

PORT ENVIRONMENTAL PROTECTION PLAN

Darwin Port Corporation

April 2013

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DARWIN PORT CORPORATION

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1. INTRODUCTION

1.1 Background

The Northern Territory Government Department of Lands, Planning and Environment (DLPE) proposes to expand East Arm Wharf (EAW) in the eastern arm of Darwin Harbour. The EAW expansion is in response to increased demands on the wharf from the oil and gas marine supply sector, and from the Department of Defence and other industries. DLP is the applicant for the expansion under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The EAW expansion includes the construction and operation of a:

- Marine Supply Base to service the existing and developing oil and gas industries.
- Barge ramp with hardstand area and loading facilities.
- Series of pontoons and moorings to accommodate tugs and smaller vessels.

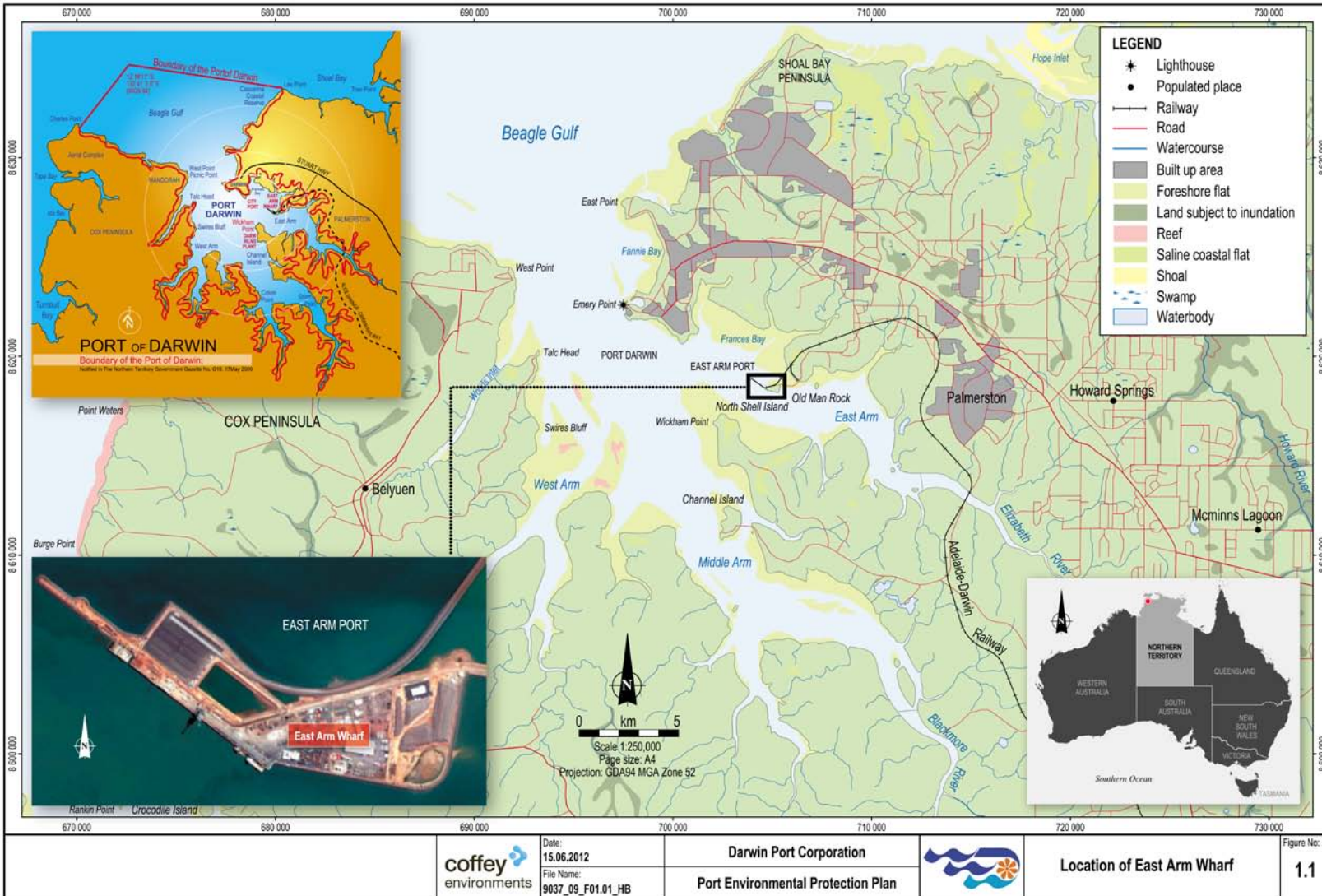
The primary role of EAW is to facilitate the movement of goods by rail, road and sea to and from international markets. It is currently used by the oil and gas, mining, construction, agriculture, horticulture, and vehicle import industries (DPC, 2010a). The EAW expansion is intended to further enhance East Arm Wharf's ability to support Darwin as an increasingly significant transport hub, well situated to facilitate trade between Australia and its neighbours in south-east Asia (URS, 2011).

