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Glossary

Term	Reference
Actual Acid Sulfate Soil	Soils that are actually acidic i.e. pH of less than 4
Adventure Class	Cruise Ships with less than 100 passengers
Anthropogenic	Caused or influenced by humans
Assessment Background Level	A single-number figure used to characterise the background noise levels from a single day of a noise survey. ABL is derived from the measured noise levels for the day, evening or night time period of a single day of background measurements. The ABL is calculated to be the tenth percentile of the background LA90 noise levels – i.e. the measured background noise is above the ABL 90% of the time
Australian Height Datum	The datum that sets mean seal level as a zero elevation
Ambient Noise Level	The ambient noise level is the overall noise level measured at a location from multiple noise sources. When assessing noise from a particular development, the ambient noise level is defined as the remaining noise level in the absence of the specific noise source being investigated. For example, if a fan located on a city building is being investigated, the ambient noise level is the noise level from all other sources without the fan running. This would include sources such as traffic, birds, people talking and other nearby fans on other buildings
Backhoe Dredger	A mechanical dredger, similar to an excavator which is mounted on a barge. It works by dredging the seabed using the bucket at the end of the excavator arm and placing the dredged material into a hopper barge
Background Noise Level	The background noise level is the noise level that is generally present at a location at all or most times. Although the background noise may change over the course of a day, over shorter time periods (e.g. 15 minutes) the background noise is almost-constant. Examples of background noise sources include steady traffic (e.g. motorways or arterial roads), constant mechanical or electrical plant and some natural noise sources such as wind, foliage, water and insects
Bathymetry	The measurement of underwater depth
Benthic	the ecological zone at the lowest level of the marine environment, including the sediment surface and sub-surface layers
Boutique Class	Cruise ships with 200-1500 passengers
Bund Wall	A constructed retaining wall designed to prevent inundation or breaches from a known source
Burra Charter	A document outlining best cultural heritage practice principles developed by the International Council on Monuments and Sites, Australia
Calibration	A comparison between measurements
Capital dredging	A one-off dredging event for the purpose of expanding the existing channel
Catchment	The entire areas from which water drains to a specific water course or water body
climate change	Any change in climate over time, whether due to natural variability or as a result of human activity
Climate projection	Projection of the response of the climate system typically based upon climate model simulations

Term	Reference
Crystal Swing Basin	The principal swing basin currently used by cruise ships to access Wharves 1-5
Concept Design	A theoretical or 'concept' plan used for planning purposes only, which will be later refined in detail
Co-ordinator General	The administrator of the SDPWO Act
Cumulative Impact	The interaction of impacts arising from a development in conjunction with other past, present and reasonably foreseeable future projects
Decibel	The ratio of sound pressures which we can hear is a ratio of 106:1 (one million:one). For convenience, therefore, a logarithmic measurement scale is used. The resulting parameter is called the 'sound pressure level' (Lp) and the associated measurement unit is the decibel (dB). As the decibel is a logarithmic ratio, the laws of logarithmic addition and subtraction apply
Decibel (A)	The unit used to define a weighted sound pressure level, which correlates well with the subjective response to sound. The 'A' weighting follows the frequency response of the human ear, which is less sensitive to low and very high frequencies than it is to those in the range 500Hz to 4kHz
Dolphin	In some statistical descriptors the 'A' weighting forms part of a subscript, such as LA10, LA90, and LAeq for the 'A' weighted equivalent continuous noise level
Dredging	An excavation activity or operation usually carried out at least partly underwater, in shallow seas or fresh water areas with the purpose of gathering up bottom sediments and disposing of them at a different location
Dredge Footprint	Refers to the outer channel, swing basins, inner channels and berth pockets that will be subject to capital dredging, and subsequent future maintenance, as a result of this project
Dredge Material Placement Area	A designated area where dredge material is placed following dredging activity (either at land or sea)
East Trinity	A parcel of land owned and managed by the state government located on the southern bank of Trinity Inlet. It is the preferred land dredge material placement area
Epibenthic/Epifauna	Communities that live upon the bottom of the ocean
Ecosystem	The biotic (living) and abiotic (non-living) environment within a specified location in space and time
Endemic	Naturally occur in a specified area
Environmental Impact Statement Guidelines	Guidelines for undertaking an Environmental Impact Statement for the Cairns Shipping Development Project, issued by the Federal Government in March, 2013
Environmental Offset	An activity undertaken to counterbalance a significant residual impact on an environmental matter. It may provide a social, cultural, economic or environmental benefit
Elutriate concentrations	The separation of light and heavy particles
Estuarine	An environment or species associated with a partially enclosed coastal body of water. It is a transitional zone between river and maritime environments that are subject to marine and riverine influences

