

## Wetland-specific glossary

### **A**

Acidic – has a pH of less than 7

Adaptation – evolutionary process by which an organism becomes better suited to live in a particular environment; how a species changes over time to better live in a particular environment

Adventitious – buds or roots that develop in unusual areas; many wetland plants exhibit adventitious roots

Aerate – to supply air to water, soil, or other media

Aerobic – (of an organism or tissue) requiring air for life; pertaining to or caused by the presence of oxygen

Algae – simple plants that are very small and live in water through photosynthesis, algae are the main producers of food and oxygen in water environments

Algal Bloom – the rapid proliferation of passively floating, simple plant life, such as blue-green algae, in and on a body of water

Alkaline – has a pH greater than 7; pH modifier in the U.S. Fish and Wildlife Service wetland classification system; in common usage, a pH of water greater than 7.4

Amphibian – an animal that may begin its life in water, but as an adult is at home in both water and land; frogs, salamanders and caecilians (which are found in the tropics only)

Anaerobic – living in the absence of air or free oxygen; pertaining to or caused by the absence of oxygen

Annual – a plant whose life cycle is completed in one year or one season

Anoxic – without oxygen

Anthropogenic – having to do with or caused by humans

Aerenchymous Tissue - a type of plant tissue in which cells are unusually large and arranged in a manner that results in air spaces in the plant organ; such tissues are often referred to as spongy and usually provide increased buoyancy

Aquatic –taking place in or being in water; consisting of, relating to, or being in water; living or growing in, on, or near the water; aquatic wetlands are those in which the plants, such as lily pads, grow in or on top of the water, but do not emerge above

### **B**

Biota – the plants and animals living in a habitat

Bog –wetlands characterized by a waterlogged, spongy mat of sphagnum moss, ultimately producing a thickness of acid peat; bogs are highly acid and tend to be nutrient poor; they are typically dominated by sedges, evergreen trees and shrubs

Brackish – water that contains some salt, but less than seawater; a mixture of fresh and saltwater typically found in estuarine areas

Buttress– broadened bottom of a tree trunk that helps to stabilize a tree growing in wet soil or water

### **C**

Clay - a sedimentary material with grains smaller than 0.002 millimeters in diameter

Conservation – careful preservation and protection of natural resources from loss, harm, or waste, planned management of a natural resource to prevent exploitation, destruction or neglect

Constructed or Created Wetlands – former terrestrial environments that have been designed or engineered to establish the necessary conditions (soils, hydrology, and flora/fauna) for a wetland

Crustacean – the group of animals having a hard shell and joint body parts; crabs or shrimp

## **D**

Decay – to rot; the breakdown of disintegration of matter

Decomposer – an organism that consumes organic waste, reducing it to simple nutrients that can be used again by living things; decomposers include: molds, insects, worms, and fungi

Delineation – identification and documentation of the boundary between wetlands and uplands

Detritus – decaying organic matter found in the top layer of soil or mixed with wetland waters; a food source for many small wetland organisms

Dissolved Oxygen - oxygen dissolved in water and available to aquatic organisms; one of the most important indicators of the condition of a water body; concentrations below 5 mg/l are stressful and may be lethal to many fish and other species

Diversity – a combination of the number of taxa (see taxa richness) and the relative abundance of those taxa; a variety of diversity indexes has been developed to calculate diversity

Dominant species – a plant species that exerts a controlling influence on or defines the character of a community

Dormant – period when a plant is not actively growing, but is still alive (i.e., for most wetland plants in NY in the winter)

## **E**

Ecology – the branch of biology that studies the interaction of living organisms with each other and their environment

Ecosystem – an organic community of plants and animals viewed within its physical environment (habitat); the ecosystem results from the interaction between soil, climate, vegetation and animal life

Emergent Plants – water plants with roots and part of the stem submerged below water level, but the rest of the plant is above water; cattails and bulrushes

Endangered Species – any species of plant or animal that is having trouble surviving and reproducing; often caused by loss of habitat, not enough food, or pollution; protected by governments in an effort to keep them from becoming extinct

Environment – the sum of all conditions and influences affecting the life of organisms

Erosion – the process whereby materials of the Earth's crust are loosened, dissolved, or worn away and simultaneously moved from one place to another

