/11/1.

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Compilation of the Most Used Definitions and Descriptions of Key Terms Related to Ecosystem Restoration

This information document fulfills the request made by the Parties in UNEP/CBD/SBSTTA/REC/XV/2 - Section I, Para 2 (e), which asks the Executive Secretary to "initiate work to compile the most used definitions and descriptions of key terms related to ecosystem restoration and to highlight their links to Targets 14 and 15 of the Strategic Plan for Biodiversity 2011-2020, and Targets 4 and 8 of the Global Strategy for Plant Conservation."

Although this compilation is not exhaustive, every effort has been made to present a representative range of the most-used definitions, and some helpful descriptions, that are publically available in the peer-reviewed scientific literature and from other relevant published sources. Where more than one definition are given for a term, they are presented in alphabetical order by author or organization. Words or key terms used in the Aichi Biodiversity Targets or GSPC Targets are indicated, e.g. **Adaptation** (T15) or **Ecological Restoration** (T14 & 15, GSPC 4 & 8). All definitions and descriptions are verbatim quotations and their references are listed at the end of the document.

Aichi Biodiversity Targets (CBD Strategic Plan)

Strategic goal D: Enhance the benefits to all from biodiversity and ecosystem services

***Target 14*:** By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.

***Target 15*:** By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.

Global Strategy for Plant Conservation

Target 4: At least 10% of each of the world's ecological regions effectively conserved.

Target 8: 60% of threatened plant species in accessible ex-situ collections, preferably in the country of origin and 10% of them included in recovery and restoration programmes.

KEY TERMS

Abiotic

Not biological; not involving or produced by organisms. Non-living, as opposed to living, or "biotic;" examples of abiotic factors controlling biological activity include pH, temperature, moisture, and chemicals. (MMDL 2012).

Adaptation (T15) *(See also Climate Change Adaptation)*

Process of genetic change within a population due to natural selection, whereby the average state of a character becomes better suited to some feature of the environment. (Groom et al. 2006).

Adjustment in natural or human systems to a new or changing environment. Various types of adaptation can be distinguished, including anticipatory and reactive adaptation, private and public adaptation, and autonomous and planned adaptation. (MA 2005).

The action or process of adapting one thing to fit with another, or suit specified conditions, especially a new or changed environment. (OED 2012).

Adaptive Capacity

The ability of a system to adjust to climate change (including climate variability and extremes) to moderate potential damages, to take advantage of opportunities, or to cope with the consequences. (IPCC 2007a).

The general ability of institutions, systems and individuals to adjust to potential damage, to take advantage of opportunities, or to cope with the consequences. (MA 2005).

Adaptive Management *(See also Monitoring and Evaluation)*

A process designed to deal with uncertainties, natural variations and changing circumstances

inherent in all managed use of components in biodiversity. (European Charter - CBD Guidelines on Biodiversity and Tourism Development 1999).

The practice of revisiting management decisions and revising them in the light of new information. (Groom et al. 2006).

A structured, iterative process of optimal decision making in the face of uncertainty, with an aim to reducing uncertainty over time via system monitoring. (Holling 1973).

A systematic process for continually improving management policies and practices by learning from the outcomes of previously employed policies and practices. (MA 2005).

Afforestation

Establishment of forest plantations on land that, until then, was not classified as forest. Implies a transformation from non-forest to forest. (FAO 2001b).

Planted forest on deforested land, or on non-forested land. (ITTO 2002).

The planting of new forests on lands which, historically, have not contained forests. (UNEP 2003).

The direct human-induced conversion of land that has not been forested for a period of at least 50 years to forest land through planting, seeding and/or the human-induced promotion of natural seed sources. (UNFCCC 2001).

Agroecology

The application of ecological principles to complex agricultural systems in which ecological interactions and synergisms between biological components provide the mechanisms for the systems to sponsor their own soil fertility, productivity and crop protection. (Altieri 2005).

Agroforestry *(Also Silviculture)*

Agroforestry is a collective name for land-use systems and technologies, where woody perennials (trees, shrubs, palms, bamboos, etc.) are deliberately used on the same land management unit as agricultural crops and/or animals, either in some form of spatial arrangement or temporal sequence. In agroforestry systems there are both ecological and economical interactions between the different components. (ICRAF 1993).

Agriculture in which there is integrated management of trees or shrubs along with conventional crops or livestock. (OED 2012).

Alien Species (*Also Non-native; Non-indigenous; See also Exotic Species*)

A species, subspecies or lower taxon, introduced outside its natural past or present distribution; includes any part, gametes, seeds, eggs, or propagules of such species that might survive and subsequently reproduce. (CBD 2012).

A species native to other areas that was introduced into a locality as a consequence of the activities of Neolithic or post-Neolithic humans and their domestic animals. (Pyšek 1995).

A species [or subspecies] occurring in an area outside of its historically known natural range as a result of intentional or accidental dispersal by human activities. (UNEP WCMC 2012).

Alpha Diversity (*See also Beta Diversity; Gamma Diversity*).

Biological diversity (typically species richness) within a single area, habitat, community or ecosystem. (Levin and Dayton 2009).

Changes in the number and distribution of species within a community. (Walker and del Moral 2003).

Anthropocene

The time [roughly since the late 18th century] during which industrial-era human activities have altered greenhouse gas concentrations in the atmosphere and thereby affected Earth's climate. (Crutzen and Stroemer 2000).

An alternative hypothesis … is that the Anthropocene actually began thousands of years ago as a result of the discovery of agriculture and subsequent technological innovations in the practice of farming. (Ruddiman 2003).

Anthropogenic

Having its origin in the activities of humans. (OED 2012).

Applied Nucleation

…mimics natural successional processes to aid woody plant recolonization…involves planting small patches of trees as focal areas for recovery. Once planted, these patches, or nuclei, attract dispersers and facilitate establishment of new woody recruits, expanding the forested area over time. (Corbin and Holl 2012).

Assembly Rules

A set of principles or laws that predict the development of specific biological communities, in contrast to development that is attributable to random processes. (SER 2004).

Predictions concerning mechanisms of community organization. (Walker and del Moral 2003).

A framework that can unify virtually all of ecology under a single conceptual umbrella and attempts to describe differing species assemblages under similar conditions. It assumes that species have similar niche requirements and that communities are governed by equilibrium dynamics. (Young et al. 2005).

Assisted Migration (*Also Assisted Colonization; Translocation; Managed Relocation*)

The purposeful translocation of species adversely affected by global change, particularly climate change. Goals of managed relocation include, but are not limited to, the reduction of extinction risk, the enhancement of evolutionary potential, and the enhancement of ecosystem services. (Hellmann et al. 2008).

When genotypes that are collected offsite are used for planting or release at a project sites within the natural range of the species. (Morrison 2009).

A new – and highly controversial – conservation tool strategy to move species or ecotypes upslope or 'poleward' (i.e. northward in the northern hemisphere, and southward in the southern hemisphere) to conserve and protect biodiversity in the face of anthropogenic climate change in general, and global warming in particular. (Van Andel and Aronson 2012).

Assisted Natural Regeneration (ANR) *(See also Passive Restoration)*
A simple, low-cost forest restoration method that can effectively convert deforested lands of degraded vegetation to more productive forests. The method aims to accelerate, rather than replace, natural successional processes by removing or reducing barriers to natural forest regeneration such as soil degradation, competition with weedy species, and recurring disturbances (e.g., fire, grazing, and wood harvesting). (FAO 2O12a).

A set of interventions that aim to promote natural regeneration or recovery of an ecosystem, such as reintroducing fauna that will disperse seeds, controlling grazing by domestic herbivores, and the control of exotic invasives. (Van Andel and Aronson 2012).

Beta Diversity (*See also Alpha Diversity; Gamma Diversity*)
Rate of turnover of species across habitats, ecosystems or an environmental gradient. (Levin and Dayton 2009).

The extent of differentiation of communities along habitat gradients. (Whittaker 1972).

Biodiversity (T15) (*= Biological Diversity*)

The variability among living organisms from all sources including, inter alia, 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 Article 2).

The extent of genetic, taxonomic and ecological diversity over all spatial and temporal scales. (Harper and Hawksworth 1994).

The variability among living organisms from all sources, including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part. Biodiversity includes diversity within species, between species and between ecosystems. (MA 2005).

Biodiversity refers to biota in terms of taxonomic and genetic diversity, the variety of life forms present and the community structure thereby created, and the ecological roles performed. (SER 2004).

Biodiversity - Ecosystem Function (B-EF) *(See also Ecosystem Processes; Ecosystem Functioning)*

This hypothesis states that different species perform optimally under different conditions, at different times. As most environments fluctuate in time, those with more species are likely to exhibit superior function (i.e. production, remineralization, etc.) integrated over time. (Levin and Dayton 2009).

The principal goals of B-EF research have been to investigate how biodiversity and ecosystem functioning are linked and to understand the mechanisms that underpin the relationship. (Reiss et al. 2009).

Biodiversity Metrics

Metrics relevant to biodiversity issues. Used for example in certification programs. (Guynn et al. 2003).

Biodiversity Offsets

Biodiversity offsets are conservation activities designed to deliver biodiversity benefits in compensation for losses, in a measurable way. (DEFRA 2012).

