



Glossary of Terms

Term	Definition
Abiotic	Pertaining to physical and inorganic components of the environment; non-living.
Acidic	Quality of being acid; having a pH of less than 7 (see pH)
Acoustic	Acoustics is the science of sound concerned with <i>the generation, transmission and reception of energy in the form of vibrational waves in matter.</i>
Aeolian	Pertaining to the wind, referring to sediments or particles transported and deposited by wind
Allochthonous material	Organic matter that is derived from outside of the aquatic ecosystem, such as leaves of terrestrial vegetation that fall into the stream.
Alluvial (alluvium)	Weathered material transported and deposited by the movement of water.
Alluvial forests	Forests growing in alluvial soils, mainly sand and silt, that a river has carried in suspension and then deposited.
Alluvial plain	A plain formed by the deposition of alluvial material over a long period of time.
AMAs	Administrative arrangements developed by the EPA, Local Government and other parties for land where detailed information is not available but the community is to be provided with information that aids in dealing with land contamination.
Animal	Any member, alive or dead, of the animal kingdom (other than a human being).
Annual Exceedance Probability (AEP)	The probability that a given flood or river discharge flow will be exceeded in any one year, usually expressed as a percentage.
Anthropogenic	Effects, processes, objects or materials which do not occur in natural environments but are as a result of, or derived from human activities
Aquatic macrophyte	Submerged, emergent or floating aquatic vegetation that is visible to the naked eye.
Aquiclude	A boundary layer that prevents soil water infiltration.
Aquifer	A water-bearing stratum of permeable rock, sand, or gravel
Aquifer	A rock type with relatively large permeability, able to transmit substantial quantities of water
Australian Height Datum (AHD)	The datum used for determining elevations in Australia which uses a national network of bench marks and tide gauges, and has set mean seal level as zero elevation
Average Recurrence Interval (ARI)	The average interval (in years) between the occurrence of a flow, discharge or rainfall greater than or equal to a specified amount.
B horizon	The second or subsurface zone of soil made of clay and oxidised materials and organic matter obtained from the A horizon by leaching.
Background noise	The underlying level of noise present in the ambient noise, excluding the noise source under investigation, when extraneous noise is removed. This is described using the L_{A90} descriptor.
Batholith	A batholith is a large emplacement of igneous intrusive (also called plutonic) rock that forms from cooled magma deep in the Earth's crust. Batholiths are almost always made mostly of felsic or intermediate rock-types, such as granite, diorite or lighter coloured forms of andesite.

Barrier beaches	Elongate sandy ridges slightly above high tide level, and running parallel to the shoreline - extended by long shore transport (Brennan, 2004).
Benthic	Pertaining to the bottom of a body of water.
Biodiversity	Biodiversity is short for “biological diversity”. It describes the variety of life forms and their habitats that make up a region. Biodiversity includes the diversity of plant and animal species, the diversity of ecosystems formed by communities of these organisms, and the genetic diversity within and between species.
Biogenic sediment	Sediment produced by the actions of living organisms.
Biotic	Pertaining to living organisms, and usually applied to the biological aspects of an organism’s environment.
Boyne Creek	The water body forming the channel to the south of Hummock Hill Island.
Bunding	An artificially created boundary, usually in the form of an embankment used to prevent sediment and substances from entering a water stream or storage facility.
CAMBA	CAMBA means the Agreement between the Government of Australia and the Government of the People’s Republic of China for the protection of Migratory Birds and their Environment done at Canberra on 20 October 1986, as in force for Australia immediately before the commencement of this Act.
Carboniferous	The period of geological time extending from about 360 to 290 million years ago.
Catena	A non-taxonomic group of soils about the same age, derived from similar parent materials and occurring under similar climatic conditions but having unlike characteristics because of variations in relief and drainage
Cease to flow	The period where water ceases to flow.
Coastal Plain	Any plain with its margins on the shore of the sea. Generally a flat featureless area of low relief which is usually underlain by sediments.
Colluvium	A general term applied to loose and incoherent materials accumulated at the foot of a slope, generally by movement of the material by gravity.
Colosseum Inlet	The water body to the west and southwest of HHI
Common	The wildlife is common or abundant and is likely to survive in the wild.
Commonwealth marine area	The Commonwealth marine area is any part of the sea, including the waters, seabed, and airspace, within Australia's exclusive economic zone and/or over the continental shelf of Australia, that is not State or Northern Territory waters.
Community	An assemblage of interdependent populations of different species (plants and animals) interacting with one another, and living in a particular area.
Compensatory habitat	A vegetation offset to maintain the extent of remnant vegetation that will be loss as a result of the Project.
Conglomerate	Coarse sedimentary rock containing cemented rounded gravel or pebbles.
Connectivity	Refers to the ease with which organisms move between particular landscape elements.
Controlled action	An action (including a project, development, undertaking, activity, or series of activities) that is likely to have a significant impact on a matter of National Environmental Significance, as defined by the Commonwealth Minister of the Department of Environment and Water. If an action is controlled it is subject to a rigours assessment