The proposed Marine Supply Base will enable greater support to offshore oil and gas developments from Darwin, and the barge ramp and storage hardstand will be accessible on a 24 hour, 7 days per week basis to users such as Defence and private barge operators (URS, 2011). The installation of tug and small vessel mooring facilities will increase the level of vessel and land-side operational activity at the EAW area.

The Darwin Port Corporation (DPC) is responsible for the management and control of the Port of Darwin, in accordance with the *Darwin Port Corporation Act 1999* (NT), and the facilities it owns around the port. DPC recognises the economic, social, and environmental importance of operating in an environmentally sustainable manner and ensuring a high level of environmental performance. The DPC is committed to achieving this through continual improvement of its management plans and procedures, and maintaining an adaptable approach to evolving port uses. The DPC manages its environmental performance by implementing an Environmental Management System that is based on ISO14001:2004 (International Standard for Environmental Management Systems). As part of DPC's Environmental Management System, environmental management plans have been developed for each of the DPC-managed wharves, including East Arm (Coffey Environments, 2010).

The Australian Government Department of Sustainability, Environment, Water, Population and Communities (SEWPaC) requires a Port Environmental Protection Plan (PEPP) be developed to ensure management of EPBC Act-related aspects associated with the EAW expansion. This is a condition of approval under the EPBC Act.

1.1 Location of East Arm Wharf



1.2 Scope of the PEPP

1.2.1 Jurisdiction

The PEPP is applicable to the jurisdictional area regulated by the DPC under the Darwin Port Corporation Act, with particular focus on activities associated with the EAW expansion and their impact on EPBC Act Matters of National Environmental Significance (Figure 1.1). As such, the PEPP is intended as a supplementary document to the EAW Environmental Management Plan (Coffey Environments, 2010) and associated plans and procedures.

The PEPP is to be complied with by all relevant Port Users, including Northern Territory Government departments and agencies, Darwin Port Corporation, Marine Supply Base constructors and operators, Barge Ramp constructors and operators, commercial shipping and tugs/small vessel operators, and small vessel mooring constructors and operators.

1.2.2 Protection of Migratory Shore Bird Habitat – Pond D

The EAW area contains several sedimentation ponds. One of these ponds – Pond D – is frequented by migratory shore birds as a high-tide roosting habitat, and as such has been identified as an important area within the port requiring protection.

The DPC currently controls public access to the whole of the operational port area, which includes Pond D. The general public are not permitted access to the operational port and the area is fenced to exclude unauthorised entry.

Under the PEPP, the DPC will ensure that fencing is maintained, and as such ensure measures continue to be in place that will restrict public access and exclude access by feral animals to Pond D. The Darwin Port Corporation, through the PEPP, has undertaken not to use Pond D in a way inconsistent with the Territory's obligation to maintain the pond as a suitable high-tide roosting habitat for migratory birds.

1.3 Legislation

The environmental assessment of the EAW expansion was undertaken in accordance with the requirements of the Northern Territory *Environmental Assessment Act 1982*. The proposal was declared a controlled action under the EPBC Act, as it was considered likely to have significant impacts on the following Matters of National Environmental Significance that are protected under Part 3 of the EPBC Act:

- Sections 18 and 18A (Listed threatened species and communities).
- Sections 20 and 20A (Listed migratory species).

The project has been assessed under the Bilateral Agreement for Environmental Impact Assessment between the NT and Australian Governments, to satisfy requirements of both the Environmental Assessment Act and the EPBC Act. It was approved by the Northern Territory Government on 23 December 2011 and the Australian Government on 5 March 2012.

