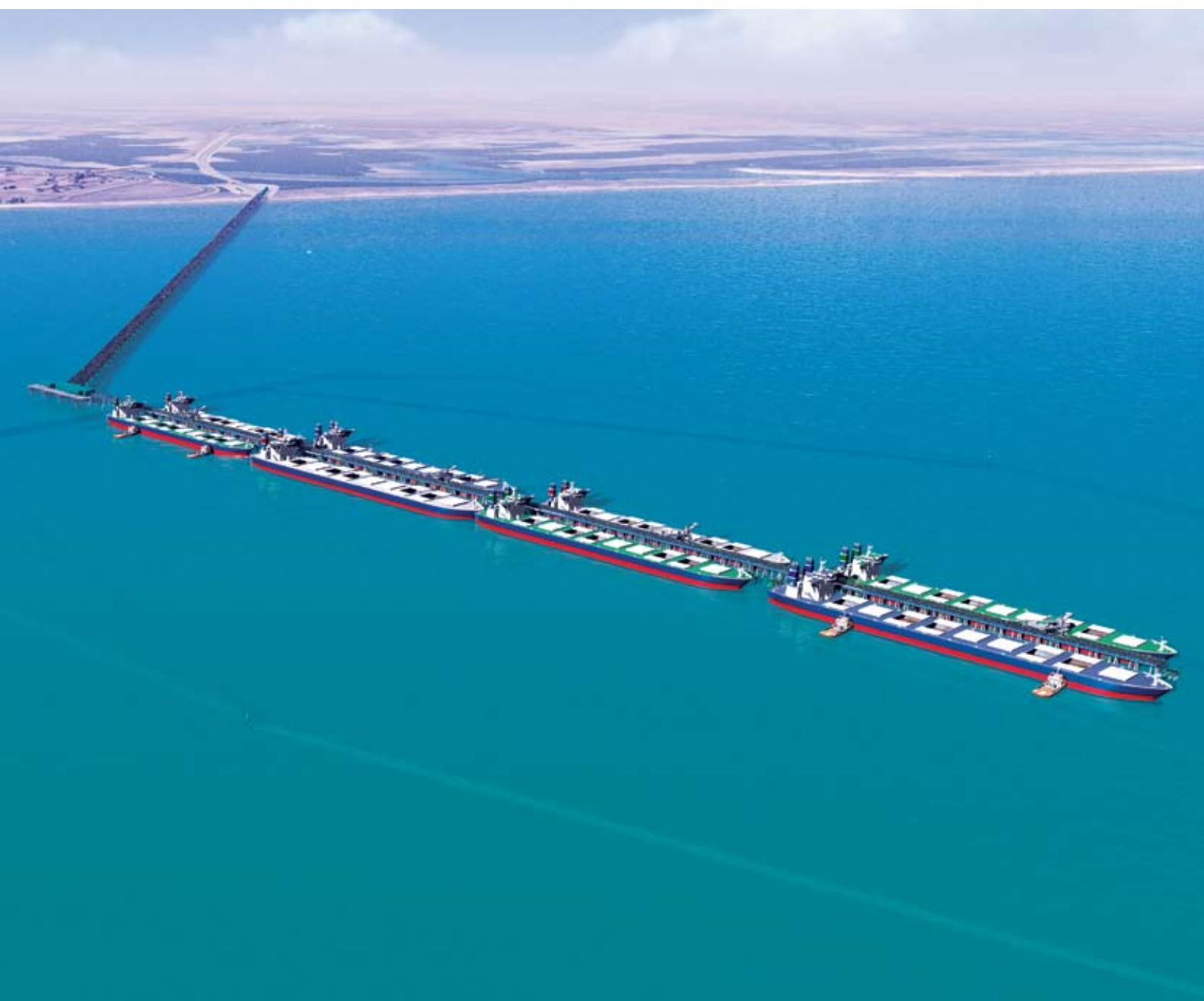




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Section 13  
Glossary and References





## 13 Glossary

Abiotic	Non living. For example, abiotic substrate includes the sand, rubble and rock component rather than the benthos living on and within it.
Ablution	Cleansing with water or other liquids.
Alluvium	Loose unconsolidated soil or sediments, eroded, deposited and reshaped by water in some form in a non-marine setting.
Assemblage	Recognisable grouping or collection of individuals or organisms.
Athalassic	Non marine saline waters.
Aquifer	A wet underground layer of water-bearing permeable rock or unconsolidated materials from which groundwater can be extracted using a water well.
Avifauna	The birds of a specific region or period.
Ballast Water	Fresh or salt water, sometimes containing sediments, held in tanks and cargo holds of ships to increase stability and maneuverability during transit.
Bathymetry	Measurement of the changing ocean depth to determine the sea floor topography.
Benthic	Bottom dwelling.
Benthic Primary Producer (BPP)	Predominantly marine plants (e.g. seagrasses, mangroves, seaweeds and turf algae) but include invertebrates such as scleractinian corals, which acquire a significant proportion of their energy from symbiotic microalgae that live in coral polyps.
Benthic Primary Producer communities (BPP communities)	Biological communities, including the plants and animals within which the benthic primary producers defined above predominate.
Benthic Primary Producer Habitat (BPPH)	Both the BPP communities and the substrata that can/does support these communities.
Benthos	All biota living upon or in the sediment of an aquatic habitat.
Bilge Water	Water that collects in the lowest inner part of the ship's hull which is frequently contaminated with oil and other lubricants from the engine room.
Bioregion	Any geographical region characterised by a distinctive flora and fauna (also termed ecoregion).
Billabong	A stagnant pool of water in the bed of a stream that flows intermittently.
Bioavailable	Able to be absorbed by a living organism.
Bioclimatic	Of or concerned with the relations of climate and living organisms.
Biogeography	Study of the geographical distribution of animals and plants.
Biota	The plants, animals and micro-organisms of a region.
Bollard Pull	A measure of a tug's pulling power.
Bommie	A protrusion on the seabed, e.g. rock or coral.
Calcareous	Composed of or containing or resembling calcium carbonate or calcite or chalk.
Calclutite	A fine grained (silt and clay sized) limestone.
Calcrete	A hardened surface formed by weathering process involving cementation of the surface soils and weathered rock by calcite.
Cay	A small, low-elevation island, formed of sand on the surface of coral reefs.
Chart Datum (CD)	The level of water that charted depths are measured from. In Australia the CD is based on the Lowest Astronomical Tide.
Coastal Hydrodynamics	Study of coastal waters in motion.
Colluvium	Soil material, rock fragments, or both moved by creep, slide, or local wash and deposited at the base of steep slopes.
Community	Ecologically, any naturally occurring group of different organisms sharing a particular habitat.
Corallivore	An animal that eats coral polyps.
Culvert	A transverse and totally enclosed drain under a road or railway.
Cyanobacteria	Blue-green algae that obtain their energy through photosynthesis.
Deadweight Tonnage (DWT)	Maximum weight including cargo, ballast, and stores that can be loaded into a vessel.
DEM	Digital Elevation Model. A digital representation of ground surface topography.
Density	The number of organisms per unit area.
Detritivore	An organism which feeds on and breaks down dead plant or animal matter.

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Dewatering	The removal of water from solid material or soil by wet classification, centrifugation, filtration, or similar solid-liquid separation processes.
Dinoflagellates	Minute phytoplankton which move by means of flagellae (long whip like appendages).
Diurnal	Daily.
Echinodermata	The group of animals containing sea stars, brittle stars, urchins, crinoids and sea cucumbers.
Echolocation	A system used by many cetaceans to navigate, orient themselves and search for food. It is accomplished by sending out sounds and interpreting the echoes produced.
Ecotoxicity	The potential for biological, chemical or physical stressors to affect ecosystems or the environment.
Elutriate	To purify, separate, or remove by washing, decanting, and settling.
Embayment	Forming into a bay or a formation resembling a bay.
Ephemeral	Short-lived, or of brief duration.
Epibenthic	Living on the surface of the ocean bottom.
Encrust	To cover over a hard surface with sessile invertebrates.
Endemic	Native species confined to a given region.
Environment	The surroundings of an organism including the other biota with which it interacts.
Epifauna	Benthic animals that move about on the sea bed or are firmly attached to it.
Epiphyte	Plant which grows attached to the surface of another plant or animal.
Ethnography	The study of culture and cultural processes that uses multiple ways to research, observe, and document people, events, or artifacts.
Fauna	Collectively, the animal life of any particular region.
Flora	Collectively, the plant life of any particular region.
Fluvial	The processes associated with rivers and streams and the deposits and landforms created by them.
Gamete	A mature sexual reproductive cell having a single set of unpaired chromosomes.
Geomorphology	The scientific study of landforms and the processes that shape them.
Habitat	The place where the physical and biological elements of ecosystems provide a suitable environment including the food, cover, and space resources needed for plant and animal livelihood.
Heterocyst	A specialised nitrogen-fixing cell formed by some filamentous cyanobacteria, and facilitates nitrogen fixation in an oxygen-free environment.
Hydrocarbons	Compounds containing mainly carbon and hydrogen, used as a source of energy, but possibly a form of environmental pollution.
Hydroids	Small invertebrates whose colonies can take many growth forms including flower-like, tree-like or feathery.
Impact	The change in the chemical, physical (including habitat) or biological quality or condition of a water body caused by external sources.
Infauna	Animals that live within the sediments of aquatic environments.
Interstitial Spaces	Spaces between tissues or organ parts.
Intertidal	Lying between the high and low tide marks.
Invertebrate	Collective term for all animals which do not have a backbone or spinal column.
Isobath	A line on a chart joining places of equal depth of water; a depth contour.
Jack up Barges (JUB)	A type of mobile platform that is able to stand still on the sea floor, resting on a number of supporting legs.
LAT	Lowest Astronomical Tide. The height of water at the lowest theoretical tide.
LiDAR	Light Detection and Ranging: A technique used to construct an image representing the terrain of an area by firing rapid pulses of light at the landscape and a sensor measures the return of light once it bounces off the landscape surface. The time taken for the light to return to the sensor allows distance and therefore topography to be measured.
Light attenuation	Light reduction (usually refers to a decrease in available light which occurs with increasing depth of water).
Luffing	A term used to describe the flapping of a sail in the wind.
Macroalgae	A diverse group of aquatic plant-like organisms. The larger members of this group that occur in the marine environment, are called seaweeds and the microscopic members that float in the water are called phytoplankton.

