

## 7. Conclusions and Recommendation

The X110 Infrastructure Development Project involves the construction of both on-shore and off-shore infrastructure for the stockpiling, and handling of coal for export. The proposed development is located adjacent to the existing stockpile facilities of the Abbot Point Coal Terminal.

This VEA has investigated potential environmental impacts, including social, economic and cultural impacts, resulting from the construction and operation of the Project. Consideration has been given to the need and alternatives of the project. Desktop literature reviews, database searches and baseline field studies have been undertaken to provide context to the assessment of impacts and identification of mitigation and management measures.

Concurrently within the Abbot Point and Bowen region a number of other major projects are occurring that have the potential to result in compounding or cumulative impacts. These other projects include the development of:

- » The Multi Cargo Facility comprising dredging and reclamation to the west of the existing and proposed off-shore jetty.
- » The proposed Chalco Alumina Refinery located south of the proposed X110 development and within the APSDA.

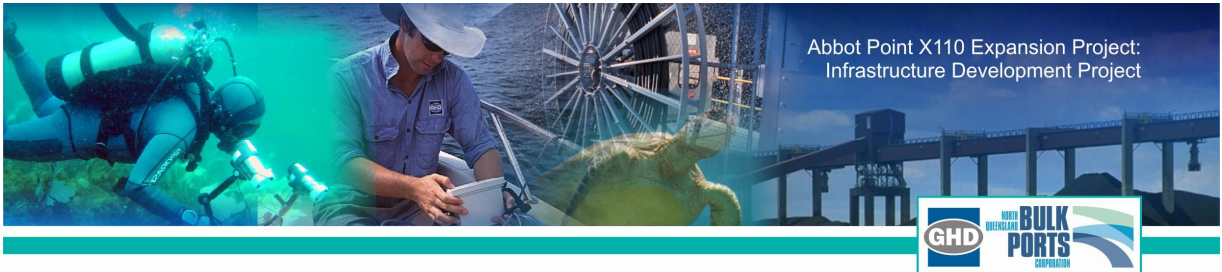
Within this study construction and operational impacts have been identified and mitigation and management strategies described for a range of environmental values including nature conservation, social, economic and cultural values.

No impacts considered to be significant were identified that could not be ameliorated or mitigated. Under the mitigation strategies identified for each of the environmental values assessed, the X110 Infrastructure Development Project is not expected to have any significant long term effects on the regional or local environmental values of the Abbot Point region.



## 8. References

- ANCA (1996). Australian Nature Conservation Agency. A Directory of Important Wetlands, Australian Nature Conservation Agency, Canberra.
- ANCA (2001). Australian Nature Conservation Agency. A Directory of Important Wetlands, Australian Nature Conservation Agency, Canberra.
- Abdo, D., Burgess, S., Coleman, G. and Osborne, K. (2004). Surveys of benthic reef communities using underwater video. Long-term monitoring of the Great Barrier Reef. Standard Operational Procedure No. 2, 3rd Revised Edition, Australian Institute of Marine Science, Townsville.
- Anthony, K., and K. E. Fabricius (2000). Shifting roles of heterotrophy and autotrophy in coral energetics under varying turbidity. *J. Exp. Mar. Biol. Ecol.* 252: 221–253.
- Anthony, K.R.N, Hoegh-Guldberg, O. (2003) Variation in coral photosynthesis, respiration and growth characteristics in contrasting light microhabitats: an analogue to plants in forest gaps and understoreys?. *FUNCTIONAL ECOLOGY* 17: 246-259.
- Anthony, K., P. V. Ridd, A. Orpin, P. Larcombe, AND J. M. Lough (2004) Temporal variation in light availability in coastal benthic habitats: Effects of clouds, turbidity and tides. *Limnol. Oceanogr.* 49: 2201–2211.
- Australian Bureau of Statistics (ABS). (2003 -2008). *ABS Basic Community Profiles for Bowen LGA: 2001 B01 Selected Characteristics, and 2006 Selected Personal Characteristics by Sex; ABS Basic Community Profiles for Queensland: 2001 B01 Selected Characteristics, and 2006 B01 Selected Personal Characteristics by Sex.*
- Australian Bureau of Statistics (ABS). (2003 -2008). *ABS Basic Community Profiles for Bowen LGA 2006: B37 Place of Usual Residence 1 Year Ago by Sex, and B39 Place of Usual Residence 5 Years Ago by Sex; and ABS Basic Community Profiles for Queensland 2006: B37 Place of Usual Residence 1 Year Ago by Sex, and B39 Place of Usual Residence 5 Years Ago by Sex.*
- Aurecon. (2008). Road Impact Assessment for X50 Infrastructure Expansion of Abbot Point. Report for Ports Corporation of Queensland.
- Aurecon Hatch. (2009). Acid Sulphate Soil Investigation Report and Management Plan. APCT X80 & X110 Infrastructure Expansion. Report for Ports Corporation of Queensland.
- Barker, B. (1999). A cultural heritage assessment of Ports Corporation of Queensland Holdings at Abbot Point/Bowen Region (Bowen Shire). Unpublished report to Ports Corporation of Queensland and the Giru Dala Council of Elders.
- Bell, I. (2003). Turtle population dynamics in the Hay Point, Abbot Point and Lucinda Port Areas. Report to PCQ.
- Bies & Hansen. (2003). *Engineering Noise Control 3rd Edition* . Available from: Spon Press



