

Appendix E. Glossary of common technical terms

The Association of State Wetland Managers (2002; last accessed November 2016) developed the initial glossary of these following terms, available online here:

<http://www.aswm.org/watersheds/69-toolkit/887-wetlands-and-watershed-protection-toolkit?showall=&start=15>

There are terms in this glossary that are not necessarily used in the panel's report.

A few technical terms were added to this glossary if requested by the panel or by a CBP partner that commented on draft report documentation; additions are highlighted in yellow to distinguish from the original ASWM glossary. The definitions for these added terms are the top result from a Google search of the given term.

The terms and definitions in this glossary are NOT recommended for any official CBP partnership purposes such as model documentation. Terms with definitions for specific contexts such Phase 6 BMP definitions for CBP purposes are defined elsewhere. This glossary is provided strictly for informational purposes for the benefit of a general reader who is likely unfamiliar with one or more technical terms used in the panel's report, appendices, or cited references.

A

Acre – a measure of land, 43,560 square feet

Areal Cover - a measure of dominance that defines the degree to which aboveground portions of plants (not limited to those rooted in a sample plot) cover the ground surface; it is possible for the total areal cover in a community to exceed 100 percent because (a) most plant communities consist of two or more vegetative strata; (b) areal cover is estimated by vegetative layer; and (c) foliage within a single layer may overlap

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

Alluvium, Alluvial Soil – soil composed primarily of eroded material such as sand, silt, or clay, that has been deposited on land or on the bottom of water bodies by rivers and streams overflowing their banks

Alpine Snow Glade – a marshy clearing between slopes above the timberline in mountains

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

Anoxic – without oxygen

Aquifer – a geological formation, such as fractured bedrock, glacial sands or gravels, which contains water and yields significant quantities of water to springs and wells; also known as ground water

B

Bank – the rising ground that borders a stream, pond or other body of water

Bank storage – the change in the amount of water stored in an aquifer resulting from a change in stage of an adjacent surface–water body

Base Flow – the sustained low flow of a stream, usually resulting from groundwater inflow to the stream channel

Bed – the ground under a river, pond or other body of water

Bed Material – sediment composing the streambed

Bedrock – a general term used for solid rock that underlies soils or other unconsolidated material

Benthic Organism – a form of aquatic life that lives on the bottom or near the bottom of streams, lakes, or oceans

Biodiversity – the sum of all species of plants and animals. An ecosystem is considered healthy when it supports the most diverse numbers and types of species it is capable of supporting

Biological Assessment (Bioassessment) – using biomonitoring data of samples of living organisms to evaluate the condition or health of a place (e.g., a stream, wetland, or woodlot)

Biological Monitoring (Biomonitoring) – sampling the biota of a place (e.g., a stream, a woodlot, or a wetland) repetitively to monitor change over time

Biomass – the amount of living matter, in the form of organisms, present in a particular habitat, usually expressed as weight-per-unit area

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

Buffer Zone – the area of land next to a body of water or wetland, where activities such as construction are restricted in order to protect water or water quality

C

Channelization – the straightening and deepening of a stream channel to permit the water to move faster or to drain a wet area for farming

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

Confining Layer – a body of impermeable or distinctly less permeable material stratigraphically adjacent to one or more aquifers that restricts the movement of water into and out of the aquifers

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

D

Degraded – condition of the quality of water that has been made unfit for some specified purpose

Delineation – identification and documentation of the boundary between wetlands and uplands
Delta – the low, nearly flat tract of land at or near the mouth of a river, resulting from the accumulation of sediment supplied by the river in such quantities that it is not removed by tides, waves, or currents

Depressional Wetland – a wetland that lay within a depression in the landscape, generally draining a small surface area

Direct Runoff – the runoff entering stream channels promptly after rainfall or snowmelt

Discharge – the volume of fluid passing a point per unit of time, commonly expressed in cubic feet per second, million gallons per day, gallons per minute, or seconds per minute per day

Discharge Area (ground water) – area where subsurface water is discharged to the land surface, to surface water, or to the atmosphere

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

Drainage Basin – the land area drained by a river or stream; also known as “watershed”; the area is determined by topography that divides drainages between watersheds

Drained – a condition in which ground or surface water has been reduced or eliminated from an area by artificial means

E

Ecoregion – a region defined by similarity of climate, landform, soil, potential natural vegetation, hydrology, and other ecologically relevant variables

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

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

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

F

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

Fill – the process where low-lying, wet land is filled with materials in an attempt to make it arable or suitable for construction, any material that raises the ground elevation of a wetland or waterbody

Flooded - a condition in which the soil surface is temporarily covered with flowing water from any source, such as streams overflowing their banks, runoff from adjacent or surrounding slopes, inflow from high tides, or any combination of sources

Flood Attenuation – a weakening or reduction in the force or intensity of a flood

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

Floodplain Wetlands – wetlands that are influenced by and associated with floodplains, where the overflowing water of rivers and streams is the dominant hydrologic input

Fluvial – pertaining to a river or stream

Frequently Flooded - a flooding class in which flooding is likely to occur often under normal weather conditions (more than 50-percent chance of flooding in any year or more than 50 times in 100 years)

