

GLOSSARY

Aeration – enrichment, air supply (oxygen required for breathing).

Agrotechnical measures – see *Biotechnical measures*.

Amelioration – (= *Land amelioration*) – land improvement, reducing the adverse effects of climatic conditions and ensuring the long-term use of natural resources.

Anthophile – an organism that feeds on flower nectar and pollen.

Biodiversity (also biological diversity) – diversity of living organisms, biological communities, and ecosystems. Various levels of biological diversity are distinguished: genetic diversity, diversity of species, diversity of ecosystems (habitats).

Biologically valuable grassland – a term used within the context of the Rural Development Programme of Latvia, which includes the EU protected grassland habitats (all semi-natural grasslands in Latvia) and grassland habitats significant for birds.

Biotechnical measures – active action of habitat management to conserve it in a particular state. Biotechnical measures are, for instance, cutting shrubs, mowing and gathering of grass. Biotechnical measures also include agrotechnical measures. See also *Habitat Management, Habitat restoration and Habitat creation*.

Birds directive – Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds.

Drainage – here – artificial removal of surface and sub-surface water from an area.

Ecological restoration – see *Habitat restoration*.

Ecosystem – concept that is wider than the concept of habitat. Ecosystem is a self-regulating thermodynamically open system existing in a biospheric space and time, which consists of biotic and abiotic components and where the internal and external exchange of substances, energy and information occurs.

Ecotone – transitional zone between two habitats (ecosystems) that differ in environmental conditions, where the environmental conditions and species of both habitats meet and interact, thus creating a unique set of environmental conditions and species. For instance, a forest edge is an ecotone between a forest and a grassland.

Epigeic invertebrate – invertebrate species that live above the soil surface.

European Union protected habitat – a habitat that, in terms of environmental conditions and community of species, conforms to any of the habitat types

listed in Annex I to Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora.

Eutrophication – raising of primary plant production caused by an increase in nutrient concentration in soil and enhanced use of nutrients. The term *eutrophic* is derived from Greek and means – *well fed*. Eutrophication is a natural process, however, human influences considerably accelerate this process.

Ex-arable land – arable land, where ploughing has been discontinued and wild annual or perennial plant species (mostly field weeds) have spread. It is not overgrown with trees and shrubs (not a forest) and has not transformed into a semi-natural grassland. Over time, the abandoned ex-arable land gradually becomes covered with forest; ex-arable land that is mown or grazed gradually transforms into a grassland.

Expansive species – a local plant or animal species that starts dominating and suppresses the species characteristic of the habitat, thus compromising the conservation status of the habitat. Expansive species can include either species characteristic of a particular habitat or species that do not belong in the habitat. For example, the meadowsweet *Filipendula ulmaria* in wet meadows is always present in small quantities (it is a species characteristic of such habitats), however, after the meadow is abandoned, it becomes expansive – begins to dominate and outcompete other plant species.

Fallow land – see *Ex-arable land*.

Favourable condition – the habitat in particular site is in good condition in terms of vegetation structure, characteristic species richness, and management.

Favourable conservation status – the natural range and the area of the habitat is stable or expanding; the specific structures and functions of the habitat that are required for long-term existence of the habitat exist and it is expected that they will exist in the nearest future; the conservation status of the habitat characteristic species in the territory of the member state is favourable.

First and/or second brood – grassland birds may have two broods. The first brood occurs in spring. The second brood only occurs when the young of the first brood have successfully matured. Not all bird species have the a second brood. Repeated brood is a brood that occurs after the death of the first brood (destruction of the nest).

Forbs – a term used in agronomy and botany to denote herbaceous plants (herbs) that are dicotyledons (a class of angiosperm plant group, which

unites plant species, the embryos of which have two cotyledons and predominantly have taproot, not racemose root). In grassland management all plant species, for the purposes of their nutritive evaluation, are divided into grasses, legumes (they are also forbs, but can fix atmospheric nitrogen), forbs (economically less valuable part of the sward, but they provide the greatest diversity of species), and sedges and rushes.

Fragmentation – *here* – the division of habitat into smaller, changed in shape and mutually isolated areas. Grassland habitat fragmentation is caused by intensification of agriculture, as well as abandoning of grasslands. The antonym of the term *connectivity*.

Grasses, also gramineous plants – species of the family *Poaceae*.

Grassland – a territory, where the vegetation consists of perennial grasses, forbs, sedges and rushes.

Grassland sown on arable land – arable land, the culture sown in which includes perennial grasses (*Poaceae*) or legumes and which is renewed at least once every five years.