Conservation actions intended to compensate for the residual, unavoidable harm to biodiversity caused by development projects, so as to ensure no net loss of biodiversity. (ten Kate et al. 2004).

Bioindicators (= *Biological Indicators; Also Biomarkers, Indicator Species; See also Ecological Indicators)*

Organisms whose presence, numbers, or intensity of development serves as an indication of some natural processes or environmental conditions. (The Free Dictionary 2012).

Indicator species whose status is indicative of the status of a larger functional group of species, reflects the status of key habitats, or acts as an early warning to the action of an anticipated stressor (e.g. white-tailed deer (Odocoileus virginianus) populations that signify the availability of forest-grassland margins). (Dale and Beyeler 2001).

An anthropogenically-induced variation in biochemical, physiological, or ecological components or processes, structures, or functions (i.e., a biomarker) that has been either statistically correlated or causally linked, in at least a semi-quantitative manner, to biological effects at one or more of the organism, population, community, or ecosystem levels of biological organization. (McCarty and Munkittrick 1996).

Biome

A large, regional ecological unit, usually defined by some dominant vegetative pattern, such as the coniferous forest biome. (Groom et al. 2006).

A major portion of the living environment of a particular region (such as a fir forest or grassland), characterized by its distinctive vegetation and maintained largely by local climatic conditions. (IUCN 2012a).

The largest unit of ecological classification that is convenient to recognize below the entire globe …TEEB has adopted a typology of 12 main biomes, subdivided into a larger number of ecosystems. (TEEB 2010).

Biota

All biological entities in a habitat, ecosystem or larger region [up to the Biosphere], independent of its diversity. (Naeem et al. 2002).

Biotic

Of or relating to a (typically specific) biota or ecosystem, or flora or fauna in general. (OED 2012).

Bioremediation

The use of living organisms to treat contaminants or remediate contaminated soil, water or air. (UNEP 2003).

Buffer Zone

Areas between core protected areas and the surrounding landscape or seascape which protect the network from potentially damaging external influences and which are essentially transitional areas. (IUCN 2012a).

Carbon Carrying Capacity

The mass of carbon stored in an ecosystem under prevailing environmental conditions and natural disturbance regimes but excluding anthropogenic disturbance. (Keith et al 2010).

Carbon Dioxide (CO_2) Capture and Storage (CCS) (*See also Carbon Sequestration*)

A process consisting of the separation of CO_2 from industrial and energy-related sources, transport to a storage location and long-term isolation from the atmosphere. (IPCC Working Group III 2005).

Carbon Sequestration

Natural ecosystems are intrinsically linked to the carbon cycle. In addition to the historical carbon store in biomass and soils, ecosystems continually absorb atmospheric CO_2 through photosynthesis and store residual carbon in a process known as sequestration. (CBD 2009)

The process of increasing the carbon content of a reservoir other than the atmosphere. (MA 2005).

Carbon Stocks (T15)

The quantity of carbon in a "pool", meaning a reservoir or system which has the capacity to accumulate or release carbon. (FAO 2001b).

Carbon pools are components of the ecosystem that can either accumulate or release carbon and have classically been split into five main categories: living above-ground biomass (AGB), living below-ground biomass (BGB), dead organic matter (DOM) in wood, DOM in litter and soil organic matter (SOM). (UNDP 2012).

The difference between carbon carrying capacity and current carbon stock allows an estimate of the carbon sequestration potential of an ecosystem and quantifies the amount of carbon lost as a result of past land-use activities. (Keith et al. 2009).

Climate Change (T15)

An alteration in the regional or global climate; especially the change in global climate patterns increasingly apparent from the mid to late 20th century onwards and attributed largely to the increased levels of atmospheric carbon dioxide produced by the use of fossil fuels. (OED 2012).

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. (UNFCCC 2012).

Climate Change Adaptation (T15)

The adjustments of natural or human systems in response to actual or expected climatic stimuli or their effects which moderates harm or exploits beneficial opportunities. (IPCC 2007a).

Climate Change Mitigation (T15)

An anthropogenic intervention to reduce the anthropogenic forcing of the climate system; it includes strategies to reduce greenhouse gas sources and emissions and enhancing greenhouse gas sinks. (IPCC 2007a).

The technological change and substitution that reduce resource inputs and emissions per unit of output. Although several social, economic and technological policies would produce an emission reduction, with respect to climate change, mitigation means implementing policies to reduce GHG emissions and enhance sinks. (IPCC 2007b).

Community Based Natural Resource Management (CBNRM)

An established policy goal of rural development…[whereby] that communities, defined by their tight spatial boundaries of jurisdiction and responsibilities, by their distinct and integrated social structure and common interests, can manage their natural resources in an efficient, equitable, and sustainable way. (Blaikie 2006).

Connectivity (*See also Landscape Connectivity; Ecological Connectivity*)
In an ecological context, connectivity is defined as the transfer of materials by wind, water, humans, and animals between locations. (Peters 2008).

The inverse of landscape fragmentation, landscape connectivity is considered a vital element of landscape structure. (Taylor et al. 1993).

Conservation Benign Introductions (*See also Assisted Migration*)
An attempt to establish a species, for the purpose of conservation, outside its recorded distribution but within an appropriate habitat and eco-geographical area. This is a feasible conservation tool only when there is no remaining area left within a species' historic range. (IUCN 1998).

Conservation Covenant
A legally binding agreement between two or more parties to protect and manage a given site such as a wetland. … the landowner will retain ownership and the site will be managed according to an agreement between you (or a future landowner) and the covenanting agency. (Dawson 2008).

Corridors *(See Ecological Corridors)*

Creation (*Also Fabrication; See also Designer Ecosystem)*
Construction of a wetland in an area that was not a wetland in the recent past (within the last 100-200 years) and that is isolated from existing wetlands (i.e., not directly adjacent). (Gwin et al. 1999).

Occurs when a wetland is placed on the landscape by some human activity on a non-wetland site. (Lewis 1989).

Creation that is conducted as supervised engineering or landscape architecture cannot qualify as restoration because restoration initiates ecosystem development along a preferred trajectory, and thereafter allows autogenic processes to guide subsequent development with little or no human interference. (SER 2004).

Cultural Landscape

A landscape that has developed under the joint influence of natural processes and human-imposed organization and resource use. (Howell et al. 2012).

A landscape modified by the effects of human activity, such as farming, building (as opposed to a natural landscape). (OED 2012).

Deforestation

The conversion of forest to another land use or the long-term reduction of the tree canopy cover below the minimum 10 percent threshold. Deforestation implies the long-term or permanent loss of forest cover and implies transformation into another land use. (FAO 2001a).

The direct human-induced conversion of forested land to non-forested land. (UNFCCC 2001).

Degradation (T15) *(See also Ecosystem Degradation)*

The simplification and loss of biodiversity caused by disturbances that are too frequent or severe to allow natural ecosystem recovery. Degradation generally reduces flows of ecosystem goods and services. (Howell et al. 2012).

Any process that reduces the biodiversity, productivity or other desirable trait of an ecosystem. (Walker and del Moral 2003).

Desertification (T15)

Land degradation in arid, semi-arid and dry sub-humid areas resulting from various factors, including climatic variations and human activities. (UNCCD 2012).

Designer Ecosystem (*Also Designer Community; See also Creation)*

An ecosystem without analogues in the natural environment that is intentionally created to achieve mitigation, conservation of a threatened species, or other management goals. (MacMahon and Holl 2001).

Creating a community of well-functioning organisms that optimizes the ecological services available from coupled natural-human ecosystems. (Palmer et al. 2004).

Disaster Risk Management (DRM) (*Also Disaster Risk Reduction or Mitigation)*

The systematic process of using administrative decisions, organization, operational skills and capacities to implement policies, strategies and coping capacities of the society and communities to lessen the impacts of natural hazards and related environmental and technological disasters. This comprises all forms of activities, including structural and non-structural measures to avoid (prevention) or to limit (mitigation and preparedness) adverse effects of hazards. (EC 2012).

Changing climate patterns thus increase the urgency to invest in disaster risk-reduction activities, preparedness and management above and beyond other efforts directed toward climate mitigation and adaptation. (FAO 2008).

Disturbance *(See also Ecosystem Disturbance)*

Disturbances are important and ubiquitous ecological events whose effects may strongly influence population, community, and ecosystem dynamics. (Dale et al. 2000).

Disturbance Regime

The typical pattern, frequency, timing or occurrence of disturbance events for an ecosystem. (Galatowitch 2012).

The composite influence of all disturbances at a particular site. (Walker and del Moral 2003).

Drivers *(See also DPSIR)*

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

DPSIR (Drivers-Pressures-Status-Impacts-Response) Framework

DPSIR stands for: Driving forces - Pressures - State - Impact – Responses. This approach can encourage and support decision-making, by pointing to clear steps in the causal chain where the chain can be broken by policy action. The DPSIR represents a systems analysis view:- social and economic developments exert pressure on the environment and, as a consequence, the state of the environment changes. This leads to impacts on e.g. human health, ecosystems and materials that may elicit a societal response that feeds back on the driving forces, on the pressures or on the state or impacts directly, through adaptation or curative action. (EEA Integrated Assessment Portal 2007).

