Glossary of Watershed Terms

"The difference between the right word and the nearly right word is the same as that between lightning and the lightning bug." –Mark Twain

A

Acute Toxicity – Toxic effects (usually lethal or sub-lethal) due to short-term exposures to chemicals.

Advanced Wastewater Treatment – Wastewater treatment that extends beyond the secondary, or biological stage, of treatment and includes the removal of nutrients and suspended solids.

Aerobic – Containing oxygen. For instance: conditions that contain oxygen, organisms that require oxygen to survive or any chemical/biological processes that occur in the presence of oxygen.

Algae – Members of a large group of primarily aquatic organisms that contain chlorophyll and other pigments and can carry out photosynthesis, but lack true roots, stems, or leaves and range from single cells to large multicellular structures. Examples of algae include seaweed, kelp, dinoflagellates, and diatoms.

Algal Bloom – The rapid growth of algae in a system due to excessive amounts of nutrients and the appropriate physical and chemical conditions.

Alkalinity – A measurement of the buffering ability of water (or the capacity of water to resist changes in pH), or the ability of a base to neutralize an acid.

Anaerobic – Lacking oxygen. For instance, conditions that lack oxygen, organisms that can survive without oxygen, and any chemical or biological processes that occurs without oxygen.

Anoxia – Absence of oxygen.

Anoxic – Lacking oxygen.

Anthropogenic – Of, relating to, or impacts resulting from human activity.

Aquaculture – The cultivation and harvest of aquatic plants and animals.

Aquifer – A stratum of rock or soil that contains groundwater.

Assimilative Capacity – Capacity of a water body or watershed to receive and absorb pollutants while maintaining designated uses and water quality standards.

B

Baseflow – The amount of stream flow contributed by groundwater sources.

Baseline Data – Information providing a look at existing chemical, biological, or physical conditions.

Beneficial Use – Uses of a water resource, such as recreation, aquatic life, and human consumption, that are protected by state water quality standards.

Benthic Macroinvertebrates – animals without backbones or internal skeletons that live on or near the bottom of a water body.

Benthos – All organisms living at or near the bottom of an aquatic habitat.

Best Management Practices (BMPs) – Methods, measures, or practices to prevent and/or reduce water pollution. Examples include treatment requirements, operating procedures, erosion control practices, fertilizer and animal waste management, runoff control in urban systems.

Bioaccumulation – The process by which contaminants accumulate within the tissues of an individual organism.

Biochemical Oxygen Demand (BOD) – The potential amount of oxygen consumed in the degradation of organic material by bacteria.

Biological Assessment – Evaluations of the condition of water bodies using surveys and other direct measurements of species diversity and species abundance (of macroinvertebrates, fish, and plants) to determine whether water bodies support survival and reproduction of desirable fish, shellfish, and other aquatic species and how aquatic life reacts to water quality.

Biological Diversity (Biodiversity) - The number and variety of living organisms on earth in all forms and at all levels, including ecosystem diversity, species diversity, and genetic diversity.

Biological Wastewater Treatment – Treatment process in which bacterial or biochemical activity is used to treat organic matter present in wastewater.

Biological Integrity – Supporting and maintaining the biological components of an aquatic ecosystem to a level comparable to that of natural habitats of the surrounding region.

Bioindicators – Organisms used to determine changes in water quality and/or pollutant levels within a system.

Biota – All of the organisms, including bacteria, plants, and animals, that live in a particular location or area.

Buffer – A vegetated area, forested or otherwise vegetated, located between water bodies such as stream, wetlands, and lakes, that provides a permanent barrier against runoff from development, agriculture, construction, and other land uses. Buffers are designed to filter pollutants in runoff before the pollutants reach surface waters.

C

Channelization – Hydrologic modifications and straightening of stream shape that may cause dramatic changes in the stream ecosystem.

Chemical Oxygen Demand (COD) – A measure of the amount of organic matter present in water or wastewater.

Chlorophyl a – Green pigment found in photosynthetic organisms that can be used as an indicator of algal biomass.

Chronic Toxicity – Toxic effects (usually non-lethal) due to long-term exposures to chemicals.

Coastal Zone - Coastal waters and adjacent shorelands that influence the uses of the ocean and its ecology, or whose uses and ecology are affected by the ocean. The Coastal Zone may include islands, transitional and intertidal areas, salt marshes, wetlands, and beaches.

Collaboration – A problem solving process in which parties work together informally to resolve an issue. The issue may or may not be contentious.

Combined Sewer Overflow – Discharge of the combination of stormwater and sanitary wastewater during storms when the capacity of the sewer system to transport, store, or treat the increased flow is exceeded.

Combined Sewer System – A wastewater collection and treatment system for both stormwater runoff and municipal sewage.

Confluence – The point at which two rivers/streams/etc. flow together.