Biosecurity Queensland. (2007a). *Fact Sheet: Rubber Vine (Cryptostegia grandiflora)*. Land Protection (Invasive Plants and Animals): Queensland Government. Viewed 27/11/2008 at [http://www.dpi.qld.gov.au/documents/Biosecurity\\_EnvironmentalPests/IPA-Rubber-Vine-PP11.pdf](http://www.dpi.qld.gov.au/documents/Biosecurity_EnvironmentalPests/IPA-Rubber-Vine-PP11.pdf)

Biosecurity Queensland. (2007b). *Fact Sheet: Parkinsonia (Parkinsonia aculeate)*. Land Protection (Invasive Plants and Animals): Queensland Government. Viewed 27/11/2008 at [http://www.dpi.qld.gov.au/documents/Biosecurity\\_EnvironmentalPests/IPA-Parkinsonia-PP36.pdf](http://www.dpi.qld.gov.au/documents/Biosecurity_EnvironmentalPests/IPA-Parkinsonia-PP36.pdf)

Biosecurity Queensland. (2007c). *Fact Sheet: Chinese apple (Ziziphus mauritiana)*. Land Protection (Invasive Plants and Animals): Queensland Government. Viewed 27/11/2008 at [http://www.dpi.qld.gov.au/documents/Biosecurity\\_EnvironmentalPests/IPA-Chinese-Apple-PP26.pdf](http://www.dpi.qld.gov.au/documents/Biosecurity_EnvironmentalPests/IPA-Chinese-Apple-PP26.pdf)

Biosecurity Queensland. (2007d). *Fact Sheet: Lantana (Lantana camara)*. Land Protection (Invasive Plants and Animals): Queensland Government. Viewed 27/11/2008 at [http://www.dpi.qld.gov.au/documents/Biosecurity\\_EnvironmentalPests/IPA-Lantana-PP34.pdf](http://www.dpi.qld.gov.au/documents/Biosecurity_EnvironmentalPests/IPA-Lantana-PP34.pdf)

Bird, M. (1995). Report on the Archaeological Assessment of Six Proposed Mobile Telephone Base Stations, North Queensland (Mount Mary, Seven Sisters, Mount Elliott, Bambaroo, South Mission Beach and Green Hill). Report to Telecom Australia. Northern Archaeology Consultancies Pty Ltd. Townsville.

Blackman, J.G., Perry, T.W., Ford, G.I., Craven, S.A., Gardiner, S.J. and DeLai, R.J. (1999). Characteristics of Important Wetlands in Queensland., Environmental Protection Agency, Queensland.

Bostock P.D. & Holland A.E. (eds.) (2007). *Census of the Queensland Flora*. Queensland Herbarium, Environmental Protection Agency, Brisbane.

