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# GLOSSARY

**Aerenchymous species**

Plant species with a tissue consisting of thin-walled cells and large intercellular spaces that allow for plant internal circulation of air, enhancing gas exchange between the root layer and the atmosphere. Aerenchymous plants are widespread in wetlands.

**Aquic**

Condition pertaining to soil layers that are virtually free of dissolved oxygen and have a reducing environment because of saturation with ground water or capillary water (adapted from Table 2.3, Chapter 2, Volume 4 of the *2006 IPCC Guidelines*).

**Aquaculture**

Organised production of aquatic animals and plants (e.g. fish, crustaceans, and seaweeds) in marine or freshwater environments. The most important aquacultural practices in coastal wetlands are fish farming and shrimp ponds.

**Autotrophic respiration**

Release of carbon dioxide by living plants from internal metabolism (growth and maintenance).

**Blanket bog**

A bog type (see *bog*) that covers the underlying undulating landscape like a blanket.

**Bog**

Peatland only fed by precipitation and consequently generally nutrient-poor and acidic (see also *fen*).

**Brackish/saline water**

Water that generally contains 0.5 or more parts per thousand (ppt) of dissolved salts.

**Brackish/saline wetland**

A wetland inundated or saturated by brackish/saline water for all or part of the year.

**CO<sub>2</sub> or CH<sub>4</sub> or N<sub>2</sub>O Flux**

Rate of flow of dissolved or gaseous CO<sub>2</sub> or CH<sub>4</sub> or N<sub>2</sub>O across a given surface or area and over a certain amount of time.

**Chamber**

Gas-tight enclosure used for measuring greenhouse gas fluxes.

**Coastal wetland**

*Wetland* at or near the coast that is influenced by *brackish/saline water* and/or astronomical tides.

**Constructed wetland for wastewater treatment**

*Wetland* designed and constructed to use natural processes to help treat wastewater.

**Created wetland**

Previously dry land converted to a *wetland* by raising the water table in inland wetlands or removing obstructions to hydrologic flow and/or raising or lowering the soil elevation to appropriate tidal elevation in coastal wetlands.

**Dam**

A barrier constructed to obstruct the flow of water.

**Denitrification**

Reduction of nitrate or nitrite to molecular nitrogen.

**Dissolved Inorganic Carbon (DIC)**

Sum of all inorganic carbon species in solution (e.g. carbonate, bicarbonate, carbonic acid, carbon dioxide).

**Dissolved Organic Carbon (DOC)**

Organic carbon remaining in solution after filtering the sample, typically using a 0.45 micrometer filter.

**Ditch**

A long, narrow excavation made in the ground by digging, as for draining or irrigating land.

**Drainage/drained**

Artificial lowering of the soil water table. In this supplement, 'drainage' is used to describe the act of changing a *wet soil* into a *dry soil*. A *drained soil* is a soil that formerly has been a *wet soil* but as a result of human intervention is tending to become a *dry soil*, to which the *2006 IPCC Guidelines* would apply.

**Drainage class**

A collection of water table depths sharing a common characteristic. (e.g. the class 'shallow-drained' is characterized by having a mean annual water table depth of less than 30 cm below the surface, whereas the class 'deep-drained' has a mean annual water table depth of 30 cm and deeper below the surface; Chapter 2, this supplement). The mean annual water table is the water table averaged over a period of several years.

**Eddy covariance**

Micrometeorological method that uses differences in concentration associated with turbulence in the air to quantify net vertical gas exchange.

**Eutrophic**

Nutrient-rich (see also *oligotrophic*).

**Extraction**

In this supplement, to remove soil (and associated biomass, dead wood and litter).

**Fen**

Peatland that in addition to precipitation water, also receives water that has been in contact with mineral soil or bedrock (see also *bog*).

**Fish cages or pens**

Types of enclosures at the water surface or fixed to the seabed that maintain a free exchange of water and fine particles and used to cultivate aquatic organisms for human consumption.

**Fish pond**

In this supplement, a general term covering ponds constructed in brackish or saline water, designed to retain and culture fish for commercial production (aquaculture).