Macro-invertebrates	Organisms without a backbone, generally visible to the naked eye.
Macro-tidal	Where the mean spring tide range is between 4 and 6 metres.
Modelling Domain	The spatial extent represented by predictive models.
Molluscs	Soft-bodied invertebrates of the phylum Mollusca usually partly or wholly enclosed within a calcium carbonate shell.
Neap tides	Sets of moderate tides which recur every two weeks and alternate with spring tides.
Nearshore	Offshore to 10 m bathymetric contour
Oceanography	The branch of science dealing with physical and biological aspects of the oceans.
Offshore	Offshore beyond 10 m bathymetric contour
Oolite	A limestone consisting largely of spherical grains of calcium carbonate in concentric spherical layers.
Photosynthesis	The chemical process that enables plants and some bacteria to capture the sun's energy and turn it into food and oxygen.
Population	Aggregate of individuals of a biological species that are geographically isolated from other members of the species and are actually or potentially interbreeding.
Quaternary	The geologic period beginning two to three million years ago and extending to the present.
Reference site	Specific locality on a water body which is unimpaired or minimally impaired and is representative of the expected biological integrity of other localities on the same water body or nearby water bodies.
Riparian vegetation	Plant communities along the interface between land and rivers / streams.
Sea level (mean)	Mean Sea Level is often abbreviated as MSL. It is necessary to convert the pressure readings to equivalent mean sea level pressures, otherwise the important horizontal changes in pressure would be overwhelmed by vertical variations simply due to differences in height between observing stations. In this way, a Mean Sea Level Pressure map will then show pressures affected by changing weather conditions, not because of changing altitude.
Sedimentation Rate	The measurement of suspended particles falling onto the seabed or benthic organisms over a given period.
Scats	
Sessile	Attached to a substrate and thus non-mobile.
Shear Stress	A measure of the force of friction from a fluid acting in a body in the path of that fluid. In the case of open water flow, it is the force of moving water against the sea bed.
Sidecast Ridge	The name given to a ridge that runs along the edge of the existing channel where dredged material excavated during construction of this channel was sidecast directly to its edges where it has consolidated and remains as a bathymetric feature today.
Species	A group of organisms that, under normal circumstances, can interbreed.
Spring tides	Extremely high and low tides which alternate with neap tides and recur every two weeks.
Subtidal	Below the low tide mark.
Supratidal	Above the high tide mark.
Suspended Solids	Any solid substance present in water in an undissolved state.
Transpiration	The process by which moisture is carried through plants from roots to small pores on the underside of leaves, where it changes to vapour and is released to the atmosphere.
Turbidity	Measure of the amount of light scatter caused by suspended materials in the water column.
Tussock	
Zincalume®	A brand of steel sheet with a zinc/aluminium alloy coating on both sides and comes in various profiles including corrugated.

## 13 References

- ABC (2008) Available online: <http://www.abc.net.au/news/stories/2008/02/26/2172582.htm> (as cited in ERM 2008, page 46)
- ABS – See Australian Bureau of Statistics
- Airoidi, L (2003) The effects of sedimentation on rocky coast assemblages. *Oceanographic Marine Biology Annual Review*, vol. 41, pp. 16 –236.
- Anchor Environmental (2003). *Literature review of the effects of resuspended sediments due to dredging operations*. Prepared for Los Angeles Contaminated Sediments Task Force, Los Angeles, California, June 2003.
- Anthropos Australis (2008) *The Report of an Aboriginal Ethnographic Survey and Cultural Impact Assessment of Works Proposal RGP5 Port Expansion Project, Harbour and Wedgefield North Project Areas, Port Hedland, Pilbara Region, Western Australia*. Report prepared for Marapikurrinya Pty Ltd and BHP Billiton Iron Ore.
- ANZECC – Australian and New Zealand Environment and Conservation Council
- APASA – See Asia Pacific Applied Science Associates
- AQIS – Australian Quarantine Inspection Service
- Aquaterra (2004) *Assessment of Water supply Development for the Stage A Port & North-South Railway*. Report prepared for Fortescue Metals Group Ltd (unpublished).
- Asia Pacific Applied Science Associates (2009a) *Quantum Project: Modelling of the Dredge and Disposal Programme*. Report prepared for SKM.
- Asia Pacific Applied Science Associates (2009b) *BHP Billiton's Iron Ore Port Hedland Outer Harbour Development: Tidal Flushing of West Creek*. Report prepared for SKM.
- Astbury, C (2008) pers. comm. Sinclair Knight Merz.
- AusLink (2007)
- Australian Bureau of Statistics (2006a) *National Regional Profile – Pilbara (Statistical Division)*. <http://www.abs.gov.au>, online 24/09/08.
- Australian Bureau of Statistics (2006b) *2006 Census Quick Stats – South Hedland*. <http://www.abs.gov.au>, online 24/09/08.
- Australian Bureau of Statistics (2006c) *2006 Census Quick Stats – Port Hedland*. <http://www.abs.gov.au>, online 24/09/08.
- Australian Hydrographic Chart AUS326 Bedout Islet to Port Walcott*
- Australian and New Zealand Environment and Conservation Council (1997) Code of Practice for Anti-fouling and In-Water Hull Cleaning and Maintenance.
- Australian and New Zealand Environment Conservation Council & Agricultural and Resource Management Council of Australia and New Zealand (2000) *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*.
- Australian Quarantine and Inspection Service (2008) *Australian Ballast Water Management Requirements* 31 March 2008.
- Babcock et al (1986)
- Baird AH, Blakeway DR, Hurley T J & Stoddart J A (2010) 'Seasonality of coral reproduction in the Dampier Archipelago, northern Western Australia'. *Marine Biology* online publication.
- Bannister J.L. and Hedley, S.L (2001). Southern Hemisphere Group IV humpback whales: their status from recent aerial survey. *Memoirs of the Queensland Museum* 47, 587-598.
- Bannister JL, Kemper CM & Warneke RM (1996) *The Action Plan for Australian Cetaceans*. Wildlife Australia Endangered Species Program Project No 380, Australian Nature Conservation Agency September 1996.
- Bassett (2009) Port Hedland Outer Harbour Development Light Spill Assessment. Report prepared for Sinclair Knight Merz.
- Bayly, I.A.E. (1972) Salinity tolerance and osmotic behaviour of animals in athalassic saline and marine hypersaline waters. *Annual Review of Ecology and Systematics*, 3, 233-268.
- Beard, J.S. (1975), *Vegetation Survey of Western Australia: Sheet 5 Pilbara*, University of Western Australia Press, Perth, Western Australia.
- Bennelongia (2008) *Troglifauna survey of the Orebody 18 Mine Modification. Report 2008/27*. Bennelongia Pty Ltd (unpublished).
- Bennelongia (2009) *Port Hedland Outer Harbour Development Subterranean Fauna Risk Assessment*. Report 2008/41. Bennelongia Pty Ltd (unpublished).
- Berry, P F (ed.) (1986) *Faunal Surveys of the Rowley Shoals, Scott Reef and Seringapatam Reef, north-western Australia*. Records of the Western Australian Museum, Supplement No. 25.

- BHP Direct Reduced Iron (1994) *Hot Briquetted Iron Plant. Consultative Environmental Review.*
- BHP Billiton Iron Ore (2005) *Annual Environmental Report – Boodarie Iron.*
- BHP Billiton Iron Ore (2006), *Revision of the Dust Management Program for Finucane Island and Nelson Point Operations, Section 46 Amendments to Ministerial Statement 433, August 2006.*
- BHP Billiton Iron Ore (2008a) *Port Hedland Outer Harbour Development: Environmental Scoping Document.* Prepared by SKM for BHP Billiton Iron Ore, December 2008.
- BHP Billiton Iron Ore (2008b) Sustainability Report
- BHP Billiton Iron Ore (2008c) *Annual Environmental Report – Boodarie Iron.*
- BHP Billiton Iron Ore (2008d) Community Investment Program Annual Report FY2008
- BHP Billiton Iron Ore (2008e) *Selection Phase Study, Project Quantum, Bathymetric LiDAR Survey at Port Hedland.* BHP Billiton (unpublished).
- BHP Billiton Iron Ore (2008f) Environmental Referral Document – *Port Hedland Finucane Island Dredging.* BHP Billiton Iron Ore, October 2008.
- BHP Billiton Iron Ore (2009a) Sustainable Development Policy
- BHP Billiton Iron Ore (2009b) Noise Reduction Management Plan
- BHP Billiton Iron Ore (2009c) Community Investment Annual Report
- BHP Billiton Iron Ore (2009d) Environmental Referral Document – *Port Hedland Harriet Point Dredging.* BHP Billiton Iron Ore, August 2009.
- BHP Billiton Iron Ore (2009e) Cultural Heritage Management Plan
- BHP Billiton Iron Ore (2009f) Growth in the Pilbara Community Stakeholder Engagement Plan.
- BHP Billiton Iron Ore (2009g) Draft Mitigation Strategy (to be updated in chapter 11).
- Biota – see Biota Environmental Services
- Biota (2001) *Hope Downs to Port Hedland Rail Vegetation and Flora Survey.* Prepared for Hope Downs Management Services.
- Biota (2002) *Proposed Hope Downs Rail Corridor from Weeli Wolli Siding to Port Hedland. Vertebrate Survey.* Prepared for Hope Downs Management Services Pty Ltd (unpublished).
- Biota (2004a) *Vegetation and Flora Survey of the Proposed FMG Stage A Rail Corridor.* Prepared for Fortescue Metals Group Limited (unpublished).
- Biota (2004b) *Fauna Habitats and Fauna Assemblages of the Proposed FMG Stage A Rail Corridor.* Prepared for Fortescue Metals Group Limited (unpublished).
- Biota (2006a) *Port Hedland Solar Saltfield Expansion Botanical Survey – Flora and Vegetation Report.* An unpublished report for Dampier Salt Ltd, May 2006.
- Biota (2006b) *Port Hedland Solar Saltfield Expansion Fauna Survey.* An unpublished report for Dampier Salt Ltd.
- Biota (2006c) *Mesa A and Robe Valley mesas troglobitic fauna survey. Project No. 291.* Prepared for BHP Billiton Iron Ore (unpublished).
- Biota (2007), *Utah Point Berth Project, Port Hedland Port Authority.* Prepared for Sinclair Knight Merz and the Port Hedland Port Authority (unpublished).
- Biota (2008) *A Flora and Fauna Assessment of RGP5 Spoil Areas A, Port Hedland Harbour.* Prepared for BHP Billiton Iron Ore (unpublished).
- Biota (2009) *Port Hedland Nelson Point Dredging Approvals Flora and Fauna Review of DMMA H.* Prepared for BHP Billiton Iron Ore (unpublished).
- Biota (2009b) *Hope Downs IV Targeted Northern Quoll Survey.* Report for Rio Tinto Iron Ore.
- Birch WR and Birch M (1984) Succession and pattern of tropical intertidal seagrasses in Cackle Bay, Queensland, Australia: a decade of observations. *Aquatic Botany.* 19: 343–367.
- Bjorndal, K A (1996) *Foraging Ecology and Nutrition in Sea Turtles.* In Lutz, P L & Musick, J A (Eds.) *The Biology of Sea Turtles.* Boca Raton, CRC Press.
- Blakeway D and Radford BTM (2005) Scleractinian corals of the Dampier Port and inner Mermaid Sound: species list, community composition and distributional data. In: JA Stoddart and SE Stoddart (eds) *Corals of the Dampier Harbour: Their Survival and Reproduction During the Dredging Programs of 2004.* Pp. 1–11. MScience Pty Ltd, Perth.
- BoM – See Bureau of Meteorology
- Braithwaite, R.W. and Griffiths, A. (1994) *Demographic variation and range contraction in the northern quoll *Dasyurus hallucatus* (Marsupialia: Dasyuridae).* *Wildlife Research* 21: 203-17.