Bowen Shire Council. (2000). *Bowen Shire Recreation and Sport Plan*. Viewed at [http://www.bowen.qld.gov.au/Portals/0/03-Community%20Info/Sport\\_Recreation\\_Plan-Bowen.pdf](http://www.bowen.qld.gov.au/Portals/0/03-Community%20Info/Sport_Recreation_Plan-Bowen.pdf)

Brodie, J., De'ath, G., Devlin, M., Furnas, M. and Wright, M. (2007) Spatial and temporal patterns of near-surface chlorophyll a in the Great Barrier Reef lagoon. *Marine and Freshwater Research*, vol 58, pp 342-353.

Brown, B.E. (1997) Coral bleaching: Causes and consequences. *Coral Reefs* 16: S129–S138.

Bureau of Meteorology (BOM). (2008). *Climate statistics for Bowen Airport from 1987 to 2008*

Bureau of Mineral Resources, Geology and Geophysics (1961)

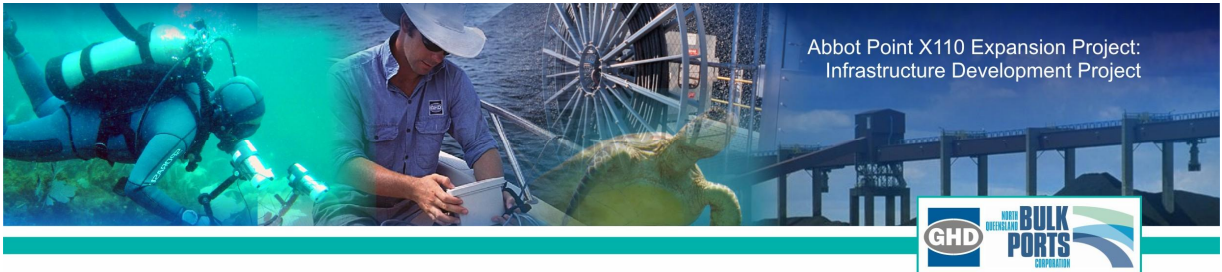
Calvert G, Lokkers C & Cumming R. (2005). *Rare Plants of the Townsville Thuringowa Region*, Coastal Dry Tropics Landcare Inc, Townsville.

Cann, J. 2008. Freshwater turtles – a wild Australia guide. Steve Parish Publishing. 96 pp.

Carlton, J.T. (1996). Molluscan invasions in marine and estuarine communities. *Malacologia* 41: 439-454.