Ecology

The study of the interactions between organisms and their environment. The science of ecology covers a wide scale of phenomena, moving from an individual molecule to the entire global system. (Howell et al. 2012).

The study of the relationships and interactions between living organisms and their natural or developed environment. (IAIA 2012).

The branch of biology that deals with the relationships between living organisms and their environment. (OED 2012).

Ecological Assessment

Ecological assessment consists in monitoring the current and changing conditions of ecological resources from which success or failure of the ecosystem can be judged without bias; understanding more fully the structure and function of ecosystems in order to develop improved management options; developing models to predict the response of ecosystems to changes resulting from human-induced stress from which possible ecosystem management strategies can be assessed and assessing the ecological consequences of management actions so that decision makers can best understand the outcomes of choosing a particular management strategy. (EEA 2012).

Ecological Connectivity *(See Connectivity)*

Ecological Corridors

A narrow strip of vegetation used by wildlife and potentially allowing movement of biotic factors between two areas. (EEA 2012).

Strips of habitat that link isolated protected areas. Ecological corridors are not under intensive land use, are distinctly different from surrounding areas, and allow the movement of plant and animal species between protected sites. (Rietbergen-McCracken et al. 2007).

Ecological Economics *(See also Environmental Economics; Natural Capital)*

The union of economics and ecology, with the economy conceived as a subsystem of the earth ecosystem that is sustained by a metabolic flow or 'throughput' from and back to the larger system. (Daly and Farley 2004).

A transdisciplinary field of academic research that aims to address the interdependence and coevolution of human economies and natural ecosystems over time and space. (Xepapadeas 2008).

It is distinguished from environmental economics, which is the mainstream economic analysis of the environment, by its treatment of the economy as a subsystem of the ecosystem and its emphasis upon preserving natural capital. (van den Bergh 2001).

Ecological Engineering

The design of sustainable ecosystems that integrate human society with its natural environment for the benefit of both. It involves the restoration of ecosystems that have been substantially disturbed by human activities such as environmental pollution or land disturbance; and the development of new sustainable ecosystems that have both human and ecological value. (Mitsch and Jorgensen 2004).

Those cases where the energy supplied by man is small relative to the natural sources but sufficient to produce large effects in the resulting patterns and processes. (Odum 1962).

Ecological Engineers

Alter their habitat to their own needs and by doing so affect the fates and opportunities of other species. (Jones et al. 1994) An example is the gopher tortoise (Gopherus polyphemus) that digs burrows used by many other species or the beaver (Castor canadensis) whose dams create wetlands). (Dale and Beyeler 2001).

Ecological Equivalency (*See also Biodiversity Offsets)*

[One of]…three possible approaches for offsetting impacts of development projects on biodiversity and ecosystems. [This] method involves the assessment of losses and gains for target components of biodiversity (species, their habitat, habitat types, ecosystem functions or services, etc.). (Quétier and Lavorel 2011).

Ecological Footprint

A measure of an individual, a city, a country, or humanity - a measure of how much productive land and water they require to produce all the resources they consume and to absorb all the waste they generate, using prevailing technology. (Rees 1995).

Today [in 2010], humanity's Ecological Footprint is over 23% larger than the planet can regenerate. (http://www.footprintnetwork.org/). In other words, it now takes more than one year and two months for the Earth to regenerate what we [humans] use in a single year. (IAIA 2012).

An index of the area of productive land and aquatic ecosystems required to produce the resources used and to assimilate the wastes produced by a defined population at a specified material standard of living, wherever on earth that land may be located. (MA 2005).

Ecological Indicator (*See also Bioindicators*)

Ecological indicators quantify the magnitude of stress, degree of exposure to the stresses, or degree of ecological response to the exposure … and are intended to provide a simple and efficient method to examine the ecological composition, structure, and function of complex ecological systems … They are easily measured, sensitive to stresses on system…predict changes that can be averted by management actions, and are integrative: the full suite of indicators provides a measure of coverage of the key gradients across the ecological systems (e.g. soils, vegetation types, temperature, etc.). (Dale and Beyeler 2001).

Variables that can be readily identified and are relatively easy to measure or monitor, and that serve as synthetic representatives or signals of changes in ecological or environmental conditions. (Van Andel and Aronson 2012).

Ecological Networks (*Also Aboveground-Belowground Linkages; See also Mutualisms, Trophic Cascade*)

Ecological networks are complex, with each species typically closely linked to all others, either directly or indirectly. Such trophic interactions—henceforth 'links'—are typically antagonistic predator–prey ones, but we expand the discussion to include webs of mutualists, including, for example, the interactions of flowers and their pollinators, and fruits and their seed dispersers. (Montoya et al. 2006).

All species are embedded in complex networks of interactions. Modeling food webs, and more generally, species' interaction networks, has advanced the understanding of the robustness of ecosystems in the face of species loss. (Pocock et al. 2012).

Ecological networks (ENs) are strips of remnant habitat designed to connect protected areas and other areas of high natural value across transformed landscapes. They aim to alleviate the effects of fragmentation of remnant natural areas, particularly in managed landscapes such as agriculture and plantation forestry. ENs consist mostly of linear corridors, often connected to protected areas (PAs) and ideally are sufficiently large to ensure connectivity between habitat patches for organism dispersal on evolutionary as well as on ecological time-scales. (Pryke and Samways 2012).

Ecological Restoration (T14 & 15, GSPC 4 & 8) *(Also Ecosystem Restoration)*
The process of returning an ecosystem to a natural pre-disturbance structure and function. (Briggs 1996).

The process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed. (SER 2004).

The process of intentionally altering a site to establish a defined, indigenous ecosystem. The goal of this process is to emulate the structure, function, diversity and dynamics of the specified ecosystem. (UNEP 2003).

Human intervention … designed to accelerate the recovery of damaged habitats, or to bring ecosystems back to as close an approximation as possible of their pre-disturbance states. (Cairns 1993; Yap 2000).

Ecological Succession

The process whereby one plant community gradually changes into another. …This process is brought about by changes in environment and biotic interactions, e.g., declining light levels, competition. (Peters and Clarkson 2010).

Progressive change in species composition and forest structure caused by natural processes over time. (Rietbergen-McCracken et al. 2007).

Sequence of stages in an ecosystem's structure, species composition, and functionality as the system develops over time, or recovers from a disturbance factor. (Van Andel and Aronson 2012).

Economic Sectors

A division of a country's population based upon the economic area in which that population is employed. Many economists recognize the following five economic sectors; the primary sector which includes agriculture, mining and other natural resource industries; the secondary sector covering manufacturing, engineering and construction; a tertiary sector for the service industries, the quaternary sector for intellectual activities involving education and research and the quinary sector reserved for high level decision makers in government and industry. (Business Dictionary 2012).

Ecoregion

Major geographic unit that corresponds to natural, physical, and biological features as well as human impacts responsible for ecological degradation. (Galatowitsch 2012).

A large area of land or water that contains a geographically distinct assemblage of natural communities that (a) share a large majority of their species and ecological dynamics; (b) share similar environmental conditions; and (c) interact ecologically in ways that are critical for their long-term persistence. (WWF 2012).

Ecosystem *(See also Biome)*
A dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit. (MA 2005; IUCN 2012a).

For practical purposes it is important to define the spatial dimensions of concern. (TEEB 2010).

The whole system, including not only the organism complex, but also the whole complex of physical factors forming what we call the environment. (Tansley 1935).

Ecosystem Approach *(Also Ecosystem-based Approach)*
A strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way. This approach considers the full range of species, their interactions, habitat, and the role of humans. (CBD decision V/6).

Ecosystem Degradation (T15) *(See also Degradation)*
An ecosystem is said to be degraded when it exhibits a loss of biodiversity and/or a simplification or disruption in ecosystem structure, function and/or composition caused by activities or disturbances that are too frequent or severe to allow for natural regeneration or recovery. (Alexander et al. 2011).

A persistent reduction in the capacity to provide ecosystem services. (MA 2005).

The terms degradation, damage, destruction and transformation all represent deviations from the normal or desired state of an intact ecosystem. The meanings of these terms overlap, and

their application is not always clear. Degradation pertains to subtle or gradual changes that reduce ecological integrity and health. (SER 2004).

Ecosystem Disturbance *(See also Disturbance)*

Natural event or human-mediated activity that changes the structure, content and/or function of an ecosystem. (Howell et al. 2012).

An event that results in a sustained disruption of an ecosystem's structure and function, generally with effects that last for time periods longer than a single seasonal growing cycle for natural vegetation cover. Physical disturbance categories include fires, hurricanes, floods, droughts, lava flows, and ice storms. Biogenic disturbance categories include the impacts of herbivorous insects, mammals, and pathogens. Anthropogenic disturbance categories include logging, deforestation, drainage of wetlands, clearing for cultivation, chemical pollution, and alien species introductions. (NASA CASA 2012).

A relatively discrete event in time and space that alters habitat structure and often involves a loss of biomass. (Walker and del Moral 2003).