- Bridges K W, Phillips RC and Young PC (1981) Patterns of some seagrass distribution in the Torres Strait, Queensland. *Australian Journal of Marine and Freshwater Research*, 33 273–283.
- Brown B E, Le Tissier M D A, Scoffin T P and Tudhope A W (1990) Evaluation of the environmental impact of dredging on intertidal coral reefs at Ko Phuket, Thailand, using ecological and ecological parameters. *Marine Ecology Progress Series* 65: 273-281
- Bullen B (2009) pers comm. Bat Call WA.
- Bureau of Meteorology, (1989) *Climate of Australia*. Commonwealth of Australia.
- Bureau of Meteorology (2008) Tropical Cyclones Affecting Port Hedland, Bureau of Meteorology, <http://www.bom.gov.au/weather/wa/cyclone/about/pthed/index.shtml>
- Bureau of Meteorology (2009a) *Climate of Port Hedland*. Available online: [http://www.bom.gov.au/weather/wa/port\\_hedland/climate.shtml](http://www.bom.gov.au/weather/wa/port_hedland/climate.shtml).
- Bureau of Meteorology (2009b) *Tropical Cyclone Information*. Available online: <http://www.bom.gov.au/weather/cyclone/>.shtml.
- Carlton, JT (2001) *Introduced Species in US Coastal Waters, Environmental Impacts and Management Priorities*, Pew Oceans Commission Arlington, VA.
- Carwardine M (1995) Whales, Dolphins and Porpoises, Dorling Kindersley, London: pp.257
- Chevron Texaco (2005) Draft Environmental Impact Statement/Environmental Review and Management Programme for the Proposed Gorgon Development
- Coffey Geotechnics (2007) *Multi-User Iron Ore Port Facility – Stage 1 (Draft)*. Prepared for the Port Hedland Port Authority
- Commonwealth of Australia (2009) NAGD
- Commonwealth Scientific and Industrial Research Organisation (1999) *Introduced Species Survey, Port Hedland Western Australia*. Report prepared by the Centre for Research on Introduced Marine Pests for the Association of Australian Ports and Marine Authorities & Australian Ballast Water Management Advisory Council.
- Commonwealth Scientific and Industrial Research Organisation (2008) The North West Shelf – An Environmental Study. Available online: <http://www.cmar.csiro.au/nwsjems/consultation/factsheet/factsheet.html>. Accessed 25 November 2008
- Connell J H, Hughes T P and Wallace C C (1997) A 30 Year Study of Coral Abundance, Recruitment and Disturbance at Several Scales in Space and Time. *Ecological Monographs*, 67: 461–488.
- Cooper, T. and Fabricius, K. E. (2007) *Coral-based indicators of changes in water quality on nearshore coral reefs of the Great Barrier Reef*. Unpublished report to Marine and Tropical Sciences Research Facility. Reef and Rainforest Research Centre Limited, Cairns (31pp.).
- Craig G. (1983) *Pilbara Coastal Flora, Western Australia*. Department of Agriculture, Perth.
- Creating Communities (2009) *Draft Mitigation Strategy July 2009*. Prepared for BHP Billiton Iron Ore (unpublished).
- Crozier J (2009) pers comm. Sinclair Knight Merz. Observations from field investigations in Port Hedland.
- CSIRO – see Commonwealth Scientific and Industrial Research Organisation
- DEC – See Department of Environment and Conservation.
- Dennison W, and Alberte R (1982) Photosynthetic responses of *Zostera marina* L. (Eelgrass) to *in situ* manipulations of light intensity. *Oecologia* 55:137-144.
- Department of Conservation and Land Management (1999) *Environmental Weed Strategy for Western Australia*. Department of Conservation and Land Management, Perth.
- Department of Conservation and Land Management (2000) *Nature Base – Dampier Archipelago – Cape Preston*.
- Dames and Moore (1984), *West Pilbara Water Supply – Millstream Aquifer Environmental Water Management Program (Draft)*. Prepared for Public Works Department of Western Australia (unpublished report).
- Department of Conservation and Land Management (1999) *Environmental Weed Strategy for Western Australia*.
- Department of Environment (2003) Interim Industry Guide to Community Involvement
- Department of Environment (2004a) *Stormwater Management Manual for Western Australia*. Available online: <http://portal.water.wa.gov.au/portal/page/portal/WaterManagement/Stormwater/Stormwater Mgt Manual>



- Department of Environment (2004b) Pilbara Air Quality Study Summary Report.
- Department of Environment (2004c) State Water Quality Management Strategy Document No. 6.
- Department of Environment (2005) Landfill Waste Classification and Waste Definitions (as amended).
- Department of Environment (2006a) General Guidance on Managing Acid Sulfate Soils
- Department of Environment (2006b) Pilbara Coastal Water Quality Consultation Outcomes: Environmental Values and Environmental Quality Objectives
- Department of Environment and Conservation (2006a) *Pilbara Coastline Acid Sulfate Soils Risk Map*.
- Department of Environment and Conservation (2006b) Background quality of the marine sediments of the Pilbara coast: Marine Technical Report Series pp.64
- Department of Environment and Conservation (2007) *Lakeland Downs Short-tailed Mouse*. Available online: [www.naturebase.net](http://www.naturebase.net).
- Department of Environment and Conservation (2008a) Current List of Threatened Fauna. Available online: <https://www.dec.wa.gov.au/management-and-protection/threatened-species/index.html>. Accessed December 17 2008.
- Department of Environment and Conservation (2008b) Current Threatened and Priority Fauna Rankings. Available online: <https://www.dec.wa.gov.au/management-and-protection/threatened-species/index.html>. Accessed December 17 2008.
- Department of Environment and Conservation (2008c) *Draft Marine Turtle Recovery Plan for Western Australia*. September 2008.
- Department of Environment and Conservation (2009a), *Identification and Investigation of Acid Sulfate Soils*. Acid Sulfate Soils Guideline Series
- Department of Environment and Conservation (2009b) *Draft Treatment and Management of Soils and Water in Acid Sulfate Soil Landscapes – Acid Sulfate Soils Guideline Series, Contaminated Sites Branch*
- Department of Environment and Conservation (2011) *A guideline for managing the impacts of dust and associated contaminants from land development sites, contaminated sites remediation and other related activities*. January 2011.
- Department of Environment and Heritage (2006). Australian National Guidelines for Whale and Dolphin Watching 2005.
- Department of Environment, Transport and the Regions (1998) *Guidance on the New Approach to Appraisal*
- Department of the Environment, Water, Heritage and the Arts (2007a). *Whale and Dolphin Sighting Report*. Available online: <http://www.environment.gov.au/coasts/publications/cetacean-guide-report.html>. Accessed 21 August 2009.
- Department of the Environment, Water, Heritage and the Arts (2007b) *Australian Whale Sanctuary*. Available online: <http://www.environment.gov.au/coasts/species/cetaceans/sanctuary.html>. Accessed 20 November 2008.
- Department of the Environment, Water, Heritage and the Arts (2008) *Marine Bioregional Planning in the North-west*. Available online: <http://www.environment.gov.au/coasts/mbp/north-west/index.html>. Accessed 25 November 2008.
- Department of Environment, Heritage, Water and the Arts (2009a) Available online: [www.environment.gov.au/biodiversity/hotspots/national-hotspots.html](http://www.environment.gov.au/biodiversity/hotspots/national-hotspots.html).
- Department of the Environment, Water, Heritage and the Arts (2009b) *Species Profile and Threats Database*. Available online: [http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon\\_id=1120](http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=1120). Accessed July 28 2009.
- Department of the Environment, Water, Heritage and the Arts (2009c) *Australian Heritage Database* Available online: <http://www.environment.gov.au>
- Department of the Environment, Water, Heritage and the Arts (2009d) *EPBC Listed Species – Sawfish* Available online: <http://www.environment.gov.au/coasts/species/sharks/sawfish/index.html>
- Department of Fisheries (2008) *State of the Fisheries Report 2006/07*. Government of Western Australia, Perth.
- Department of Health (2005) *Mosquito-borne Disease in Western Australia Factsheet*, Perth, Western Australia
- Department of Health (2007) *Port Hedland Community Bulletin July 2007*
- Department of Mines and Petroleum (2008) *Western Australian Mineral and Petroleum Statistics Digest*