- Carlton J.T. (2002). Bioinvasion ecology: assessing impact and scale. In: *Invasive Aquatic Species of Europe: Distribution, Impacts and Management*. (E Leppäkoski, S Gollasch and S Olenin eds). Kluwer Academic Publishers, Dordrecht, Netherlands (pp. 7-19).
- Caughley, G. and A. Gunn (1996). *Conservation Biology in Theory and Practice*. Oxford, England, Blackwell Science.
- Chaloupka, M.Y. and Limpus, C.J. (2005). Estimates of sex- and age-class-specific probabilities for a southern Great Barrier Reef green turtle population. *Marine Biology.*, 146: 1251-1261.
- Chilvers, B. L., S. Delean, N. J. Gales, D. K. Holley, I. R. Lawler, H. Marsh and A. R. Preen (2004). "Diving behaviour of dugongs, *Dugong dugon*." *Journal of Experimental Marine Biology and Ecology* 304(2004): 203-224.
- CoG. (2008). Development scheme for the Abbot Point State Development Area. Queensland Government; The Coordinator General.
- Corkeron, P. J., N. M. Morissette, L. J. Porter and H. Marsh (1997). "Distribution and status of hump-backed dolphins, *Sousa chinensis*, in Australian waters." *Asian Marine Biology* 14: 49-59.
- Connell Hatch (2006). Wiggins Island Coal Terminal Environmental Impact Statement, Revision 3. Connell Hatch, Brisbane.
- Davies, P., Eyre, B.D., 2005. Estuarine modification of nutrient and sediment exports to the Great Barrier Reef Marine Park from the Daintree and Annan River catchments. *Marine Pollution Bulletin*; 51(1-4):174-85.
- DERM (2005). *Wetland Mapping and Classification for Wetlands in Queensland, Version 1.2* Queensland Government, Brisbane.
- Department of Environment, Water, Heritage and the Arts (DEWHA) (2008a). *A Directory of Important Wetlands in Australia Database: Abbot Point – Caley Valley*. Viewed 17/11/08 at [http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW&doiw\\_refcodelist=QLD001](http://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW&doiw_refcodelist=QLD001).
- Department of the Environment, Water, Heritage and the Arts. (2008b). *Migratory species in Australia*. Viewed 18/11/08 at <http://www.environment.gov.au/biodiversity/migratory/index.html>.
- Department of Natural Resources and Mines (DNRM) (2005). *Land Cover Change in Queensland 2001 – 2003, Incorporating 2001 – 2002 and 2002 – 2003 Change Periods: A Statewide Landcover and Trees Study (SLATS) Report*, Queensland Government, Brisbane.
- Earth Tech Inc (2006), CALPUFF - Version 6.112, CALMET - Version 6.211, Concord, MA, USA. [http://www.src.com/verio/download/download.htm#MOD6\\_VERSION](http://www.src.com/verio/download/download.htm#MOD6_VERSION)
- Ecoserve (2005). *Abbot Point and Caley Valley Wetlands – Dry Season Flora and Fauna Survey*. Report prepared for Collinsville Coal Company, Final Report May 2005.
- Ecoserve. (2007). *Wildlife Online*.
- Econsearch. (2008). *Economic Impact: APCT Expansion and Multi-Cargo Facility*. Prepared for PCQ.



Environment Australia. (2001). *A Directory of Important Wetlands in Australia*, Third Edition. Environment Australia: Canberra. Viewed 17/11/08 at <http://www.environment.gov.au/water/publications/environmental/wetlands/pubs/directory-ch8.pdf>.

Environmental Protection Agency (EPA). (1997). *Wave Data Recording Program, Abbot Point Region, 1977-1996*. Conservation data report No. W06.2.

Environmental Protection Agency. (2002). *Biodiversity Assessment and Mapping Methodology*. Environmental Protection Agency, Biodiversity Planning Unit, Biodiversity Branch, Version 2.1.

Environmental Protection Agency (EPA). (2004). *Planning for Noise Control*. Available from <http://www.epa.qld.gov.au>

Fabricius, K.E., Wolanski, E., (2000) Rapid smothering of coral reef organisms by muddy marine snow. *Estuarine, Coastal and Shelf Science* 50, 115-120.

GHD Pty Ltd (2008) Report for Port of Abbot Point Baseline Environmental Monitoring: Benthic Fauna Survey. Prepared for Ports Corporation of Queensland (unpublished report).

Gisiner R. C. (1998). Workshop on the effects of anthropogenic noise in the marine environment. Marine Mammal Science Program, Office of Naval Research Proceedings of a workshop 141.

Grech, A. and H. Marsh (2007). "Prioritising areas for dugong conservation in a marine protected area using a spatially explicit population model." *Applied GIS* 3(2): 1-14.

Groom, R. A., I. R. Lawler and H. Marsh (2004). "The risk to dugongs of vessel strike in the Southern Bay Islands area of Moreton Bay." pp. 22. James Cook University, Townsville, Queensland.

Harden GJ (ed). (2002). *Flora of New South Wales: Volume 2*, Royal Botanical Gardens: Sydney.

Hayes, K.R., Sliwa, C., Migus, S., McEnnulty, F. and Duncan, P. (2005). National priority pests: part II ranking of Australian marine pests. An independent report undertaken for the Department of Environment and Heritage by CSIRO Marine Research.

HEEN. (2004). *The Health Effects of Environmental Noise – Other than Hearing Loss*.

Hill, I.W. (1978) An Archaeological Report on Abbot Point Port and Transport Area and Collinsville Proposed Mining Areas. Summary of report obtained via WBM Oceanics Australia, Brisbane.