**Flooded Land**

In this supplement, *Flooded Land* is defined as: *water bodies where human activities have caused changes in the amount of surface area covered by water, typically through water level regulation. Examples of Flooded Land include reservoirs for the production of hydroelectricity, irrigation, and navigation. Regulated lakes and rivers that do not have substantial changes in water area in comparison with the pre-flooded ecosystem are not considered as Flooded Lands. Some rice paddies are cultivated through flooding of land, but because of the unique characteristics of rice cultivation, rice paddies are addressed in Chapter 5 (Cropland) of the Guidelines (Chapter 7.3, Volume 4 of the 2006 IPCC Guidelines).*

**Flooding**

Overflowing of water on land normally dry.

**Floodplain**

Land adjacent to a stream or river that experiences flooding during periods of high discharge.

**Freshwater**

Water that contains < 0.5 parts per thousand (ppt) of various dissolved salts.

**Freshwater wetland**

A *wetland* inundated or saturated by *freshwater* for all or part of the year.

**Heterotrophic respiration**

The total of physical and chemical processes in an organism by which oxygen is conveyed to tissues and cells, and the oxidation products CO<sub>2</sub> and water, are given off.

**Horizontal subsurface flow (HSSF)**

A type of constructed wetland with horizontal subsurface flow.

**Hydroperiod**

*Inundation* frequency, differentiated into permanent and intermittent.

**Immobilization**

With respect to nitrogen, the process by which inorganic N, as ammonium (NH<sub>4</sub>) and nitrate (NO<sub>3</sub>) is assimilated by microorganisms.

**Impoundment**

Body of water formed by containment.

**Inundated/inundation**

Covered by water; see also *Flooded Land*.

**Mangrove**

A *coastal wetland* that has trees able to live in areas that are tidally flooded by brackish/saline water.

**Marsh**

A *wetland*, typically treeless, periodically inundated and characterized by grasses, sedges, cattails, and rushes.

**Methanogen**

Microorganism that produces methane during the decomposition of organic matter.

**Methanotroph**

Microorganism that utilizes methane for metabolism.

**Mineral soil**

Every soil that does not meet the definition of *organic soil* (see Annex 3A.5, Chapter 3, Volume 4 of the 2006 IPCC Guidelines).

**Mineralization**

The process of converting organic compounds to inorganic compounds.

**Minerotrophic**

(Of peatland): supplied with nutrients from other sources (groundwater, flood water) than the atmosphere (see also *ombrotrophic*).

**Nitrification**

The microbial oxidation of NH<sub>x</sub> to NO<sub>3</sub>.

**Ombrotrophic**

Only supplied with nutrients by the atmosphere (see also *minerotrophic*) and consequently often acidic and low in nutrients.

**Oligotrophic**

Poor to extremely poor in nutrients (see also *eutrophic*).

**Organic soil**

In line with the 2006 IPCC Guidelines (Annex 3A.5, Chapter 3, Volume 4), soil that satisfies the requirements 1 and 2, or 1 and 3 below:

- 1) Thickness of organic horizon greater than or equal to 10 cm. A horizon of less than 20 cm must have 12 percent or more organic carbon when mixed to a depth of 20 cm;
- 2) Soils that are never saturated with water for more than a few days must contain more than 20 percent organic carbon by weight (i.e. about 35 percent organic matter); and
- 3) Soils are subject to water saturation episodes and have either:
  - a) At least 12 percent organic carbon by weight (i.e. about 20 percent organic matter) if the soil has no clay; or
  - b) At least 18 percent organic carbon by weight (i.e. about 30 percent organic matter) if the soil has 60% or more clay; or
  - c) An intermediate proportional amount of organic carbon for intermediate amounts of clay.

Except for the 10 cm criterion mentioned under 1), the *2006 IPCC Guidelines* do not define a minimum thickness for the organic horizon to allow for country-specific definitions of organic soil.

**Paludiculture**

Agriculture and forestry on wet (undrained, rewetted) organic soil.

**Particulate Organic Carbon (POC)**

Organic carbon that is larger than 0.45 micrometer in size (see also *Dissolved Organic Carbon*).

**Peat<sup>1</sup>**

Soft, porous or compressed, sedentary deposit of which a substantial portion is partly decomposed plant material with high water content in the natural state (up to about 90 percent). Countries may define *peat* according to their national circumstances.