Estuaries – the part of the wide lower course of a river where its current is met by ocean tides; an arm of the sea that extends inland to meet the mouth of a river; has somewhat salty water and tidal activity

Eutrophication – a natural process, that can be accelerated by human activities, whereby the concentration of nutrients in rivers, estuaries, and other bodies of water increases; over time this can result in anaerobic (lack of oxygen) conditions in the water column; the increase of nutrients stimulates algae "blooms" as the algae decays and dies, the availability of dissolved oxygen is reduced; as a result, creatures living in the water accustomed to aerobic conditions perish

Evapotranspiration – a term that includes water discharged to the atmosphere as a result of evaporation from the soil and surface-water bodies and by plant transpiration

Evergreen – plants that retain their leaves throughout the year

Exoskeleton – the hard outer covering that supports or protects the soft tissue of an organism such as the shells on turtles, snails and lobsters

Exotic Species – plants or animals not native to the area

Extirpated – a local population of a species that no longer exists but populations exist elsewhere

## **F**

Facultative Plant (FAC) – plants which are equally likely to occur in wetlands or non-wetlands (estimated probability 34 to 66 percent)

Facultative Upland Plant (FACU) – plants which usually occur in non-wetlands but are occasionally found in wetlands (estimated probability 1 to 33 percent)

Facultative Wetland Plant (FACW) – plants which usually occur in wetlands (estimated probability 67 to 99 percent)

Fen – peat-accumulating wetland that generally receives water from surface runoff and (or) seepage from mineral soils in addition to direct precipitation; generally alkaline; or slightly acid

Floating Plants – water plants with floating leaves; may be free-floating, such as duckweed, or attached to the bottom by a root system as in the case with pond lilies

Flood Plain – a strip of relatively flat land bordering a stream channel that may be overflowed at times of high water; the amount of land inundated during a flood is relative to the severity of a flood event

Flyway – a specific air route taken by birds during migration

Food Chain – interrelations of organisms that feed upon each other, transferring energy and nutrients; typically solar energy is processed by plants who are eaten by herbivores which in turn are eaten by carnivores: sun → grass → mouse → owl

Food Web – the combined food chains of a community or ecosystem

Freshwater – water without salt in it, like ponds and streams

Functions – the roles that wetlands serve, which are of value to society or environment

## **G**

Gleyed – soil condition resulting from prolonged soil saturation, evidenced by the presence of bluish or greenish colors through the soil or in mottles (spots or streaks) among other colors; occurs under reducing soil conditions resulting from soil saturation, by which iron is reduced predominantly to the ferrous state

Ground Water – in the broadest sense, all subsurface water; more commonly that part of the subsurface water in the saturated zone; a layer of underground water that forms when precipitation soaks into the soil and becomes trapped between the soil above and a rock or clay layer below

Groundwater Recharge – the process whereby infiltrating rain, snowmelt or surface water enters and replenishes the groundwater stores

Growing Season – the period of the year when the soil temperature at 19.7 inches below the soil surface is above biological zero; for ease of determination this period can be approximated by the number of frost-free days

## **H**

Habitat – the sum total of all the living and non-living factors that surround and potentially influence an organism; a particular organism's environment

Hardpan – a relatively hard, impervious, and usually clayey layer of soil lying at or just below land surface-produced as a result of cementation by precipitation of insoluble minerals

Herbs – succulent, non-woody plants that die down at the end of the growing season

Hydric – relating to, marked by, or requiring considerable moisture

Hydric Soil – a soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions that favor the growth and regeneration of hydrophytic vegetation; field indicators of hydric soils can include: a

thick layer of decomposing plant material on the surface; the odor of rotten eggs; and colors of bluish–gray, gray, black, or sometimes gray with contrasting brighter spots of color

Hydrologic Cycle – the circulation of water from the sea, through the atmosphere, to the land, and thence back to the sea by overland and subterranean routes

Hydrology – the study of the cycle of water movement on, over and through the earth's surface; the science dealing with the properties, distribution, and circulation of water

Hydroperiod – depth, duration, seasonality, and frequency of flooding

Hydrophyte – plants that have adapted mechanisms for survival in saturated or inundated soils with anaerobic conditions; examples include cattails, bulrushes, willows; a plant that can, and often must, live in water

## **I**

Indicator – organism, ecological community, or structural feature so strictly associated with a particular environmental condition that its presence indicates the existence of the condition

Infiltration – the downward movement of water from the atmosphere into soil or porous rock

Inorganic – containing no carbon; matter other than plant or animal

Inorganic Soil – soil with less than 20 percent organic matter in the upper 16 inches

Intermittent Stream – streams that flow primarily during the wet seasons when the water table is high, and remain dry for a portion of the year; most intermittent streams flow for a good portion of the year

Intertidal – alternately flooded and exposed by tides

Inundation – a condition in which water from any source temporarily or permanently covers a land surface.