Forested Wetland – a wetland class where the soil is saturated and often inundated, and woody plants taller than 20 feet form the dominant cover, e.g. red maple, American elm, and tamarack; water tolerant shrubs often form a second layer beneath the forest canopy, with a layer of herbaceous plants growing beneath the shrubs (abbreviated FO)

Fringe Wetland – wetland near a large body of water that receives significant and regular two-way flow

Function – refers to how wetlands and riparian areas work – the physical, chemical, and biological processes that occur in these settings, which are a result of their physical and biological structure

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

G

Geomorphic – pertaining to the form of the Earth or of its surface features

Geomorphology – the science that treats the general configuration of the Earth's surface; the description of landforms

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

Ground Water Discharge – ground water that emerges at the land surface, in the form of springs or seepage areas; ground water can also discharge into rivers (via bank seepage) and sustain flow during the drier months

Groundwater Flow System – the underground pathway by which groundwater moves from areas of recharge to areas of discharge

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

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

Hydraulic Head – the height of the free surface of a body of water above a given point beneath the surface

Hydraulic Gradient – the change of hydraulic head per unit of distance in a given direction

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

Hydrogeomorphic – of or pertaining to a synthesis of the geomorphic setting, the water source and its transport, and hydrodynamics

Hydrogeomorphic (HGM) Classification – a wetland classification system based on the position of a wetland in the landscape (geomorphic setting), dominant sources of water, and the flow and fluctuation of water once in the wetland; hydrogeomorphic classes include riverine, depressional, slope, mineral soil flats, organic soil flats, estuarine fringe, and lacustrine fringe

Hydrogeomorphic (HGM) Approach – a method that compares a wetland's functions (e.g., water retention, nutrient cycling) to similar wetlands of the same type (as defined by HGM classification) that are relatively unaltered; HGM functions normally fall into one of three major categories: (1) hydrologic (e.g., storage of surface water), (2) biogeochemical (e.g., removal of elements and compounds), and (3) habitat (e.g., maintenance of plant and animal communities)

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

I

Impaired – condition of the quality of water that has been adversely affected for a specific use by contamination or pollution.

Impairment – a detrimental effect on the biological integrity of a waterbody caused by an impact that prevents attainment of the designated use

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

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

Intertidal Habitat – the tidal area between the mean lower low water and mean higher high water which is alternately exposed and covered by water twice daily

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

Invasive Species - plant, fungus, or animal species that is not native to a specific location (an introduced species), and which has a tendency to spread to a degree believed to cause damage to the environment, human economy or human health.

Irrigation – controlled application of water to arable land to supply requirements of crops not satisfied by rainfall

Isolated Wetland – wetland not regulated by the COE because it does not have an interstate commerce connection; typically does not have surface water connection to other waters or wetlands

J

Jurisdictional Wetlands – wetlands which are under the jurisdiction of the COE and the EPA pursuant to Section 404 of the federal Clean Water Act because they meet the COE and EPA definition of wetlands; those areas which "...are inundated or saturated by surface or ground water at a frequency and duration to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions"; identified in the field based on the 1987 Corps of Engineers Wetland Delineation Manual which requires indicators of the following three parameters:

- A) a dominance of wetland plants;
- B) hydric soils; and
- C) wetlands hydrology

K

Karst – a type of topography that results from dissolution and collapse of carbonate rocks such as limestone, dolomite, and gypsum, and that is characterized by closed depressions or sinkholes, caves, and underground drainage

L

Lacustrine – pertaining to, produced by, or formed in a lake

Lacustrine Wetlands – wetlands within a lake or reservoir greater than 20 acres or within a lake or reservoir less than 20 acres if the water is greater than 2 meters deep in the deepest part of the basin; ocean-derived salinity must be less than 0.5 part per thousand

Load – material that is moved or carried by streams, reported as weight of material transported during a specified time period, such as tons per year

M

m – meter; there are approximately 39 inches in a meter

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

Maturity – a stage in the evolutionary erosion of land areas where the flat uplands have been widely dissected by deep river valleys

mg/l – milligrams per liter; a unit of concentration

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

Monitoring – the regular measurement of an area or quantity/quality over time (generally of things that can change)

N

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

Navigable Water – a water that has in the past, currently is or can be used for interstate commerce (i.e., movement of logs downstate); term is defined differently by the COE under the different regulatory programs

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

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

O

Open Water – a wetland class consisting of areas of open water less than 6.6 feet deep; there are often submerged or floating-leaved plants in the shallower portions along the edges of the waterbody (abbreviated OW)

Organic – containing carbon, but possibly also containing hydrogen, oxygen, chlorine, nitrogen, and other elements

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

Organic Waste – the decaying or decayed matter from once living organisms

Overland Flow – the flow of rainwater or snowmelt over the land surface toward stream channels

Oxbow – a bow-shaped lake formed in an abandoned meander of a river

P

Palustrine Wetlands – freshwater wetlands including open water bodies of less than 20 acres in which water is less than 2 meters deep; includes marshes, wet meadows, fens, playas, potholes, pocosins, bogs, swamps, and shallow ponds; most wetlands are classified as Palustrine

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

Perched Groundwater – unconfined ground water separated from an underlying main body of ground water by an unsaturated zone, typically by an impermeable clay layer

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

Permeability – the capacity of a rock for transmitting a fluid; a measure of the relative ease with which a porous medium can transmit a liquid

Physiographic Province – a region in which the landforms differ significantly from those of adjacent regions

Physiography – a description of the surface features of the Earth, with an emphasis on the mode or origin

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

Pollution – The Clean Water Act (Section 502.19) defines pollution as "the [hu]man-made or [hu]man-induced alteration of chemical, physical, biological, and radiological integrity of water."