Term	Reference
Equivalent Continuous Sound Level	An index for assessment for overall noise exposure is the equivalent continuous sound level, Leq. This is a notional steady level which would, over a given period of time, deliver the same sound energy as the actual time-varying sound over the same period. Hence fluctuating levels can be described in terms of a single figure level
Faecal coliform	A bacteria that originates in the intestines of warm-blooded animals. In general, used as a measure of water quality
Frequency	Frequency is the rate of repetition of a sound wave. The subjective equivalent in music is pitch. The unit of frequency is the hertz (Hz), which is identical to cycles per second. A 1000Hz is often denoted as 1kHz, eg 2kHz = 2000Hz. Human hearing ranges approximately from 20Hz to 20kHz. For design purposes the octave bands between 63Hz to 8kHz are generally used. The most commonly used frequency bands are octave bands, in which the mid frequency of each band is twice that of the band below it. For more detailed analysis, each octave band may be split into three one-third octave bands or in some cases, narrow frequency bands
Gross Regional Product	The value of all goods and services produced within a 'region'
Ground Integrity	Criteria used in archaeological assessments to indicate level of ground disturbance
Ground Surface Visibility	Scale used in archaeological assessments to measure visibility of ground surface
Highest Astronomical Tide	The highest tidal level that can be predicted to occur under average meteorological conditions and any combination of astronomical conditions
Home Porting	A vessel's home port, where maintenance and restocking occurs, and to which the vessel returns after its journey
Infauna	Aquatic animals that live in the substrate of a body of water, especially in a soft sea bottom
Inner Harbour	The inner harbour channel commences at the channel 'bend' and terminates at the Main Turning (Swing) Basin
Intermediate Fuel Oil (IFO)	Type of fuel to be stored in fuel storage facility
ISO14001	International Standard for Environmental Management Systems
Landside Infrastructure	The provision and upgrade of services to support the project (includes traffic and access, fuel supply, potable water supply, fire fighting services and discharge of sewerage)
Lowest Astronomical Tide	The lowest tidal level that can be predicted to occur under average meteorological conditions and any combination of astronomical conditions
Macro invertebrate	Small animals that for all, or part of their lives in water e.g. beetles, larvae, water fleas
Maintenance Dredging	Ongoing and regular dredging to maintain the existing channel (and the expanded channel)
Main Swing Basin	Primarily used by cargo ships and vessels berthing at Cairns Naval Base to manoeuvre