Hilliard, R.W., Walker, S., Hoskins, N., and Raaymakers, S. (1997). *Ballast Water Risk Assessment – 12 Queensland Ports; Stage 1B Report*. EcoPorts Monograph Series No.10.

Hoedt, F.E., Choat, J.H., Collins, J. and Cruz, J.J. (2000). Mourilyan Harbour and Abbot Point Surveys: Port Marine Baseline Surveys and Surveys for Introduced Marine Pests. CRC Reef, James Cook University, 49 pages.

Huson & Associates. (2005). *Noise Impact Assessment: Stage 3 Expansion Abbot Point Coal Terminal*.

Intergovernmental Panel on Climate Change (IPCC). (2007). *Assessment Report 4*.



International Union for Conservation of Nature and Natural Resources (IUCN) (2002) Red List of Threatened Animals.

Jacobsen, J. (2001). Danish guidelines on environmental low frequency noise, infrasound and vibration. *Journal Low Frequency Noise, Vibration and Active Control* 20, September 2001 pp141 – 148.

Jefferson, T.A., Leatherwood, S. and Webber, M.A. (1993). *Marine Mammals of the World*. United Nations Environment Programme, Food and Agriculture Organization of the United Nations, Rome. 320 pp.

Katestone Environmental (2008a), "Environmental Evaluation of Fugitive Coal Dust Emissions from Coal Trains", report for Queensland Rail Limited.

Katestone Environmental (2008b), "Moura Link – Aldoga Rail Project, Air Quality Assessment", report for Connell Hatch.

Larcombe, P., Carter, R.M., Dye, J., Gagan, M.K. & Johnson, D.P. (1995) New evidence for episodic post-glacial sea-level rise, central Great Barrier Reef, Australia. *Marine Geology* 127, 1-44.

Larkin, R. P. (1996). *Effects of Military Noise on Wildlife: A Literature Review*. Centre for Wildlife Ecology: Illinois.

Lee Long WJ, Coles RG, Helmke SA and Bennett RE (1989). Seagrass habitats in coastal, mid shelf and reef waters from Lookout Point to Barrow Point in north-eastern Queensland. A report to the Great Barrier Reef Marine Park Authority. Department of Primary Industries, Queensland Government. 19pp.

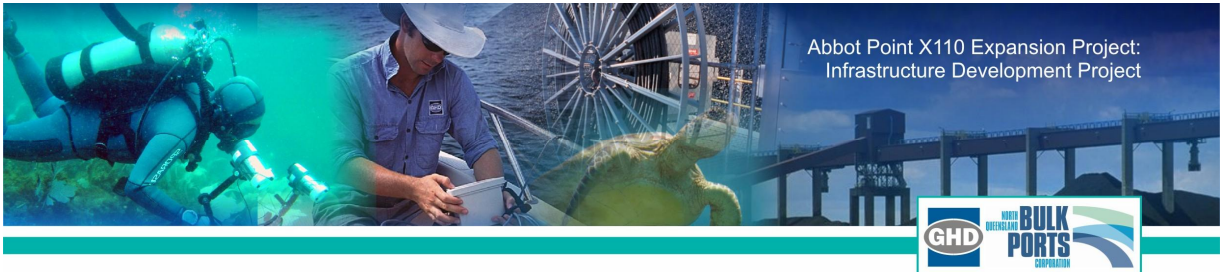
Lee Long WJ, McKenzie LJ, Rasheed MA and Coles RG (1996). Monitoring Seagrasses in Tropical Ports and Harbours. In: 'Seagrass Biology: Proceedings of an International Workshop, Rottnest Island, Western Australia 25-29 January, 1996'. (Eds. J. Kuo, R. C. Phillips, D. I. Walker, and H. Kirkman.) pp. 345-350. (Faculty of Sciences, The University of Western Australia: Perth).

Lohmann, K., B.E. Witherington, C.M.F. Lohmann & M. Salmon. (1996). Orientation, navigation and natal beach homing in sea turtles. *In: The Biology of Sea Turtles* (P.L. Lutz & J.A. Musick, eds.). CRC Press, Boca Raton: 107-135.