	and approval process under the provisions of the <i>Environment Protection and Biodiversity Conservation Act 1999</i> .
Covenant	An agreement or contract between two parties (i.e. landholder and council).
Cracking clay	Clay soil from surface with large cracking patterns. Usually with gilgai surface features.
dB(A)	Unit used to measure 'A-weighted' sound pressure levels. A-weighting is an adjustment made to sound-level measurement to approximate the response of the human ear.
Dead Storage	The volume in a water storage below the lowest operable level.
Dendritic	Having a form resembling a shrub or tree
Denuded (denudation)	The removal of matter. Commonly used to describe the removal of vegetation, but also refers to the process of mass, or rapid, sediment removal
Dermosols	Soils lacking strong texture contrast and having a structured B horizon.
Dispersion	To distribute or suspend fine particles, such as clay, in or throughout a dispersion medium, such as water
Duplex	Light surface texture or clay loam abruptly overlaying clay.
Ecology	The study of the interrelationships of organisms with and within their environment
Ecosystem	A community and its (living and nonliving) environment considered collectively; the fundamental unit in ecology.
Edge effect	All changes at an ecosystem boundary and within adjacent ecosystems; the negative influence of a disturbed habitat edge on the interior conditions of a habitat, or on species that use the interior habitat.
Endangered	A species is endangered if: <ul style="list-style-type: none"> ■ there have not been thorough searches conducted for the wildlife and the wildlife has not been seen in the wild over a period that is appropriate for the life cycle or form of the wildlife; or ■ the habitat or distribution of the wildlife has been reduced to an extent that the wildlife may be in danger of extinction; or ■ the population size of the wildlife has declined, or is likely to decline, to an extent that the wildlife may be in danger of extinction; or ■ the survival of the wildlife in the wild is unlikely if a threatening process continues.
Endangered Regional Ecosystem	A regional ecosystem is listed as endangered under the Vegetation Management Act 1999 if remnant vegetation is less than 10 per cent of its pre-clearing extent across the bioregion; or 10-30% of its pre-clearing extent remains and the remnant vegetation is less than 10,000 hectares.
Endemic	Restricted to a certain region or part of region.
Environment	The total of all the external conditions that act upon an organism.
Environmental flow	The flow of water that is required to maintain aquatic and riparian ecosystems in streams and rivers.
Environmental Flow Objective (EFO)	Performance indicators set out in the <i>Water Resource (Mary Basin) Plan 2006</i> for the measurement of the environmental performance of the Mary Basin.
Environmental quality	Human (individual or social) concepts of desirable ecological situations.
Ephemeral	Transitory, short-lived.