Term	Reference
Maximum Noise Level	The maximum noise level identified during a measurement period. Experimental data has shown that the human ear does not generally register the full loudness of transient sound events of less than 125ms duration and fast time weighting (F) has an exponential time constant of 125ms which reflects the ear's response. Slow time weighting (S) has an exponential time constant of 1s and is used to allow more accurate estimation of the average sound level on a visual display
Mega class cruise ships	The maximum level measured with fast time weighting is denoted as L _{Amax, F} . The maximum level measured with slow time weighting is denoted L _{Amax, S} .
Mega fauna	Large or giant animals e.g. whales
Mid-size Cruise Ships	Cruise ships with 200-2000 passengers
Mitigation	Measures, including any process, activity or design to avoid, reduce, remedy or compensate for adverse impacts of a project
Multi-criteria analysis	A process for assessing a range of options by assigning scores and weightings to criteria
Naturalness	Absence of apparent modified landforms and habitats. Absence of apparent environmental and species disturbance or damage (including visitor damage)
Nephelometric Turbidity Unit	A unit of turbidity which measures light reflected from a given amount of particulates
Net Present Value	The present value of cash inflows and outflows, taking into account the present value of money compared to the value of money in the future
Outer channel	Commences at the channel bend adjacent to beacon number 20 and extends out to sea, to the end of the channel
Outstanding Universal Value	A term used to describe the value of a World Heritage Area as defined under the World Heritage Convention.
Overflow dredging	A device that discharges fluids from a hopper above a certain level to the marine environment. Sediment laden water is released into the water column
Perfluorinated Compound	A chemical compound often used as a component of foams used for fire fighting. Often used as a measure of water quality or toxicants
Place	Means a geographically defined area. It may include elements, objects, spaces and views. Place may have tangible and intangible dimensions.
Photosynthetically active radiation	The spectral range of solar radiation that photosynthetic organisms (e.g. seagrass) are able to use in the process of photosynthesis
Pore Water	Water that occupies the space between sediment particles
Potable Water	Water treated to drinking water standards
Potential Acid Sulfate Soil	Soils that have not been oxidised by exposure to air, but would become acidic upon exposure
Project Area	Cairns Cruise Shipping Development Project
Project Area	The immediate footprint of the project, including the shipping channel, preferred marine placement area and wharf upgrades
Ramsar convention	An international treaty for the conservation and sustainable use of wetlands

Term	Reference
Rating Background level	A single-number figure used to characterise the background noise levels from a complete noise survey. The RBL for a day, evening or night time period for the overall survey is calculated from the individual Assessment Background Levels (ABL) for each day of the measurement period, and is numerically equal to the median (middle value) of the ABL values for the days in the noise survey. This parameter is denoted RBL in NSW, and minLA90,1hour in QLD
Regional Ecosystem	Vegetation communities in a bioregion that are consistently associated with a particular combination of geology, landform and soil
Remoteness	Absence of settlement (or distance from population centres). Absence of human presence or intervention in the landscape (structures & changes). Absence of obvious accessibility
Residual Impact	An impact of the project that remains once all mitigation measures or actions have been taken to reduce or eliminate the impact
Resilience	The ability of an ecosystem or species to adapt to a stress or adverse environment
Resuspension	The re-mobilisation of sediment particles that have been previous mobilised by currents and other processes.
Sampling and Analysis Plan	A plan for characterising the physical and chemical properties of the proposed dredged sediment, prepared in accordance with the NAGD and approved by the GBRMPA
Sensitive Receptor	A human or ecological that may potentially be sensitive to disturbance from an action
Ship simulation	A model used to determine channel dimensions and its navigability for vessels
Significance	Aesthetic, historic, scientific, social or spiritual value for past, present or future generations
Significant Impact	A description used to estimate the scale or level of impact of an action
Smith Creek Swing Basin	A proposed relocation of the Main Swing Basin to Senrab Point and the Tropical Reef Shipyard
Solitude	Absence of people other than one's companions
Sound Power Level	The sound power level (L _w) of a source is a measure of the total acoustic power radiated by a source. The sound power level is an intrinsic characteristic of a source (analogous to its volume or mass), which is not affected by the environment within which the source is located
Sound Pressure Level	The sound power emitted by a source results in pressure fluctuations in the air, which are heard as sound
Spiritual	The sound pressure level (L _p) is ten times the logarithm of the ratio of the measured sound pressure (detected by a microphone) to the reference level of 2 x 10 ⁻⁵ Pa (the threshold of hearing)
Study Area	Thus L _p (dB) = 10 log (P ₁ /Pref) ² where Pref, the lowest pressure detectable by the ear, is 0.00002 pascals (ie 2x10 ⁻⁵ Pa)
Terms of Reference	The threshold of hearing is 0dB, while the threshold of pain is approximately 120dB. Normal speech is approximately 60dBLA and a change of 3dB is only just detectable. A change of 10dB is subjectively twice, or half, as loud

