

## Glossary of Terms used in the Stormwater Industry

Term	Code	Definition
Early life-stage test	Eco	28-day to 32-day (60-day post-hatch for salmonids) exposures of the early life stages of a species of fish from shortly after fertilisation through embryonic, larval and early juvenile development. Data are obtained on survival and growth.
Earth dam	Eng	A massive earthen, watertight embankment with sloping faces.
Easement	Gen	A right held by one person to make limited use of another person's land, e.g. right of access to water.
Easement (drainage)	Sto	A corridor of land of which the drainage function is the primary role.
Ecological harm	Eco	Any adverse effect, or potential adverse effect (whether temporary or permanent) on an environmental value directly associated with an ecological feature.
Ecological integrity	Eco	The ecological values, including biodiversity, geodiversity, essential ecological processes and life support systems associated with an area or region.
Ecologically sensitive area	Eco	An area that provides critical resources, connectivity or habitat, to any species, or group of species during any phase of their life cycle.
Ecologically Sustainable Development (ESD)	Eng	A concept that promotes protection of the environment while allowing for the development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends.
Ecology	Gen	The branch of biology that studies the relationships between organisms and their environment.
	Sci	The study of relationships between living organisms and their environment.
Ecosystem	Eco	A community of interacting organisms and the immediate physical, chemical and biological environment with which they interact, e.g. a pond or forest.
Ecotone	Eco	A narrow, defined boundary between different adjacent ecosystems.
Effluent	Gen	Fluid outflow from a process or treatment system, such as treated liquid waste or sewage as discharged from a treatment plant.
Effluent stream	Wwy	A creek that leaves a watercourse and does not return to it (the opposite of a tributary).
Eh (redox potential)	Wat	The value of the redox electrolyte potential, expressed in volts, using an electrochemical cell.
El Niño	Gen	Part of an ocean-atmosphere phenomenon characterised by temperature fluctuations in surface water in the equatorial zone of the eastern Pacific Ocean that causes a warm water current to overly the cold waters off the coast of Peru and Ecuador.

		Coupled with the atmospheric fluctuations of the Southern Oscillation, the so-called El Niño effect is associated with drought and higher temperatures on the mainland of eastern Australia.
Electrical conductivity	Wat	A measure of the conduction of electricity through water or a water extract of soil. Measurements are expressed in siemens per metre; soil salinity is normally expressed as millisiemens per centimetre at 25 degrees Celsius.
Embankment	Eng	1. An artificial elevation of earth, longer than it is wide, typically constructed for the purpose of controlling the flow of, or storing water as in a bank or dam.
	Eng	2. An earth slope, longer than it is high, constructed from fill material (e.g. earth, rock).
Embankment flood	Eng	The flood which, when routed through the reservoir, gives a still water elevation equal to the top of dam.
EMC	Sto	The abbreviation for event mean concentration, the measure of the mass of pollutant (pollutant load) washed off by a storm event divided by the runoff volume of that storm.
Emergency outlet	Eng	A structure or spillway that safely conveys emergency overflows from the facility e.g. water storage. It includes the approach and exit channels.
Emergency spillway	Eng	A spillway that is constructed in addition to the primary spillway or bypass system (i.e. an auxiliary spillway).
	Esc	An open channel, usually with a relatively steep gradient, used to convey water from a basin, such as a sediment basin, during periods of high flow. Such a spillway may not necessarily be an auxiliary spillway.
Emergent plants	Bot	A plant whose top parts protrude above the water surface, e.g. sedges and reeds.
Emergent vegetation	Bot	A plant or plants the top parts of which protrude above the water surface, e.g. sedges and reeds.
Emerson aggregate test	Sol	A classification of soil aggregates based on their coherence in water. Soil aggregates are classified into 8 types according the conditions in which they slake, swell and disperse, in which Class 1 is the most stable through to Class 8 which is least stable. Classes 2 and 3 may be further subdivided according to the degree of dispersion.
Enclosed GPT	Sto	An in-ground, enclosed trash, rack and sediment collection sump usually located at or near the end of a stormwater pipe. Designed to trap coarse pollutants such as litter, organic debris, and coarse sediment.  Also known as an ENCLOSED GROSS POLLUTANT TRAP and MINOR GPT.
Enclosed gross pollutant trap	Sto	An in-ground, enclosed, trash rack and sediment collection sump usually located at or near the end of a stormwater pipe. Designed to trap coarse pollutants such as litter, organic debris, and coarse sediment.