1.4 EPBC Act Matters

A number of EPBC Act-listed species may occur in or may relate to the project area and may be impacted by the project. These species are listed as Matters of National Environmental Significance under the EPBC Act and include:

- Coastal Dolphins:
 - Snubfin dolphin (*Orcaella*).
 - Indo-Pacific humpback dolphin (*Sousa chinensis*).
 - Indo-Pacific bottlenose dolphin (*Tursiops aduncus*).
- Dugong (*Dugong dugon*).
- Whales:
 - Bryde's whale (*Balaenoptera edeni*)
 - Humpback whale (*Megaptera noaeangliae*)
- Sawfish:
 - Dwarf sawfish (*Pristis clavata*).
 - Freshwater sawfish (*Pristis mircodon*).
 - Green sawfish (*Pristis zijsron*).
- Marine Turtles:
 - Flatback turtle (*Natator depressus*).
 - Loggerhead turtle (*Caretta caretta*).
 - Green turtle (*Chelonia mydas*).
 - Leatherback turtle (*Dermochelys coriacea*).
 - Hawksbill turtle (*Eretmochelys imbricate*).
 - Olive Ridley turtle (*Lepidochelys olivacea*).
- Migratory shorebirds at numbers greater than 0.1% of the flyway population¹:
 - Lesser sand plover (*Charadrius mongolus*).
 - Greater sand plover (*Charadrius leschenaultii*).
 - Far Eastern curlew (*Numenius madagascariensis*).
 - Terek sandpiper (*Xenus cinereus*).
 - Sharp-tailed sandpiper (*Calidris acuminata*).
- Twenty-two migratory shorebird species².

Condition 45 of the SEWPac EPBC Act approval for the EAW expansion states:

The person taking the action must submit a Port Environmental Protection Plan (PEPP) to the minister for approval. The PEPP must address the consequential and residual impacts to EPBC Act listed threatened and migratory marine fauna from expansion of East Arm Wharf. The PEPP must be implemented for the life of the project and must include:

¹ The EPBC Act policy statement 3.21 provides a set of criteria for determining the importance of habitat for migratory shorebirds in Australia. One of the criteria of a site of nationally important habitat is one which supports at least 0.1% of the flyway population of a single species.

² The EPBC Act policy statement 3.21 provides a set of criteria for determining the importance of habitat for migratory shorebirds in Australia. One of the criteria of a site of nationally important habitat is one which supports at least 15 shorebird species.

- a. Measures to manage the risk of vessel strike to marine fauna. These must include prescribed maximum commercial vessel speed limits; enforcement of speed limits; monitoring and reporting of vessel strike; and adaptive management measures.
- b. Measures to increase the response capacity of Darwin Harbour to respond to accidental fuel, oil or chemical spills to address the increased likelihood of a spill as a result of increased vessel usage of the wharf.
- c. Measures that minimise the risk of introduced marine pest species over the life of the project, including ballast water management and vessel inspections for non-domestic vessels.
- d. An educational campaign for all port personnel including the provision of information that fosters a culture of awareness of the environmental values, including the EPBC Act listed species that may occur within the project area, and the related responsibilities of the port personnel.

Additionally, condition 33e of the SEWPaC EPBC Act approval requires that the Indigenous Rangers program developed as part of the Biodiversity Impact Mitigation and Offsets Strategy should:

Assist with implementation of the education campaign at Condition 45d.

This PEPP fulfils the requirement of these conditions. The plan comprises:

- Chapter 1 (this chapter): introduces the PEPP.
- Chapter 2: describes the management and mitigation measures to minimise the risk of vessel strike to marine fauna.
- Chapter 3: describes the measures to increase the response to respond to accidental fuel, oil and chemical spills.
- Chapter 4: describes the measures to minimise the risk of introduced marine pest species.
- Chapter 5: describes the educational campaign for the provision of information that fosters a culture of awareness of the environmental values, and incorporates the Indigenous Ranger program.
- Chapter 6: describes the review and revision process.
- Chapter 7: references.

2. MANAGEMENT AND MITIGATION MEASURES TO MINIMISE VESSEL STRIKE

2.1 Background

The issue of vessel strikes to marine fauna, and in particular cetaceans (whales and dolphins), has been identified as a growing concern internationally (IMO, 2009). IMO (2009) states that with the increase in number, size and speed of ships, the threat of ship strikes of cetaceans may also increase.

As a direct result of the EAW expansion, the commercial vessel usage for the entire EAW (including EAW and Marine Supply Base) is expected to increase from 501 vessels per year in 2009 to 1,130 vessels per year in 2015 (DLP, 2011). Vessel traffic in Darwin Harbour, excluding fishing vessels, tugs, ferries, charter, naval and pleasure vessels, will increase from 1,730 vessels per year in 2010/11 to 2,920 vessels per year in 2019/20. There is a concern that the increased vessel usage within the harbour will increase the risk of boat strikes to dolphins, marine turtles and dugongs, and therefore management and mitigation measures are required to minimise the likelihood and consequence of such strikes.

2.2 Conditional Requirements

The Approving Authority has determined that this PEPP must include:

Measures to manage the risk of vessel strike to marine fauna. These must include prescribed maximum commercial vessel speed limits; enforcement of speed limits; monitoring and reporting of vessel strike; and adaptive management measures.