Lukoscheck, V. and Chilvers, B.L. (2008). A robust baseline for bottlenose dolphin and abundance in coastal Moreton Bay: a large carnivore living in a region of escalating anthropogenic impacts. *Wildlife Research* 35: 593-605.

Marsh, H. and W. K. Saalfeld (1989). "Distribution and abundance of dugongs in the northern Great Barrier Reef Marine Park." *Australian Wildlife Research* 16: 429-440.

Marsh.H., Kwan, D. and Lawler, I. (1993). The status of dugongs, sea turtles and dolphins in the northern Great Barrier Reef region. Unpublished report to the Great Barrier Reef Marine Park Authority.



Marsh, H., P. J. Corkeron, I. R. Lawler, A. R. Preen and J. Lanyon (1996). "The status of dugong in the southern Great Barrier Reef Marine Park." pp. 80. Great Barrier Reef Marine Park Authority Research Publication No. 41, Townsville.

Marsh, H. and I. R. Lawler (2001). "Dugong distribution and abundance in the Southern Great Barrier Reef Marine Park and Hervey Bay: results of an aerial survey in October - December 1999." Great Barrier Reef Marine Park Authority Research Publication No. 70, Townsville.

Marsh HD & Lawler IR (2002) Dugong distribution and abundance in the northern Great Barrier Reef Marine Park - November 2000. In: Research Publication No 77 1 - 62. Great Barrier Reef Marine Park Authority

McCauley R.D. (1994). Environmental implications of off-shore oil and gas development in Australia – Seismic Surveys, pp 19 – 122 in J.M. Swan, J.M. Neff and P.C. Young (1994). Environmental implications of off-shore oil and gas development in Australia.

McCauley R. D., Jenner C., Bannister L., Burton C. L. K., Cato D. H. and Duncan A. (2001). Blue whale calling in the Rottneest Trench - 2000, Western Australia. Curtin University Perth Project cmst 241 R2001-6 55 pp.

Mellors JE (2003) Sediment and nutrient dynamics in coastal intertidal seagrass of north eastern tropical Australia. PhD Thesis. School of Tropical Environment Studies and Geography: James Cook University, Townsville.

Menkhorst, P. & Knight, F. (2004). *Field Guide to Mammals of Australia*. Oxford University Press: South Melbourne.

Moore, K.A., Richard L. Wetzel and Robert J. Orth. (1996). Seasonal pulses of turbidity and their relations to eelgrass (*Zostera marina* L.) survival in an estuary. *Journal of Experimental Marine Biology and Ecology* 1: 115-134.

Mumby, P.J. and Harborne, A.R. (1999). Development of a systematic classification scheme of marine habitats to facilitate regional management and mapping of Caribbean coral reefs. *Biological Conservation* 88: 155-163.

National Environment Protection Council (NEPM) (1998), "National Environment Protection Measure for Ambient Air Quality".

National Pollutant Inventory (NPI) (2001), "Emission Estimation Technique Manual for Mining". National Environment Protection Council.

Natural Resource Management Ministerial Council. (2006). *Australian Weed Strategy – A national strategy for weed management in Australia*. Australian Government, Department of the Environment and Water Resources: Canberra ACT.

NEPC (1998), National Environment Protection (Ambient Air Quality) Measure, National Environment Protection Council, 1998.

New South Wales Department of Environment and Climate Change (DECC). (2006). *Assessing Vibration: A Technical Guideline*.

O'Brien P. E. (2002) Impacts of marine acoustic technology on the Antarctic environment SCAR Ad Hoc group on marine acoustic technology; unpublished 32 pp.



Organisation for Economic Cooperation and Development (OECD) (2001) Economic Outlook Volume 2001.

Orpin, A. R., Ridd, P. V. & Stewart, L. K. (1999) Assessment of the relative importance of major sediment-transport mechanisms in the central Great Barrier Reef lagoon. *Australian Journal of Earth Sciences* 46, 883-896.