Grazing season – number of days per year, when grazing animals stay in the pasture and feed on the grass of the pasture. *See also Seasonal pastures and Year-round pastures.*

Groundcover – a layer of vegetation developed by the sum total of herbaceous plants, dwarf shrubs, mosses and lichens. *See also herb layer.*

Habitat – this book uses the concept of habitat in the meaning of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora referring to the habitat of a species. Habitat is a living environment of animal, plant, lichen or mushroom species, which is characterised by specific abiotic and biotic factors and where the individuals of the particular species live.

Habitat conservation status – a set of influences that affects the habitat and habitat specific species and can affect the distribution of the habitat, its structures and functions and the existence of typical species in the longer run. *See Favourable conservation status.*

Habitat creation – a set of biotechnical measures aimed at the creation of environmental conditions and structure necessary for the habitat (composition of species, age structure, etc.) and introduction of species in the area where the habitat has never existed. This also applies to sites where the habitat has existed, but the environment has been completely transformed and has not retained any features of the habitat.

Habitat important for birds – a grassland, that is

important for a bird species included in Annex I to Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds; a species belonging to the meadow waders community; a species characteristic of a grassland that has a tendency of reducing in numbers.

Habitat management – a set of biotechnical measures aimed at maintaining the habitat in a favourable conservation status. The term *Habitat management* includes both maintenance, as well as restoration and creation. *See also Optimal management, Suboptimal management, Inappropriate management.*

Habitat restoration (= ecological restoration) – a set of biotechnical measures aimed at restoring the environmental conditions, structure (composition of species, age structure, etc.) and species in the area, where the habitat has once existed or still exists, but is in unfavourable conservation status.

Habitat type of European Union interest (also habitat of Community importance) – habitat type listed in Annex I of the Habitats Directive (see the Habitats Directive).

Habitats directive – Council Directive 92/43/EEC of 21.05.1992 on the conservation of natural habitats and of wild fauna and flora.

Herb layer – assemblage of herbaceous plant species, which covers the soil in the vegetation. The herb layer includes dwarf shrubs, for instance *Vaccinium vitis-idaea*, *Calluna vulgaris*. Mosses and lichens growing on the soil do not belong to the herb layer – they create a separate layer – moss layer. The synonym of herb layer in forests is *groundcover*.

Improved grassland – a grassland that has been created and maintained by humans, where the environmental conditions are controlled by means of agrotechnical measures (fertilisation, drainage, etc.) and the vegetation is created by purposeful sowing of grasses and legumes or admixture sowing in the existing vegetation.

Inappropriate management – a set of biotechnical measures, which, in the shorter or longer run destroys or significantly depletes the natural assets of grassland habitat and therefore is comparable or even worse than grassland abandonment and/or leaving it to natural succession.

Invasive species – a species of non-native origin, which, upon entering the ecosystem, rapidly proliferate and change it. Such species have arrived to Latvia with the mediation of people, in the absence of human mediation they would have not have reached this area due to the existence of natural barriers of distribution.

Legumes – species of legume *Leguminosae* (or *Fabaceae*) family. Most of the wild and cultivated species common in Latvia develop mycorrhiza with root-nodule bacteria, which are capable of fixing nitrogen from the atmosphere, thus improving the soil.

Management – see *Habitat management*.

Meadow – a grassland, which is primarily used for mowing with the gathering of hay or grass.

Meadow wader semi-colony – a unity of nesting couples of one or several bird species that nest near each other in the territory, which is collectively protected against predators. Unlike the true bird colonies (for instance, gull colonies), meadow waders breed in smaller numbers together and their nests are dispersed wider apart.

Meadow waders – a group of birds belonging to the *Charadrii* and *Scolopaci* suborders, which nest in the grasslands, frequently in semi-colonies, and aggressively defend their nesting sites from potential nest predators. Typical species of this complex in Latvian conditions include *Vanellus vanellus*, *Tringa totanus*, *Limosa limosa*, *Calidris alpina schinzii*, *Philomachus pugnax* and *Gallinago gallinago*, earlier also *Numenius arquata*. In essence, it would be more accurate to use the term *grassland waders*, because they live both in meadows and pastures, however, the term *meadow waders*, has been used elsewhere and therefore it is used in this book as well.

Monophage – an animal that feeds on only one type of food. Monophagous insects usually only eat plants of one particular plant species or genus.

Natura 2000 site – a protected area, which is included in the Natura 2000 network – a joint network of protected areas of the European Union countries, which aims at the preservation of the most endangered species and habitats of Europe included in the Birds and Habitat Directives.

Natural grassland – a grassland, the existence of which is completely ensured by natural conditions (precipitation, fire, wild herbivores, soil conditions) and no human activity (mowing or grazing) is required. This type of grassland most commonly occurs in steppe and savannah zones.