Invertebrate – an animal with no backbone or spinal column; invertebrates include 95% of the animal kingdom

## **K**

Knee– A part of the root of a wetland tree that emerges from the water in which the tree is growing; common on bald cypress (see “pneumatophore”)

## **L**

Lentic – pertaining to or living in still waters (such as lakes, ponds, or swamps)

Lotic – pertaining to or living in flowing water

## **M**

Macroinvertebrates – animals without backbones that can be seen with the naked eye (caught with a 1-mm<sup>2</sup> mesh net); includes insects, crayfish, snails, mussels, clams, fairy shrimp, etc.

Mangroves – tropical evergreen trees found in swamps

Marsh – an area of soft, wet, low–lying land, characterized by grassy vegetation and often forming a transition zone between water and land; marshes are dominated by non-woody vegetation and they tend to develop in zones progressing from terrestrial habitat to open water

Migratory – a creature that moves from one region to another when the seasons change

Mineral soil – soil composed predominantly of mineral rather than organic materials; less than 20 percent organic material

Mitigation – a process of minimizing or compensating for damages to natural habitats, caused by human developments; these activities are designed to decrease the degree of damage to an ecosystem and may include restoration,

enhancement, or creation; according to the Clean Water Act, mitigation is a sequential process that includes avoiding impacts, then minimizing impacts, and lastly, compensating for impacts

Mottle – contrasting spots of bright colors in a soil; an indication of some oxidation or ground water level fluctuation

Muck – dark, finely divided, well-decomposed, organic matter forming a surface deposit in some poorly drained areas

## **N**

Native – an animal or plant that lives or grows naturally in a certain region

Naturalist – a person who appreciates, studies and interprets the natural environment

Niche – the way of life of an organism; how it get its food, its behavior and impact on other organisms and habitat; the location and function of a living organism in its environment

Nonpoint Source – a source (of any water-carried material) from a broad area, rather than from discrete points

Nonrenewable – something that is limited in supply and cannot be replenished by natural processes, at least for thousands of years; fossil fuels are a nonrenewable resource

Nuisance Species – undesirable plants and animals, commonly exotic species

Nutrient – any inorganic or organic compound that provides the nourishment needed for the survival of an organism

## **O**

Obligate Upland Plant (UPL) – plants which almost always occur in uplands (estimated probability greater than 99 percent)

Obligate Wetland Plant (OBL) – plants which almost always occur in wetlands (estimated probability greater than 99 percent)

Organic Material – anything that is living or was living; in soil it is usually made up of nuts, leaves, twigs, bark, etc.

Organic Soil – soil that contains more than 20 percent organic matter in the upper 16 inches

Organism – a living thing

Oxidized Rhizosphere – precipitation of orange-ish ferric compounds around the roots and rhizomes of plants growing in frequently saturated soils; caused by oxidation of the soil immediately surrounding the root from the discharge of oxygen by the roots or rhizomes of a plant

## **P**

Parameter– a characteristic component of a unit that can be defined; vegetation, soil, and hydrology are three parameters that may be used to define wetlands

Peat – organic material (leaves, bark, nuts) that has decayed partially; it is dark brown with identifiable plant parts, and can be found in peatlands and bogs

Percolation – the movement, under hydrostatic pressure, of water through interstices of a rock or soil (except the movement through large openings such as caves)

Perennial – a plant that grows year after year

pH – a measure of the acidity (less than 7) or alkalinity (greater than 7) of a solution; a pH of 7 is considered neutral

Photosynthesis – process by which green plants (chlorophyll containing) make food by combining carbon dioxide and water using energy from sunlight

Phytoplankton – microscopic, free-floating plants that drift in the water

Pioneer Plant – herbaceous annual and perennial seedling plants that colonize bare areas as a first stage in secondary succession