- Department of Planning and Infrastructure (2009) *Pilbara Framework*.
- Department of Regional Development and Lands (2010) Pilbara Cities Website <http://www.pilbaracities.com/index.php>
- Department of Water (2006) Hydrogeological Atlas. Available online: <http://portal.water.wa.gov.au/portal/page/portal/MapsDataAtlases/HydrogeologicalAtlas>
- DEH – See Department of Environment and Heritage
- DEWHA – See Department of Environment, Water, Heritage and the Arts
- DMP – See Department of Mines and Petroleum
- DoE – See Department of Environment.
- DoF – See Department of Fisheries
- Domingues, C M, Maltrud M E, Wijffels S E, Church J A, Tomczak M. (2007) *Simulated Lagrangian pathways between the Leeuwin Current System and the upper-ocean circulation of the southeast Indian Ocean*. *Deep-sea research Part 2: Topical Studies in Oceanography*: 797 – 817.
- DoW – See Department of Water
- DPI – See Department of Planning and Infrastructure
- DRDL – see Department of Regional Development and Lands
- Duke NC (2006) *Australia's Mangroves. The authoritative guide to Australia's mangrove plants*. University of Queensland, Brisbane.
- Eckert, S.A., Bowles, A.E. & Berg, E. (no date) *The effect of seismic airgun surveys on leatherback sea turtles (Dermochelys coriacea) during the nesting season*. Final report to BHP Petroleum (Trinidad) Ltd.
- Ecologia (2010) *BHP Billiton Iron Ore RGP5 Northern Quoll Monitoring 2010*
- Ecoscope Pty Ltd (2004) *2004-2009 Port Hedland Coastal Management Plan (Draft)*. Report prepared for the Town of Port Hedland for Public Comment.
- Edgar GJ (1997) *Australian Marine Life*. Reed Books, Victoria, Australia.
- Edgar, GJ (2000) *Australian Marine Life, The plants and animals of temperate waters*: p. 544
- Edinger, EN, Limmon, GV, Jompa, J, Widjatmoko, W, Heikoop, JM & Risk, MJ (2000) *Normal coral growth rates on dying reefs: are coral growth rates good indicators of reef health?* *Marine Pollution Bulletin*, vol. 40, no. 5, pp. 404–425.
- Edward, K.L. & Harvey, M.S. (2008) Short-range Endemism in Hypogean Environments: The Pseudoscorpion Genera *Tyrannochthonius* and *Lagynochthonius* (Pseudoscorpiones: Chthoniidae) in the Semiarid Zone of Western Australia. *Invertebrate Systematics*, 22, 259–293.
- Ellison J.C. (1999) *Impacts of Sediment Burial on Mangroves*. *Marine Pollution Bulletin* 37: 8-12
- English, S., Wilkinson, C., and Baker, V., (1997) *Survey Manual for Tropical Marine Resources*, 2<sup>nd</sup> Edition. (Townsville: Australian Institute of Marine Science). pp. 390
- ENV– see ENV Australia
- ENV Australia (2009a) *Port Hedland Outer Harbour Development Flora and Vegetation Assessment*. Prepared for BHP Billiton Iron Ore (unpublished).
- ENV Australia (2009b) *Port Hedland Goldsworthy Rail Duplication Flora and Vegetation Assessment*. Prepared for BHP Billiton Iron Ore (unpublished).
- ENV Australia (2009c) *Port Hedland Area Priority Flora Targeted Survey*. Prepared for BHP Billiton Iron Ore (unpublished).
- ENV Australia (2009d) *Port Hedland Nelson Point Dredging Approvals Flora and Vegetation Assessment of DMMA H*. Prepared for BHP Billiton Iron Ore (unpublished).
- ENV Australia (2009e) *Port Hedland Outer Harbour Development Fauna Assessment*. Prepared for BHP Billiton Iron Ore (unpublished).
- ENV Australia (2009f) *Port Hedland Goldsworthy Rail Duplication Fauna Assessment Part 2*. Prepared for BHP Billiton Iron Ore (unpublished).
- ENV Australia (2009g) *Port Hedland Outer Harbour Development Short-range Endemic Fauna Assessment Part1*. Prepared for BHP Billiton Iron Ore (unpublished).
- Environ Australia Pty Ltd (2004) *Pilbara Iron Ore and Infrastructure Project: Stage A Port and North-South Railway. Public Environmental Review*. Report prepared for Fortescue Metals Group Ltd.

- Environment Australia (2000) *Revision of the Iiterim Biogeographic Regionalisation for Australia (IBRA) and Development of Version 5.1*. Summary Report. November 2000. Environmental Protection Authority (2003) *EPA Guidance Statement No. 55: Implementing Best Practice in proposals submitted to the Environmental Impact Assessment process*.
- Environment Australia (2002) *National Ocean Disposal Guidelines for Dredged Material*. Commonwealth of Australia.
- Environment Australia (2003) *Recovery Plan for Marine Turtles in Australia*. Prepared by the Marine Species Section, Approvals and Wildlife Division, Environment Australia, in consultation with the Marine Turtle Recovery Team
- Environmental Protection Authority (2000a) Guidance Statement No. 18 Prevention of Air Quality Impacts from Land Development Sites, Perth, Western Australia.
- Environmental Protection Authority (2000b) Preliminary Draft Guidance Statement No. 14: Road and Rail Transport Noise, Perth, Western Australia.
- Environmental Protection Authority (2000c) EPA Position Statement No. 2: Environmental Protection of Native Vegetation in Western Australia, Perth, Western Australia.
- Environmental Protection Authority (2001) Guidance for the Assessment of Environmental Factors: *Guidance Statement for the protection of tropical arid zone mangroves along the Pilbara Coast*, No.1.
- Environmental Protection Authority (2002) Position Statement No. 3: Terrestrial Biological Surveys as an Element of Biodiversity Protection.
- Environmental Protection Authority (2004a) Position Statement No. 7: Principles of Environmental Protection, Perth, Western Australia.
- Environmental Protection Authority (2004b) *Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia, No. 51*, EPA, Perth, Western Australia.
- Environmental Protection Authority (2004c) Guidance Statement No. 56: Terrestrial Fauna surveys for Environmental Impact Assessment in Western Australia.
- Environmental Protection Authority (2004d) Guidance for the Assessment of Environmental Factors *Benthic Primary Producer Habitat Protection for Western Australia's Marine Environment*, No. 29.
- Environmental Protection Authority (2005) Environmental Quality Criteria Reference Document for Cockburn Sound (2003-2004), State Environmental (Cockburn Sound) Policy 2005, Report 20.
- Environmental Protection Authority (2005) *Pilbara Iron Ore and Infrastructure Project: Port and North-South Railway (Stage A)*. Bulletin 1173.
- Environmental Protection Authority (2007) Guidance Statement No. 8: Environmental Noise (Draft)
- Environmental Protection Authority (2008a) *Application of Risk-Based Approach in EIA (Draft for Comment)*.
- Environmental Protection Authority (2008) *Port Facility Upgrade – Anderson Point, Port Hedland, Dredging and Wharf Construction – Third Berth*. Bulletin 1286.
- Environmental Protection Authority (2008) Guidance Statement No. 12: Minimising Greenhouse Gas Emissions.
- Environmental Protection Authority (2009a) Guidance Statement No. 20: *Sampling of Short-range Endemic Invertebrate Fauna for Environmental Impact Assessment in Western Australia*.
- Environmental Protection Authority (2009b) Environmental Assessment Guideline No. 3: *Sampling of Short-range Endemic Invertebrate Fauna for Environmental Impact Assessment in Western Australia*.
- Environmental Protection Authority (2010) Environmental Assessment Guideline No. 5: *Environmental Assessment Guideline for Protecting Marine Turtles from Light Impacts*. Draft. March 2010.
- Environmental Protection Authority (2011). *South West Creek Dredging and Reclamation Proposal – Port Hedland Port Authority – Report and Recommendations of the Environmental Protection Authority*. Report 1380, January 2011.
- Environmental Resources Management (2009) – *Social Impact Assessment – Annex A: Port Hedland Outer Harbour Development* Prepared for BHP Billiton Iron Ore (unpublished).
- Eriksson, BK & Johansson, G (2005) Effects of sedimentation on macroalgae: species-specific responses are related to reproductive traits, *Oecologia*, vol. 143, pp. 438–448.
- ERM – see Environmental Resources Management