Nitrophytes – plant species that has adapted to the growth in the nitrogen rich soil (for instance, *Urtica dioica*).

Oligophage – an animal that feeds predominantly on one type of food.

Optimal management – a set of biotechnical measures, which completely suits the environmental requirements of the habitat and, in the case of other favourable conditions, ensures the composition, structure and functions of species characteristic for

the habitat.

Passerines – birds belonging to the order Passerine (*Passeriformes*), suborder *Passeres*. These birds have a well-developed syrinx and are characterised by diverse “songs” that they use to mark their breeding territories, invite partners and warn competitors that the territory is occupied.

Pasture – a grassland, which is principally used for the grazing of pasture animals (livestock or semi-feral herbivores).

Permanent grassland – a term used in the context of the common agricultural policy of the EU. It denotes grassland, which exists for longer than five years. Plant and animal community characteristic of a grassland ecosystem has developed in the grassland.

Phenology – a branch of science that studies periodic phenomena in living nature that are associated with seasonal change and weather conditions. This includes the time of occurrence of seasonal phenomena and factors affecting them, for instance, the time of germination, flowering, seed ripening of various plants, arrival of migratory birds, nesting, hatching.

Phytophage – an organism that feeds on plants.

Phytosaprophage – an organism that feeds on plants and dead parts of plants.

Polyphage – an animal which can eat a variety of food.

Population – a set of individuals of a single species living in a particular geographical area and that have the capability of interbreeding (there are no barriers that would prevent one individual from meeting another individual in the mating season).

Priority habitat type of European Union interest (also priority habitat type of Community interest) – Habitat type of European Union interest with priority status.

Protected species – species that is included in the list of specially protected species of Latvia.

Protected Habitat – a habitat (see *Habitat*), which is listed in Cabinet Regulation No. 421 of 5 December 2000 *Regulations of the List of the Specially Protected Biotopes* and/or Annex 1 to Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora.

Range – distribution area (the region where the species or habitat is occurring and exists regularly).

Restoration – see *Habitat restoration*.

Ruderal plant – plant that grows in waste places, construction sites, abandoned agricultural lands.

Saprophage – an animal that feeds on decaying and decomposing organic matter (dead animals, dead parts of plants).

Saproxyllic animal – an animal that feeds on dead or dying off wood.

Seasonal pasture – pasture animals stay in the pasture and mainly feed on pasture grass from mid-May to mid-October, in winter the livestock is kept in barns.

Semi-natural grassland – a grassland, the existence of which is supported by human agricultural activity (mowing or livestock grazing), but the environmental conditions and the composition of species is provided by natural processes.

Sown grassland (= *improved grassland*).

Stocking method (grazing method): natural grazing – grazing of the large semi-feral herbivores entirely without human influence, or supervision; **continuous stocking** – continuous grazing of pasture animals in a single perimeter fence, without changing the grazing pressure and duration during the entire grazing season; **controlled stocking** – regulation of the grazing pressure and duration by means of paddockenclosures, supervision of a shepherd, chaining tethering or otherwise.

Stridulation – singing of katydids and locusts by rubbing their hind legs against the long wings.

Suboptimal management – a set of agrotechnical measures that ensures the existence of the habitat, however, in the long run it may degrade the conservation status of the habitat or reduce the appropriateness of the habitat for particular species that are characteristic of this habitat type. This can adversely affect the composition or structure of habitat species, however, in general it is much more

favourable for the conservation of biodiversity than abandonment.

Succession – a process of ecosystem development, where habitats replace each other, for instance, fen transforms to transitional mire and then into raised bog. Primary succession occurs in places with no existing vegetation, for instance, on open sand in a sand quarry. Secondary succession is a process started in sites of pre-existing soil and vegetation which is totally or partially destroyed but abiotic conditions and also part of the species (seeds or vegetative propagules) is preserved.

Umbrella species – a species that is sensitive to changes in the quality of the habitat, therefore a high incidence of such species in the habitat points to favourable conservation status of the habitat both in terms of habitat structure and communities of species.

Vascular plants – any plants possessing vascular tissue, including flowering plants, conifers and ferns.

Vegetation – a sum total of all individuals of all plant species as a whole, which develops in a particular territory.

Year-round pasture – the grazing animals stay in pasture all year-long and mainly feed on pasture grass, but, depending on the severity of winter or the condition of the pasture (for instance, overgrazed, flooded), the livestock may receive supplementary feed in winter. In such cases, animals are concentrated mostly in the feeding areas and do not use or only partially use the area of the pasture.

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