GLOSSARY

Algae: It is one of the vital organic matters among the soil constituents. It helps the binding of soil particles together, protects the soil from leaching and erosion, provides nutrients to the upper layer, helps aeration of poorly drained soils and helps fixing the nitrogen.

Aquatic Ecosystems: These are the ecosystems that occur in water and are also known as marine ecosystems. The limiting factors in the functioning of aquatic ecosystems include the depth upto which the sunlight can penetrate, the availability of nutrients and the concentration of dissolved oxygen.

BOD: Biochemical oxygen demand, a biological test for degradable organic matter in water.

Bogs: Bogs are peat accumulating wetlands where the peat deposit is usually more than a foot. Normally, there is no significant inflow or outflow of water. Bogs are rain or snow-fed wetlands having low oxygen level.

Biodiversity: Biodiversity, it refers to the variety and variability among all groups of living organisms and the ecosystem complexes in which occur.

Carnivores: These are flesh eating animals at Trophic level III of the food chain. These depend upon other animals for their food. These are big animals and require lot of energy for building up their tissues. These receive their energy from trophic level II through food consumptions.

Cation Exchange: The function of exchanging ions(catio) in the soils is a crucial determinant of its fertility. The humus and clay particles in the soil are negatively charged particles. Therefore, they are able to attract positively charged nutrients which get bound to the negatively charged clay and humus particles. From there these gradually get released to
the plants where these ions get replaced by hydrogen ions (cations) from the soil. This is known as cation exchange.

**Chemical Oxygen Demand (COD):** COD determines the oxygen required for chemical oxidation of organic matters with the help of strong chemical oxidant.

**Ecology:** The study of interactions between organism and their environment is known as ecology.

**Ecosystem:** Any segment of the landscape that includes biotic and abiotic components is known as an ecosystem if all its components are integrated with each other. For instance, a lake is an ecosystem when it is considered in its totality and not as just a water body. Apart from water it also contains nutrients, climate and all of its life. Similarly, a forest or a river is also an ecosystem.

**Ecotone:** The zone along which one ecosystem merges into another is known as ecotone. In such a zone one often comes across a mixture of plant and animal species from the mutually merging ecosystems.

**Eutrophication:** It refers to uncontrolled chemical enrichment resulting in increased productivity which may be beyond the desired level. For instance, an over application of nitrogenous fertilizers may add large quantities of nitrates which may remain unbroken and which may get leached into lakes, rivers and sea. These may get enriched in nitrogen which may effect both plant and animal life, growth as well as decaying. It finally may result in the fall of oxygen levels to such level that aquatic plant and animal life may become impossible.

**Ex-situ:** It is practiced outside the habitats of genetic resources by conserving sample population of the species in zoos, genetic resource centers, botanical garden etc. The role of gene banks, seed banks, germplasm, genetic engineering is vital for ex-situ conservation of species of plants and animals.
Fens: Fens are mineral rich peat accumulating wetlands that are dominated by reeds, sedges and other herbs. Hydrology of the fens is supported by interior drainage.

Floodplain: The floodplains are riparian ecosystems and are seasonally or regularly inundated wetlands adjacent to a river system. They may be tidal or non-tidal, and are rich in alluvial deposits. Floodplains are vegetated with different spectrum of vegetation depending upon water quality.

Food chain: There are four trophic levels in the food chain. At the first trophic level lie the plants which produce their own food through a process of photosynthesis whereby the plants transform a part of the solar energy into chemical energy (food). This energy stored in the autotrophs (plants) at trophic level 1 becomes the chief source of energy for plant eating animals at the trophic level II. This transfer of energy from level I to level II takes place when the plant eating animals consume the organic tissues of plants. A part of the chemical energy stored in the animals at trophic level II gets transferred to plant and animal eating animals at the trophic level III. The remaining energy in the plants and animals at all levels of this food chain is finally transferred to the decomposers when these become dead and thereby complex a food chain.

Humus: Dead plants provide humus to the soil which is a finely graded organic matter. Decayed organic matters in the soil gets converted into humus. Humus gives a dark brown or black colour to the soils.

Hydrological Cycle: The process that maintains the flow of water through the terrestrial and atmospheric branches of the hydrosphere is known as hydrological cycle. It includes all the three physical states of water, the liquid (ice and snow) and gas (the vapours). It also includes all possible transformations among these states, i.e. evaporation (liquid to gas), consideration (gas to liquid), freezing (liquid to solid), fusion or melting (solid to liquid), and sublimation (gas to solid or reverse). Thus, the hydrological cycle refers to the cyclic flow of water in the environment.
In-situ: The genetic resources are conserved by maintaining them within the natural or artificial man-made ecosystems to which they belong. Nature reserve, cultural landscapes, national parks, sanctuaries, natural monuments, biosphere reserves fall in this domain.

Lentic: Related to slow – moving or standing water systems; usually refers to lake and stagnant swampy streams.

Littoral: It is a part of a country along the coast. It is a zone between high and low tide in coastal waters or the shoreline of a freshwater lake. Wetland habitats of a lacustrine system which extend from the shore to a depth of 2m below low water or to the maximum extent of non-persistent emergent plants.

Lotic: Pertaining to running water (i.e., rivers and streams).

Marshes: Marshes are permanently low-lying wet areas, usually rich in mineral soil. They are usually dominated by emergent macrophytes like reeds, rushes, grasses and sedges etc.

Nutrient Cycling: It refers to various cycles that keep the nutrients cycling so as to support life on the earth. Such nutrient cycles include the carbon cycle, the nitrogen cycle, the sulphur cycle, the cycling of phosphorus and other essential nutrients and the hydrogen cycle.

Nutrients: The material elements constituting all life forms, i.e. carbon, hydrogen, oxygen, ion, sulphur, phosphorus, manganese, etc. are called nutrients.

Omnivores: These are plant and animals eating animals including man. Omnivores are at the top (trophic level IV) level of the food-chain. Omnivores take energy from all the trophic levels i.e., I, II and III.
**pH value**: The proportion of free hydrogen ions in the soil water solutions is measured as pH value. A pH value of 7 is neutral. A value below this makes the soils acidic and a value above this indicates alkaline soils.

**Peat-lands**: A wetland that accumulates partially decayed plant matter is commonly known as peat-land. Peat-lands are formed as a result of water-logging, an anoxic environment for nutrient matter, hyper acidity or low temperatures. A genetic term of any wetland that accumulates partially decayed plant matter.

**Shrub**: A persistent woody plant with several stems from the base.

**Silt**: In silt soil, the size of individual soil particle has a diameter ranging between 0.002mm. and 0.05 mm.

**Slough**: An elongated swamp or shallow lake system, often adjacent to a river or stream. A slowly flowing shallow swamp or marsh or marsh in the southeastern United States.

**Soil Erosion**: Soil removal is a natural process. The wearing away of land surface by running water, winds, waves, moving ice, etc. is a normal geological process known as soil erosion.

**Sulphur Oxides**: Oxides of sulphur is a polluting gaseous element and very harmful to animal health. These can cause acute and chronic asthma, bronchitis, emphysema, etc. Asthma is a well known killer not only in less developed countries but also in the more developed world.

**Species**: It is composed of individuals, single functioning units identifiable as organisms.

**Swamps**: Swamps generally have saturated soils or are flooded for most of the growing season. They may be tidal or non tidal. They are often dominated by shrubs and tress, either a single emergent herb species, or are forested.

**Toxin**: The complex and harmful chemical substance usually released from industries.