**Peat compaction**

Volume reduction of peat in the aerated zone above the water table, resulting in increased bulk density.

**Peat consolidation**

Volume reduction of peat in the saturated zone below the water table owing to increased loading (downward pressure) from the drained top peat (by loss of buoyancy) on the peat below. See also *peat compaction*.

**Peat decomposition**

The process by which peat is broken down into simpler forms of matter. In mineralisation, decomposition proceeds to the mineral components, including CO<sub>2</sub> and H<sub>2</sub>O.

**Peat subsidence**

The loss in peat elevation resulting from *peat compaction*, *peat consolidation* and *peat oxidation*.

**Prairie**

An extensive area of flat or rolling, predominantly treeless grassland; often considered to be part of the temperate grasslands, savannas, and shrublands biome.

**Refractory carbon**

Soil carbon that does not get broken down and released as dissolved or gaseous CO<sub>2</sub> (predominantly by microorganisms) within the time scale of the inventory.

**Rehabilitation**

The re-establishment, on formerly drained sites, of some but not necessarily all the hydrological, biogeochemical and ecological processes and functions that characterized pre-drainage conditions.

**Restoration**

The process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed. In case of drained former wetlands, restoration always has to include 'rewetting'.

**Rewetted soil**

A soil that formerly has been *drained* but as a result of human intervention has once more become a *wet soil*.

**Rewetting**

The deliberate action of changing a *drained soil* into a *wet soil*, e.g. by blocking drainage ditches, disabling pumping facilities or breaching obstructions.

**Riparian**

Of, inhabiting, or situated on the bank of a river.

**Saline inland wetland**

*Wetland* that accumulates salts in its soil typically as a result of semi-arid to arid conditions.

**Salt production**

The production of salt by evaporating brackish or saline tidal water.

**Seagrass meadow**

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<sup>1</sup> Consistent with the definition of peat found in the Energy sector of the *2006 IPCC Guidelines* (Volume 2, Chapter 1, Table 1.1)

*Coastal wetland* vegetated by seagrass species (rooted, flowering plants), permanently or tidally covered by brackish/saline water.

**Sediment**

Deposit of inorganic or organic material that has been carried and deposited by wind, water, or ice.

**Semi-natural treatment wetland**

Natural *wetland* that has been modified for wastewater treatment, e.g. by increasing the volume reserved (i.e. by dams) and constructing channels for targeting the influent and effluent.

**Surface flow (SF)**

A type of constructed wetland with surface flow.

**Swamp**

Wetlands dominated by trees or woody species.

**Tidal freshwater wetland**

*Wetland* inundated or saturated for all or part of the year by tidal freshwater. The upper boundary is recognized as the landward extent of tidal inundation.

**Tidal marsh**

*Marsh* inundated or saturated for all or part of the year by tidal freshwater or brackish/saline water. The upper boundary is recognized as the landward extent of tidal inundation.

**Total organic carbon (TOC)**

All carbon in organic matter.

**Vertical subsurface flow (VSSF)**

A type of constructed wetland with vertical subsurface flow.

**Wastewater treatment plant**

A facility designed to receive wastewater and to remove materials that damage water quality and threaten public health and safety when discharged into receiving streams or bodies of water.

**Waterborne carbon**

*DIC*, *DOC* or *POC* contained in or conveyed by water.

**Wetland**

In this supplement, the term ‘wetland’ is used to refer to land with a *wet soil*. For the IPCC land-use category Wetlands, see below.

**Wetlands**

This guidance uses the term ‘Wetlands’ (with capital ‘W’ and plural) when referring to the IPCC land-use category Wetlands. The terms ‘wetland’ or ‘wetlands’ (except in titles with lowercase ‘w’ and singular or plural) are used to refer to land with wet soil (see above).

**Wetland mineral soil**

A mineral soil that is classified as an ‘aquic soil’ or a ‘gleysol’ according to the default mineral soil classification in Annex 3A.5, Figures 3A.5.3 and 3A.5.4, Chapter 3, Volume 4 of the *2006 IPCC Guidelines*.

**Wet soil**

A soil that is inundated or saturated by water for all or part of the year to the extent that biota, adapted to anaerobic conditions, particularly soil microbes and rooted plants, control the quality and quantity of the net annual greenhouse gas emissions and removals.