- Fabricius, KE (2005). Effects of terrestrial runoff on the ecology of corals and coral reefs: review and synthesis, *Marine Pollution Bulletin*, vol. 50, pp. 125–146.
- Fabricius K and De'ath G (2001) Environmental Factors Associated with the Spatial Distribution of Crustose Coralline Algae on the Great Barrier Reef. *Coral Reefs* 19: 303–309.
- Fabricius K E, Golbuu Y and Victor S (2007) Selective Mortality in Coastal Reef Organisms from an Acute Sedimentation Event. *Coral Reefs* 26: 69–69.
- Falkowski, PG, Jokiel, PL & Kinzie, R, III, (1990). Irradiance in corals. in Dubinsky Z (Ed.), *Ecosystems of the World 25 Coral Reefs.*, pp. 89–107, The Netherlands: Elsevier Science Publishers B.V.
- Falkowski, PG & Dubinsky, Z (1981). Light-shade adaptation of *Stylophora pistillata*, a hermatypic coral from the Gulf of Elat. *Nature*, vol. 289, pp. 172–74.
- Feist, B.E., J.J. Anderson, and Miyamoto, R. 1992. Potential impacts of pile driving on juvenile pink (*Oncorhynchus gorbuscha*) and chum (*O. keta*) salmon behavior and distribution. FRI-UW-9603. Fisheries Resources Institute.
- Fortescue Metals Group Limited (2008) *Fortescue Metals Group (homepage)*. Available online: <<http://www.fmg.com.au/IRM/content/Home.htm>>.
- Fugro (2006) *Report for the Project Quantum bathymetry and refraction survey*. Volume 1: text and appendices. Unpublished. Pp.192.
- GEMS – See Global Environmental Modelling Systems.
- Geological Society of Western Australia (1983) *Port Hedland Geological Survey of Western Australia*, 1:50,000 Urban Geology Series, Department of Lands and Surveys.
- GHD (2007) *Port of Port Hedland: Long Term Dredge Material Management Plan*. Prepared for Port Hedland Port Authority.
- Gibert, J., Danielopol, D.L. & Stanford, J.A. (eds) (1994) *Groundwater Ecology*. Academic Press, San Diego.
- Gilmour J. (1999) Experimental investigation into the effects of suspended sediment on fertilisation, larval survival and settlement in a scleractinian coral. *Marine Biology* 135: 451–462.
- Gilmour JP, Cooper TF, Fabricius KE and Smith LD (2006) *Early warning indicators of change in corals and coral communities responding to anthropogenic stressors in the Pilbara, Western Australia*.
- Godfrey, J.S. and Ridgway, K.R. (1985) The large-scale environment of the poleward-flowing Leeuwin Current, Western Australia: Longshore steric height gradients, wind stresses and geostrophic flow. *J Phys. Oceanogr.* 15:481–495.
- Guinea, M (2007) *Marine Snakes: Species Profile for the North-west Planning Area*. Report for the National Oceans Office, Hobart.
- Global Environmental Modelling Systems (2000) *Greater Port Hedland Storm-Surge Study: Final Report to WA Ministry for Town Planning and Port Hedland Council*.
- Global Environmental Modelling Systems (2009) *Sediment Transport Studies for the Port Hedland Outer Harbour Development – Quantum Project*. Unpublished Technical Report: prepared for BHP Billiton Iron Ore
- Government of Western Australia (2010) Media Statements <<http://www.mediastatements.wa.gov.au/Pages/Results.aspx?ItemId=133196&days=365&page=2>> .
- GSWA – See Geological Society of Western Australia.
- Halford A, Cheal A J, Ryan D and Williams McB (2004) Resilience to Large-Scale Disturbance in Coral and Fish Assemblages on the Great Barrier Reef. *Ecology*, 85: 1892–1905.
- Halpern Glick Maunsell (1993)
- Halpern Glick Maunsell Pty Ltd (1997) *Port Hedland Port Developments Environmental Study*. Report prepared for Port Hedland Port Authority.
- Halpern Glick Maunsell Pty Ltd (1999) *Marillana Creek Tree Stress Monitoring Summer 1998-1999*. Report prepared for BHP Billiton Iron Ore (unpublished).
- Halse, S.A., Scanlon, M.D., Cocking, J.S., Barron H.J. & Eberhard, S.M (in preparation). *Pilbara stygofauna: deep groundwater of an ancient landscape contains globally significant radiation of biodiversity*.
- Hanley J (2009) pers comm. Sinclair Knight Merz. Observations from field investigations in Port Hedland.

- Harrington L, Fabricius K, Eaglesham G and Negri A (2005) Synergistic Effects of Diuron and Sedimentation on Photosynthesis and Survival of Crustose Coralline Algae. *Marine Pollution Bulletin* 51: 415–427.
- Hartmann-Schroder, G. & Hartmann, G. (1978) Zur Kenntnis des eulitorals der australischen Küsten unter besonderer Berücksichtigung der Polychaeten und Ostracoden. Mitteilungen aus dem Hamburgischen Zoologischen Museum und Institut, 75, 63-219.
- Harvey, M.S. (2002) Short-range endemism among Australian fauna: some examples from non-marine environments. *Invertebrate Systematics* 16: 555-570.
- Hastings, M. C. and Popper, A.N. (2005) Effects of sound on fish. Subconsultants to Jones & Stokes Under California Department of Transportation Contract No. 43A0139. Report. Pp 82.
- Hazel, J., Lawler, I. R., Marsh, H. & Robson, S. (2007) Vessel speed increases collision risk for the green turtle *Chelonia mydas*. *Endangered Species Research* 3, 105-113.
- HCWA – see Heritage Council of Western Australia
- HDMS – see Hope Downs Management Services Pty Ltd
- Hedley, S.L., Bannister, J.L. and Dunlop, R. (2009). Group IV humpback whales: abundance estimates from aerial and land-based surveys off Shark Bay, Western Australia, 2008. Paper SC/61/SH23 presented to the Scientific Committee of the International Whaling Commission, June 2009. (unpublished): 17 pp.
- Heritage Council of Western Australia (2009) *Database of Heritage Places*. [http://register.heritage.wa.gov.au/search\\_results.html](http://register.heritage.wa.gov.au/search_results.html)
- Hewitt C.L., Martin R.B., Sliwa C., McEnulty, F.R., Murphy, N.E., Jones T. & Cooper, S. (2002) National Introduced Marine Pest Information System (NIMPIS) Web publication available online: <http://crimp.marine.csiro.au/nimpis>
- HGM – see Halpern Glick Maunsell
- Hill B.M. and Ward S.J. (2010). *National Recovery Plan for the Northern Quoll *Dasyurus hallucatus**. Department of Natural Resources, Environment, The Arts and Sport, Darwin.
- Holmes K W, Van Niel K P, Radford B, Kendrick G A and Grove S L (2008) Modelling distribution of marine benthos from hydroacoustics and underwater video. *Continental Shelf Research, Volume 28, Issue 14, 15 August 2008, Pages 1800-1810*
- Hope Downs Management Services Pty Ltd (2002) *Hope Downs Iron Ore Project Rail and Port Public Environmental Review*.
- How, R.A., Dell, J. and Cooper, N.K. (1991). *Vertebrate fauna of the Abydos-Woodstock Reserve, northeast Pilbara*. Records of the Western Australian Museum Supplement 37: 78-125.
- Huisman JM (2004) Marine benthic flora of the Dampier Archipelago, Western Australia. *Records of the Western Australian Museum Supplement* 66: 61-68.
- Huisman JM (2008)
- Huisman JM and Borowitzka MA (2004) Marine benthic flora of the Dampier Archipelago, Western Australia. In FE Wells, DI Walker and DS Jones (eds) *The Marine Flora and Fauna of Dampier, Western Australia*. Western Australian Museum, Perth.
- Huisman J, Parker C and Phillips J (2006) *Marine Plants of the Perth Region*. Department of Environment and Conservation, Perth.
- Huisman, JM, Jones, DS, Wells, FE., and Burton, T. (2008) Marine introductions into Western Australian waters. *Records of the Western Australian Museum* 24: 323-366.
- Humphrey C, Weber M, Lott C, Cooper T & Fabricius K (2008) Effects of suspended sediments, dissolved inorganic nutrients and salinity on fertilisation and embryo development in the coral *Acropora Millepora* (Ehrenberg, 1834). *Coral Reefs* 27: 837-850.
- Hutchins, JB (2004) *Fishes of the Dampier Archipelago Western Australia*, In Jones, DS (ed) Report on the Results of the Western Australian Museum/Woodside Energy Ltd. Partnership to Explore the Marine Biodiversity of the Dampier Archipelago, Western Australia 1998-2002 – Records of the Western Australian Museum Supplement No. 66. Western Australian Museum, Perth, pp 343-398.
- International Union for Conservation of Nature (2008) The IUCN Red List of Threatened Species 2008. Available online: [http://iucn.org/about/work/programmes/species/red\\_list/index.cfm](http://iucn.org/about/work/programmes/species/red_list/index.cfm). Accessed December 18 2008.
- IUCN – See International Union for Conservation of Nature

- Jackson, G, Stedman, J, Fry, R., & Ibbotson, S (2008) *The Report of an Aboriginal Archaeological Survey of the Wedgefield North Section of the RGP5 Survey Area at Port Hedland, Pilbara, Western Australia*. Prepared for Marapikurrinya Pty Ltd and BHP Billiton Iron Ore Pty Ltd.
- Jenner, K.C.S., Jenner, M-N., and McCabe K.A. (2001). Geographical and temporal movements of humpback whales in Western Australian waters. *APPEA Journal* 38 (1):692-707.
- Jenner, A and Thiele, D (2008) *Review of cetacean and dugong literature. Assessment of likely impacts and identification of risks for species in the Port Hedland region of Northwestern Australia*. Report prepared for BHP Billiton's Iron Ore Outer Harbour Development.
- Johnstone R E (1990) Mangroves and mangrove birds of Western Australia. *Records of the Western Australian Museum*, Supplement No. 32: pp. 120
- Johnstone, R.E., & Storr, G.M. (1998) *Handbook of Western Australian Birds: Volume 1 – Non-passerines (Emu to Dollarbird)*. Western Australian Museum, Perth Western Australia.
- Jones, G. Robertson, A. Forbes, J. and Hollier, G. (1990) *Collins Dictionary of Environmental Science*. HarperCollins, Glasgow.
- Karanovic, T. (2008) *Marine interstitial Poecilostomatoidea and Cyclopoida (Copepoda) of Australia. Crustaceana Monographs*, 9, 1-336.
- Kendrick, P., & Stanley, F. (2001) *Pilbara 4 (PIL4 – Roebourne synopsis) in A Biodiversity Audit of Western Australia's 53 Biogeographic Subregions in 2002*. Department of Conservation and Land Management, Western Australia.
- Kinloch, M, Summerson, R and Curran, D (2003) *Domestic vessel movements and the spread of marine pests: Risks and management approaches*. Published report by Bureau of Rural Sciences (Department of Agriculture, Fisheries and Forestry) to the National Oceans Office, Canberra, November 2003 (168 pp. including Appendices).
- Lang, K. (1965) Copepoda Harpacticoida from the Californian Pacific coast. *Kungliga Svenska Vetenskaps Akademiens Handlingar*, 10 (2), 1-566.
- LDM – see LeProvost Dames & Moore
- Lee Long WJ, Mellors JE and RG Coles (1993) Seagrasses between Cape York and Hervey Bay, Queensland, Australia. *Australian Journal of Marine and Freshwater Research*, 44 19–31.
- Lenhardt, M.L., Bellmund, S., Byles, R.A., Hawkins, S.W. & Musick, J.A. (1983) Marine turtle reception of bone conducted sound. *Journal of Auditory Research* 23, 119-125.
- Lenhardt, M.L., Moein, S. & Musick, J.A. (1996) A method for determining hearing thresholds in marine turtles. *Proceedings of the Fifteenth Annual Workshop on Sea Turtle Biology and Conservation*, NOAA Technical Memorandum NMFS-SEFSC-387.
- LeProvost Dames and Moore (1995). *LPG Jetty and Ship-Turning Basin Dredging Programme Marine Monitoring Programme*, Report prepared for Woodside.
- Le Provost I, Semeniuk V and Chalmer D (1984) *Environmental description of proposed dredge spoil grounds, Port Hedland, Western Australia*. Prepared for Mount Newman Mining Company, pp. 46.
- Le Provost I, Semeniuk V and Chalmer D (1989) *Maintenance Dredging 1989 Mermaid Sound WA, State Environment Monitoring Programme*. Unpublished report.
- Little, C (2000) *The Biology of Soft Shore and Estuaries*. Oxford University Press. 252 pages
- Longstaff B and Denison W (1999) Seagrass survival during pulsed turbidity events: the effect of light deprivation on the seagrasses *Halodule pinifolia* and *Halophila ovalis*. *Aquatic Botany* 65:105-121
- Longstaff B, Loneragan N, O'Donohue M, Denison W (1999) Effects of light deprivation on the survival and recovery of the seagrass *Halophila ovalis* (RBr) Hook. *Journal of Experimental Marine Biology and Ecology* 234:1-27
- Lugo A E, Rogers C S and Nixon S W (2000) Hurricanes, Coral Reefs and Rainforests: Resistance, Ruin and Recovery in the Caribbean. *Ambio*, 29: 106–114.
- McCauley, R.D., Fewtrell, J., Popper, A.N. (2003) High intensity anthropogenic sound damages fish ears. *J. Acoust. Soc. Am.* 113(1):638-642
- MScience (2007) Pluto LNG development: Baseline water quality assessment report, report to the Western Australian EPA April 2007
- Main Roads Western Australia (2009) Information Sheet
- Marine Parks and Reserves Selection Working Group (1994) *A Representative Marine Reserve System for Western Australia*, Report of the