		Also known as an ENCLOSED GPT and MINOR GPT.
Endocrine disrupter	Res	A substance having an endocrine disrupting potential.
Endocrine disrupting potential	Res	The ability to interfere with endocrine mechanisms. A mode of physiological response.
End wall	Eng	A retaining wall at the end of a culvert barrel. Also known as a HEAD WALL.
Energy dissipater	Eng	A structure used to absorb excess kinetic energy in flowing water. Energy dissipaters are typically incorporated into the outlets of hydraulics structures to reduce outlet flow velocities and downstream erosion. (Dissipator in USA)
Energy equation	Hyd	A numerical expression describing the total energy (energy head) in a fluid, i.e. the combined kinetic and potential energy.
Energy head	Hyd	The numerical value of the total energy in a fluid being a combination of kinetic and potential energy. It is proportional to the total energy per unit mass and per gravity unit. It is expressed in metres of water. Also known as TOTAL HEAD or TOTAL ENERGY.
Energy loss coefficient	Hyd	A dimensionless coefficient that applies to a given hydraulic device or component of a hydraulic system for a given discharge and fluid. It is represented by the total energy loss (units of length, metres) experienced by a fluid flow as it passes through that device or component, divided by the velocity head (units of length) of the fluid at the given discharge.
Enteropathogenic	Bio	Capable of producing disease in the intestines.
Entrainment	Soil	The processes by which detached soil particles are drawn into the flow of air or water during an erosion event.
Entrance screen	Sto	A metal screen placed on the inlet to a drainage network to prevent gross pollutants from entering.
Environment	Gen	The physical, social and economic conditions in which an organism lives.  Includes ecosystems and their constituent parts, e.g. people and communities; all natural and physical resources; the qualities and characteristics of locations, places and areas, however large or small that contribute to their biological diversity and integrity, intrinsic or attributed scientific value or interest, amenity, harmony and sense of community; and the social, economic, aesthetic and cultural conditions that affect, or are affected by the ecosystem.
Environmental flow	Wwy	The flow, or characteristics of a flow pattern, that are either protected or created specifically to benefit the natural environment. Usually associated with flows released from storage systems to a stream to maintain or enhance the healthy state of the stream and/or downstream waters.
Environmental harm	Gen	Any adverse effect, or potential adverse effect (whether temporary or permanent) on an environmental value.

Environmental indicator	Eco	An measurable attribute that can provide evidence of change of environmental quality. There are three types of indicators: <ul style="list-style-type: none"> <li>• those normally present in the water, where any changes indicate a change in environmental quality;</li> <li>• those not normally found, where their presence indicates changes in environmental quality;</li> <li>• those normally present, where their absence indicates changes in environmental quality.</li> </ul>
Environmental integrity	Eco	The ecosystem in which there is an interdependence upon and interaction between living organisms and their immediate physical, chemical and biological environment.
Environmental Management Plan	Gen	A plan showing how the potential environmental impacts associated with a given activity will be managed. It identifies risks to the environment as a result of the activity, the key strategies for managing these risks and the project's environmental requirements, outcomes and performance indicators.
Environmental monitoring	Gen	The action of gathering and evaluating information used for the assessment of environmental performance.
Environmental quality	Gen	A measure of an environmental feature, at a given point in time, in either scientific terms (such as a water quality measurement), or another recognised environmental value of that feature.
Environmental value	Gen	A value or use of the environment that is conducive to public welfare, safety, health or benefit (whether social, economic cultural, or environmental). Several environmental values can be designated for a specific environment or component of the environment.
Environmental water requirement	Wwy	The water regimes, including seasonal water flows and levels, needed to sustain the ecological values of a water dependent ecosystems, including its process and biological diversity, with low-level risk of environmental harm.
Ephemeral	Wwy	A system that flows or exhibits the presence of water only periodically, e.g. a creek that flows intermittently (whether or not water is retained in pools) or a wetland that dries up periodically.
Ephemeral stream	Wwy	A watercourse that flows during and for short periods after storms.
Ephemeral wetland	Lfm	A wetland that dries up periodically.
Epilimnion	Wwy	The well-mixed uppermost layer of water within a stratified lake, usually characterised by an essentially uniform temperature warmer than elsewhere in the lake.
Epilithon	Eco	Organisms that live attached to rocks, e.g. algae and lichens.
Epipelon	Eco	Algal community living in or on the surface of sediments in shallow waters where light penetrates.
Epiphyte	Bot	Any plant that grows on the outside of another plant, using it for support but not obtaining food from it.
	Eco	The action that wears away earth surfaces.