This chapter details these measures.

2.3 Current Measures

There are several rules, regulations and guidelines comprising the legislative framework currently being implemented that will assist in reducing the incidence of vessel strikes on marine fauna within the Port of Darwin. These include:

- Darwin Port Corporation Act, Port By-Laws, Marine Act and Marine (Pilotage) Regulation. This legislation provides information on how vessels are allowed to move within the Port of Darwin, specifically:
 - All vessels larger than 35 m are to be piloted into, and out of, the Port of Darwin (unless exempt under by-law 34 or directed by the Harbourmaster).
 - Restricted areas.
- The ability to monitor vessel speeds within the Port of Darwin using the DPC's vessel traffic service (VTS) that incorporates an automated information system (AIS) that can show ship speeds. The VTS is currently utilised in limited capacity to monitor real-time movements of those vessels fitted with AIS, however the capacity of the VTS is scheduled to be upgraded in 2013.
- Environment Protection and Biodiversity Conservation Regulation Part 8: Interacting with cetaceans and whale watching (2000). This regulation provides information about the

recommended speed and separation distance required when a cetacean is sighted from a vessel.

There are currently no speed limits for commercial vessels in the Port of Darwin and hence no legal enforcement of commercial vessel speeds. There is no intention on behalf of government to modify existing legislation to include enforcement of commercial vessel speed limits in the Port of Darwin. Commercial vessels operating within Northern Territory waters are required to comply with the requirements of the Marine Act and Regulations, however, these do not specify general speed limits for commercial vessels.

2.4 Proposed Measures

2.4.1 Prescribed Maximum Commercial Vessel Speed Limits

The majority of vessels utilising EAW are typically over 35 m in length and hence are piloted into, and out of, the Port of Darwin. On piloted vessels the pilot will be responsible for the vessel speed. For those commercial vessels that are not piloted, e.g. commercial vessels less than 35 m, Defence operated vessels, or those with a pilotage exemption, the master will be responsible for vessel speed.

DPC will adopt a nominal maximum speed limits for commercial vessels in areas as depicted in figure 2.1 as follows:

