

GLOSSARY OF TERMS

303(d) Report	Report required under Section 303(d) of the federal Clean Waters Act from each state listing impaired waters within the state that would not support designated uses even after appropriate and required water pollution control technologies have been applied.
305(b) Report	Report required under Section 305(b) of the federal Clean Waters Act from each state on the state's water quality conditions and water quality management program.
algal bloom	A sudden growth of algae in an aquatic ecosystem. Often induced by nutrient enrichment from pollution.
alkaline	Having a pH greater than 7
alkalinity	The ability of a material to buffer acidity. Usually measured in mg/L CaCO ₃ .
alluvial	Pertains to the environments, processes, and products of streams or rivers. Materials (sediments, detritus, etc.) deposited by flowing water are referred to as alluvial deposits.
anthropogenic	Resulting from human activity.
aquatic	Relating to freshwater.
aquifer	A body of permeable rock that is capable of storing significant quantities of water, that is underlain by impermeable material, and through which groundwater moves.
atmospheric deposition	Matter that falls to the earth either as wet deposition (rain and snow) or dry deposition (dust particles).
autotrophs	An organism that manufactures its own food, using carbon dioxide as its source of carbon and sunlight as an energy source; generally photosynthetic organisms.
avifauna	Bird life

bank-full flow	The maximum amount of discharge that a stream channel can carry without overflowing.
basin (drainage)	<i>See watershed</i>
bedrock	The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.
benthic	Refers to the bottom sediments and immediately adjacent zone in an aquatic ecosystem.
Best Management Practices	Refer to the most environmentally appropriate techniques for agriculture, forestry, mining, development, urban stormwater management, and other practices that are potential threats to natural resources.
bioaccumulation	The build-up of toxic substances in animal tissue which increases as level in the food chain increases.
biodiversity	The variety of all living things. Can be measured by genetic variability, species richness, or ecosystem complexity.
bog	A plant community adapted to acidic, wet areas. Generally, decomposition rates are slow, resulting in peat formation.
bottomland	Lowland areas generally around waterways.
brine	A saline solution containing high levels of inorganic salts; typically comprises deep groundwater and may be brought to the surface during oil and gas drilling.
calcareous	Describes substances containing calcium carbonate (CaCO ₃).
carbonate (CO₃)	A substance that bonds to hydrogen ions in carbonic acid, and forms bicarbonate. This reaction reduces acidity and raises alkalinity.
comprehensive plan	A general policy guide for the physical development of a municipality, taking into account

many factors including location, character, and timing of future development. A plan provides a blueprint for housing, transportation, community facilities and utilities, and for land use.

conductivity

See specific conductance

confluence

The meeting of two waterways. The terminal end of the smaller (tributary) waterway at the confluence is referred to as the tributary's mouth.

conservation

The maintenance of environmental quality and resources; resources include physical, biological, or cultural. Ecosystem management within given social and economic constraints; producing goods and services for humans without depleting natural ecosystem diversity, and acknowledging the naturally dynamic character of biological systems.

conservation easement

A legal agreement a property owner makes to restrict the type and amount of development that may take place on his or her property.

contaminant

See pollutant

contiguous

Adjacent

CPOM

Course particulate organic matter; comprised of dead plant (fallen leaves and woody debris) and animal material (decaying organisms).

darter

Small fish, related to perch and walleye. Most rely on clean, flowing water and silt-free substrate. Some species live in lakes or stream pool habitats.

detritivore

An animal that feeds on dead material (detritus), usually plant material but can include animal material.

dissolved oxygen

Oxygen held in solution in water; utilized by aquatic organisms for respiration. Important indicator of water quality as dissolved oxygen levels often decrease as pollution increases.

dissolved solids

Mineral particles held in solution in water; usually reaches a threshold before particles begin to

precipitate out of solution. Important indicator of water quality as high dissolved solids indicate an inflow of sediments or other pollutants.