Erode	Geo	The action of all forces of nature that wear away the earth's surface.
	Esc	The action of rainfall, flowing water, or wind that detach and transport particles from the soil surface, whether an open soil surface or the surface of a tunnel.
Erodibility	Sol	The susceptibility of a soil to erosion due to its mechanical, chemical and physical properties.  Categorised into low, moderate, high, very high and extreme. Independent of the other factors that influence soil erosion such as topography, land use, rainfall intensity and plant cover, but might be changed by management.
Erosion	Gen	The process of wearing away earth surfaces external forces e.g. running water, rainfall, wind, ice or other geological agents. Includes processes such as detachment, entrainment, suspension, transportation and mass movement.
	Esc	Detachment and movement of granular material by water, wind, ice or gravity. (i.e. accelerated, geological, gully, natural, rill, sheet, splash, gully or wind erosion).
Erosion and sediment control plan (ESCP)	Esc	A plan, or set of plans, including explanatory notes, that demonstrate measures to control stormwater drainage, soil erosion, and sediment runoff during the construction/building, site stabilisation, and maintenance phases of a construction, building or other soil disturbance activity.
Erosion control	Esc	The protection of soil or other granular material from erosion or measures taken to reduce potential erosion.
Erosion control blanket	Esc	A blanket of synthetic and/or natural material used to cover and protect soil against erosion caused by wind, rain, and minor overland flows.
Erosion control mat	Esc	A mat of synthetic and/or natural material that is primarily used to protect soil against erosion caused by concentrated surface flows.
Erosion control measure	Esc	A system, procedure or material used to prevent or reduce the effects of erosion on a soil or other granular material.
Erosion control mesh	Esc	An open weave blanket formed from synthetic or natural twine such as hessian rope (jute) or coconut fibre (coir), primarily used to protect soil against erosion caused by concentrated surface flows.
Erosion control structure	Esc	A system, procedure, or material used to prevent or reduce the effects of erosion on soil or other granular material.

Erosion hazard	Sol	<p>A measure of the susceptibility of a site to erosion. Categorized as low, moderate, high, very high and extreme according to a combination of climate, landform, soil, land use and land management factors.</p> <p>Low erosion hazard implies that no appreciable erosion damage is likely to occur during or after the development of the site.</p> <p>Moderate erosion hazard implies that significant erosion might occur during development.</p> <p>High erosion hazard implies that significant erosion will occur during development.</p> <p>Very high erosion hazard implies that significant erosion will occur during development and after the land use is established. Erosion might even occur with intensive soil conservation measures.</p> <p>Extreme erosion hazard implies that erosion will occur to such an extent that even conventional soil conservation measures will be impractical and uneconomic.</p>
	Esc	1. The potential for soil erosion (measure in tonnes, or tonnes per hectare per year).
	Esc	2. The potential for environmental harm as a result of soil erosion—often associated with an arbitrary hazard rating.
Erosion risk	Sol	A measure of the susceptibility of a site to erosion, depending on a combination of climate, topographic and soil factors. Erosion risk does not take land management factors into account, unlike erosion hazard.
	Esc	1. An evaluation of the risk of soil erosion that examines the degree of erosion and the likelihood of it occurring.
	Esc	2. An evaluation of the risk of environmental harm caused by soil erosion taking into account the degree of erosion and the likelihood of the erosion occurring.
Erosion risk mapping	Esc	<p>The process of identifying and mapping of areas of erosion risk. Usually undertaken by land developers as part of initial site planning, or as part of the conceptual planning of construction procedures.</p> <p>Only maps those site constraints directly related to soil erosion (i.e. not overall environmental risk). In effect, a mapping exercise based on a suitable soil erosion model such as the Revised Universal Soil Loss Equation (RUSLE).</p>
Erosive agent	Esc	Those active factors that cause erosion, e.g. rain, flowing water, and wind.
Erosivity	Sol	1. A measure of the potential ability to cause erosion.
	Sol	2. A measure of the erosive potential of rainfall expressed as the product of total storm energy and the maximum 30-minute intensity of each storm.