Connectivity – A measurement of the continuity of a corridor (riparian corridor, etc.). Connectivity promotes valuable natural functions, such as movement of animals through their habitat, transport of materials and energy, which help maintain the integrity of natural communities.

Consensus – A method of making collaborative decisions in which everyone agrees they can live with the decision and/or attempts are made to address all parties interests.

Cost-Effective Solution – A financially viable solution to a problem.

Cost-Sharing – Sharing the costs of constructing and implementing a Best Management Practice (BMP) between more then one funding source.

Critical Habitat – Areas that are essential for the conservation of federally endangered or threatened species. Such areas may require protection or certain management practices.

D

Decomposition – The breakdown of organic substances by microorganisms.

Designated Uses – Uses for water resources identified by state water quality standards that must be upheld or achieved as required by the Clean Water Act (CWA). Examples of designated uses include aquatic habitat, fisheries, and public water supply.

Detention – The slowing, collecting, or detaining of stormwater runoff prior to release into receiving waters.

Discharge – The release or placement of wastewater, dredged or fill materials, or other substances directly into surface waters.

Dissolved Oxygen – The amount of oxygen present in the water column. Dissolved oxygen is important for aerobic organisms and proper biological functioning. Less then 5 parts per million of oxygen in water can cause stress to aquatic organisms. The lower the oxygen concentrations, the greater the stress.

E

Ecological Integrity – Supporting and maintaining all components, biological, physical, and chemical components, of an ecosystem to a level comparable to that of natural habitats of the surrounding region.

Ecosystem – The network of a biological community and its surrounding interconnected physical and chemical environment.

Edge - The outer boundary of a habitat patch.

Edge effect - A condition in which otherwise suitable habitat becomes less suitable for a species because it is adjacent to non-habitat land. This degradation of habitat may occur due to predation from species that live outside the patch, or increased competition with species that live outside the habitat patch.

Effluent – Treated or untreated wastewater that is discharged into the environment from a treatment plant, sewer, or industrial facility.

Endemic- An adjective that describes species that occur only in a limited number of places.

EPT – Insect groups (Ephemeroptera, Plecoptera, and Trichoptera) that are generally intolerant of many types of pollution. Low EPT abundance may signify poor water quality.

Erosion – The wearing away of rock and soil due to wind, weathering, water, ice, or other physical, chemical, or biological forces. The rate of erosion may be increased by land-use activities.

Estuary - A coastal area where fresh water from rivers and streams mixes with salt water from the ocean. Bays, sounds, and lagoons along coasts may be estuaries. Segments of rivers and streams connected to estuaries are considered part of the estuary.

Eutrophication – Process by which a water body undergoes an increase in dissolved nutrients, often leading to algal blooms, low dissolved oxygen, and changes in community structure. This process occurs naturally over time, but can be accelerated by human activities that increase nutrient inputs into aquatic ecosystems.

Exotic species – A recently introduced species, or a species that is living in a location that is outside of its normal or historical range.

Extinct species- A species no longer in existence

Extirpated species – A species no longer surviving in regions that were once part of their range.

F

Facilitation - Assistance provided to a group of people by an impartial party (facilitator) in order to help the group conduct a satisfying meeting or series of meetings.

Fecal Coliform – Bacteria found in the fecal matter of warm-blooded animals. Fecal coliform is harmless to human health, but is used as an indicator of other harmful pathogens.

First Flush - Stormwater that initially runs off an area that is more polluted than the stormwater that runs off later.

Floodplain – Area of land on each side of a stream channel that is inundated periodically by flood waters.

Fragmentation – The process whereby a large patch of habitat is broken down into many smaller patches of habitat, resulting in a loss in the amount and quality of habitat.

G

Gaging station- A particular site on a stream, canal, lake, or reservoir where systematic observations of hydrologic data are obtained.

Geodatabase- A GIS-based computer program where both mapping information and other data such as water quality can be combined, mapped, and tracked.

GIS (Geographical Information Systems) – Computer program for storing, mapping, analyzing, and displaying geographically-referenced data, that is, data identified according to location.

Greenway- A linear open space established along a natural corridor, such as a river, stream, ridgeline, rail-trail, canal, or other route for conservation, recreation, or alternative transportation purposes. Greenways can connect parks, nature preserves, cultural facilities, and historic sites with business and residential areas.

Groundwater – Water occurring beneath the earth's surface, typically in aquifers, that supplies wells and springs, and is a key source of drinking water.

H

Habitat – An area with specific physical and environmental conditions in which a particular plant or animal lives.

Habitat Integrity – Supporting and maintaining the physical and environmental conditions of an aquatic ecosystem to a level comparable to that of natural habitats of the surrounding region.

Hardness – The presence of mineral, such as calcium and magnesium, in surface and/or ground waters.