DOM	Dissolved organic matter; organic matter that has been broken down through mechanical and chemical means and is held in solution in water.
droughty	Extremely dry; refers to well-drained soil.
drumlin	A streamlined, spoon-shaped hill of glacial till formed under a moving ice sheet and elongated in the direction of ice movement.
dry dam	Man-made dam that allows normal stream flows to pass through unhindered, but during periods of heavy rainfall or snow melt, higher flows are retained by the dam and released at a pre-determined rate.
ecology (ecological)	The study of the interrelationships among organisms and between organisms, and between them and all aspects, living and nonliving, of their environment.
ecosystem	A discrete unit that consists of living and nonliving parts, interacting to form a stable system. This term can be applied to different levels (e.g. processes that govern a small pond may be the same in a large lake, the ocean, and the earth).
ecotourism	Tourism that highlights the natural resources of an area with emphasis on conservation; the tourism activities are generally designed to be non-threatening to the resources.
elevation	Height above a base point, generally sea level.
emergent marsh	A more or less permanently wet area of mineral soil that contains plants which jut above the water level. Considered <i>robust</i> if plants persist above water levels during the non-growing season.
endangered	A classification given to a species that has a low relative abundance and therefore high probability of extinction.

erosion	The movement of soil and rock material by running water, wind, or other natural forces.
eutrophic (eutrophication)	Describes nutrient-rich waters with high primary productivity. May result in depleted dissolved oxygen levels. Eutrophication is the process by which a water body moves from nutrient-poor to nutrient-rich. This is a natural process that is often sped up by human influences.
exotic species	An introduced, non-native species. May be invasive if able to out-compete native species for resources.
extant	Applied to a group of related organisms (taxon), some members of which are still living.
extirpate	To bring a species to extinction in at least part of its range.
fauna	Animal life
fecal coliforms	Harmful bacteria normally associated with raw sewage.
fen	An area of wet peat that is typically alkaline to only slightly acidic, normally receives mineral-rich groundwater, and gives rise to a unique plant community.
floodplain	The area of a stream or river valley, adjacent to the waterway, that is made up of unconsolidated sediments deposited by the waterway and is periodically flooded.
flora	Plant life
flow regime	The natural processes that govern the movement of a stream or river. Includes water inputs, channel morphology, ground conditions, groundwater, etc.
fluvial geomorphology	The study of how flowing water impacts the land surface.

food web (food chain)	The feeding relationships of organisms within an ecosystem. A food web depicts numerous interconnected pathways for energy flow between an organism and several others. A food chain depicts only a single energy pathway from primary producers (green plants) through a chain of organisms that eat the previous organism and get eaten by the next.
FPOM	Fine particulate organic matter; comprised of organic matter that has been broken down into smaller pieces than CPOM but not yet dissolved.
geology	The study of the development of the earth's crust. Rocks, fossils, etc.
glacial drift	Any rock material deposited by an ice sheet or by meltwaters of that ice sheet.
glacial lake	A natural lake formed from glacial processes. Often referred to as a <i>kettle lake</i> , however not all glacial lakes are kettle lakes. Kettle lake refers to a lake that was formed when a large block of ice broke off an ice sheet and lay on the ground. The resulting depression after the ice melted filled to form a kettle lake. Lakes may be formed from other glacial processes including gouging of the bedrock, blockage of a stream valley, and filling in behind a moraine.
glacial outwash (plain)	Stratified drift deposited by meltwater streams. The outwash plain refers to the deposit of outwash whose surface is a broad, very gently sloping plain.
glacial till	A nonsorted, nonstratified sediment carried or deposited by a glacier.
glaciation	The covering of a large region by ice; ice age.
glacier	A large mass of ice that rests on a land surface and moves through sliding or growing and melting.
glochidia	Young, larval-stage freshwater mussels.
gradient (streams)	Refers to the amount of elevational drop over a stream's course. High gradient streams are fast

flowing, typically characterized by rapid sections. Low gradient streams are slow, characterized by pools.

graminoid-forb

Describes a plant community comprised largely of grasses, sedges, rushes (graminoid) and other non-woody species like ferns (forb).

G Rank

A relative scale that describes a species' conservation status throughout the country or world. G1 signifies a species is critically imperiled and a G5 species is secure.

greenspace

An undeveloped area or open space

greenway

Corridor of open space

groundwater

Water that occurs below the Earth's surface; found in pore spaces in rock material. Source of drinking water for many; also contributes to surface waterways.