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

Ponded – a condition in which water stands in a closed depression; water may be removed only by percolation, evaporation, and/or transpiration

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

Porosity – the ratio of the volume of voids in a rock or soil to the total volume

Precipitation – the process by which condensed water builds up in clouds and falls to the ground as rain, sleet, snow, or hail

Prior Converted Wetland – wetland converted to farmable land before December 23, 1985

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

Q

Quantitative – a precise measurement or determination expressed numerically

R

Reach – a continuous part of a stream between two specified points

Reaeration – the replenishment of oxygen in water from which oxygen has been removed

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

Recharge Area (groundwater) – an area in which water infiltrates the ground and reaches the zone of saturation

Reference Condition – set of selected measurements or conditions of minimally impaired waterbodies characteristic of a waterbody type in a region

Reference Site – a minimally impaired site that is representative of the expected ecological conditions and integrity of other sites of the same type and region

Regolith - the layer of unconsolidated rocky material covering bedrock

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

Riparian Area – an area of streamside vegetation including the stream bank and adjoining floodplain, which is distinguishable from upland areas in terms of vegetation, soils, and topography

Riparian Forest – a swamp that is narrow in width and runs along the shore of and affects a river or stream

Riverine Wetlands – wetlands within river and stream channels; ocean-derived salinity is less than 0.5 part per thousand

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

S

Salt Flat – the level, salt-encrusted bottom of a dried up lake or pond

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

Salt Meadow – a meadow subject to overflow by salt water

Saltwater – water with a high concentration of salt; sometimes used synonymously with seawater or saline water

Sand – a sedimentary material, finer than a granule and coarser than silt, with grains between 0.06 and 2.0 millimeters in diameter

Saprolite – Soft, thoroughly decomposed and porous rock, often rich in clay, formed by the in-place chemical weathering of igneous, metamorphic, or sedimentary rocks

Saturated Zone – generally the zone within sediment and rock formations where all voids are filled with water under pressure greater than atmospheric

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

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

Scrub–Shrub Wetland – a wetland class dominated by shrubs and woody plants that are less than 20 feet tall, e.g. dogwoods, alders, red maple saplings, etc.; water levels in shrub swamps can range from permanent to intermittent flooding (abbr. SS)

Sea Level – the long–term average position of the sea surface; in this volume, it refers to the National Geodetic Vertical Datum of 1929

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

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

Shrubland – land covered predominantly with shrubs

Silt – one of three main parts of soil (sand, silt, and clay); silt is small rock particles that are between .05 mm and .002 mm in diameter

Siltation – the deposition or accumulation of silt (or small–grained material) in a body of water

Site – the portion of land chosen as the basis for an activity or ecological assessment

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 Moisture – water occurring in the pore spaces between the soil particles in the unsaturated zone from which water is discharged by the transpiration of plants or by evaporation from the soil

Somewhat Poorly Drained– soils that are wet near enough to the surface or long enough that planting or harvesting operations or crop growth is markedly restricted unless artificial drainage is provided; commonly have a layer with low hydraulic conductivity, wet conditions high in the profile, additions of water through seepage, or a combination of these conditions

Streamflow – the discharge of water in a natural channel

Substrate – the base or material on which an organism lives; subsoil

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

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

Terrain – physical features of a tract of land

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

Tidal Prism – the total volume of water passing in and out of a particular area, such as a lagoon or salt marsh, during a tidal cycle

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

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

U

Undercutting – a process of riverbank erosion whereby the base or 'toe' of the riverbank is 'eaten away' as a result of river flow or wave action. It results in the section of bank above becoming unstable and prone to collapse

Unsaturated Zone – a subsurface zone above the water table where the pore spaces may contain a combination of air and water

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

V

Very Poorly Drained – water is removed from the soil so slowly that water remains at or on the surface during most of the growing season

W

Water Column – an imaginary column extending through a water body from its floor to its surface

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

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

Wet Meadow – emergent wetlands that are generally seasonally flooded and have saturated soil for much of the growing season. Wet meadows are dominated by grasses, sedges and rushes and are very often cultivated or pastured

Wet Prairie – herbaceous wetland dominated by grasses rather than sedges and with waterlogged soil near the surface but without standing water for most of the year

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 nonsoil and is saturated with water or covered by shallow water at some time during the growing season of each year. Wetland Boundary– the point on the ground at which a shift from wetlands to nonwetlands or aquatic habitats occurs; these boundaries usually follow contours

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 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