Ecosystem Enhancement *(See also Rehabilitation)*

Actions that improve ecosystem function in a manner that may contribute partially towards ecological restoration. (Howell et al. 2012).

Ecosystem Functioning *(See also Ecosystem Processes; B-EF)*

The activities, processes, or properties of ecosystems that are influenced by its biota. (Naeem et al. 2002).

The joint effects of all processes that sustain an ecosystem. Some authors also use the term for ecosystem properties such as resistance to invasion. (Reiss et al. 2009).

A subset of the interactions between ecosystems structure and processes that underpin the capacity of an ecosystem to provide goods and services. (TEEB 2010).

Ecosystem Goods and Services *(See also Ecosystem Services)*

Ecosystem services are the benefits people obtain from ecosystems. (MA 2005).

The products of ecosystem functioning that are of (usually socioeconomic) value to humans. (Reiss et al. 2009).

The direct and indirect contribution of ecosystems to human well-being. (TEEB 2010).

Ecosystem Health

An ecological system is healthy and free from 'distress syndrome' if it is stable and sustainable-that is, if it is active and maintains its organization and autonomy and is resilient to stress. Four major characteristics applicable to any complex system: sustainability, which is a function of activity, organization and resilience. (Costanza et al. 1992).

A state or condition of an ecosystem that expresses attributes of biodiversity within 'normal' ranges, relative to its ecological stage of development. Ecosystems health depends *inter alia* on ecosystem resilience and resistance. (TEEB 2010).

The condition of an ecosystem in which its dynamic attributes are expressed within 'normal' ranges of activity relative to its ecological stage of development. (SER 2004).

Ecosystem Management

An evolving approach to natural resource management that requires significant adjustments to institutions, policies, and the current "norms" of doing business in natural resource management. (Leech et al. 2009).

An approach to natural resource management that focuses on sustaining ecosystems to meet both ecological and human needs in the future. Ecosystem management is adaptive to changing needs and new information. It promotes shared vision of a desired future by integrating social, environmental and economic perspectives to managing geographically defined natural ecological systems. (UNEP 2012).

Ecosystem Processes *(See also Ecosystem Functioning; B-EF)*

The underlying processes of an ecosystem, such as energy transfer, primary production, food chain dynamics, hydrological pathways and nutrient cycling. Inextricably linked with ecosystem structure, but not synonymous with ecosystem functioning. (de Groot et al. 2010).

Any change or reaction which occurs within ecosystems, either physical, chemical or biological. Ecosystem process includes decomposition, production, nutrient cycling and fluxes of nutrients and energy. (MA 2005).

The changes in energy and matter over time and space through biological activity, which are measured as response variables to biodiversity in B-EF experiments. These rates are also governed by the interplay of abiotic factors (physical and chemical), but the focus of B-EF research is mediation of processes (abiotic or biotic) by organisms. Examples include production of carbon, resource consumption, respiration, denitrification and nutrient uptake. (Reiss et al. 2009).

Ecosystem Recovery

[Ecosystem] recovery involves the rate and manner in which the ecosystem subsequently returns to its unstressed condition or follows a chronological sequence of development (often termed a trajectory) that would coincide with an unstressed reference condition, if recovery indeed occurs. (Kelly and Harwell 1990).

The degree of similarity between restoration sites and the pre-disturbance condition should provide evidence for establishment of conditions conducive to [recovery and] development of long-term ecosystem stability if indicators are carefully chosen and used with their limitations in mind. (White and Walker 1997).

Ecosystem Rehabilitation *(See Rehabilitation)*

Ecosystem Resilience (T15) *(See also Socio-Ecological Resilience)*
The capacity of an ecosystem to absorb disturbance without shifting to an alternative state and losing function and services. The concept therefore encompasses two separate processes: resistance - the magnitude of disturbance that causes a change in structure - and recovery - the speed of return to the original structure. (Côté and Darling 2010).

Ecosystem resilience is the capacity of an ecosystem to tolerate disturbance without collapsing into a qualitatively different state that is controlled by a different set of processes. A resilient ecosystem can withstand shocks and rebuild itself when necessary. (Resilience Alliance 2012.)

The ability of an ecosystem to recover from disturbance without human intervention. (TEEB 2010).

The capacity of a system to absorb disturbance and reorganize while still retaining similar function, structure, and feedbacks. (Suding 2011).

Ecosystem Restoration (T14 & 15) *(See Ecological Restoration)*

Ecosystem Services (T14 & 15) *(See also Ecosystem Goods and Services)*
The benefits of nature to people - households, communities and economies. They comprise provisioning, regulating, supporting and cultural services. (IAIA 2012).

The Millennium Ecosystem Assessment recognizes four categories of ecosystem services (sometimes referred to as goods and services) that directly and indirectly contribute to human well-being: provisioning, regulating, supporting, and cultural functions. Examples include the provisioning of clean water; regulation of flood waters; soil protection and erosion control; climate maintenance (carbon sequestration), and crop pollination; and cultural in terms of fulfilling recreational, intellectual and spiritual needs. (MA 2005).

Ecosystem Structure

The individuals and communities of plants and animals of which an ecosystem is composed, their age and spatial distribution, and the abiotic resources present. The elements of ecosystem structure interact to create ecosystem functions as emergent properties generated of such a large complex system. (Daly and Farley 2004).

The biophysical architecture of an ecosystem. The composition of species making up the architecture may vary. (TEEB 2010).

Ecosystem Trajectory (*See also Ecological Succession*)

Successional route by which an ecosystem develops over time in terms of composition, structure and functioning. (Van Andel and Aronson 2012).

The temporal path traveled by vegetation from its initiation to stability. (Walker and del Moral 2003).

Ecosystem Vulnerability (T14) *(See also Vulnerability)*

Exposure to contingencies and stress, and the difficulty in coping with them. Three major dimensions of vulnerability are involved: exposure to stresses, perturbations, and shocks; the sensitivity of people, places, ecosystems, and species to the stress or perturbation, including their capacity to anticipate and cope with the stress; and the resilience of the exposed

people, places, ecosystems, and species in terms of their capacity to absorb shocks and perturbations while maintaining function. (MA 2005).

Ecotone

Transitional zone between two adjacent plant communities, such as a meadow and a forest. (MMDL 2012).

Emerging Ecosystems *(See also Novel Ecosystems)*

An ecosystem that is on the way to becoming significantly different from what it was before due to ongoing and often unpredictable environmental changes, caused by natural, social, economic and cultural drivers and impacts. (Van Andel and Aronson 2012).

Endangered Species *(Also Threatened Species)*

Plant and animal species considered to be in danger of extinction. (Howell et al. 2012).

Near extinction. Referring to a species or ecosystem so reduced or fragile that it is doomed or at least fatally vulnerable. (Wilson 1999).

Endemic Species

A species or race native to a particular place and found only there. If it originated in the same place by evolution, it is also called an autochthon. (Wilson 1999).

Enhancement

The modification of specific structural features of an existing wetland to increase one or more functions based on management objectives, typically done by modifying site elevations or the proportion of open water. (Gwin et al. 1999).

The alteration of a site to produce conditions that did not previously exist in order to accentuate one or more values of a site. (Lewis 1989).

Environment

The surroundings of an organism or a species: the ecosystem in which it lives, including both the physical environment and the other organisms with which it comes into contact. (Wilson 1999).

Environmental Economics *(See also Ecological Economics)*

The branch of neoclassical economics that addresses environmental problems such as pollution, negative externalities, and valuation of nonmarket environmental services. In general, environmental economics focuses almost exclusively on efficient allocation, and accepts the pre-analytic vision of neoclassical economics that the economic system is the whole, and not a subsystem of the containing and sustaining global ecosystem. (Daly and Farley 2004).

Environmental Services *(See Ecosystem Services)*

Environmental Stress

…temporarily impedes growth and productivity, but does not threaten the integrity and health of ecosystems. (Clewell and Aronson 2012).

An ecological driving force and key player in evolution. (Steinberg 2012).

Environmental Stressors

Disturbances that recur and serve as barriers to the establishment of uncharacteristic species (Lugo 1978); cf. disturbance filters. (Grime 2006).

Stressors exact a toll in terms of productivity and standing biomass, which is the ecological price to be paid for ensuring ecosystem integrity and health. Probably all ecosystems are maintained to some degree by stressors. (Clewell and Aronson 2012).

Eradication *(See also Extirpation)*

Removal of every individual and propagule of an invasive species so that only reintroduction could allow its return. (Zavaleta et al. 2001).

Erosion

The wearing away of land by the action of natural forces. On a beach, the carrying away of beach material by wave action, tidal currents, littoral currents, or wind. (MMDL 2012).

Eutrophication *(See also Nutrient Loading)*

The natural or artificial process of nutrient enrichment often resulting in a water body becoming filled with algae and other aquatic plants. (MMDL 2012).

The enrichment of bodies of fresh water by inorganic plant nutrients (e.g. nitrate, phosphate). It may occur naturally but can also be the result of human activity (cultural eutrophication from fertilizer runoff and sewage discharge) and is particularly evident in slow-moving rivers and shallow lakes. (Lawrence et al. 1998).