Area A 16 knots

Area B 12 knots

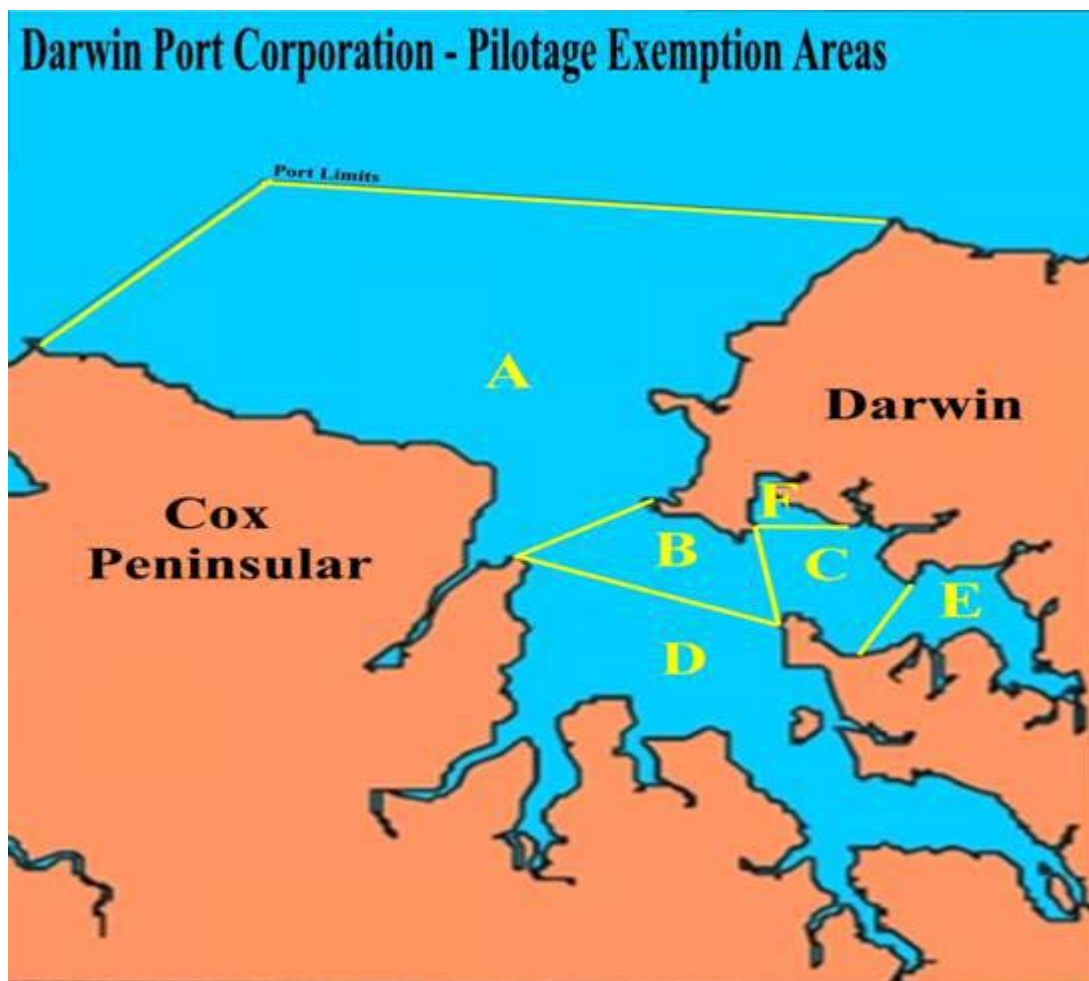
Area C 12 knots

Area D 10 knots

Area E 8 knots

Area F 8 knots

Figure 2.1 Port Speed Limit Areas



These speed limits will be adopted from the date the first EAW expansion component becomes operational.

Vessels may exceed the nominal maximum speed limits by the minimum amount required where:

- The vessel may be unreasonably compromised (e.g. due to tidal windows increasing the risk of grounding);
- The vessel has fixed speed settings that are unreasonable if operating below the nominal maximum speed limit.
- Specific exemption is provided by the DPC CEO in situations where there is a high probability of unacceptable constraints to economic, social and environmental aspects if the nominal maximum speed limit were applied.

The implementation of commercial vessel speed limits will be communicated through means such as the DPC Handbook and Notice to Mariners.

Commercial vessels exceeding 300 GRT are required to be fitted with AIS. This will enable monitoring via VTS.

2.4.2 Enforcement of Speed Limits

The pilot will be responsible for abiding by the maximum speed limit on piloted vessels. The VTS system will be used to monitor vessel speeds and record instances of excessive speed. Vessels will be requested to reduce speed by the Vessel Traffic System Officers (VTSO) if they are exceeding the nominal maximum speed limit (as per the powers afforded the harbourmaster under Section 29 of the DPC Act and delegated to the VTSO's).

A new VTS system is currently under contract for installation in 2013 VTS capacity enhancement measures include:

- Expansion to incorporate CCTV coverage across Darwin Harbour.
- Ability to log / record events that occur above a set threshold, e.g., logging of occurrences where a vessel has exceeded the nominal maximum speed limit within a speed restricted area.

Implementation of proposed VTS capacity enhancement measures will be completed within 12 months of the first EAW expansion component becoming operational.

Instances where the VTSO requests vessels to reduce speed within the Port will be recorded. DPC will conduct annual reviews of VTS excessive speed exceedance logs and DPC instruction to vessel logs. The annual review of such instances will be used to inform adaptive management measures. Such adaptive management measures will include initiatives aimed at reducing risk of vessel strike such as the revision of nominal maximum speed limits in areas identified as high risk.

2.4.3 Marine Animal Reporting

Monitoring and reporting will be undertaken using the Animal Near Miss/Strike Form (Attachment A) that will be filled in by the captain/master of all vessels in the Port of Darwin that have a near miss (animal within 20 m of vessel) with, or hit, marine fauna.

The form must be completed and forwarded within 24hrs of the incident occurrence.

The Animal Near Miss/Strike reporting form will be made available on the DPC website and completed forms are to be sent to DPC c/o Environment Manager at the details below:

Port Administration Building
Darwin Business Park
Berrimah Northern Territory
0828 Australia
GPO Box 390

darwinport.dpa@nt.gov.au

DPC will conduct annual review of reported vessel strike occurrences in conjunction with publicly reported data from the Marine Wildwatch hotline.

The efficiency of this system will be monitored over 12 months from the date of implementation. If review finds that the system is ineffective/inefficient, online reporting via the DPC web portal will be considered for implementation if viable.

2.4.4 Adaptive Management Measures

Due to the lack of historical records of vessel strikes within Darwin harbour there is no existing baseline against which to measure performance of proposed measures to reduce the risk of increased vessel strike.

The measures proposed in Sections 2.4.1 to 2.4.3 will be used to establish a baseline of vessel strike events in Darwin harbour over a period of 12 months from the date of the first EAW expansion component becoming operational.

Once the baseline has been established the performance indicator for the proposed risk reduction measures shall be: zero percent increase in vessel strike events attributed to increased vessel movement as a result of the EAW expansion.