Growing Greener

Pennsylvania Legislation recommended by the 21st Century Environment Commission to Governor Tom Ridge in 1998. Invests nearly \$650 million between 2000 and 2004 to preserve farmland and protect open space; eliminate the maintenance backlog in State Parks; clean up abandoned mines and restore watersheds; and provide new and upgraded water and sewer systems.

habitat

The place where an organism or biological community lives; usually has physical or biological properties that the organism or community can't exist without.

headwater

Refers to upstream reaches of a stream or river.

heavy metals

Refers to a group of metals that can contaminate water and soils and prove toxic to organisms, especially in solution.

hummocky topography

A strongly undulating land surface

hydric

Wet (often used to describe soils)

hydrologic cycle (water cycle)	The flow of water in various states through the atmospheric and terrestrial environments.
hydrologic model (water budget)	A simulation of the hydrologic cycle for a particular waterway that attempts to identify and quantify gains and losses of water.
hydrology	The study of the movement of water (hydrologic cycle) on the Earth; includes surface water and groundwater.
hydrophyte	A plant that is adapted to grow in water or very wet environments.
ichthyofauna	Fish life
impervious surface	Material that water can not penetrate. Refers to concrete surfaces, rooftops, and roadways in urbanized areas. Increased percentages of impervious surfaces increase run-off.
impoundment	Usually refers to a man-made body of water, often through damming a stream or river.
inter-basin transfer	The movement, by human activity, of water from one watershed or drainage to another.
invasive species	A species (often exotic) that is capable of aggressively out competing other species (often native) for resources. Usually results in a monoculture of the invasive species.
kame	A mound composed chiefly of sand and gravel deposited in contact with the ice by meltwaters of glaciers.
karst	Describes an area underlain by limestone and prone to caves, channels, and other voids left from the dissolution of the limestone by water.
lentic	Describes a freshwater habitat of calm or standing water (e.g. lakes, ponds, swamp, and bogs).
limestone	A sedimentary type of rock comprised largely of calcium carbonate and/or dolomite, another

carbonate bearing rock. Good buffering capabilities against acidification.

lotic

Describes a freshwater habitat of running water (e.g. springs, streams, and rivers).

macroinvertebrate

Refers to organisms without backbones that are large enough to be seen without magnification and are generally associated with soil or stream substrate.

macrophytes

Rooted plants

marsh

A more or less permanently wet area of mineral soil, as opposed to peat.

mesotrophic

Describes freshwater environments that have nutrient levels mid-way between oligotrophic and eutrophic.

mixing zone

The length of a stream below an input, such as a pipe discharge, where the input mixes with the stream water and becomes diluted.

moraine

An accumulation of till deposited by a glacier.

native

Indigenous; a species that occurs naturally in an area, not introduced by human activity

natural resources

Attributes of an area that occur naturally and provide a benefit to humans. These may be geological, chemical, biological, etc.

nitrogen

An element essential to all plant and animal life. One of the two most important nutrients to the eutrophication of surface waters.

non-point source pollution

Pollution that emanates from various points on the landscape and can not be traced to a single pipe, ditch, or discharge. Typically involves run-off from fields, urban areas, mines, etc.

nutrient loading

The input of excessive nutrients like nitrogen and phosphorous to aquatic systems.

oligotrophic	Describes waters that are poor in nutrients and have low primary productivity.
ordinance	A municipal regulation; ordinances can be used to describe zoning, subdivision, and other land use issues within a municipality.
organic enrichment	Refers to excessive organic materials being introduced to a waterway. Organic compounds typically break down into component nutrients, so this process produces similar results to nutrient enrichment.
ornithology	The study of birds
peat	An organic soil or deposit formed when decomposition of organic material is slowed due to anaerobic conditions usually in a waterlogged environment.
periphyton	Organisms attached to or clinging to the stems and leaves of plants or other objects projecting above the bottom sediments of freshwater ecosystems.
pH	A value on a scale of 0-14 that gives a measure of the acidity or alkalinity of a medium (e.g. water or soil). A pH of 7 is neutral; less than 7 is acidic and more than 7 is basic or alkaline.
phosphorous	An element essential to all plant and animal life. One of the two most important nutrients to the eutrophication of surface waters.
physiographic	A term used to describe the physical relatedness of all areas within a given region.
phytoplankton	The plant plankton and primary producers of aquatic ecosystems, typically diatoms and dinoflagellates.
point source pollution	Pollution that can be traced to a particular pipe, ditch, or discharge.
pollutant	A by-product of human activities which enters or becomes concentrated in the environment, where it may cause injury to humans or desirable species.

