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*All words in green are defined in the glossary.

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LIST OF ACRONYMS

| Acronym | Definition |
|-----------|--|
| AOB | Ammonia Oxidising Bacteria |
| BBSK | Biological Soil Classification Scheme |
| BIOASSESS | BIOdiversity ASSESSment tools project |
| BISQ | Biological Indicator System for Soil Quality |
| BSQ | Biological Soil Quality |
| CAP | Common Agricultural Policy |
| CBD | Convention on Biological Diversity |
| CC | Climate Change |
| CDC | Center for Disease Control and Prevention |
| CITES | Convention on International Trade in Endangered Species |
| COP | Conference of Parties |
| DNA | DeoxyriboNucleic Acid |
| DSQN | Dutch Soil Quality Network |
| EAP | Environment Action Programme |
| EC | European Commission |
| ECCP | European Climate Change Programme |
| EFSA | European Food Safety Authority |
| EMAN | Ecological Monitoring and Assessment Network |
| EMI | Eco-Morphological Index |
| ENVASSO | Environmental Assessment of Soil for Monitoring |
| ERA | Ecosystem Risk Assessment |
| ERC | Ecotoxicologically Relevant Concentration |
| EU | European Union |
| FAO | Food and Agriculture Organisation |
| FP | Framework Programme |
| GAEC | Good Agricultural and Environmental Conditions |
| GHG | GreenHouse Gases |
| GISQ | General Indicator of Soil Quality |
| GMO | Genetically Modified Organism |
| IBQS | Biotic Indicator of Soil Quality |
| ISO | International Organisation for Standardisation |
| MEA | Millennium Ecosystem Assessment |
| MS | Member States of the EU |
| NAPs | National Action Programmes |
| NOR | Normal Operating Range |
| ONF | French National Forest Office |
| PCB | PolyChlorinated Biphenyl |
| PCR | Polymerase Chain Reaction |
| QBS | Biological Quality of Soil |
| RENECOFOR | National network for the long term tracking of forest ecosystems (Réseau National de suivi à long terme des ECOSystèmes FORestiers) |
| RIVPACS | River Invertebrate Prediction and Classification System |

| Acronym | Definition |
|----------|---|
| RMQS | Soil Quality Measurement Network |
| SACs | Special Areas of Conservation |
| SARS | Severe Acute Respiratory Syndrome |
| SBSTTA | Subsidiary Body on Scientific, Technical and Technological Advice |
| SOC | Soil Organic Carbon |
| SOILPACS | Soil Invertebrate Prediction and Classification Scheme |
| SOM | Soil Organic Matter |
| SPAs | Special Protection Areas |
| SPU | Service Providing Unit |
| TWINSpan | Two-Way INdicator SPecies ANalysis |
| UBA | German Federal Environmental Agency |

GLOSSARY

Anabolic reaction is a chemical reaction which involves building complex molecules from simpler molecules and using energy.

Anecic earthworms build permanent, vertical burrows that extend deep into the soil. This type of worm comes to the surface to feed on manure, leaf litter, and other organic matter. This class of earthworms, such as the night-crawlers, *Lumbricus terrestris* and *Aporrectodea longa*, have profound effects on organic matter decomposition and soil structure.

Autotroph organisms produce complex organic compounds from simple inorganic molecules using energy from light (by photosynthesis) or performing inorganic chemical reactions. In this latter case they are called chemotrophic organisms. Autotroph organisms, such as plants or algae, are primary producers in the food chain.

Biome is the biggest unit of ecosystem categorisation. It is a complex biotic community characterised by distinctive plant and animal species, and maintained under the climatic conditions of the region. For example, all forests share certain properties regarding nutrient cycling, disturbance, and biomass, which are different from the properties of grasslands.

Bioturbation is the displacement and mixing of soil particles. In soil ecosystems bio-turbation is mainly performed by earthworms and gastropods, through infilling of abandoned dwellings, burrowing, displacement, mix, ingestion and defecation of soil.

Catabolic reaction is a reaction that breaks macromolecules into constituent simpler sub-units.

Commensalism is a class of ecological relationships between two organisms where one benefits and the other is not significantly harmed or benefited.

Community is any combination of populations from different organisms found living together in a particular environment; essentially the biotic component of an ecosystem.

Cryptobiosis is an ametabolic state of life entered by an organism in response to adverse environmental conditions such as desiccation, freezing, and oxygen deficiency. In the cryptobiotic state, all metabolic procedures stop, preventing reproduction, development, and repair. An organism in a cryptobiotic state can essentially live indefinitely until environmental conditions return to being hospitable. When this occurs, the organism will return to its metabolic state of life as it was prior to the cryptobiosis.

Cyst is the resting or dormant stage of a microorganism, usually a bacterium or a protist, that helps the organism to survive unfavourable environmental conditions. It can be thought of as a state of suspended animation in which the metabolic processes of the cell are slowed down and the cell ceases all activities like feeding and locomotion.

Diapause is a physiological state of low metabolic activity with very specific triggering and releasing conditions. This state of low metabolism is neurologically or hormonally induced. Diapause occurs during determined stages of life-cycles, generally in response to environmental stimuli. Once diapause has begun, metabolic activity is suppressed even if favourable conditions for development occur. It can be defined as a predictive strategy of dormancy.

Dormancy is a period in an organism's life cycle when growth, development, and (in animals) physical activity is temporarily suspended. This minimises metabolic activity and therefore helps an organism to conserve energy. Dormancy tends to be closely associated with environmental conditions.