Annual review of vessel speeds and vessel strike events within Darwin harbour shall be conducted by DPC. Should review of vessel speeds and vessel strike data indicate an increase in vessel strikes as a result of the EAW expansion over the 12 month period following the establishment of the baseline, then adaptive management measures shall be implemented by DPC within three months of the date of review.

These will include:

- Revision of nominal maximum speed limits in areas identified as high-risk based on review of vessel strike records and VTS speed limit exceedance logs.
- An education program aimed at informing the DPC pilots as to the best methods to reduce the risk of vessel strike.
- Implementation of an avoidance action plan similar to that of other Australian ports and in alignment with Figure 2.2.
- Modification of the 'Technical and Safety Standards for Pilotage and Provision of Pilotage Services for the Port of Darwin' (DPC, 2012) to include provision of speed limits and vessel strike avoidance in development of Passage Plans.

Adaptive management measures shall be implemented for a period of 12 months from implementation. The effectiveness of adaptive management measures implemented shall be included in DPCs annual review of vessel strike data against the performance indicator. Should the incidence of vessel strike in Darwin harbour still be increasing as a result of increased vessel traffic associated with the EAW expansion, additional or alternative adaptive management measures appropriate to the causative factors identified shall be implemented within three months of the date of review.

Adaptive management measures shall be incorporated into the biennial review of this PEPP in conjunction with the review of the EAW EMP.

1 2.2 Whale and dolphin separation distances

Approach distances for whales

Requirements	Distance to a whale	Distance to a dolphin
CAUTION ZONE - No wake speed - Maximum of 3 vessels - Do not enter caution zone if animals are stranded, entangled or distressed	BETWEEN 300 and 100 metres	BETWEEN 150 and 50 metres
NO APPROACH ZONE - Do not enter - No waiting in front of direction of travel - Do not approach from the rear	WITHIN 100 metres 300m if calf is present	WITHIN 50 metres 150m if calf is present

Bow riding

- Do not deliberately encourage bow riding
- When animals are bow riding - do not change course or speed suddenly
- If there is a need to stop - reduce speed gradually

If approached by a whale or dolphin slow down to a 'no wash' speed and move away if safe to do so or disengage your vessel's gears, make no sudden movement and minimal noise.

Do not enter **Caution Zone** if there is a calf in a group

Approach distances for dolphins

Source:
Australian National Guidelines for Whale and Dolphin Watching 2005 distributed by the Department of Sustainability, Environment, Water, Population and Communities (SEWPaC)

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9037
File Name:
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Darwin Port Corporation
Port Environmental Protection Plan

Whale and Dolphin Separation Distances

Figure No:
2.2

3. OIL, FUEL, AND CHEMICAL SPILL RESPONSE

3.1 Background

The proposed EAW expansion is intended to further enhance the wharf's ability to service a greater variety and frequency of vessel visits and operational activity (URS, 2011). This increase in activity on and around EAW, and increased number of vessels moving throughout the port, potentially increases the likelihood of a fuel/oil/chemical spill. Such spills could result from land-based activities on the wharf and surrounding areas, from vessels at berth alongside the wharf, or from vessel collision in the port itself.

3.2 Conditional Requirements

The Approving Authority has determined that this PEPP must include:

Measures to increase the response capacity of Darwin Harbour to respond to accidental fuel, oil or chemical spills to address the increased likelihood of a spill as a result increased vessel usage to the wharf.

This chapter details these measures.

3.3 Current Measures

Oil spills to the marine environment are regulated under the *Marine Pollution Act* by the Marine Safety Branch of the Northern Territory Government Department of Transport.

The Northern Territory Oil Spill Contingency Plan (NT OSCP) (DLP, 2012) outlines the steps required for the management of marine pollution response events that are the responsibility of the Marine Safety Branch. The Marine Safety Branch is also responsible for administering the Northern Territory Marine Pollution Contingency Plan (MPCP) which supports the National Plan to Combat Pollution of the Sea by Oil and other Noxious Hazardous Substances (AMSA, 2007) (the National Plan). The National Plan is administered and coordinated by the Australian Maritime Safety Authority (AMSA). The DPC is a participant in the Northern Territory Marine Pollution Contingency Plan along with Northern Territory Government departments, oil and chemical industry representatives, and the Police and Emergency Services.

The NT OSCP and MPCP are supported by the NT Marine Pollution Advisory Committee (MPAC) (State Committee under the National Plan). The NT MPAC meets twice per year and is comprised of cross-agency and cross-industry stakeholders including DPC, the NT Marine Safety Branch, other NT Government departments, oil and chemical industry representatives, Police and Emergency Services and AMSA – ensuring all tiers are represented. These meetings focus on identifying and resolving issues, coordinating response management and capacity and organising training. Meetings are formally minuted and action items communicated to relevant parties. Follow-up on action items is conducted at the next meeting or sooner if a shorter close-out date is required.