Term	Reference
Threshold Value	A quantifiable amount, over which an impact may be experienced beyond natural variation
Trigger Values	Values (ecological or water-related), which, when exceeded, will 'trigger' the need for the implementation of management measures
Trailer Suction Hopper Dredger	A self-propelled sea going dredger equipped with a hopper. Dredging is undertaken via a draghead which is connected to a suction pipe to fill the hopper
Tranquillity	Absence of discordant and intrusive sounds, smells and sights. Opportunities for moments of stillness, peace, intimacy offered by the landscape
Turbidity	A measurement of the amount of suspended material within a fluid
Waderbird	A shorebird that is long-legged e.g. storks, herons
Yorkeys Knob	A suburb of Cairns, where some cruise ships anchor off, at sea
Zone of impact	A value used to assess the potential impact to marine quality and ecologically sensitive areas from the project
Zone of Influence	The probable maximum extent of detectable dredge plumes

Abbreviations

Abbreviation	Reference	Abbreviation	Reference
AASS	Actual Acid Sulfate Soils	CPA	Cairns Port Authority
ACH Act	Aboriginal Cultural Heritage Act 2003 (Qld)	CSD	Cairns Shipping Development
AHC	Australian Heritage Council	CSDP	Cairns Shipping Development Project
AHD	Australian Height Datum	EPP Water	Environmental Protection (Water) Policy 2009
AHPI	Australian Heritage Places Inventory	Evs	Environmental Values
AMSDB	Australian Maritime Sites Database	DAFF	The Department of Agriculture, Fisheries and Forestry, Queensland
AQIS	Australian Quarantine and Inspection Service	DATSIMA	Department of Aboriginal and Torres Strait Islander and Multicultural Affairs
ARCHAEO	ARCHAEO Cultural Heritage Services P/L	DATSIMA	Department of Aboriginal and Torres Strait Islander and Multicultural Affairs
AS/NZS	Australian standard/New Zealand standard	dB	Decibel
ASS	Acid Sulfate Soil	DEHP	Department of Environment and Heritage Protection, Queensland
BHD	Back Hoe Dredger	DIWA	Directory of Important Wetlands in Australia
BoM	Bureau of Meteorology	DMPA	Dredge Material Placement Area
BPPH	Benthic Primary Producer Habitat	DNPRSR	Department of National Parks, Recreation, Sport and Racing
c.	Circa	DNRM	Department of Natural Resources and Mines
CAMBA	China–Australia Migratory Bird Agreement	DOE	Dissolved Oxygen
CBD	Central Business District	DOE	Department of the Environment
CCLT	Cairns Cruise Liner Terminal	DSDIP	Department of State Development, Infrastructure and Planning
CD	Chart datum	DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities (Australian Government)
CG	Office of the Co-ordinator General	EIS	Environmental Impact Statement
CHB	Cairns Harbour Board	EMP	Environmental Management Plan
CHCU	Cultural Heritage Coordination Unit	EMR	Environmental Management Register
CHL	Commonwealth Heritage List	EMS	Environmental Management System
CHMP	Cultural Heritage Management Plan	EP Act	Environmental Protection Act 1994 (Qld)
CHS	Cairns Historical Society		
CLR	Contaminated Land Register		
CMP	Conservation Management Plan		
Coastal Act	Coastal Protection and Management Act 1995 (Qld)		
Converge	Converge Heritage + Community		