Ecosystem is a complex set of connections among the living resources, habitats, and residents of an area. It includes plants, trees, animals, fish, birds, micro-organisms, water, soil, and people. It is an ecological community which, together with its environment, functions as a unit.

Ecosystem process comprises the physical, chemical and biological events that connect organisms and their environment.

Ecosystem function is the collective intraspecific and interspecific interactions of the biota, and between organisms and the physical environment, giving rise to functions such as bioturbation or organic matter decomposition.

Ecosystem service is the benefit that is derived from ecosystems. This comprises provisioning services such as food and water; regulating services such as flood and disease control; cultural services such as spiritual, recreational and cultural benefits; and supporting services such as nutrient cycling that maintain the conditions for life on Earth.

Endogeic earthworms forage below the soil surface in horizontal, branching burrows. They ingest large amounts of soil, showing a preference for soil that is rich in organic matter. Endogeics may have a major impact on the decomposition of dead plant roots, but are not important in the incorporation of surface litter.

Enzymes are molecules (mostly proteins) that catalyze chemical reactions within living cells.

Epigeic earthworms are those that live in the superficial soil layers and feed on undecomposed plant litter.

Eukaryote is an organism whose cells contain a nucleus enclosed within a nuclear membrane and complex structures called organelles. Most living organisms, including all animals, plants, fungi, and **protists**, are eukaryotes.

Eusociality is a term used for the highest level of social organisation among organisms of the same species in a hierarchical classification. Eusocial organisms (mainly invertebrates) have certain features in common: reproductive division of labour, overlapping generations and cooperative care of young. The most common eusocial organisms are insects including ants, bees, wasps, and termites, all with reproductive queens and more or less sterile workers and/or soldiers.

Free radicals are molecules, atoms or ions having unpaired electrons and thus being extremely reactive.

Functional group is a group of species with comparable functional attributes.

Habitat is the area or the environment where an organism, an ecological community or a population normally lives or occurs, e.g. a marine habitat.

Heterotroph organisms use organic substrates to obtain its chemical energy for its life cycle. This contrasts with autotrophs such as plants, which are able to use sources of energy such as light directly, to produce organic substrates from inorganic carbon dioxide. Heterotrophs are known as consumers in food chains, and obtain organic carbon by eating other heterotrophs or autotrophs. All animals are heterotrophic, as well as fungi and many bacteria.

Humus refers to any stable organic matter in soil that will not be further decomposed.

Hyphae are long, branching filaments of a fungus. Hyphae are the main mode of vegetative growth in fungi and are collectively called a mycelium.

Infectivity is the feature of a pathogenic agent that exemplifies the capability of entering, surviving, and multiplying in a susceptible host, leading to a disease.

Invasive species are exotic species which become disproportionately abundant in their new environment.

Microarthropods are small invertebrates (< 2 mm) in the phylum Arthropoda. The most well known members of the microarthropod group are mites (Acari) and springtails (Collembola).

Mutualism is a biological interaction between two organisms, where each individual derives a fitness benefit (e.g. survival or food provisioning).

Mycelium is the vegetative part of a fungus, consisting of a mass of branching, thread-like hyphae.

Mycorrhiza is a symbiotic association between a fungus and plant roots. The fungus colonises the roots of the host plant, either intracellularly or extracellularly. This association provides the fungus with relatively constant and direct access to glucose and sucrose produced by the plant in photosynthesis. In return, the plant gains the use of the mycelium's very large surface area to absorb water and mineral nutrients from the soil, thus improving the mineral absorption capabilities of the plant roots. Since both involved organisms benefit from the interaction, it is defined as a mutualistic association.

Nematodes are roundworms (see section 2.1.2)

Parasitism is a type of symbiotic relationship between two different organisms where one organism, the parasite, takes some advantages from another one, the host.

Parthenogenesis is an asexual form of reproduction found in females where the growth and development of embryos occurs without fertilisation by a male.

Primary production is the production of organic compounds from atmospheric or aquatic carbon dioxide, principally through the process of photosynthesis, and less often through chemosynthesis.

Prokaryotes are organisms characterised by the absence of a nucleus separated from the rest of the cell by a nuclear membrane and by the absence of complex membranous organelles.

Protists are a diverse group of eukaryotic microorganisms, including amoeba, algae and molds.

Provisioning services are a class of ecosystem services providing goods such as food, water, construction material, etc.

Regulating services are a class of ecosystem services which provide the regulation of ecosystem processes, such as water flux, climate control, pest control, etc.

Resilience is the capacity of an ecosystem to stand negative impacts without falling into a qualitatively different state that is controlled by a different set of processes.

Rhizosphere is the zone around plant roots which is influenced by root secretion and by the root-associated soil microorganisms.

Rizhobium is the group of bacteria that forms symbiotic associations with leguminous plants and which is responsible for fixing atmospheric nitrogen into a form that can be used by plants.

Supporting services are a class of ecosystem services providing indispensable processes such as nutrient cycles and crop pollination.

Symbiosis refers to a close and long term interaction between two species of organisms in which both species obtain a substantial benefit.

Taxon is a group of (one or more) organisms, which a taxonomist adjudges to be a unit. Usually a taxon is given a name and a rank, although neither is a requirement, and both the taxon and exact criteria for inclusion are sometimes still subject to discussion.

Vascular plants (also known as tracheophytes or higher plants): are those plants which have lignified tissues for conducting water, minerals, and photosynthetic products through the plant.

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