Erosivity factor	Sol	The rainfall erosivity factor (R) used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE).
Estimated limiting value	Hyd	A measure of the largest magnitude possible for a hydrologic event at a given location based on the best available hydrologic information.
Estuary	Wwy	That part of the mouth or lower reach of a river in which its current meets the sea's tides, and is subject to their effects.
Euphotic zone	Wwy	The layer on the surface of a water body that has enough light for plants to carry out photosynthesis.
Eutrophic	Eco	Relating to nutrient-rich water with high rates of productivity that often results in oxygen depletion below the surface layer.
Eutrophication	Eco	the process of enrichment of a water body by nutrients, primarily phosphorus, which can lead to excessive algal growth or other water quality problems.
Evaporation	Hyd	The act or process of rainwater evaporating from the catchment surface. It generally does not include that water evaporated from plant leaves following transpiration, but includes the evaporation of rainwater that has fallen directly onto the surface of plants.
Evaporation pan	Hyd	A circular tank containing water, in which the rate of evaporation is measured by the rate of fall of the water surface.
Evapo-transpiration	Hyd	The combined loss of water by transpiration through the leaves of plants and by evaporation off the surface of the ground.
Event	Gen	The occurrence of a particular set of circumstances, whether certain or uncertain.
	Hyd	A single precipitation and associated runoff occurrence.
	Wat	A rainfall or discharge condition that is significantly different (> 10 times) from the day-to-day background levels.
Event-based analysis	Wat	A method used to assess the short-term performance of a water body when subjected to a hydrologic event.
Event mean concentration (EMC)	Wat	The measure of the mass of pollutant (pollutant load) washed off by a storm event divided by the runoff volume of that storm.
Exceedance probability	Hyd	The probability of a flood event being equalled or exceeded within a given period. If a flood has a 1% annual exceedance probability (AEP), then there is a 1% chance that this flood will be equalled or exceeded in anyone year.
Exchange capacity	Sol	A measure of the total ionic charge of a soil, expressed in centimoles of charge per kilogram of soil. Its numerical value is identical to the value expressed in milliequivalents per 100g of soil.
Exchangeable sodium percentage (ESP)	Sol	The proportion of the cation exchange capacity occupied by sodium ions, expressed as a percentage. Sodic soils are categorised as those with an ESP from 6 to 14%, strongly sodic soils are those with an ESP of 15% or more. Soils with a high ESP are typically unstable and as a consequence have high erodibility and often present problems in soil conservation

		earthworks.
Exfiltration system	Sto	<p>A large underground stormwater detention tanks/pit from which stormwater is allowed to infiltrate into the surrounding soil. An infiltration trench is just one type of exfiltration system.</p> <p>The tank or pit typically consists of either an open-chamber tank; a three-dimensional, large void cubicle (e.g. storage tank formed from stacked plastic crates); or a rock-filled pit (also known as a soakage pit).</p>
Exfiltration trench	Sto	<p>An exfiltration system consisting of a perforated or slotted pipe located within an excavated trench filled with coarse gravel enclosed within filter fabric. Stormwater runoff is first directed into a buried pipe from where it is allowed to percolate through the gravel envelope into the surrounding soil.</p> <p>Exfiltration trenches are used when the infiltration capacity (rate) of the surrounding soil is insufficient to allow the effective operation of a traditional exfiltration system.</p> <p>The inclusion of the perforated subsurface pipe or chamber is what differentiates an exfiltration trench from an infiltration trench or soakage pit. The chamber allows more effective removal of sediment (compared to an infiltration trench) and provides greater detention storage volume.</p>
Expansive soil	Sol	A soil that significantly shrinks and cracks when dry and expands when wet due to the presence of montmorillonite type clays.
Exposure	Eco	A measure of the amount of physical or chemical agent that reaches a target or receptor.
Extended detention	Sto	The process by which a stormwater is detained over days rather than hours (typically 1 to 2 days).
Extended detention basin	Sto	A stormwater detention basin designed to drain (from full) over days rather than hours (typically 1 to 2 days) to enhance its pollution retention/treatment benefit and/or to avoid the adverse effects of coincident hydrograph peaks downstream of the basin.
Extended detention practices	—	Those practices that detain stormwater over days rather than hours (typically 1 to 2 days).
Extended Rational Method	Hyd	A modification to the traditional Rational Method as used in the DRAINS-hydrologic model that allows the estimation of discharge hydrographs based on a defined hydrograph shape (ie. triangular or trapezoidal), peak discharge and some adjustment to runoff volume. The method differs from the Modified Rational Method in that it assumes a constant continuing loss rate.
Extreme event	Hyd	An event, such as a flood or discharge, that is considered extremely rare or much larger than the design event of a structure or system.

Extreme flood	Hyd	<p>A design flood event used to assess the upper performance limits or the hydraulic failure of a structure.</p> <p>Extreme flood events are normally used in hydraulic analysis to assess the economic and social impacts associated with the overtopping or failure of a structure.</p>
Extreme precipitation	Hyd	<p>That rainfall which is expected to have an exceedance probability less than one per cent.</p>
Extreme rainfall	Hyd	<p>Rainfall with an intensity greater than 50mm/hr, and a total rainfall depth greater than the equivalent of the one hour duration, 1 in 10 year ARI design storm rainfall depth over a 24 hour period.</p> <p>For example, if the 1 hour duration, 1 in 10 year ARI average rainfall intensity at a given location is 70mm/hr, then extreme rainfall would be a rainfall depth greater than 70mm within any 24 hour period, or a rainfall intensity exceeding 50mm/hr at any given time.</p>