Erosion	<p>The process by which rocks are loosened, worn away and removed from parts of the Earth's surface.</p> <p>Seven processes of erosion discussed separately; in practice they overlap and it is often difficult to isolate the net effects of any one process.</p> <p>Rainsplash erosion: the detachment and removal of soil and debris by raindrop impact.</p> <p>Overland flow OR surface runoff: water flowing over the surface before being concentrated into definite streams.</p> <p>Sheet erosion, sheet wash, or slope wash: the combined effect of overland flow and rainsplash.</p> <p>Gully erosion: the rapid development of gullies, usually in first- or second-order tributaries of streams, BUT also in situations unrelated to an integrated drainage system (eg highly dispersive soils)</p> <p>Mass Movement: downhill movement of debris <i>en masse</i> rather than as individual particles. It can occur slowly (creep), or rapidly (rockfalls, slumps, landslides).</p> <p>Surface rock creep: the movement of stones down sloping surfaces.</p> <p>Fluvial erosion: the detachment and removal by streams of material in solution, suspension, or as bed load. Includes removal of debris supplied to the streams by slope wash, mass movement, and gullies.</p>
Essential habitat	Vegetation in which a species of wildlife is known to occur that is listed as endangered, vulnerable, near threatened or rare under the <i>Nature Conservation Act 1992</i> .
Estuarine	The mouth region of a river that is affected by tides
Euphotic zone	Surface layer of a body of water which receives enough sunlight for photosynthesis.
Eutrophication	Process during which water bodies become enriched with dissolved nutrients resulting in excessive growth of organisms, such as algae, and the subsequent depletion of oxygen.
Evaporation	The process that changes a liquid or a solid into a gas. In the tropical hydrological cycle, this involves the conversion to water vapour and the return to the atmosphere of the precipitation (rainfall) that has reached the earth's surface.
Evapotranspiration	The combined effect of evaporation and transpiration.
Exotic species	Introduced species
Ex-situ	Ex-situ means off site, i.e. protecting a species of plant or animal by removing part of the population from a threatened habitat and placing it in a new location.
Fauna	See definition for 'animals'
Feral	An introduced or domestic animal living in the wild.
Ferrosols	Soil lacking strong texture contrast and having high free iron in B horizon.
Flood Plain	That portion of a river valley that is covered during periods of high flood water.
Flora	The collective plants growing in a geographic area (see definition for 'plants').
Fluvial	The river system.
Fragmentation	A process of landscape alteration in which natural areas are subdivided into smaller patches.
Geomorphological Time Periods	<p>Proterozoic (2500-545 million years ago)</p> <p>During the Proterozoic two mountainous blocks, the Mt Isa Inlier and the Georgetown massif (current area of the Einasleigh Uplands) were formed. Formation was a result of faulting, folding, thrusting of deposited marine and terrestrial sediments, extrusive volcanics and</p>

	<p>igneous intrusions. Widespread metamorphism was associated with igneous intrusions and the deforming tectonic activities (Brennan, 2004).</p> <p>Palaeozoic (545-251 million years ago)</p> <p>Extensive erosion and planation was the major process occurring during this period. Weathered sediments were stripped from the two Proterozoic blocks and deposited within the Tasman geosyncline between these two divisions. North-west of the Proterozoic Mt Isa Inlier, a shallow sea transgressed from the south depositing carbonate-dominated marine sediments. These comprise the Barkly Tableland of the upper Nicholson and Settlement Catchments today. In the Einasleigh Uplands some extrusive volcanics accompanied erosion processes and resulted in the formation of the Newcastle and Croydon Ranges in the Norman and Gilbert Catchments. In the west, erosion continued to form an extensive plain that grew eastwards, and by the early Mesozoic, the whole of the Gulf region was reduced to a flat plain (Brennan, 2004).</p> <p>Mesozoic (251-65 million years ago)</p> <p>The Proterozoic to Mesozoic cycle of erosion was terminated by earth movements that warped the flat plains. The result was the transgression (higher sea levels) of the sea into the Carpentaria and Eromanga Basins and the widespread deposition of Mesozoic sediments, namely sandstone, siltstone, mudstone, limestone, shale and conglomerate overlying the erosion surface of old, deformed Proterozoic rocks. By the end of the Mesozoic, the only extruding Palaeozoic rocks remained in the east (Einasleigh Uplands) (Brennan, 2004).</p> <p>Early-Mid Tertiary (65-34 million years ago)</p> <p>During this period the Mesozoic plain was uplifted and warped resulting in widespread erosion of the Mesozoic sediments. By the Mid-Tertiary most of the area was again reduced to a low relief plain that underwent laterisation (Brennan, 2004).</p> <p>Late Tertiary - Quaternary (34 million years ago to present)</p> <p>Uplifting and warping increased slopes and initiated another period of erosion and planation. Streams adjusted to a new base level (increased sea levels) and the erosional surfaces extended inland forming the dissected river valleys seen today. At the upland margins of the Gulf Plains, the late Cretaceous rocks (end of the Mesozoic period) were removed, and within the steeper ranges rocks formed at end of the Palaeozoic period were eroded away. Accompanying widespread erosion was extensive deposition and the formation of new alluvial fans in the lower reaches of the Gulf Catchments (Brennan, 2004).</p> <p>Along the coastline, down-warping lowered the laterised older Tertiary plain to wave action level (hence increased sea levels). This formed low cliffs and a marine terrace. Due to a low offshore gradient and wave action, and high loads of terrestrial sedimentation, constructional landforms were formed (eg, barrier beaches and islands). A later drop in sea level and subsequent emergence of land led to the abandonment of barrier beaches that occur as parallel ridges around the Gulf of Carpentaria today, and the formation of a new lower, marine terrace (Brennan, 2004).</p> <p>Some volcanic eruptions in the eastern block (Einasleigh Uplands) also occurred during this period, resulting in infilling of older valleys, particularly in the upper Flinders and Gilbert Catchments (Brennan, 2004).</p>
Geomorphology (geomorphological)	The form or shape of the landscape and the processes that modify and change it.
Gilgai	Melon hole, mound depression surface
Global Warming	The warming of the earth's atmosphere generally attributed to the