EPA	Environmental Protection Agency	MGO	Marine Gas Oil
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Cth)	MNES	Matters of national environmental significance (under the EPBC Act)
EPP	Environmental Protection Policy (water, air, waste, noise)	MSES	Matters of state Environmental Significance (under the Sustainable Planning Act 2009)
ERA	Environmentally Relevant Activity	MSQ	Maritime Safety Queensland
FHA	Fish Habitat Area	NAGD	National Assessment Guidelines for Dredging
GBR	Great Barrier Reef	NC Act	Nature Conservation Act 1992 (Qld)
GBRMP	Great Barrier Reef Marine Park	NEPM	National Environmental Protection Measures
GBRMP Act	Great Barrier Reef Marine Park Act 1975	NGA	National Greenhouse Accounts
GBRMP Regulations	Great Barrier Reef Marine Park Regulations 1983	NHL	National Heritage List
GBRMPA	Great Barrier Reef Marine Park Authority	NPV	Net Present Value
GBRWHA	Great Barrier Reef World Heritage Area	NICH	Non-Indigenous Cultural Heritage
GI	Ground Integrity	NT Act (Cth)	Commonwealth Native Title Act 1993
GOCA 1993	Government Owned Corporations Act 1993	NT Act (Qld)	Nature Title (Queensland) Act 1993
GSV	Ground Surface Visibility	NT agreement	Native title agreement
HES	High Ecological Significance (wetland)	NTDA	Native Title Determination Application
HSA	Historic Shipwrecks Act 1996	NTU	Nephelometric Turbidity Unit
HLC	Heavy Landing Craft	NWQMS	National Water Quality Management Strategy
IAS	Initial Advice Statement	OCV	Offshore Combatant Vessels
ICH	Indigenous Cultural Heritage	OUV	Outstanding Universal Value
ICOMOS	International Council on Monuments and Sites	PAR	Photosynthetically Active Radiation
IFO	Intermediate Fuel Oil (IFO)	PASS	Potential Acid Sulfate Soils
JAMBA	Japan–Australia Migratory Bird Agreement	PCTI	Port of Cairns and Trinity Inlet Wetland
LAT	Lowest Astronomical Tide	pH	a measure of the acidity or basicity of an aqueous solution
LHD	Landing Helicopter Dock	PFC	Perfluorinated Compound
LHR	Local Heritage Register	ppm	Parts per million
LTDMDMP	Long Term Dredge Material Disposal Management Plan	QHA	Queensland Heritage Act 1992
MARPOL	International Convention for the Prevention of Pollution from Ships	QHC	Queensland Heritage Council
MCA	Multi Criteria Analysis	QHR	Queensland Heritage Register
mg/L	milligrams per litre		

QWQG	Queensland Water Quality Guidelines 2009	WPA	Wetland Protection Area
RE	Regional Ecosystem	WQOs	Water Quality Objectives
REDD	Regional Ecosystem Description Database	WSSR Act	Water Supply (Safety and Reliability) Act 2008 (Qld)
REF	Review of Environmental Factors	µg/L	micrograms per litre
RHM	Regional Harbour Master		
RL	Reduced Level		
RNE	Register of the National Estate (former)		
ROKAMBA	Republic of Korea–Australia Migratory Bird Agreement		
SAP	Sampling Analysis Plan		
SEWPaC	Department of Sustainability, Environment, Water, Population and Communities		
SCL Act	Strategic Cropping Land Act 2011 (Qld)		
SDPWO Act	State Development and Public Works Organisation Act 1971 (Qld)		
SIA	Social Impact Assessment		
SP Act	Sustainable Planning Act 2009 (Qld)		
TACC	Advisory Consultative Committee		
TIA	Transport Infrastructure Act 1994 (Qld)		
TOR	Terms of Reference		
TOMPA	Transport Operations (Marine Pollution)		
Act 1995			
TORUM Act	Transport Operations (Road Use Management) Act 1995 (Qld)		
TSHD	Trailer Suction Hopper Dredger		
TSP	Total Suspended Particulates		
TSS	Total Suspended Solids		
um	Micrometres		
UNESCO WHA/S	UNESCO World Heritage Area/ Site		
VM Act	Vegetation Management Act 1999 (Qld)		
WHA	World Heritage Area		
WHL	World Heritage List		