The term 'eutrophic' means well-nourished; thus, 'eutrophication' refers to natural or artificial addition of nutrients to bodies of water and to the effects of the added nutrients….When the effects are undesirable, eutrophication may be considered a form of pollution. (NAS 1969).

Exotic Species *(Also Non-Native Species; See also Invasive Alien Species; Alien Species; Weeds)*

A species that originates in another region than the one in which it now occurs. Antonym of native species. Can refer to cultivated ornamental or crop species, naturalized weeds, or invasive aliens. Often the determination of what is native vs. non-native is highly subjective and not scientific. Furthermore, some authors (e.g. Valéry et al. 2009) argue that native species can also be considered as invasive. (Van Andel and Aronson 2012).

Species not native to the location; often a weed. (Walker and del Moral 2003).

Extinction

Of a race, family, species, etc. - The fact or process of becoming extinct; a coming to an end or dying out; the condition of being extinct. (OED 2012).

The point at which an organism within a species can no longer reproduce to create subsequent generations and the species dies out. (TEEB 2010).

The termination of any lineage of organisms, from subspecies to species and higher taxonomic categories from genera to phyla. Extinction can be local, in which one or more populations of a species or other unit vanish both others survive elsewhere, or total (global), in which all the populations vanish. When biologists speak of the extinction of a particular species without further qualification, they mean total extinction. (Wilson 1999).

Extirpation *(See also Eradication)*

Elimination of all individuals of a local population, but with conspecifics remaining in contiguous populations or nearby. (Simberloff 2010).

***Ex-situ* Conservation**

Conservation of components of biological diversity outside their natural habitats. (CBD Article 2).

Study, maintenance, or conservation of an organism away from its natural surroundings. (Science-Dictionary 2012).

Extractive Industries

Any processes that involve the extraction of raw materials from the earth to be used by consumers. The extractive industry consists of any operations that remove metals, mineral and aggregates from the earth. Examples of extractive processes include oil and gas extraction, mining, dredging and quarrying. (Business Dictionary 2012)

Extreme Events

Extreme events are not unprecedented but are uncommon and formative. Here we suggest that these events play a disproportionate role in shaping the physiology, ecology and evolution of organisms, with a focus on terrestrial plants. To evaluate this role, we require first a definition of what constitutes an extreme event; this has varied widely in the literature. In part, this is a result of comparing divergent types of events – climatic extremes, physical disturbances, insect outbreaks and invasions by exotic species, as examples. (Gutschick and Bassiri Rad 2003).

Focal Species

Species chosen as a focus for restoration or conservation action because they are sensitive to human impacts, have habitat requirements that are thought to encompass those of many others species, provide ecological services, or can help build public support. (Galatowitch 2012).

Forest Degradation (*See also Degradation*)

Direct human-induced loss of forest values (particularly carbon), likely to be characterized by a reduction of tree crown cover. Routine management from which crown cover will recover within the normal cycle of forest management operations is not included. (FAO 2012a).

Long-term reduction of the overall potential supply of benefits from the forest, which include wood, biodiversity and any other product or service. (ITTO 2002).

The reduction of the capacity of a forest to produce goods and services. 'Capacity' includes the maintenance of ecosystem structure and functions. (Rietbergen-McCracken et al. 2007).

Forest Landscape Restoration (FLR)

An integrated approach that seeks to ensure that forests, trees and the functions that they provide are effectively restored, conserved and employed to help secure sustainable livelihoods and ecological integrity for the future. (GPFLR 2012a).

FLR aims to restore ecological integrity and improve the productivity and economic value of degraded land, rather than to re-establish the pristine forests of the past. (GPFLR 2012b).

FLR focuses on assessment of restoration efforts on ecosystem functions at the landscape rather than site scale. (Maginnis and Jackson 2005).

A process that aims to regain ecological integrity and enhance human well-being in deforested or degraded forest landscapes. (Rietbergen-McCracken et al. 2007).

Forest Fragmentation *(See also Fragmentation; Habitat Fragmentation)*
The splitting of continuous forest tracts into a series of smaller patches, due to roads, clearing for agriculture or other human-induced impacts. (Rietbergen-McCracken et al. 2007).

Forest Rehabilitation *(See also Rehabilitation; Ecosystem Enhancement)*
Forest rehabilitation is the process of restoring the capacity of a forest to provide goods and services again, where the state of the rehabilitated forest is not identical to its state before degradation. (FAO 2012b).

Foundation Species *(See also Keystone Species)*
Species that have a key role in structuring communities through the provision of habitat or via food chain interactions. In some cases this role may be larger than would be intuited or implied by observations of a given species' abundance or biomass. (Levin and Dayton 2009).

A single species that contributes substantially to community structure on account of its life form and abundance and that creates locally stable conditions for other species and modulates and stabilizes fundamental ecosystem processes. (Van Andel and Aronson 2012).

Fragmentation *(See also Habitation Fragmentation; Forest Fragmentation; Landscape Fragmentation)*

A change in the boundary conditions of an ecological system of interest, for instance, an ecosystem. (Hallia, Saunders and Hobbs 1992).

The separation of a formerly continuous natural area into smaller natural units that are isolated from each other by lands that were converted for economic production or the development of infrastructure such as road building. (Howell et al. 2012).

Framework Species Method

A type of forest restoration that involves planting the minimum number of tree species required to re-instate the natural processes of forest regeneration and recover biodiversity. It often combines the planting of 20-40 key tree species of different stages of succession to enhance natural regeneration, creating a self-sustaining forest ecosystem from a single planting event. (FORRU 2009).

Functional Diversity

Biological diversity can be quantified in ways that account for functional and phenotypic differences. A number of such measures of functional diversity (FD) have been created, quantifying the distribution of traits in a community or the relative magnitude of species similarities and differences. FD measures those aspects of diversity that potentially affect community assembly and function. (Cadotte et al. 2011).

Functional Group

Those species that have a common set of attributes and play a particular role in ecosystem processes. Examples are nitrogen-fixing plant species or microbe-feeding nematodes. When the species rely on a similar set of resources, functional groups are also called guilds. (Howell et al. 2012).

A set of species that are similar, and at least partially substitutable in their contribution to a specific ecosystem process. (Naeem et al. 2002).

Functional Trait

One of the greatest challenges for ecological restoration is to create or reassemble plant communities that are resistant to invasion by exotic species. Community ecology theory predicts that an invasive species will be unlikely to establish if there is a species with similar traits present in the resident community or if available niches are filled. Therefore, successful restoration efforts should select native species with traits similar to likely invaders and include a diversity of functional traits. (Funk et al. 2008).

A component of an organism's phenotype that determines its effect on processes and its response to environmental factors. The term 'trait' should be used for the individual level only. For example, body mass is a trait, biomass is not. (Reiss et al. 2009).

A feature of an organism, which has demonstrable links to the organism's function. (TEEB 2010).

Gamma Diversity (*See also Alpha Diversity; Beta Diversity*)

Biological diversity at the landscape scale: both derived from, and a determinant of, Alpha diversity and Beta diversity. (Levin and Dayton 2009).

Changes in the number and distribution of species across landscapes. (Walker and del Moral 2003).

The total or gamma diversity of a landscape, or geographic area, is a product of the alpha diversity of its communities and the degree of beta differentiation among them. (Whittaker 1972).

Genetic Diversity

The value, range, and relative abundance of genes present in the organisms in an ecological community. (TEEB 2010).

Genetic Erosion

A process that refers to a change in genetic diversity over time, and as such is difficult to specify in an index or indicator. (Brown 2008).

The permanent reduction in richness (or evenness) of common local alleles, or the loss of combinations of alleles over time in a defined area. (Maxted and Guarino 2006).

Genetic Materials

The genetic material of a cell or an organism refers to those materials found in the nucleus, mitochondria and cytoplasm, which play a fundamental role in determining the structure and nature of cell substances, and capable of self-propagating and variation. (Biology Online 2012).

Geographic Information Systems (GIS)

Geographic information systems are integrated computer systems for the input, storage, analysis and output of spatially referenced data. (Goodchild 1988).

Habitat

The space, resources, and conditions a species requires to complete its life cycle. (Galatowitsch 2012).

The natural environment of a plant or animal. (Gowdy and O'Hara 1995).

The locality in which a plant or animal naturally grows or lives; habitation. Sometimes applied to the geographical area over which it extends, or the special locality to which it is confined; sometimes restricted to the particular station or spot in which a specimen is found; but chiefly

used to indicate the kind of locality, as the sea-shore, rocky cliffs, chalk hills, or the like. (OED 2012).

The living space of an organism or a population of a species, characterized by its particular environmental properties. (Van Andel and Aronson 2012).

An environment of a particular kind, such as lake shores or tall-grass prairie; also a particular environment in one place, such as the mountain forest of Tahiti. (Wilson 1999.)

Habitat Fragmentation *(See also Forest Fragmentation; Landscape Fragmentation)*
The human-caused break-up of once continuous habitat into smaller and more isolated habitat tracts. (Galatowitch 2012).

The fragmentation a formerly continuous living space or geographical range of a species population into smaller units, resulting in a metapopulation or in genetically separated subpopulations. (Howell et al. 2012).