- Marine Parks and Reserves Selection Working Group, Department of Conservation and Land Management, Government of Western Australia, Perth
- Mattiske Consulting (1994) *Hedland HBI Project – Boodarie Site Flora, Vegetation and Vertebrate Fauna*. Prepared for BHP Billiton Iron Ore (unpublished).
- Meagher, TD and Associates (1984) *Environmental Monitoring of Pipeline Installation in Mermaid Sound*, Report prepared by Meagher and Associates for Woodside.
- Mining Chronicle (2009) *RFDS on the Road*, Mining Chronicle, January 2009
- Moein, S.E., Musick, J.A. & Lenhardt, M.L. (1994) Auditory behaviour of the loggerhead turtle (*Caretta caretta*). *Fourteenth Annual Symposium on Sea Turtle Biology and Conservation*. Hilton Head, South Carolina.
- Morgan D.L., Whitty J.M., Phillips NM (2010) *Endangered Sawfish and River Sharks in Western Australia*, Report prepared for Woodside Energy Ltd.
- Morrison P (2008) pers. comm. Sinclair Knight Merz. Observations from field investigations in Port Hedland.
- MPSRWG – see Marine Parks and Reserves Selection Working Group
- MRWA – See Main Roads Western Australia
- Muir Environmental (1994) *Marillana Creek: 1983 Dry Season Vegetation Monitoring*. Report prepared for BHP Billiton Iron Ore (unpublished).
- Muir Environmental (1995) 'Field Monitoring of Vegetation Health', in *Management of Groundwater Dependant Vegetation in the Central Pilbara Iron Ore Mining Province*, ed. The University of Western Australia.
- National Heritage Trust (2005) *Humpback Whale Recovery Plan 2005-2010*, Department of the Environment and Heritage.
- National Oceanic and Atmospheric Administration (2004) *Shipping Noise and Marine Mammals: A Forum for Science, Management, and Technology*, Final Report of the National Oceanic and Atmospheric Administration (NOAA) International Symposium, 18-19 May 2004 Arlington, Virginia, U.S.A.
- National Research Council (2003) *Ocean Noise and Marine Mammals*. Committee on Potential Impacts of Ambient Noise in the Ocean on Marine Mammals, National Research Council. The National Academies Press, Washington DC, USA.
- Nedwell, J.R.; Edwards, B., Turnpenny, A.W.H., and Gordon, J. (2004). Fish and Marine Mammal Audiograms: A summary of available information. Subacoustech Report No: 534R0214.
- NHT – see National Heritage Trust
- NOAA – see National Oceanic and Atmospheric Administration
- NRC – see National Research Council
- Nugues, M.M. and C.M. Roberts (2003). Partial mortality in massive reef corals as an indicator of sediment stress on coral reefs. *Marine Pollution Bulletin* 46: 314-323.
- O'Hara, J. & Wilcox, J. R. (1990) Avoidance responses of loggerhead turtles, *Caretta caretta*, to low frequency sound. *Copeia* 1990, 564-567
- PACC – See Pilbara Area Consultative Committee
- Paccani G (2009) pers comm. Sinclair Knight Merz. Observations from field investigations in Port Hedland.
- Paling EI (1986) *Ecological significance of blue-green algal mats in the Dampier mangrove ecosystem*. Technical Series 2. Department of Conservation and Environment, Perth WA.
- Paling EI, McComb AJ and Pate JS (1989) Nitrogen fixation (acetylene reduction) in non-heterocystous cyanobacterial mats from the Dampier Archipelago, Western Australia. *Australian Journal of Marine and Freshwater Research* 40: 147-153.
- Paling E.I., Humphries G., McCardle I. and Thomson G. (2001) The effects of iron ore dust on mangroves in Western Australia: Lack of evidence for stomatal damage. *Wetlands Ecology and Management* 9: 363–370.
- Paling E I, Humphreys G, McCardle I (2003) The effect of a harbour development on mangroves in north-western Australia. *Wetlands Ecology and Management* 54: 281-290.
- Pavey, C. (2006). *National Recovery Plan for the Greater Bilby *Macrotis lagotis**. Northern Territory Department of Natural Resources, Environment and the Arts.
- PDC – See Pilbara Development Council

- Peacock S. (2009) pers comm. Department of the Environment, Water, Heritage and the Arts
- Pendoley K (2005) Sea Turtles and Industrial Activity on the North West Shelf, Western Australia. School of Biology and Biotechnology. PhD Thesis, Perth, Murdoch University.
- Pendoley K, Chaloupka M & Prince R I T (in review) A positive conservation outlook for the most atypical marine turtle species in the world: The endemic flatback. *Endangered Species Research*.
- Pendoley Environmental (2009a) *Port Hedland Outer Harbour (Quantum) Development: Review Of Sea Turtle Habitat Usage Within The Port Hedland Region Of Western Australia*. Report prepared for SKM/BHP Billiton Iron Ore.
- Pendoley Environmental (2009b) *Port Hedland Outer Harbour Development: Marine turtle Impacts Assessment*. Report prepared for SKM and BHP Billiton Iron Ore.
- Pendoley Environmental (2009c) *Port Hedland Outer Harbour (Quantum) Development: Marine Turtle Management Plan*. Report prepared for SKM/BHP Billiton Iron Ore.
- PHPA – See Port Hedland Port Authority
- PICC – See Pilbara Industry’s Community Council
- Pilbara Area Consultative Committee (2008) *The Pilbara Plan*
- Pilbara Development Council (2003) – as cited in *Land Availability and Business Incubation*. BHP Billiton Iron Ore. Unpublished/internal document.
- Pilbara Industry’s Community Council (2008a) *Planning for Resources Growth in the Pilbara: Employment and Population Projections to 2020*.
- Pilbara Industry’s Community Council (2008b) *Briefing Paper: Impacts of Growth in the Pilbara Regions*
- Pile A J, Grant A, Hinde R, Borowitzka M A (2003) Heterotrophy on Ultraplankton Communities is an Important Source of Nitrogen for a Sponge-Rhodophyta Symbiosis. *Journal of Experimental Biology* 206: 4533–4538.
- Popper, A.N., and R.R Fay. (1973) Sound detection and processing by teleost fishes: critical review. *J. Acoustical Soc. Am.* 53(6):1515-1529.
- Popper, A.N. and Fay, R.R. (1993) Sound detection and processing by fish: Critical review and major research questions. *Brain, Behav., Evol.* 41:14-38.
- Port Hedland Port Authority (2003) *Annual Environmental Management Plan*.
- Port Hedland Port Authority (2006) *Annual Environmental Management Plan*.
- Port Hedland Port Authority (2008a) *Annual Environmental Management Plan*.
- Port Hedland Port Authority (2008b) *Cargo Statistics and Port Information 2007/2008*.
- Port Hedland Port Authority (2009) Media release. Available online: <http://www.porthedland.wa.gov.au/NewsfromTownofPortHedland/mediareleases/MediareleasesJanJun09/>
- Ports Corporation Queensland. (2007) Port of Hay Point Apron Areas and Departure Path Capital Dredging Project. Environmental Review. EcoPorts Monograph Series No. 24.
- Prince R.I.T., Anderson P.K. and Blackman D. (1981) Status and distribution of dugongs in Western Australia. *The Dugong: proceedings of a seminar/workshop, held at James Cook University of North Queensland*.pp 67-87.
- Prince R I T (1994) Major species breeding sites. Perth, CALM.
- Prince R I T (2001) *Aerial Survey of the Distribution and Abundance of Dugongs and Associated Macrovertebrate Fauna – Pilbara Coastal and Offshore Region, WA* (Report for Environment Australia).
- Prince R I T, Lawler I R & Marsh R (2001) The distribution and abundance of dugong and other mega vertebrates in WA coastal waters extending seaward of the 20m isobath between NW Cape and the De Grey River mouth. April 2000. Canberra, Environment Australia.
- Richardson, W. J., Green., Jr. C.R., Malme, R. and Thomson, C. I. (1995) *Marine mammals and noise*. Academic, San Diego.
- Rosser & Gilmour 2008
- Saenger P (2002) *Mangrove Ecology, Silviculture and Conservation*. Kluwer Academic Publishers.
- Salgado-Kent, C., McCauley, R.D. and Duncan, A.J. (2009) *Environmental Impacts of Underwater Noise Associated With Harbour Works*, Port Hedland. Centre for Marine Science and Technology, Curtin University. Report prepared for BHP Billiton Iron Ore.