Ottaway J R, J S Andrews, C Burdon-Jones, L S Hamond, C R Roberts and W K Salfield (1989). *Marine Environmental Impacts of Construction of an Offshore Loading Facility at Abbot Point Queensland (Vol 1 and 2)* Department of Marine Biology, School of Biological Sciences, James Cook University of North Queensland.

Parra, G. J., P. J. Corkeron and H. Marsh (2006). "Population sizes, site fidelity and residence patterns of Australian snubfin and Indo-Pacific humpback dolphins: Implications for conservation." *Biological Conservation* 129: 167-180.

PCQ (2005). *Environmental Management Plan – Port of Abbot Point*. Ports Corporation of Queensland, January 2005.

PIFU. (2008a). *Population and Housing Fact Sheet for the Bowen Shire*.

<http://www.dip.qld.gov.au/resources/map/population-housing-factsheets/bowen.pdf>.

PIFU. (2008b). *Population and Housing Fact Sheet for Queensland*.

<http://www.dip.qld.gov.au/resources/map/population-housing-factsheets/queensland.pdf>.

Pizzey, G. & Knight, F. (2003). *Field Guide to the Birds of Australia*. Harper Collins Publishers Pty Ltd.

QASSIT (2002). *Queensland Acid Sulphate Soil Technical Manual – Soil Management Guidelines Version 3.7 November 2002*. Queensland Department of Natural Resources and Mines, Indooroopilly, Queensland, Australia.

Queensland Climate Change and Community Vulnerability to Tropical Cyclones. (2004). *Synthesis Report - An Overview of Results from Project Stages 2, 3 and 4*.

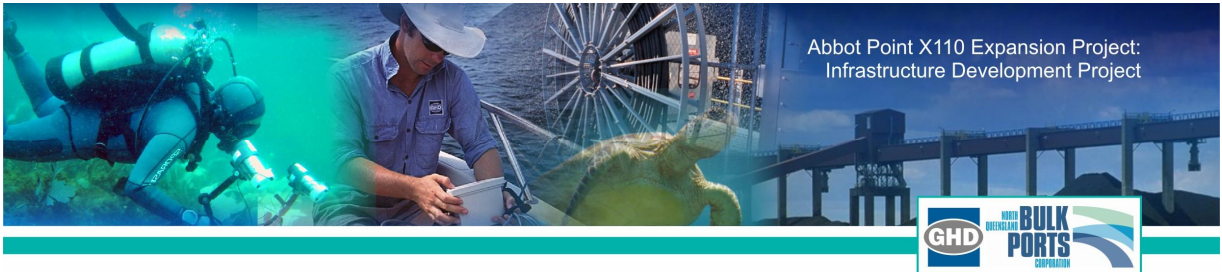
Queensland Government.(1992). *SPP 1/92 – Development and Conservation of Good Quality Agricultural Land*.

Queensland Government (1997), "Environmental Protection (Air) Policy 1997" Subordinate Legislation 1997 No. 468 and amendments.

Queensland Government (2008), "Environmental Protection (Air) Policy 2008" Subordinate Legislation 2008 No. 441.

Queensland Water Quality Guidelines (QWQG) (2006). Available at [http://www.epa.qld.gov.au/environmental\\_management/water/queensland\\_water\\_quality\\_guidelines/queensland\\_water\\_quality\\_guidelines\\_march\\_2006\\_with\\_2007\\_minor\\_updates/](http://www.epa.qld.gov.au/environmental_management/water/queensland_water_quality_guidelines/queensland_water_quality_guidelines_march_2006_with_2007_minor_updates/) Environmental Protection Agency, March 2006.

Rasheed, M.A., Thomas, R. and McKenna, S.A. (2005). *Port of Abbot Point seagrass, algae and benthic macro-invertebrate community survey, March 2005*. DPI Information Series Q105044 (Queensland Department of Primary Industries and Fisheries, Cairns), 27 pp.



Richardson W. J., Greene C. R. J., Malme C. I., and Thomson D. H. (1995). *Marine mammals and noise*. San Diego, Academic Press.