primary producers	Photosynthetic and chemosynthetic autotrophs (mainly green plants including algae and phytoplankton) that utilize nutrients and energy from the sun or chemical reactions to produce organic compounds. These organisms form the beginning of all food chains.
put-and-take fishery	Fish are stocked solely for angling purposes usually because water conditions are only habitable for the stocked species part of the year. Describes most of the trout stocked waters in Pennsylvania.
recharge area	The area that acts as a catchment for any particular aquifer.
relief	Describes the relative degree of elevation change in any given area. Flat areas have low relief as opposed to mountainous areas, which tend to have high relief. Not to be confused with elevation that only measures the height above a certain point, typically sea level.
riparian buffer, zone, or area	Refers to the area of land immediately adjacent to a waterway that acts as a buffer against pollutants running off the land. A variety of plants in the riparian buffer act like a sponge, taking up nutrients and other pollutants from surface and shallow sub-surface flows that could degrade the waterway. Buffer, zone, and area are used interchangeably.
rip-rap	A loose foundation layer of irregular rock fragments or other material used to prevent stream banks from eroding. Usually less desirable than utilizing vegetative stabilization techniques but sometimes required for severe erosion problems.
river mile	A term used in the DEP Pennsylvania Stream Gazetteer to identify distances on a stream or river. River miles are measured from the mouth of the stream or river, which is designated river mile 0 for that waterway.
runoff	Water from wet deposition (rain or snow melt) that flows over the surface of the ground to a receiving

waterway. May carry high levels of sediment, nutrients, and other pollutants.

sandstone

A type of sedimentary rock, formed of a lithified sand bound together with a mud matrix and a mineral cement. Contains little or no natural buffering capabilities against acidification.

scrub-shrub wetland

A more or less permanently wet area where the water table is low enough to allow woody shrubs to dominate.

sedimentation

The build up of detached soil particles in nearby waterways.

sedimentary

Describes rock formed by the deposition and compression of mineral and rock particles, and often including organic material. This is the rock type that would have been laid down layer after layer on the bottom of ancient seabeds.

sediment deposition

Laying down of detached soil particles on the bottoms of streams, lakes, and rivers.

seep wetland

A dispersed flow of water above ground level that occurs where the water table intercepts the ground surface. Similar to a spring with no obvious flow. Often gives rise to unique plant communities depending on the groundwater chemistry.

shale

Fine-grained, fissile, sedimentary rock composed of clay-sized and silt-sized particles of unspecified mineral composition.

silt

Class of finest-grained mineral soil particles.

siltstone

A lithified silt

silviculture

The management of forests or woodlands for the benefit of the entire ecosystem. More comprehensive than forestry.

siphon (incurrent, excurrent)

Refers to the appendages used by freshwater mussels for drawing water into their bodies (incurrent) for the purpose of food and oxygen

extraction and expelling water from their bodies (excurrent).

Smart Growth

A current movement that focuses on redevelopment of established urban areas and other ways to reduce sprawl pressures on undeveloped countrysides.

species

A taxonomic group of individuals that can interbreed within the group but not with members outside the group (i.e. other species).

species of special concern

An organism considered rare, threatened, or endangered at the state or federal level and tracked by the Pennsylvania Natural Diversity Inventory Program.

specific conductance

Refers to the measurable potential of water to conduct an electric current. A higher specific conductance signifies more dissolved and suspended matter in the water. This is an indication of sedimentation or other pollution.