	burning of fossil fuels. Also referred to as "The Greenhouse Effect" - the capacity of the atmosphere to transmit short-wave energy (visible and ultra violet light) to the earth's surface, and to absorb and retain heat radiating from the surface.
Groundwater	Water found underground in porous rock or soil strata
Habitat	The biophysical medium or media occupied (continuously, periodically or occasionally) by an organism or group of organisms.
Herpetofauna	Includes reptiles and amphibians.
Highest Astronomical Tide (HAT)	The highest tide level which can be predicted to occur under any combination of astronomical conditions.
Holocene	Refers to a geological period of time between the present and 10,000 years before present.
Hydraulic	Mechanical properties of liquids.
Hyporheic	Hyporheic zone is where there is mixing of shallow groundwater and surface water in a region beneath and lateral to a stream bed
Igneous rocks	Rocks formed by the solidification of molten material from far below the Earth's surface
Impermeable	Material through which substances, such as liquids or gases, cannot pass.
Intertidal	The area between high and low tide.
Intrusive noise	Refers to noise that intrudes above the background level by more than 5 dB(A).
JAMBA	JAMBA means the Agreement between the Government of Japan and the Government of Australia for the Protection of Migratory Birds and Birds in Danger of Extinction and their Environment done at Tokyo on 6 February 1974, as in force for Australia immediately before the commencement of this Act.
Kandosols	Soils lacking strong texture contrast and having a massive B horizon.
Kurosols	Soils with strong texture contrast and having pH <5.5 in B horizon.
$L_{A(xx)}$	The $L_{A(xx)}$ refers to statistical indicators that represent the percentage of time that a noise level is exceeded. These levels are commonly the L_{A1} , L_{A10} , and the L_{A90} , and are graphed to show how these levels change over the course of a 24 hour period.
L_{A90}	Is an important statistical indicator that represents the A-weighted sound pressure level that is exceeded for 90% of the time over which the noise is measured. This is often termed the background noise.
L_{Aeq}	Although the L_{Aeq} is not a statistical indicator, it is probably one of the most important of the noise descriptors. It represents the equivalent continuous A-weighted noise level for the measurement period. This is the level of noise energy averaged over the measurement period.
L_{Amax} Maximum noise level	The highest noise level during a specified time period or during a specified number of events expressed as the absolute maximum value of the root-mean-square (r.m.s.) sound pressure level using time weighting 'F'.
L_{Amin} Minimum noise level	The lowest noise level during a specified time period or during a specified number of events expressed as the absolute minimum value of the root-mean-square (r.m.s.) sound pressure level using time weighting 'F'.
Lentic habitat	Standing or still water habitats such as lakes and ponds.
Listed species	A plant or animal included in a schedule of vulnerable, rare or endangered biota, such as the schedules in the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth) or the <i>Nature Conservation (Wildlife) Regulation 2004</i> (Qld).