The breaking up of a formerly continuous living space or geographical range of a species population into smaller units, resulting in a metapopulation or in genetically separated subpopulations. (Van Andel and Aronson 2012).

Habitat Restoration
Ecological restoration with respect to the living conditions for a particular species. (Howell et al. 2012).

Human Well-Being (T14)
A context- and situation-dependent state, comprising basic material for a good life, freedom and choice, health and bodily well-being, good social relations, security, peace of mind, and spiritual experience. (MA 2005).

Indigenous Peoples (T14)

(a) Tribal peoples in independent countries whose social, cultural and economic conditions distinguish them from other sections of the national community, and whose status is regulated wholly or partially by their own customs or traditions or by special laws or regulations; (b) Peoples in independent countries who are regarded as indigenous on account of their descent from the populations which inhabited the country, or a geographical region to which the country belongs, at the time of conquest or colonization or the establishment of present State boundaries and who, irrespective of their legal status, retain some or all of their own social, economic, cultural and political institutions. (IUCN 2012a).

***In-situ* Conservation**

In-situ conservation means the conservation of ecosystems and natural habitats and the maintenance and recovery of viable populations of species in their natural surroundings and, in the case of domesticated or cultivated species, in the surroundings where they have developed their distinctive properties. (CBD Article 2).

In its (original) place; in position. (OED 2012).

Institutions

The prescriptions or rules humans use to organize all forms of repetitive or structural interactions. They are the arrangements enabling collective actions. (Lamb 2011).

Intervention

A specific action or intentional strategy that will bring about an action on the ecosystem such as site preparation, invasive species removal, desirable species introductions, biomanipulation, altering canopy structure, or re-introducing fire. (Howell et al. 2012).

The action of intervening, ‘stepping in’, or interfering in any affair, so as to affect its course or issue. Now frequently applied to the interference of a state or government in the domestic affairs or foreign relations of another country. (OED 2012).

Invasive Alien Species (GSPC 4 & 8) *(See also Alien Species; Exotic Species)*
An alien species whose introduction and/or spread threaten biological diversity (For the purposes of the present guiding principles, the term "invasive alien species" shall be deemed the same as "alien invasive species" in decision V/8 of the Conference of the Parties to the Convention on Biological Diversity). (CBD 2012; CBD decision VI/23).

A non-native or alien species that has become naturalized in an area, and whose distribution, reproduction, and spread are no longer restrained by soil parameters, natural predators, etc., and thus rapidly expands its distribution and abundance regardless of habitat. (Pyšek 1995; cf. Richardson et al. 2000).

If this process threatens ecosystems, habitats or species with economic or environmental harm, the species can be called noxious, as noted under Article 8(h) of the Convention on Biological Diversity. (McNeeley 2001).

Invasive Plants
A subset of naturalized plants that produce and disperse many reproductive offspring, and thus have the potential to spread over a large area. (Pyšek et al. 2004).

Keystone Species *(See also Foundation Species)*
Keystone species have much greater effects on one or more ecological processes than would be predicted from their abundance or biomass alone … (e.g. the red-cockaded woodpecker (*Picoides borealis*) creates cavities in living trees that provide shelter for
23 other species…). (Dale and Beyeler 2001).

A species that has a substantially greater influence on other species in the food web of an ecosystem than would be predicted by its abundance or size. (Paine 1966).

A strongly interactive species with a greater influence on ecosystem functioning (including species diversity) than would be predicted based on its abundance. Named after the keystone at the top of an arch structure; if the keystone is removed, the arch collapses. (Rietbergen-McCracken et al. 2007).

Species that are crucial to the development or maintenance of a system. (Walker and del Moral 2003).

Land Degradation

A reduction in the productive capacity of land caused by changes in soil fertility, erosion, weeds or recurrent fires due to inappropriate human activities. (Lamb 2011).

Reduction or loss, in arid, semi-arid and dry sub-humid areas, of the biological or economic productivity and complexity of rainfed cropland, irrigated cropland, or range, pasture, forest and woodlands resulting from land uses or from a process or combination of processes, including processes arising from human activities and habitation patterns, such as: (1) soil erosion caused by wind and/or water; (2) deterioration of the physical, chemical and biological or economic properties of soil; and (3) long-term loss of natural vegetation. (UNCCD 2012).

Landscape

A contiguous area, intermediate in size between an ‘ecoregion’ and a ‘site’, with a specific set of ecological, cultural and socio-economic characteristics distinct from its neighbors. (InfoResources 2005).

An assemblage of ecosystems that are arranged in recognizable patterns and that exchange organisms and materials such as water. (Forman and Godron 1986).

The spatial scale at which it is necessary to intervene if one is to balance trade-offs and optimize conservation and livelihood benefits in a particular area. (Lamb 2011).

A land-area mosaic of interacting ecosystems, land uses and social and economic groupings. It should be noted that a landscape is not necessarily defined by its area; in the context of FLR the size of the landscape is determined more by the scale of the FLR initiative and the likely or desired geographic extent of its impacts. (Rietbergen-McCracken et al. 2008).

Landscape Connectivity *(See also Connectivity)*
Landscape connectivity can be defined as the degree to which the landscape facilitates or impedes movement between resources patches. (Taylor et al. 1993).

Landscape Mosaic *(See also Landscape; Forest Landscape Restoration)*
A patchwork of different components, pieced together to form an overall landscape. The actual composition of the mosaic and the pattern in which the components are distributed will be unique to each landscape. (Rietbergen-McCracken et al. 2008).

Local Ecological Knowledge (LEK) *(See also Traditional Ecological Knowledge)*
Refers to ecology [that] includes a person's general knowledge of nature and a more specific local knowledge. …a blend of learned scientific knowledge and knowledge based on a residents own observations and experiences from surrounding nature. (Yli-Pelkonen and Kohl 2005).

Useful knowledge about species and ecosystems gathered by people who live in rural landscapes and manage their land to minimize detrimental impacts. (Van Andel and Aronson 2012).

Management
The management phase of a restoration project begins once the initial restoration goals and

objectives have been achieved. Management includes planning, implementation, monitoring, and revising, and directs, but does not prevent change. (Howell et al. 2012).

Originally: the working or cultivation of land. Later also: the maintenance and control of a forest, environment, nature reserve, etc. In extended use: the conservation and encouragement of natural resources such as game, fish, wildlife, etc. (OED 2012).

Metapopulation

One of a set of local populations of a plant or animal species that fluctuate independently but interact within a larger area of space, with long-term survival of the species depending on a shifting balance between local extinctions and recolonizations in the patchwork of fragmented landscape or habitat. (Howell et al. 2012).

A set of partially isolated populations belonging to the same species. The populations are able to exchange individuals and recolonize sites in which the species has recently become extinct. (Wilson 1999).

Mitigation *(See also Climate Change Mitigation)*

A word often used when restoration is considered. It is important to note that it is nothing to do with restoration. To mitigate is “to appease... or to moderate the heinousness of something.” So although mitigation can be an outcome of restoration it is a separate consideration. (Bradshaw 1996).

Measures required by government agencies, or international agreements, for permission to undertake development projects that cause unavoidable environmental harm. Such measures included compensation in terms of enhancement, rehabilitation, ecological restoration; steps taken during a project to reduce impacts; or modifications in the scope of the project. (Howell et al. 2012).

Mitigation Banking

Mitigation banking is the creation, restoration or enhancement of wetlands [or other ecosystems] that will be sold or exchanged to compensate for future wetland losses. Typically the created, restored or enhanced wetlands. (Marsh et al. 1996).

Monitoring and Evaluation *(See also Adaptive Management)*

Monitoring -- a systematic and orderly gathering of specific data over a period of time undertaken to ensure that predetermined conditions are being met. (Holl and Cairns 2002).

Ongoing and periodic assessments of forest management activities to determine the extent to which objectives are being met, identify changes in the forest condition and gauge the need for any adjustments in management practices. (Rietbergen-McCracken et al. 2007).

Evaluations include the assessment of any stated goals and objectives that pertain to cultural, economic and other societal concerns. For these, the techniques of evaluation may include those of the social sciences. The evaluation of socio-economic goals is important to stakeholders and ultimately to policy-makers who decide whether or not to authorize and finance restoration projects. (SER 2004).

Mutualisms *(See also Ecological Networks)*

Mutually beneficial interactions among species….ubiquitous in ecological systems. (Bernstein 2001).

An interaction between species that is beneficial to both. (Boucher et al. 1982)

Native Species (T14 & 15, GSPC 4 & 8)

Taxa that have originated in a given area without human involvement or that have arrived there without intentional or unintentional intervention of humans from an area in which they are native. (Pyšek et al. 2004).

Natural Capital

An economic metaphor for the limited stocks of physical and biological natural resources found on Earth. According to Rees (1995) and MA (2005), there are four, partially overlapping types: renewable natural capital (living species and ecosystems), non-renewable natural capital (sub-soil assets, e.g. petroleum, coal, diamonds), replenishable natural capital (e.g., the atmosphere, potable water, fertile soils), and cultivated natural capital (e.g., crops and forest plantations). (Aronson et al. 2007).

Stocks or funds provided by nature (biotic or abiotic) that yield a valuable flow into the future of either natural resources or natural services. (Daly and Fairley 2004).