S Rank

A relative scale that describes a species' conservation status throughout the state. S1 signifies a species is critically imperiled and a S5 species is secure.

stormwater management

A program designed to preserve and restore the flood-carrying capacity of Commonwealth streams; to preserve, to the maximum extent practicable, natural stormwater runoff regimes and natural course, current, and cross section of water of the Commonwealth; and to protect and conserve ground waters and ground water recharge areas.

stratification

In aquatic terms, refers to the arrangement of lake water into layers. The upper layer, or epilimnion, is generally warmer, oxygen-rich, and contains the bulk of primary production. The bottom layer, or hypolimnion, is generally colder, oxygen-depleted, and low in primary production. The area in between is known as the mesolimnion. Stratified lakes mix twice yearly, known as turnover, and replenish nutrients and oxygen to the hypolimnion.

sub-basin

See sub-watershed

subdivision and land development regulation

Subdivision is the creation of new property lines, while land development involves the construction of public or private improvements. The major purposes of subdivision and land development regulations are: to provide adequate sites for development and public use; to maintain reasonable and acceptable design standards; and to coordinate public improvements with private development interests.

substrate

The layer of material on the bottom of a stream, river, or lake utilized as habitat by benthic organisms.

sub-watershed

The watershed of a tributary stream; it is a sub-unit of the receiving stream, river, or lake's watershed.

successional stages

Sequential changes in vegetation and the animals associated with it, either in response to an environmental change or induced by the intrinsic properties of the organisms themselves.

Superfund site

A hazardous waste site placed on the Superfund National Priorities List and financed for clean up by the U.S. EPA.

suspended solids

The part of a total load of a stream or river that is carried in suspension. Elevated levels of suspended solids indicates erosion upstream.

swamp

A shallow wet area that is usually covered by standing water all year.

taxon (pl. taxa)

A group of related organisms of an taxonomic rank (e.g. family, genus, or species).

terrestrial

Pertaining to dry land

terminal moraine

A deposit of till at the front end of a glacier signifying the furthest advance of the glacier.

threatened

A classification given to a species that could potentially go endangered.

TMDL

Total maximum daily load; a limit for pollutant load placed on a waterway by DEP. TMDLs are

determined for a waterway based on how much pollutant it is determined that the waterway can assimilate. TMDLs will be used to regulate the percentage of total pollutant load that each source in a watershed can contribute.

topography

Describes landscape features of an area.

transpiration

The loss of water vapor from plants to the atmosphere.

tributary

A stream that feeds into another (receiving) stream, river, lake, or ocean.

turbidity

The presence of suspended sediments in water that causes a loss of transparency.

turnover

Mixing of lake waters during the spring warm-up and autumn cool down. Once stratified layers in a lake reach equal temperatures, wind causes the layers to mix. Turnover replenishes oxygen to the lower lake levels.

Unassessed Waters Program

U.S. EPA mandated program requiring states to assess all streams for pollutants. Pennsylvania DEP administers the PA Unassessed Waters Program.

unconsolidated

Loosely occurring, not bound together or formed from solid rock.

upland

Higher elevation areas, usually away from waterways.

veligers

Young larval-stage zebra mussels

watershed

The area from which a surface watercourse or groundwater system derives its water. The area is usually bound by high points and all water within the area runs downhill to a common receiving body of water. This term can be applied to any scale; a tiny stream has its own watershed but that stream and many other streams are part of a larger river system's watershed.

water table

The upper surface of groundwater; or the area below which the soil or rock interstices are saturated.

wellhead protection area

Wellhead is the well location and the recharge area for the well is designated as a protection area. Threats to the groundwater are identified within the protection area and measures are taken to remove the threats.

wetland

Variously defined but generally can be described as all open water habitats and seasonally or permanently waterlogged land areas.

zoning ordinance

A municipal ordinance which divides all land within the municipality into districts, and creates regulations that apply generally to the municipality as a whole as well as specifically to individual districts. To properly delineate the boundaries of any district created within the zoning ordinance, and to determine the need for any specific district or districts, studies must be conducted in various areas, which allow rational decisions to be made concerning the zoning districts.