Heavy Metals – Metals that do not degrade over time and are thus an environmental concern. Examples of heavy metals are cadmium, mercury, nickel, and lead.

Historical Data – Background information on historical conditions of an ecosystem and activities that may have occurred on or near the site of interest. Historical data will help understand the existing conditions of the ecosystem and may be useful in determining target conditions for restoration, etc.

Human-Induced Disturbances – Disturbances to ecosystem structure and function due to human activities and land-uses.

Hydric soils – Soils inundated with water long enough to become anaerobic. Hydric soils are often indicative of wetlands.

Hydrologic Unit Cataloging (HUC) – Cataloging of watersheds of various geographical scales, using numerical codes, developed by the USGS.

Hydrology – Movement and distribution of groundwater and surface water in a system.

Hypoxia – Low dissolved oxygen concentrations in aquatic environments.

I

Impaired Water – Water bodies with decreased water quality due to pollution or other degradation that are only partially supporting, or do not support, their designated uses.

Impervious Surface – A surface that does not allow water to penetrate. Examples of impervious surfaces include asphalt, rooftops, and concrete.

Infiltration – The process by which a liquid draining or seeping into the earth, stormwater pipes, etc.

Interest – A concern, need, or value which in a dispute often gives rise to a specific stance (see: "position") taken by a disputing party. Substantive interests are those relating to the topics or issues under dispute, such as a technical or policy issue. Procedural interests relate to the fairness and efficiency of the methods or rules guiding discussions a decision making. Psychological interests relate to the parties' feelings, for example feelings of respect, appreciation, independence, enjoyment.

Intermittent Stream – A stream that flows only at certain times of the year, or does not flow continuously.

J K L M

Land Use – The way land is used or developed. For instance, the types of buildings/structures permitted on the land and the types of activities permitted on the land. Particular land uses are often associated with different types of pollution, such as erosion and sedimentation from construction activities.

Land Use Planning – Planning and creating policies to guide the way in which land and resources will be used.

Leachate – Water that picks up contaminants as it flows through wastes, pesticides, fertilizers, or other potential pollutants.

Loading – Entry of pollutants into a body of water.

Meander – A curve in a river or stream.

Mitigation – Actions taken to avoid, reduce, or compensate for the effects of human-induced environmental damage. It can include projects such as restoration and enhancement of negatively impacted ecosystems, or creation of an ecosystem.

Mitigation Banking – The restoration, creation, enhancement, or, in exceptional circumstances, the preservation of wetlands or other ecological resources which will compensate for unavoidable wetland or other ecological resource losses at another site or in future development. (NCSE)

Monitoring - Repeated observation, measurement, or sampling at a site, on a scheduled or event basis, for a particular purpose.

N

Natural Disturbances – Natural events that disturb the structure and function of an ecosystem such as floods, drought, earthquakes, fire, lightning, etc.

Non-Point Source (NPS) Pollution – Pollution that enters water bodies from a variety of sources. NPS pollution is caused by runoff from rainfall or snowmelt that moves over and through the ground, washing natural and human-made pollutants into surface waters and underground sources of drinking water.

No-till Farming – Farming method in which the soil is left undisturbed.

Nutrients – Substances, such as nitrogen and phosphorous, required by plants and animals for growth. In some circumstances, excessive nutrient additions to surface waters may result in excessive algal/plant growth and, subsequently, the accumulation and decay of increased organic matter.

Nutrient Management – A best management practice (BMP) developed to minimize the amount of nutrients entering surface and ground waters by limiting the amount of nutrients applied to the land to only as much as the crop is estimated to use.

O P

Oxygen Demanding Materials – Materials such as organic wastes, food wastes, etc. that use up dissolved oxygen in the water column as they decompose.

PAHs- Polycyclic aromatic hydrocarbons, a group of organic contaminants that form from the incomplete combustion of hydrocarbons such as coal, oil, gas, wood, garbage, or other organic substances.

Pathogen – A disease-causing organism (viruses, bacteria, or fungi can be pathogenic organisms).

Perennial Stream – A stream that flows continuously throughout the year.

Pesticides – Chemicals or substances designed to eliminate insects and other pests.

Pesticide Management – A best management practice developed to reduce the pollution of water, soil, air, and non-targeted organisms by limiting the use, quantity, placement, timing, and application method of pesticides.

Point Source Pollution - Pollution that can be traced to a single point, or output, such as a pipe.

Pools - A section of a stream with slow-moving, deep water. In natural streams pools and riffles are alternating.

Position - Stance taken by a party which indicates specific perspectives or solutions that the party will or will not accept (see: "Interest").

Q R

Receiving Waters – Surface waters, whether natural or man-made, into which materials are discharged.

Restoration - The management of physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to sites that formerly supported wetlands.

Riffle – A section of a stream with fast-moving, turbulent, shallow water with a rocky bottom. In natural streams pools and riffles are alternating.