Playa Lake – a shallow, temporary lake in an arid or semiarid region, covering or occupying a playa in the wet season but drying up in summer; temporary lake that upon evaporation leaves or forms a playa

Pneumatophore – specialized roots formed on several species of plants occurring frequently in inundated habitats; root is erect and protrudes above the soil surface

Point Source – originating at any discrete source (i.e., a discharge pipe)

Pond – a relatively small body of standing, fresh water; usually shallow enough for sunlight to reach the bed

Poorly Drained – water is removed from the soil so slowly that the soil is saturated periodically during the growing season or remains wet for long periods

Pothole or Prairie Pothole – a term often used to describe the small, shallow ponds and marshes formed by Pleistocene glaciation in the grasslands of the northern United States and southern Canada; "kettlehole" was the original term used

ppt – parts per thousand. The salinity of ocean water is approximately 35 ppt

Preservation – the protection and maintenance of organisms or ecosystems for personal or special use

Prey – an animal that is eaten by other animals

Pristine – the earliest condition of the quality of a water body; unaffected by human activities

## **R**

Ramsar Convention – an intergovernmental treaty for the conservation of wetlands

Recharge (groundwater) – the process whereby infiltrating rain, snowmelt or surface water enters and replenishes the ground water stores

Renewable – something that can be replaced through natural processes if not overused or contaminated

Resilience – the ability of land to return to a relatively stable and functioning state following a disturbance Resource – something that is available that can be used to take care of a need

Restore – to return a wetland (or other natural habitat) to a close approximation of its condition prior to disturbance by modifying conditions responsible for the loss or change

Riparian – pertaining to or situated on the bank of a natural body of flowing water

Rhizome – an elongated, underground root, which usually grows horizontally and from which may sprout new plants

Rhizosphere– the zone of soil in which interactions between living plant roots and microorganisms occur

Root zone– the portion of a soil profile in which plant roots occur

Runoff – rainwater that flows over the land and into streams and lakes; it often picks up soil particles along the way and transports it into streams and lakes

Rush – grass-like plant that forms dense clumps, mostly in wet areas; needle-like stems are cylindrical or flattened, hollow and green; "rushes are round, sedges have edges"

## **S**

Salinity – the concentration of dissolved salts in a body of water; commonly expressed as parts per thousand

Salt Marsh – flat land dominated by non-woody vegetation that is flooded by salt water brought in by tides; it is found along saltwater rivers, bays, and oceans

Saturation – a condition in which all easily drained voids (pores) between soil particles are temporarily or permanently filled with water; soil has as much water in it as it can hold

SAV – see submerged aquatic vegetation

Scrub – a straggly, stunted tree or shrub; a growth or tract of stunted vegetation

Sediment – fine-grained mineral and organic material in suspension, in transit, or deposited by air, water, or ice on the earth's surface

Sedimentation – the act or process of forming or accumulating sediment in layers; the process of deposition of sediment

Sedge – grass-like plant, usually with solid triangular stems; “rushes are round, sedges have edges”

Seep – a wetland that forms in areas where groundwater discharges to the land surface, often at the base of steep slopes, but where water volume is too small to create a stream or creek; these wetlands have a perpetually saturated soil but may have little or no standing water

Shrub – a woody plant generally less than 7 meters in height, having several stems arising from the base and lacking a single trunk; a bush

Soil– unconsolidated mineral and organic material that supports, or is capable of supporting, plants, and which has recognizable properties due to the integrated effect of climate and living matter acting upon parent material, as conditioned by relief over time

Soil Horizon – a layer of soil that is distinguishable from adjacent layers by characteristic physical and chemical properties

Soil Profile – a vertical section of a soil through all its horizons and extending into the parent material

Soil Types – soils are commonly said to be sandy, loamy or clayey; sandy soils are dominated by sand and fall apart easily and do not have good water retention; loamy soils are where organic matter makes the soil dark and friable, with good moisture retention; clayey soils are dominated by clay to such an extent that you can squeeze a 'ribbon' out of the moist soil

Spring – area where there is a concentrated discharge of ground water that flows at the ground surface

Staining – dark brown marks left on trees and on the ground made by water

Submerged Aquatic Vegetation – plants that live entirely under water

Surface Runoff – water that flows over the surface of the land as a result of rainfall or snowmelt; surface runoff enters streams and rivers to become channelized stream flow