The NT Marine Safety Branch, in conjunction with DPC, conduct regular (generally quarterly) oil spill response training. Training sessions are often conducted in conjunction with AMSA.

The DPC has statutory agency responsibility for the combat of spills within the Port of Darwin under the Darwin Port Corporation Act. Under the NT OSCP the DPC must maintain the ability to respond to Tier 1 spill events and provide support to Tier 2 and 3 events.

The DPC Oil Spill Contingency Plan (DPC, 2002) outlines the steps required for the management of marine oil pollution responses that fall under the jurisdiction of the DPC. The DPC Oil Spill Contingency Plan is planned for review in 2013, and is integrated with the NT OSCP and the NT Marine Pollution Contingency Plan.

Spill response equipment stored on EAW, in addition to that held by commercial operators at EAW, is owned by AMSA. This equipment is audited by AMSA on a regular basis, and is augmented by AMSA's resources nationally if required. Additional spill response resources are also available from AMOSC in Geelong and Singapore.

The DPC Environmental Management System (DPC EMS) contains provision for a framework to establish and maintain procedures for Emergency Preparedness and Response (EMSP7 DPC EMS, 2010). DPC cargo and operations staff receive regular training in spill response, and have actively participated in spill response events interstate and in Commonwealth waters.

The DPC East Arm Wharf Environmental Management Plan (EAW EMP) (Coffey Environments, 2010) encompasses objectives, targets, and management strategies relating to fuel/oil/chemical spills in Section 5.11 Hydrocarbons and Hazardous Materials. Under the EAW EMP, DPC requires port operators to develop and maintain environmental management plans to cover their activities, including implementation of appropriate spill prevention and response procedures.

This requirement under the EAW EMP is supported by clauses within individual tenancy Licence Agreements and includes:

- Compliance with the DPC Environmental Management System;
- Establishment and compliance with the Licensee's EMP (that is consistent with the DPC Environmental Management Plans) for its operations in respect of the Licensed Area and the Common User Areas (to the extent the Common User Areas are used by the Licensee) detailing the systems, procedures, training and policies that the Licensee will implement to comply with federal and Territory environmental laws and respond to any environmental incident; and
- At its own cost and expense, a Licensee must immediately clean up, store and dispose of any pollution, spills or contamination arising from environmental harm caused or contributed to by the Licensee.

In accordance with the EAW EMP, DPC has developed the Darwin Port Corporation Emergency Response Plan (DPC ERP) (DPC, 2010b). This plan covers all areas of port activities, including EAW. Chapter 4, Section 4.7 outlines specific procedures relating to marine pollution and oil spill incidents. Appendix C of the DPC ERP relates specifically to EAW, and identifies EAW specific protocols but refers back to the DPC Oil Spill Contingency Plan for marine spillage response procedures.

3.4 Proposed Measures

The Draft Environmental Impact Statement prepared for the EAW expansion included a risk assessment and risk register of the construction and operational phases of the EAW expansion (URS, 2011, Section 25.3.4). This risk assessment identified fuel/oil/chemical spill as a potential risk but at a low risk level in all operational areas of the EAW expansion, across both the construction and operational phases of the project (URS, 2011).

To increase the response capacity of DPC to fuel, oil, and chemical spills as a result of increased vessel activity at EAW, the following measures will be adopted:

- DPC will support any improvements to the existing spill response strategy proposed by the Australian Maritime Safety Authority subsequent to its next scheduled assessment of the NT OSCP and existing spill response capacity.
- DPC will ensure annual compliance checks on EAW Licensees to ensure appropriate spill prevention is incorporated into operational activities, and appropriate spill response equipment and trained personnel are available if required. The existing EAW Licence Agreements will be used to ensure compliance. Proposed modifications to the EAW Licence Agreement include:
 - The existing requirement for a Licensee's EMP to be provided to DPC within two months of the Commencement Date will be modified to require provision of the Licensee's EMP prior to operations commencing.
 - The existing requirement for a Licensee to establish and comply with an EMP that is consistent with the DPC EMP shall be modified to include review by DPC of a Licensee's EMP, prior to operations commencing, for adequacy to the type and scale of operations, and incorporation of adequate spill response capability and equipment.
- Within the existing EAW Licence Agreement provision is made for DPC to give notice to a Licensee deemed in breach of either DPC's EMP or the Licensee's own EMP, to remedy the breach and provide a documented report on the actions taken. Additionally, the EAW Licence Agreement requires the Licensee to annually provide qualified third party confirmation of the Licensee's ongoing compliance with DPC's EMP and the Licensees' own EMP.