Rogers, C.S., (1990). Responses of coral reefs and reef organisms to sedimentation. *Marine Ecology Progress Series* 62, 185–202.

Stafford-Smith, M.G. (1992). Mortality of the hard coral *Leptoria phrygia* under persistent sediment influx. *Proceedings of the Seventh International Coral Reef Symposium, Guam, 1*: 289-299.

Standards Australia. (1999). *AS/NZS 4360:1999 Risk Management Standard*.

Tasker M. L. and Weir C. (1998). *Proceedings of the seismic and marine mammals workshop*. London Proceedings.

Taylor, B. L. (2002). Conservation biology. *Encyclopedia of marine mammals*. W. F. Perrin, B. Würsig and H. Thewissen. San Diego, CA, Academic Press: 273-276.

The Air Pollution Model (TAPM) (2006), Version 3.0.7 developed by the CSIRO (<http://www.cmar.csiro.au/research/tapm/>).

Udy JW, Dennison WC, Long WJL and McKenzie LJ (1999) Responses of seagrass to nutrients in the Great Barrier Reef, Australia. *Marine Ecology-Progress Series* 185: 257-271.

Urich R. J. (1983). *Principles of Underwater Sound*. 3<sup>rd</sup> edition. McGraw-Hill Company. New York.

US EPA (1998), “Western surface coal mining”, AP-42 Chapter 11.9, USEPA Office of Air Quality Planning and Standards.

US EPA (2006), “Aggregate handling and storage piles”, AP-42 Chapter 13.2.4, USEPA Office of Air Quality Planning and Standards.

Waycott M, Longstaff BJ and Mellors J (2005) Seagrass population dynamics and water quality in the Great Barrier Reef region: A review and future research directions. *Marine Pollution Bulletin* 51(1-4): 343-350.

WBM (2005). *Abbot Point Coal Terminal Stage 3 Expansion supplement to the Environmental Impact Statement*. WBM Report for PCQ.

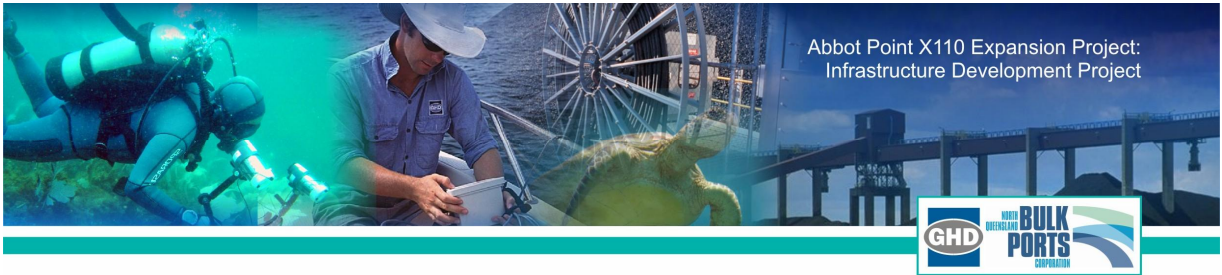
WBM. (2006). *Abbot Point Coal Terminal - X50 Expansion Environmental Impact Statement*. Report prepared for Ports Corporation of Queensland.

WBM Oceanics Australia. (2006). *Abbot Point Coal Terminal Stage 3 Expansion, Environmental Impact Statement*. Prepared for Ports Corporation of Queensland.

WBM Oceanics. (2006). *Abbot Point Coal Terminal, Stage 3 Expansion Environmental Impact Statement (EIS)*. Prepared for Ports Corporation of Queensland.

Wilson, S. (2005). *A Field Guide to the Reptiles of Queensland*. Reed New Holland. Sydney.

Young, P.A.R., Wilson, B.A., McCosker, J.C., Fensham, R.J., Morgan, G., Taylor, P.M. Brigalow Belt: Chapter 11 in Sattler.P & Williams, R (eds.). (1999). *The Conservation Status of Queensland's Bioregional Ecosystems*. Environmental Protection Agency: Queensland.



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