Surface Water – water present above the substrate or soil surface; an open body of water such as a lake, river, or stream

Suspended Sediment – sediment that is transported in suspension by a stream

Swale – a slight depression, sometimes filled with water, in the midst of generally level land

Swamp – a wetland where the soil is saturated and often inundated and dominated by shrubs (e.g., alder) or trees (e.g., red maple); contrasting with a marsh that has non-woody plants

## **T**

Terrestrial – pertaining to, consisting of, or representing the Earth; refers to anything that is land based

Tidal Flat – an extensive, nearly horizontal, tract of land that is alternately covered and uncovered by the tide and consists of unconsolidated sediment

Tidal Wetland – a wetland that is subject to the periodic rising and falling of sea level generated by the gravitational forces of the moon and the sun.

Tide – the rhythmic, alternate rise and fall of the surface (or water level) of the ocean, and connected bodies of water, occurring twice a day over most of the Earth, resulting from the gravitational attraction of the Moon, and to a lesser degree, the Sun

Top Soil – the top layer of soil; it is full of organic material and can be good for growing crops

Topography – the general configuration of a land surface or any part of the Earth's surface, including its relief and the position of its natural and man-made features

Transect – a straight line of certain length marked out through a wetland or upland, along which biodiversity is assessed or monitored

Transpiration – the process by which water passes through living organisms, primarily plants, into the atmosphere

Trees – woody plants greater than 7 meters tall, and usually with one main trunk

Tundra – a vast, nearly level, treeless plain of the arctic and subarctic regions. It usually has a marshy surface that supports mosses, lichens, and low shrubs, underlain by mucky soils and permafrost

## **U**

Understory – a foliage layer lying beneath and shaded by the main canopy of a forest often formed by shrub vegetation

Upland – a general term for non-wetland; elevated land above low areas along streams or between hills; any elevated region from which rivers gather drainage

## **V**

Values – the goods and services that come from a biological system, including wetlands and riparian areas that benefit humans or human society

Vascular Plant – a plant composed of or provided with vessels or ducts that convey water or sap; a fern is an example of this type of plant

Vernal Pond/ Pool – a small lake or pond that is filled with water for only a short time during the spring; many species of reptiles, amphibians, insects and invertebrates rely on vernal pools for breeding

Vulnerable – a species that is at risk because of low or declining numbers

## **W**

Water Cycle – the process by which water evaporates into water vapor, condenses into liquid form in the clouds, and precipitates as rain or snow back to Earth

Watermark – a line on a tree or other upright structure that represents the maximum static water level reached during an inundation event

Water Table – the upper level of the portion of the ground (rock) in which all spaces are wholly saturated with water; the water table may be located at or near the land surface or at a depth below the land surface and usually fluctuates from season to season; springs, seepages, marshes or lakes may occur where the water table intersects the land surface

Water Vapor – tiny drops of water floating in the air

Watershed – all the water from precipitation (snow, rain, etc.) that drains into a particular body of water (stream, pond, river, bay, etc.); surface drainage area that contributes water to a lake, river, or other body of water; the area drained by a watercourse; different watersheds are separated by divides or water partings

Wetland – a vegetated ecosystem where water is a dominant factor in its development and existence

Wetlands (Cowardin et al.) – are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For purposes of this classification wetlands must have one or more of the following three attributes: (1) at least periodically, the land supports predominantly hydrophytes



(2) the substrate is predominantly undrained hydric soil and (3) the substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season of each year.

Wetland Determination– the process or procedure by which an area is adjudged a wetland or non-wetland

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Wetland Function – a process or series of processes that take place within a wetland that are beneficial to the wetland itself, the surrounding ecosystems, and people

Wetland Soil– a soil that has characteristics developed in a reducing atmosphere, which exists when periods of prolonged soil saturation result in anaerobic conditions; hydric soils that are sufficiently wet to support hydrophytic vegetation are wetland soils

Wetland vegetation– the sum total of macrophytic (large enough to see without magnification) plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present; hydrophytic vegetation occurring in areas that also have hydric soils and wetland hydrology may be properly referred to as wetland vegetation

## **Z**

Zonation – state or condition of being marked with bands, as of color or texture; wetland vegetation often exhibits distinct zones characterized by plant communities composed of different species

Zooplankton – free-floating animals that drift in the water, range from microscopic organisms to larger animals such as jellyfish