Riparian – Of, relating to, living on, or located on the banks of a watercourse such as a river, stream, lake, etc.

River Basin – Area encompassing all the land drained by streams and creeks flowing downhill into a major river. All water that falls within the basin flows into these streams and rivers.

Runoff – Water flowing across the land that does not infiltrate the soil, but drains into surface or ground waters, or when rainfall exceeds the infiltration capacity of the land.

S

Sedimentation – The deposition of particles of soil, sand, silt, clay, or organic matter onto the bottom of any surface water or left behind as water leaves.

Sinuosity – Describes the amount of curvature in a stream channel.

Situation Assessment- A social science activity that occurs early in a watershed planning process and involves identifying watershed stakeholders, learning what concerns stakeholders and what they hope to gain in a watershed planning process, and identifying potential conflicts.

Stormwater Runoff – Runoff that picks up contaminants deposited on impervious surfaces during its flow to surface or ground waters.

Streambank Stabilization – Prevention of stream bank erosion and deterioration through vegetation or other stabilizing structures.

Stream Corridor – Spatial scale defining the ecosystem surrounding a stream, linear in shape, that includes the stream channel, riparian vegetation, floodplains, streambanks, tributary streams, and trails, roads, and other development.

Stream Restoration – The management of morphological, ecological, and hydrological characteristics of a stream with the goal of returning natural/historic functions to the stream system.

Suspended Solids – Organic and inorganic particles suspended in the water column and carried by the water. The presence of suspended solids in water may reduce the amount of light reaching the water column, clog the gills of fish and other animals, and are often associated with toxic contaminants that bind to particles.

T

Technical Advisors – In watershed planning, a group of individuals with expertise in particular subjects or issues regarding the watershed or the watershed planning process that can be called on for informational needs and other technical assistance.

TMDL (total maximum daily load) - Calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards and allocation of that amount to the pollutant's sources.

Total Suspended Solids (TSS) – The weight of all suspended solids in water.

Transitional Upland Fringe – Areas of land on each side of a stream bank, beyond the floodplain, that act as a transitional zone between floodplain and surrounding land.

Tributary – A stream or river that feeds into a larger stream, lake, or river.

Turbidity – A measurement that indicates the amount of suspended solids in the water column.

U V W

Vegetative Clearing – The removal of riparian and upland vegetation for land-use purposes.

Water Cycle – The cycle in which water evaporates from surface waters, condenses into clouds, and falls again to the earth as rain or other forms of precipitation.

Water Quality Standards – Laws and regulations that maintain limits, or criteria, for certain chemical, biological, and physical parameters in order to protect designated uses.

Water Table – The depth at which the ground is saturated with water.

Watershed - Ecosystem consisting of three major components, stream channel, floodplain, and upland areas, that function together and drain to water bodies, including lakes, rivers, estuaries, wetlands, streams, and the surrounding landscape (groundwater recharge areas are also considered).

Watershed Advisory Group – Assembly of a group of key participants, such as local citizens, public officials, landowners, local business owners, and public interest groups, who represent a variety of community interests, are affected by watershed initiatives, and will play an active role in the watershed planning process.

Watershed Stakeholder - Anyone who has influence upon the quality of waters in a watershed (such as industry, municipalities, boaters, agriculture, forestry), and anyone who is impacted by the quality of waters in a watershed (such as fisherman, swimmers, waterfront homeowners), and thus has a "stake" in any potential water quality management measures.

Wetlands – Areas that are frequently inundated or saturated with water for periods of time long enough to support vegetation suited for survival in saturated soils. Wetlands may include bogs, swamps, marshes, etc.

Wetland Creation - Creation of wetlands at a location where there was previously no wetlands, or where no wetland has existed in the last 100-200 years (Lewis, 1989, Gwin, et. al., 1999).

Wetland Enhancement - The manipulation of the physical, chemical, or biological characteristics of a wetland (undisturbed or degraded) site the heighten, intensify, or improve specific function(s) or for a purpose such as water quality improvement, flood water retention or wildlife habitat resulting in a change in wetland function(s).

Wetland Establishment – The manipulation of the physical, chemical, or biological characteristics present to develop a wetland that did not previously exist on an upland or deepwater site resulting in a gain in wetland acres.

Wetland Protection/Maintenance - Removal of a threat to, or preventing decline of, wetland conditions be an action in of near a wetland. Includes purchase of land or easement, repairing water control structures or fences, structural protection such as repairing a barrier island, or preservation.

Wetlands – Areas that are frequently inundated or saturated with water for periods of time long enough to support vegetation suited for survival in saturated soils. Wetlands may include bogs, swamps, marshes, etc (40 CFR 232.2(r)).

X Y Z

Zoning – Designation and regulation of areas of land for particular land uses. Zoning is delineated in a town, county, etc. Zoning Ordinance.

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