- Samuel, Y., Morreale, S. J., Clark, C. W., Greene, C. H. & Richmond, M. E. (2005) Underwater, low-frequency noise in a coastal sea turtle habitat. *Journal of the Acoustical Society of America* **117**, 1465-1472.
- Semeniuk V (1993) The Pilbara Coast: a riverine coastal plain in a tropical arid setting, north-western Australia. *Sedimentary Geology*, vol. 83, pp. 235-256.
- Semeniuk V (2007) The Mangroves of Utah Point, Port Hedland – Regional Setting, Description, Processes, Significance, Prediction of Port Construction Impacts and Mitigation. Report prepared by V & C Semeniuk Research Group for Port Hedland Port Authority.
- Sheppard J K, Marsh H and Lawler I R (2007) Seagrass as Pasture for Seacows: Landscape-level Dugong Habitat Evaluation. *Estuarine Coastal and Shelf Science* 71: 117 – 132.
- Simpson, K & Day, N (2004) *A Field Guide to the Birds of Australia*. Penguin Books Australia Ltd, Melbourne.
- Sinclair Knight Merz (2003a) Cape Lambert Dredging Marine Monitoring Program: Post Dredging Marine Survey. Prepared for Robe River Iron Associates.
- Sinclair Knight Merz (2003b). Aggregated Emissions Inventory for the Pilbara Airshed. Prepared for the Western Australian Department of Environment and Conservation.
- Sinclair Knight Merz (2008) *Selection Phase Study, Project Quantum, Hydrological Investigation*. August, 2008, Brisbane.
- Sinclair Knight Merz (2009a) *Port Hedland Outer Harbour Development: Preliminary Acid Sulphate Soil Investigation*. June, 2009, Perth.
- Sinclair Knight Merz (2009b) *Port Hedland Outer Harbour Development: Preliminary Site Investigation*. June, 2009, Perth.
- Sinclair Knight Merz (2009c) *Dredged Material Management Area A detailed ASS Investigation*. Report prepared for BHP Billiton Iron Ore.
- Sinclair Knight Merz (2009d) *Port Hedland Outer Harbour Development: Surface and Ground water Hydrological Review*, August, 2009, Perth.
- Sinclair Knight Merz (2009e) *Port Hedland Outer Harbour Development Sampling and Analysis Plan Implementation Report*. Report prepared for BHP Billiton Iron Ore.
- Sinclair Knight Merz (2009f) *Port Hedland Outer Harbour Development Baseline Water Quality Monitoring Report Periods 1 – 13*. Report prepared for BHP Billiton Iron Ore.
- Sinclair Knight Merz (2009g) *Port Hedland Outer Harbour Development Marine Subtidal Benthic Primary Producer Habitat Impact Assessment*. Report prepared for BHP Billiton Iron Ore.
- Sinclair Knight Merz (2009h) *Port Hedland Outer Harbour Development Spoil Ground Selection Study*. Report prepared for BHP Billiton Iron Ore.
- Sinclair Knight Merz (2009i) *Sea Dumping Permit Application*. Prepared for BHP Billiton Iron Ore.
- Sinclair Knight Merz (2009j) RGP6 Port Facilities `Definition Phase *Benthic Primary Producer Subtidal Habitat mapping*. Report prepared for BHP Billiton Iron Ore.
- Sinclair Knight Merz (2009k) *Port Hedland Outer Harbour Development Marine Benthic Habitat Survey*. Report prepared for BHP Billiton Iron Ore.
- Sinclair Knight Merz (2009l) – *Intertidal Benthic Primary Producer Habitat Survey*. Report prepared for BHP Billiton Iron Ore.
- Sinclair Knight Merz (2009m) *Port Hedland Outer Harbour Development Cumulative Historical Loss Estimates for Mangroves in the Port Hedland Area*. Report prepared for BHP Billiton Iron Ore.
- Sinclair Knight Merz (2009n) – *Desktop Fisheries Study*. Report prepared for BHP Billiton Iron Ore.
- Sinclair Knight Merz (2009o) *Outer Harbour Development Greenhouse Gas Assessment*. Report prepared for BHP Billiton Iron Ore.
- Sinclair Knight Merz (2009p) – *Visual Impact Assessment*. Report prepared for BHP Billiton Iron Ore.
- Sinclair Knight Merz (2009q) *Cape Lambert Port B Development: Public Environmental Review and Draft Public Environmental Report*. Prepared for Pilbara Iron Pty Ltd (or Rio Tinto?)
- Sinclair Knight Merz (2009r) *Port Hedland Outer Harbour Development Baseline Coral Health Monitoring Report Periods 1 – 13*. Report prepared for BHP Billiton Iron Ore.
- Sinclair Knight Merz (2009s) *Port Hedland Outer Harbour Development Waste Management Study for Construction and Operations*. Report prepared for BHP Billiton Iron Ore.

- Sinclair Knight Merz (2009t) RGP6 Port Facilities: *Benthic Primary Producer: Reference Area Subtidal Habitat Mapping*. Report prepared for BHP Billiton Iron Ore.
- Sinclair Knight Merz (2010) *RGP6 Port Facilities Baseline Infauna Report*. Report prepared for BHP Billiton Iron Ore.
- SKM – see Sinclair Knight Merz.
- Stirrat, S, Larson, H and Woinarski, J (2006). Threatened Species of the Northern Territory: Green Sawfish. Prepared for the Northern Territory Government.
- Stoddart, JA & Gilmour, J (2005) Patterns of reproduction of in-shore corals of the Dampier Harbour, Western Australia, and comparisons with other reefs. in Stoddart, JA & Stoddart, SE (eds) 2005, *Corals of the Dampier Harbour: Their Survival and Reproduction during the Dredging Programs of 2004*, Mscience.
- Storr, G M, Smith, L A, Johnstone, R E (2002) *Snakes of Western Australia* (Western Australian Museum, Perth).
- Strahan, R. (1995) *The Mammals of Australia*. Reed New Holland Publishers, Sydney.
- Subterranean Ecology (2007) *Pardoo DSO Project. Troglifauna survey. Phase 2 and 3 results*. Subterranean Ecology, Greenwood.
- Sundararaman, M, Boopathi, T & Gopinath, S (2007) 'Status of Mangrove Ecosystem', in Seckbach, J (2007) *Cellular Origin, Life in Extreme Habitats and Astrobiology: Algae and Cyanobacteria in Extreme Environments*, Springer Press.
- SVT (2009) *Port Hedland Outer Harbour Development Noise Assessment Report*. Prepared for BHP Billiton Iron Ore, September 2009
- SVT (2011) Piling Noise Assessment
- Taylor, AH and Rigby, G (2002) *The Infection and Management of Vessel Biofouling Areas as Pathways for the Introduction of Unwanted Aquatic Organisms*. Department of Agriculture, Fisheries and Forestry.
- Tenix (2008) Tenix LADS Report of survey: Bathymetric LIDAR survey at Port Hedland. Prepared for BHP Billiton Iron Ore, February 2008.
- Titlyanov, EA & Latypov, YY (1991) Light dependence in scleractinian distribution in the sub-littoral zone of South China Sea Islands. *Coral Reefs*, vol. 10, pp. 133–38.
- Thompson, G. G and Thompson, S.A. (2008) Abundance and distribution of five mammals at a local scale. *The Australian Mammal Society* 30(2):65-70
- Town of Port Hedland (2007a) *Land Use Master Plan*. Available online: <[http://www.porthedland.wa.gov.au/CouncilInitiative/Land\\_Use\\_Master\\_Plan/](http://www.porthedland.wa.gov.au/CouncilInitiative/Land_Use_Master_Plan/)>.
- Town of Port Hedland (2007b) *Hedland's Future Today – Action Blueprint September 2007*. in Partnership with BHP Billiton.
- Town of Port Hedland (2008a) *Plan for the Future 2008 – 2013 (Draft)*. Available online: <[http://www.porthedland.wa.gov.au/council/public\\_documents/strategic\\_plans](http://www.porthedland.wa.gov.au/council/public_documents/strategic_plans)>.
- Town of Port Hedland (2008b) Town Planning Scheme No.5. Updated 2 September 2008. Available online: <<http://www.wapc.wa.gov.au/Region+schemes/Local+planning+schemes/565.aspx>>.
- Town of Port Hedland (2009) *Hedland's Future Today Community Infrastructure Implementation Plan 2009-2104*
- Turner S.J. (1994) The biology and population outbreaks of the corallivorous gastropod *Drupella* on Indo-Pacific reefs. *Oceanography. & Marine. Biology. Annual. Rev.*, 32: 461–530.
- Turner, JR, Boak, R, Klaus, R, Daby, D & Hardman, E (2006) Environmental impact assessment for coral reefs: advocating direct protective approaches. Chapter 11 In: Cote, IM & Reynolds, JD 2006, 'Coral Reef Conservation', *Conservation Biology*, vol. 13. Cambridge University Press, Cambridge, United Kingdom.
- Umar M J, McCook L and Price I R (1998) Effects of Sediment Deposits on the Seaweed Sargassum on a Fringing Coral Reef. *Coral Reefs* 17: 169–177.
- URS (2005). *Maintenance Dredging Campaign: Environmental Monitoring 2004*. Prepared for Port Hedland Port Authority. 60 pp.
- URS (2006) *Port Hedland Harbour Dredging and Reclamation Monitoring and Management Plan*. Report Prepared for Fortescue Metals Group Ltd.
- URS (2007) *Hazard analysis of marine biofouling pests in the Australian petroleum industry*. Review prepared on behalf of the Department of Agriculture, Fisheries and Forestry, Canberra, 2 July 2007.