Littoral vegetation	Vegetation that occurs within the littoral zone.
Littoral zone	Region of shallow water near the shore of a body of water where light reaches the bottom.
Lotic habitat	Flowing water habitats such as rivers and streams.
Macroinvertebrate	Organisms without a backbone which are large enough to be seen with the naked eye.
Microhabitat	Within this habitat area there is a low availability of ground microhabitat including leaf litter, logs and branches
Migratory species	A migratory species listed and protected under the provisions of the EPBC Act.
National heritage place	Under the EPBC Act, a World Heritage property is either: <ul style="list-style-type: none"> ■ an Australian property on the World Heritage List kept under the World Heritage Convention; or ■ a property declared to be a World Heritage property by the Commonwealth Environment Minister.
Native species	A species that is indigenous to Australia or an external Territory, or periodically or occasionally visits.
Natural Environment	The complex of atmospheric, geological, and biological characteristics found in an area in the absence of artefacts or influences of a well-developed technological human culture.
'Not of Concern' Regional Ecosystem	A regional ecosystem is listed as Not of concern under the Vegetation Management Act 1999 if remnant vegetation is over 30 per cent of its pre-clearing extent across the bioregion, and the remnant area is greater than 10,000 hectares.
Notifiable Activity	Those activities that cause or are likely to cause contamination as listed under Schedule 2 of the EP Act.
'Of Concern' Regional Ecosystem	A regional ecosystem is listed as of concern under Vegetation Management Act 1999 if remnant vegetation is 10-30 per cent of its pre-clearing extent across the bioregion; or more than 30 per cent of its pre-clearing extent remains and the remnant extent is less than 10,000 hectares.
Old growth forests	Forests that are both little disturbed and ecologically mature.
Opportunistic	When the conditions are ideal.
Pelagic zone	The water column associated with the surface or middle depths of a water body, away from the bottom.
Permeability	The capacity of a material (rock) to transmit fluids (groundwater)
Permeable Rock	Rock through which water can pass, either via <ul style="list-style-type: none"> (a) a network of pores between the grains, or (b) interconnected joints, bedding planes and fissures (more correctly termed 'pervious rock')
Permian	The period of geological time extending from about 285 to 250 million years ago.
pH	"power hydrogen". Negative logarithm of hydrogen-ion concentration; a numerical expression of acidity or alkalinity.
Plant	A member, alive or dead, of the plant kingdom or of the fungus kingdom, and includes a part of a plant and plant reproductive material.
Pleistocene	The first part of the Quaternary period of geological time lasting from about 2 million years to 10,000 years ago.
Population	Occurrence of a species or ecological community in a particular area.
Porosity	Is a measure of void spaces in various rock types.
Precambrian	The period of geological time extending from about 285 to 250 mya.

Precipitation	A collective term for the moisture, either liquid or solid, that falls on the earth from the atmosphere. In North Queensland this is usually in the form of rain.
Probable Maximum Flood (PMF)	The flood resulting from the worst flood-producing catchment conditions that can be realistically expected in the prevailing meteorological conditions.
Propagation	The reproduction of plants.
Rare	An animal is rare / near threatened if: <ul style="list-style-type: none"> ■ the population size or distribution of the wildlife is small and may become smaller; or ■ the population size of the wildlife has declined, or is likely to decline, at a rate higher than the usual rate for population changes for the wildlife; or ■ the survival of the wildlife in the wild is affected to an extent that the wildlife is in danger of becoming vulnerable.
Recharge	The process involving the infiltration of water from the surface to groundwater.
Recovery plans	A recovery plan is a document stating the research and management actions necessary to stop the decline, support the recovery and enhance the chance of long-term survival in the wild, of a stated species or community of protected wildlife.
Regional Ecosystems	Regional ecosystems were defined by Sattler and Williams (1999) as vegetation communities in a bioregion that are consistently associated with a particular combination of geology, landform and soil.
Regrowth	A young, usually even-aged forest stand that has regenerated after disturbance.
Rehabilitation	Making the land useful again after a disturbance. It involves the recovery of ecosystem functions and processes in a degraded habitat.
Regulated Waste	Waste defined under the Qld Environmental Protection (Waste) Policy as waste that contains a significant quantity and concentration of a hazardous contaminant; or waste in which the hazardous contaminant exhibits hazardous characteristics because of its toxicity, carcinogenicity, mutagenicity, teratogenicity, flammability, corrosivity, reactivity, ignitability or infectiousness, through its physical, chemical or biological characteristics; or waste that may cause environmental harm if improperly transported, treated, stored, disposed or otherwise managed.
Rehabilitation	Making the land useful again after a disturbance. It involves the recovery of ecosystem functions and processes in a degraded habitat.
Remnant vegetation	Small remaining areas of naturally occurring vegetation in a landscape that has been altered by human activity such as agriculture. These remnants were once part of a continuously vegetated landscape.
Riparian	Pertaining to, or situated on the bank of, a body of water, especially a watercourse such as a river.
Riverine	Pertaining to rivers
Rodds Bay	The water body to the North of Hummock Hill Island.
Salinity	The concentration of any salt.
Sediment	Any usually finely divided organic and / or mineral matter deposited by air or water in non-turbulent areas.
Seven Mile Creek	The water Body to the East of Hummock Hill Island.
Slickensides	Parallel striations on rock surfaces produced by relative motion across opposite sides of fault planes. They may appear similar to the striations produced by glaciers but can be seen to pass into the body of the rock.