An economic metaphor for the limited stocks of physical and biological resources found on earth. (MA 2005).

Niche

The place occupied by a species in its ecosystem – where it lives, what it eats, its foraging route, the season of its activity, and so on. In a more abstract sense, a niche is a potential place or role within a given ecosystem into which species may or may not have evolved. (Wilson 1999).

Novel Ecosystems *(Also No-Analogue Ecosystems; See also Emerging Ecosystems)*

Have species compositions and relative abundances that have not occurred previously within a given biome. The key characteristics are (1) novelty: new species combinations, with the potential for changes in ecosystem functioning; and (2) human agency: ecosystems that are the result of deliberate or inadvertent human action, but do not depend on continued human intervention for their maintenance. (Hobbs et al. 2006).

New, non-historical configurations of ecosystems owing to changing species distributions and environmental alteration through climate and land use change. (Suding 2011).

Nutrient Loading *(See also Eutrophication)*

Quantity of nutrients entering an ecosystem in a given period of time. (MA 2005).

Ocean Acidification

Ongoing decrease in the pH and increase in acidity of the Earth's oceans, caused by the uptake of anthropogenic carbon dioxide (CO_2) from the atmosphere. (Caldeira 2003).

Overexploitation *(See also Ecological Footprint)*

Excessive exploitation; overuse of natural resources. (OED 2012).

Use in excess of a sustainable use level. (TEEB 2010).

Overgrazing

Excessive grazing, especially so as to cause damage to grassland. (OED 2012).

Paleoecology

The study of ecosystem history over various time scales using sedimentary records – provides a unique temporal perspective on patterns, causes, and rates of ecological change due to natural hydrologic and climatic variability, and anthropogenic activity. (Willard et al. 2007).

Passive Restoration *(Also Autogenic Restoration; See also Assisted Natural Regeneration)*

Autonomous or autogenic recovery of a degraded ecosystem by means of the unassisted processes of resilience, succession, or natural regeneration. (Holl and Aide 2011).

Pest Species *(See also Invasive Alien Species, Weeds)*

Those native or introduced plants, animals, diseases, viruses, or insects that interfere with restoration and management goals. Under different circumstances, different times, or in different places, a species that behaves as a pest on one site, may, on a different site be a beneficial component of the ecosystem being restored. (Howell et al. 2012).

Any species, strain or biotype of plant, animal or pathogenic agent injurious to plants or plant products. (CBD 2012; IPPC).

Phytoremediation

The use of plants to remove pollutants from the environment or to render them harmless. (Gleba et al. 1999).

The use of plants to treat contaminants or remediate contaminated soil, water or air. (UNEP 2003).

Pollution

Physical impurity or contamination; (now) *esp.* the presence in or introduction into the environment (esp. as a result of human activity) of harmful or poisonous substances, or excessive levels of light, noise, organic waste, etc. (OED 2012).

Poverty Alleviation (T14) *(Also Poverty Reduction)*

Any process which seeks to reduce the level of poverty in a community, or amongst a group of people or countries. Poverty reduction programs may be aimed at economic or non-economic poverty. Some of the popular methods used are education, economic development, and income redistribution. (CARICOM-ICT4D 2008).

An inclusive term for poverty avoidance or mitigation, that is, a situation where forests resources serve a safety net function, or as a gap filler, including as a source of petty cash; and poverty elimination, that is, a situation where [ecosystem] resources help lift the household out of poverty by functioning as a source of savings, investment, accumulation, asset building, and permanent increases in income and welfare. (FAO 2003).

Refers to a situation where wealth is generated and capital accumulated through capital and labour investment, thus helping to lift people out of poverty in all its dimensions. (FAO 2005).

Prescribed Fire

The deliberate application of fire to forest fuels under specified conditions such that well-defined management goals are attained. (Fernandes and Botelho 2003).

Protected Area

A clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values. (IUCN WCPA 2012).

Provenance

The geographic place of origin or source of seeds or other propagules. (Howell et al. 2012).

The geographic source of tree or other kinds of seed; the place of origin of a seed lot. (OED 2012).

Rainforestation (RF)

RF aims to replace the more destructive forms of "kaingin" or slash-and-burn practices [in the Philippines], form a buffer zone around the primary forests, protect biodiversity, help maintain the water cycle of Leyte Island, and provide farmers with stable and higher incomes. Promoting the use of local tree species, RF works with the hypothesis that a farming system becomes increasingly sustainable as its physical structure and species composition become closer to [that of] the original local rainforest. (Milan and Margraf 1994).

Reallocation (*Also Replacement*)

A general term to describe what happens when part of a landscape, in any state, is assigned a new use that does not necessarily bear an intrinsic relationship with the predisturbance ecosystem's structure or functioning. (Aronson et al. 1993).

Activities in which most or all of an existing wetland is converted to a different type of wetland. For example, changing an emergent wetland to a pond converts the habitat from one wetland type to something quite different. (US EPA 2012b).

Reclamation

A term used by many practitioners, especially in Britain but also in North America. It is defined as "the making of land fit for cultivation." But to reclaim is given as "to bring back to a proper state." There is no implication of returning to an original state but rather to a useful one. (Bradshaw 1996).

Improving a locale from a less useful to a more useful condition. (Galatowitch 2012).

The conversion of wasteland to some productive use by conscious intervention. (Walker and del Moral 2003).

REDD+

Reducing emissions from deforestation (RED) was introduced at COP 11 in 2005. It has been expanded to include reducing emissions from forest degradation (REDD), and then to REDD plus the role of conservation, sustainable management of forests and enhancement of forest carbon stocks (REDD+). There have also been proposals for taking into account emissions from agriculture and other land uses, as part of a broader AFOLU (agriculture, forestry and other land use) program. This approach has been referred to as REDD++. (Minang et al. 2009).

Policy approaches and positive incentives on issues relating to reducing emissions from deforestation and forest degradation in developing countries; and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries. (UNFCCC 2010)

Redundancy *(Also Insurance Hypothesis)*

The situation whereby several species play a particular role in ecosystem processes when only one or a few species could in appearance fulfill that role. The other species thus might appear to be 'dispensable' or 'substitutable' in terms of function and process, even though they contribute to biodiversity. (Howell et al. 2012).

Reference Ecosystem

Although some knowledge of reference conditions is essential, and having at least one extant reference site is certainly desirable when conducting restoration projects, similarity to reference conditions is not always the most desirable outcome of restoration. (Brewer and Menzel 2009).

One or more natural ecosystems, ecological descriptions thereof, or, if these are unavailable, characteristics of presumed natural ecosystems, which serve as models or targets for planning ecological restoration and rehabilitation projects. (Clewell and Aronson 2012).

A reference ecosystem or reference serves as a model for planning a restoration project, and later for its evaluation. In its simplest form, the reference is an actual site, its written description, or both. The problem with a simple reference is that it represents a single state or expression of ecosystem attributes. The reference that is selected could have been manifested as any one of many potential states that fall within the historic range of variation of that ecosystem. The reference reflects a particular combination of stochastic events that occurred during ecosystem development. (SER 2004).

Reforestation

Establishment of forest plantations on temporarily unstocked lands that are considered as forest. (FAO 2000a). CBD SBSTTA 2001 Applies FAO definition but refers to wording presented in FRA Working Paper 33. (FAO 2001).

Re-establishment of trees and understory plants at a site immediately after removal of natural forest cover. (ITTO 2002).

The direct human-induced conversion of non-forested land to forested land through planting, seedling and/or the human-induced promotion of natural seed sources, on land that was forested but that has been converted to non-forested land. (UNFCCC 2005).

Rehabilitation *(See also Forest Rehabilitation; Ecosystem Enhancement)*
Seeks to repair damaged or blocked ecosystem *functions*, with the primary goal of raising ecosystem productivity for the benefit of local people. (Aronson et al. 1993).

The action of restoring a thing to a previous condition or status. This appears rather similar to restoration, but there is little or no implication of perfection. Indeed in common usage, something that is rehabilitated is not expected to be in as original or healthy a state as if it had been restored. (Bradshaw 1996).

The improvement of ecosystem functions without necessarily achieving a return to 'pre-disturbance' conditions. Emphasis is generally on restoring ecosystem processes and functions so as to increase the flow of services and benefits to people. (Clewell and Aronson 2007).

The act of partially or, more rarely, fully replacing structural or functional characteristics of an ecosystem that have been diminished or lost, or the substitution of alternative qualities or characteristics than those originally present with the provision that they have more social, economic or ecological value than existed in the disturbed or degraded state. (Edwards 1998).

The reversal of site degradation, usually for the purpose of increasing its capacity to provide ecosystem services. (Galatowitch 2012).

Rehabilitation shares with restoration a fundamental focus on historical or pre-existing ecosystems as models or references, but the two activities differ in their goals and strategies. Rehabilitation emphasizes the reparation of ecosystem processes, productivity and services, whereas the goals of restoration also include the re-establishment of the pre-existing biotic integrity in terms of species composition and community structure. (SER 2004).

Reinforcement *(See also Species Reintroduction)*

The action or an act of enforcing again; (also) a repetition with fresh force; a reiteration. (OED 2012).