- Van Rijn L. (1989) Handbook Sediment Transport by Currents and Waves. Delft Hydraulics, Report H, pp.461.
- Van Dyck S. and Strahan R. (2008) The Mammals of Australia, Third Edition, 887 pgs New Holland Publishers
- Van Vreeswyk A.E., Payne A.L., Leighton, K.A., & Hennig, P. (2004) *An Inventory and Condition Survey of the Pilbara Region, Western Australia*, Technical Bulletin No. 92. Department of Agriculture and Food, Government of Western Australia.
- WAH – See Western Australian Herbarium
- Walker D I and Prince R I T (1987) Distribution and biogeography of seagrass species on the northwest coast of Australia, *Aquatic Botany*, 29, 19-32.
- WAPC – See Western Australia Planning Commission
- WAPC and DoP – See Western Australia Planning Commission and Department of Planning
- Waycott, M, McMahon, K, Mellors, J, Calladine, A & Kleine, D (2004) *A guide to tropical seagrasses of the Indo-West Pacific*, James Cook University, Brisbane, Queensland.
- Waycott, M, Longstaff, BJ & Mellors, J (2005) Seagrass population dynamics and water quality in the Great Barrier Reef region: A review and future research directions, *Marine Pollution Bulletin*, vol. 51, pp. 343–350.
- Waycott M, Collier C, McMahon K, Ralph P, McKenzie L, Udy J, Grech A (2007) Vulnerability of seagrasses in the GBR to climate change. In 'Assessing Climate Change Vulnerability of the Great Barrier Reef'. (Eds J Johnson and P Marshall). (GBRMPA: Townsville).
- Western Australian Herbarium (2009) *Florabase – Information on the Western Australian Flora*. Department of Environment and Conservation, Perth. <http://florabase.calm.wa.gov.au>
- Western Australian Planning Commission (2003) *Port Hedland Area Planning Commission Study*.
- Western Australian Planning Commission (2007) *Visual Landscape Planning In Western Australia: A Manual for Evaluation, Assessment, Siting and Design*, November 2007.
- Western Australian Planning Commission (2009a) *Acid Sulfate Soils Planning. Bulletin No. 64*.
- Western Australia Planning Commission (2009b) *Acid Sulphate Soils Planning Guidelines*.
- Western Australian Planning Commission (2009c) Draft Statement of Planning Policy: Road and Rail Transport Noise.
- Western Australia Planning Commission and Department of Planning (2009) Pilbara Framework Regional Profile.
- Weston, A & Trudgen, M (1995) *Vegetation and Flora Survey Marillana/ Weeli Wolli Creeks and Palaeochannels*. Report prepared for BHP Billiton Iron Ore (unpublished).
- Wilkens, H., Culver, D.C. & Humphreys, W.F. (eds) (2000) *Subterranean Ecosystems*. Elsevier, Amsterdam, pp. 806
- Willis BL, Page CA, Dinsdale EA (2004) Coral disease on the Great Barrier Reef. In: Rosenberg E, Loya Y (eds) *Coral Disease and Health*. Springer-Verlag, Berlin, pp 69-104.
- Wilson, S., and Swan, G (2003) *Reptiles of Australia*, New Holland Publishers, Australia.
- Wolanski E, Fabricus K, Spagnol S and Brinkman R (2005) *Fine sediment budget on an inner-shelf coral fringed island, Great Barrier Reef of Australia*. *Estuarine, Coastal and Shelf Science* 65: 153 – 158
- Woolley, P.A. (2005) The species of *Dasyercus* Peters, 1875 (*Marsupialia: Dasyuridae*) *Memoirs of the Museum Victoria* 62. 213-221.
- Woolley, P.A. (2006) Studies on the crest-tailed mulgara *Dasyercus cristicauda* and the brush-tailed mulgara *D. blythi* (*Marsupialia: Dasyuridae*). *Australian Mammology* 28, 117-120.
- Yahel G, Sharp J H, Marie D, Hase C, Genin A (2003) *In situ* Feeding and Element Removal in the Symbiont-Bearing Sponge *Theonella swinhoei*: Bulk DOC is the Major Source of Carbon. *Limnology and Oceanography* 48: 141–149.
- Yahel G, Whitney F, Reiswig H M, Eerkes-Medrano D I, Leys S P (2007) *In situ* Feeding and Metabolism of Glass Sponges (*Hexactinellida, Porifera*) Studied in a Deep Temperate Fjord with a Remotely Operated Submersible. *Limnology and Oceanography* 52: 428–440.

### 13.1 Abbreviations

Abbreviation	Definition
AASS	Actual Acid Sulphate Soils
ADP	Asset Development Projects
AHD	Australian Height Datum
ALARP	As low as reasonably practicable
ANC	Acid Neutralising Capacity
ANC <sub>e</sub>	Effective Acid Neutralising Capacity
AMSA	Australian Maritime Safety Authority
AQIS	Australian Quarantine and Inspection Service
ARI	Assessment on Referral Information
ASS	Acid Sulphate Soils
ASSMP	Acid Sulphate Soils Management Plan
BAM	Beta Attenuation Monitor
BHPBIO	BHP Billiton Iron Ore
BoM	Bureau of Meteorology
BPPH	Benthic Primary Producer Habitat
CAMBA	China-Australia Migratory Bird Agreement
CCG	Coastal Community Group
CEO	Chief Executive Officer
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CEMP	Construction Environmental Management Plan
dB	The scale on which sound pressure level is expressed. It is defined as 20 times the logarithm of the ratio between the root mean square pressure of the sound field and the reference pressure (0.00002 N/m <sup>2</sup> ). Zero dB is the threshold of hearing; 140 dB is the threshold of pain. A change of 10 dB corresponds approximately to halving or doubling the loudness of sound.
dB(A)	A measure of the overall noise level of sound across the audible spectrum with a frequency weighting (i.e. 'A' weighting) to compensate for the varying sensitivity of the human ear to sound at different frequencies.
DEC	Department of Environment and Conservation
DEWHA	Commonwealth Department of the Environment, Water, Heritage and the Arts
DIA	Department of Indigenous Affairs
DMA	Decision making authority
DMMA	Dredged Material Management Area/s
DO	Dissolved oxygen
DoF	Department of Fisheries
DoH	Department of Health
DoIR	Department of Industry and Resources
DoITRDG	Department of Infrastructure, Transport, Regional Development and Local Government
DoW	Department of Water
DPI	Department for Planning and Infrastructure
DRF	Declared Rare Flora
DWT	dead weight tonnes

Abbreviation	Definition
EC	Electrical Conductivity
EIL	Ecological Investigation Level
EIA	Environmental Impact Assessment
EIS/ERMP	Environmental Impact Statement/ Environmental Review and Management Program
EMP	Environmental Management Plan
EMS	Environmental Management System
ENV	ENV Australia
EPA	Environmental Protection Authority
EPASU	Environmental Protection Authority Service Unit
EP Act	<i>Environmental Protection Act 1986</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
EQO	Environmental Quality Objective
ERM	Environmental Resources Management
ERD	Environmental Referral Document
FIFO	Fly-In Fly-Out
FMG	Fortescue Metals Group
GEMS	Global Environmental Modelling Systems
GHG	Greenhouse Gas
HAT	Highest Astronomical Tide
HBI	Hot Briquetted Iron
HCWA	Heritage Council of Western Australia
HIL	Health Investigation Level
HiVol	High Volume (sampler)
HSEC	Health, Safety, Environment and Community
IBRA	Interim Biogeographic Regionalisation for Australia
IMS	Introduced Marine Species
ISQG	Interim Sediment Quality Guideline
JAMBA	Japan-Australia Migratory Bird Agreement
LA <sub>10</sub>	The 'A' weighted sound pressure level of the noise in decibels which is exceeded for 10 per cent of a given time.
LA <sub>90</sub>	The 'A' weighted sound pressure level of the residual noise in decibels which is exceeded for 90 per cent of a given time. The L <sub>A90</sub> measure is used to describe background noise levels.
LAT	Lowest Astronomical Tide
LEP	Levels of Ecological Protection
LiDAR	Light Detection and Ranging
LMP	Land Use Management Plan
LOF	Load Out Facility
MCEMP	Marine Construction Environmental Management Plan
m AHD	metres (Australian Height Datum)
mbgl	metres below ground level
MBO	Monosulphidic black ooze
m CD	metres (Chart Datum)

<b>Abbreviation</b>	<b>Definition</b>
Mm <sup>3</sup>	Million cubic metres
MMP	Mangrove Management Plan
MPL	Marapikurrinya Proprietary Limited
MRWA	Main Roads Western Australia
Mtpa	Million tonnes per annum
NAGD	National Assessment Guidelines for Dredging
NASS	Non-Acid Sulphate Soils
NATA	National Association of Testing Authorities
NEPM	National Environmental Protection Measure
NES	National Environmental Significance
NGO	Non-government organisations
nm	Nautical miles
NODGDM	National Ocean Disposal Guidelines for Dredged Material
NTU	Nephelometric Turbidity Units
PACE	Product and Capacity Expansion
PAH	Polycyclic aromatic hydrocarbons
PAR	Photosynthetically available radiation
PASS	Potential Acid Sulphate Soil
PEAHR	Project Environmental and Aboriginal Heritage Review
PER/EIS	Public Environmental Review/ Environmental Impact Statement
PHPA	Port Hedland Port Authority
PM <sub>2.5</sub>	particulate matter less than 2.5 microns in diameter
PM <sub>10</sub>	particulate matter less than 10 microns in diameter
PQL	Practical Quantitation Limit
PSD	Particle size distribution
PSI	Preliminary Site Investigation
RGP	Rapid Growth Project
SAP	Sampling and Analysis Plan
S <sub>CR</sub>	Chromium reducible sulphur
SIA	Social Impact Assessment
SRE	Shore-range Endemic
TCEMP	Terrestrial Construction Environmental Management Plan
TBT	Tributyltin
ToPH	Town of Port Hedland
TDS	Total Dissolved Solids
TOC	Total Organic Carbon
TPH	Total Petroleum Hydrocarbons
TSP	Total Suspended Particulates
TSS	Total Suspended Solids
TTA	Total Titratable Acidity
UCL	Upper Confidence Level
WAPC	Western Australian Planning Commission