Soil Aggregation	The lumping together of soil particles into a coherent mass.
Soil Profile	The physical and chemical features of the soil imagined or seen in vertical section from the surface to the point at which the characteristics of the parent rock are not modified by surface weathering or soil processes.
Species	A group of biological entities that (a) interbreed to produce fertile offspring; or (b) possess common characteristics derived from a common gene pool.
Species richness	A botanical term indicating a measure of the number of species of plants or animals occurring in a given area.
Spotter/catcher	An ecologist who is accredited by the QPWS to capture and relocate fauna (mainly mammals) from trees prior to vegetation clearance.
Stress	The result or consequent state of a physical or chemical, or social, stimulus on an organism or system
Sub-species	A geographically separate population of a species, being a population that is characterised by morphological or biological differences from other populations of that species.
Systematic	In a methodical and organised way.
Taxa	Taxonomic group of any rank (for example as species, genus, family, class, order).
Tenosols	Soils with weak pedological organisation.
Terrain	A tract of land and its physical features with emphasis on bedrock geology.
Terrestrial	Pertaining to land, the continents, and/or dry ground. Contrasts to aquatic.
Tertiary	The period of geological time extending from about 65 to 2 mya.
Threatened	A collective term for native plants and animals which are presumed extinct, endangered and vulnerable.
Threatened species and ecological communities	Threatened species or ecological communities listed and protected under the provisions of the EPBC Act.
Topography	Description or representation of natural or artificial features of the landscape; the description of any surface, but usually the earth's.
Translocation	The transfer of plants and animals from one part of their range to another.
Transpiration	The loss of water from plants, normally as vapour.
Ubiquitous	Having or seeming to have the ability to be everywhere at once.
Understorey	A general term for the plants of a community occurring at levels lower than the top stratum.
Vertosols	Soils with high clay content (>35%), cracks and slickensides.
Vulnerable	A species is vulnerable if: <ul style="list-style-type: none"> ■ its population is decreasing because of threatening processes, or ■ its population has been seriously depleted and its protection is not secured, or ■ its population, while abundant, is at risk because of threatening processes, or ■ its population is low or localised or depends on limited habitat that is at risk because of threatening processes.
Waste	A substance that is left over, or an unwanted by-product, from an industrial, commercial, domestic or other activity; or surplus to the industrial, commercial, domestic or other activity generating wastes.
Weathering	Changes in the coherence, texture and composition of rocks and minerals by either physical (mechanical) or chemical processes as a result of exposure at the Earth's surface.



Hummock Hill

Weed	A plant that is considered undesirable because it threatens the persistence of native plants.
Wetlands	Low-lying areas regularly inundated or permanently covered by shallow water. Usually important areas for birds and other wildlife.
Wildlife	An animal, plant or specimen derived from an animal or plant.
Wildlife corridor	A strip of habitat that facilitates fauna movement between otherwise isolated patches of habitat.
World Heritage property	Under the EPBC Act, a World Heritage property is either: <ul style="list-style-type: none">■ an Australian property on the World Heritage List kept under the World Heritage Convention; or■ a property declared to be a World Heritage property by the Commonwealth Environment Minister.