Remediation *(See also Bioremediation)*

The act of remedying. To remedy is "to rectify, to make good." Here the emphasis is on the process rather than on the endpoint reached. (Bradshaw 1996).

The process of restoring a site or a natural product by rendering harmless or removing pollutants and contaminants. (OED 2012).

Socio-Ecological Resilience *(See also Ecosystem Resilience)*

By resilience, we mean the capacity of linked social-ecological systems to absorb recurrent disturbances such as hurricanes or floods so as to retain essential structures, processes, and feedbacks. Resilience reflects the degree to which a complex adaptive system is capable of self-organization (versus lack of organization or organization forced by external factors) and the degree to which the system can build capacity for learning and adaptation. (Adger et al. 2005).

Restoring Natural Capital (RNC)

Investment in natural capital stocks to improve the sustainability of both natural and human-managed ecosystems, while contributing to the socio-economic wellbeing of people (see human well-being). Renewable, replenishable and cultivated natural capital delivers ecosystems goods and services; RNC is required when delivery is interrupted or impeded. RNC includes the

ecological restoration or rehabilitation of ecosystems, ecologically sound improvements to production systems, ecologically sound improvements in the utilization of biological resources, or non-renewable natural capital, and efforts to increase public awareness and appreciation for the importance of natural capital. (Aronson et al. 2007).

Restoration Ecology

The science which provides clear concepts, models, methodologies and tools for practitioners in support of their practice. (SER 2004).

The study of the structure and regeneration of plant and animal communities, aimed at the enlargement or restitution of threatened ecosystems. (Wilson 1999).

Revegetation

The deliberate planting of trees, shrubs and other plants in areas formerly cleared of their natural vegetation. (Bushcare 2002).

Establishment of plant cover on open land, often with one or few species, irrespective of their origin or provenance. (Van Andel and Aronson 2012).

Secondary Forest

Forests regenerating after some form of severe disturbance including poorly managed logging and agricultural clearings as well as natural disturbances such as landslips and fire. (Lamb 2011).

Seed Bank (GSPC 4 & 8)

A place where seeds of different plant varieties and species are stored as a safeguard against their possible extinction. (OED 2012).

Soil Seed Bank

The seeds that have accumulated naturally in a given area of ground. (OED 2012).

Socio-Ecological System

An ecological system largely dominated by humans, or in which cultural activities are thoroughly integrated. …consist of a mixture of natural ecosystems, production systems, and land or wetlands allocated to residences, other buildings, transport networks, etc., all of which are functionally interrelated at least in socio-economic terms. Alternatively, an ecosystem, the management of this ecosystem by actors and organizations, and the rules, social norms and conventions underlying this management. (MA 2005).

Species (*See also Subspecies*)

The basic unit of classification, consisting of a population or series of populations of closely related and similar organisms. (Wilson 1999).

Species Eradication (GSPC 4 & 8) *(See also Extirpation)*

The removal of every potentially reproducing individual of a species or the reduction of their population density below sustainable levels. (Planet Botany 2012).

The elimination of all individuals of a species from an isolated population. (Simberloff 2010).

Species Reintroduction (GSPC 4 & 8)

An attempt to establish a species in an area which was once part of its historical range, but from which it has been extirpated or become extinct."Re-establishment" is a synonym, but implies that the re-introduction has been successful. (IUCN 2012a).

The action of reintroducing a species of animal or plant to a locality. (OED 2012).

Releasing captive born animals where they once existed. Only successful after you have corrected the cause(s) of the original population decline. (Primack 2006).

Stakeholder

Those people or organizations which are vital to the success or failure of an organization or project to reach its goals. The primary stakeholders are (a) those needed for permission, approval and financial support and (b) those who are directly affected by the activities of the organization or project. Secondary stakeholders are those who are indirectly affected. Tertiary stakeholders are those who are not affected or involved, but who can influence opinions either for or against. (IUCN 2012b).

Any individual or group directly or indirectly affected by, or interested in, a given resource. (Rietbergen-McCracken et al. 2007).

A person, group or organization that has a stake in the outcome of a particular activity. (TEEB 2010).

Stewardship

Stewardship is usually used to describe forms of "responsible" management where concerns such as sustainability and environmental quality are being promoted. (Brown and Mitchell 1996).

The literal meaning of the term would require the existence of a steward who is appointed by and answerable to a higher authority, and undertakes management in a way that reflects the wishes of the authority. A central idea of stewardship is looking after something "in trust" for someone else: for God, a god, nature, society, or future generations. (Worrell and Appleby 2000).

Subspecies

Subdivisions of a species. Usually defined narrowly as a geographical race: a population or series of populations occupying a discrete range and differing genetically from other geographical races of the same species. (Wilson 1999).

Succession *(See Ecological Succession)*

Sustainable Development

Economic development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs. (Brundtland Commission 1987).

The use of land and water to sustain production indefinitely without environment deterioration, ideally without loss of native biodiversity. (Wilson 1999).

Sustainable Livelihoods (T14)

Sustainable livelihoods is a way of thinking about the objectives, scope and priorities for development, in order to enhance progress in poverty elimination. SL aims to help poor people achieve lasting improvements against the indicators of poverty that they define. (Ashley and Carney 1999).

Sustainable Forest Management (SFM)

Aims to ensure that the goods and services derived from the forest meet present-day needs while at the same time securing their continued availability and contribution to long-term development. In its broadest sense, forest management encompasses the administrative, legal, technical, economic, social and environmental aspects of the conservation and use of forests. It implies various degrees of deliberate human intervention, ranging from actions aimed at safeguarding and maintaining the forest ecosystem and its functions, to favouring specific socially or economically valuable species or groups of species for the improved production of goods and services. (FAO 2011).

Sustainability

A characteristic or state whereby the needs of the present and local population can be met without compromising the ability of future generations or populations in other locations to meet their needs. (MA 2005).

Sustainability Science

An integrated scientific approach to investigate economic sustainability (see sustainable development), social sustainability (resilience and shared awareness of responsibility of social networks and cultural systems towards future generations), and environmental sustainability (resilience of ecosystems). (Clark and Dickson 2003).

Threshold

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).

A point beyond which a system changes dramatically (sometimes referred to as a state change). Increasingly management communities are seeking to identify critical thresholds (e.g. in water quality) beyond which it is difficult to restore an ecological system without major interventions. Alternatively, restorationists need to identify thresholds beyond which ecosystems undergoing restoration can self-restore without further intervention. (Van Andel and Aronson 2012).

Tipping Points

The time at which a change or an effect cannot be stopped. (Cambridge Dictionaries 2012).

Traditional Ecological Knowledge (TEK) *(See also Local Ecological Knowledge)*

Knowledge, innovations and practices of indigenous and local communities around the world. Developed from experience gained over the centuries and adapted to the local culture and environment, traditional knowledge is transmitted orally from generation to generation. It tends to be collectively owned and takes the form of stories, songs, folklore, proverbs, cultural

values, beliefs, rituals, community laws, local language, and agricultural practices, including the development of plant species and animal breeds. Traditional knowledge is mainly of a practical nature, particularly in such fields as agriculture, fisheries, health, horticulture, and forestry. (CBD Article 8(j)).

Trajectory *(See Ecosystem Trajectory)*

Trophic Cascade *(See also Ecological Networks)*
An ecological phenomenon triggered by the addition or removal of top predators and involving reciprocal changes in the relative populations of predator and prey through a food chain, which often results in dramatic changes in ecosystem structure and nutrient cycling. In a three-level food chain, an increase (or decrease) in carnivores causes a decrease (or increase) in herbivores and an increase (or decrease) in primary producers such as plants and phytoplankton. (Britannica Encyclopedia 2012).

Species-level cascades' occur within a subset of the community or compartment of a food web, such that changes in predator numbers affect the success of a subset (one or a few) of the plant species. 'Community-level cascades' substantially alter the distribution of plant biomass throughout an entire system. (Polis et al. 2000).

When changes in one species affect the abundances of other species across more than one link in the food web. (Zavaleta et al. 2001).

Trophic Level
A group of organisms that obtain their energy from the same part of the food web of a biological community. Examples: the primary producers, which are mostly plants, and herbivores, the animals that consume plants. (Wilson 1999).

Vulnerability (T14) *(See also Ecosystem Vulnerability)*

Degree to which a system is susceptible to, or unable to cope with, adverse effects of climate change, including climate variability and extremes. (IPCC 2007a).

Watershed *(Also Catchment)*

An area that drains the rainwater to a common waterway, such as a stream, lake, estuary, wetland, aquifer, or even the ocean. (US EPA 2012a).

The line separating the waters flowing into different rivers or river basins; a narrow elevated tract of ground between two drainage areas. (OED 2012).

Wetland

Areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres. (Ramsar 2006).

The aquatic habitat in which plants, in contrast to microalgae, are predominant. This includes swamps, marshes, bogs and shallow lakes. (UNEP 2003).

Wilderness

Self-regulating nature with no or very low human influence. (Swart et al. 2001).

Wildlife

Plants and animals that owe their existence to natural phenomena or to processes that occur autonomously [i.e., not moderated by humans]. (DWC 2012)

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