DPC will assess annually a Licensee's compliance with this requirement of the Licence. Assessments shall also consider the ongoing effectiveness of the Licensee's EMP in conjunction with the increased or modified activities of both the Licensee and other port users associated with EAW. Evidence of these assessments will be documented by DPC.

Non-compliance with EAW Licence Agreement requirements shall result in possible suspension of the Licensee's licence to operate on EAW. Spill incidents that are beyond the response capability of the Licensee shall be reported by DPC to the environmental regulator, and shall trigger a review by DPC of the implementation and adequacy of the Licensee's EMP.

- DPC will modify/review the DPC Handbook to include a section titled 'Oil, Fuel, and Chemical Spill Response' detailing:
 - Port Users and operators shall ensure that they possess and maintain oil / fuel / chemical spill prevention and response equipment appropriate to the scale of their activities.
 - Port users and operators shall ensure that staff are trained in spill response to a level appropriate to the scale of their activities.
 - Any spill incidents that could cause pollution must be reported within 24 hours of the incident occurring.
 - All spill incidents must be reported to the Marine Safety Branch of the Department of Transport on 08 8924 7100 during office hours. Alternatively, the 24 hours pollution hotline can be contacted on 1800 064 567.

Modification / review of the DPC handbook shall be completed by the date of the first EAW expansion component becoming operational. The DPC Handbook shall be made readily available to Ship Masters, port operators, and the general public.

- DPC will review and modify where necessary the existing EAW General Induction and spill response training and awareness programs to incorporate the EAW expansion operations and associated risks. This review will occur by the date of the first EAW expansion component becoming operational.
- DPC will review the DPC OSCP for adequacy and effectiveness in consideration of the additional activities resulting from the EAW expansion that are likely to occur within the scheduled review period of the DPC OSCP. The first review shall occur within six months of the first component of the EAW expansion project becoming operational.

3.4.1 Adaptive Response Capability

The EAW expansion creates potential for an increase in likelihood of an oil, fuel or chemical spill in Darwin harbour due to the increase in the number of vessels utilising the harbour. However, the environmental consequences of an oil, fuel or chemical spill are not likely to be magnified by this increase in vessel movement – i.e., the size or magnitude of a spill is not likely to increase as a result of the EAW expansion.

Under the International Convention on Oil Pollution Preparedness, Response and Co-operation (IMO1990), to which Australia is party, ships are required to carry a shipboard oil pollution emergency plan and associated response equipment. Operators of offshore units under jurisdiction of Parties are also required to have oil pollution emergency plans or similar arrangements which must be coordinated with national and regional oil spill contingency plans. Those vessels utilising EAW fall under this IMO requirement.

Large scale new developments in the port bring increased spill response capability. Many new developments will have requirements to develop and maintain spill response plans and capability in support of their own operations and this will subsequently enhance the spill response capacity of the port as a whole. An example of this is the Ichthys LNG project being undertaken by Inpex Browse Ltd. which has developed a comprehensive Oil Spill Contingency Plan in response to a condition of approval under the EPBC Act.

Biennial review of this PEPP in conjunction with review of the EAW EMP will enable management measures and response strategies to be adapted to the evolving operations of the EAW precinct. The biannual meeting of the NT MPAC enables frequent and regular identification, assessment, and response by all tiers of management, to issues related to increased risk of a spill as a result of the increased vessel usage of the wharf.

Existing monitoring programs within Darwin Harbour (conducted by DPC and PWC) and the Darwin Harbour Region Report Card system (conducted by NT Government's Aquatic Health Unit) provide an ongoing platform from which to monitor and provide informed management of cumulative impacts from increased activities associated with expansion of the EAW facilities.

DPC will review relevant environmental monitoring data biennially to identify cumulative impacts and assess their severity. Should review of monitoring data lead to identification of specific operational discharges associated with EAW, adaptive management measures appropriate to the type and scale of operational discharge identified as causing the cumulative impact(s) shall be planned and implemented within a reasonably practicable timeframe.

The quarterly environmental monitoring results provided to DPC after each quarterly sampling round of the Darwin Harbour Environmental Monitoring program shall be reviewed by DPC upon receipt to identify and assess impacts from specific spill incidents known to be associated with increased activities at EAW. Should review of monitoring data lead to identification of specific operational or accidental discharges associated with EAW, adaptive management measures appropriate to the type and scale of the operational or accidental discharge identified as causing the incidental impact(s) shall be planned and implemented within a reasonably practicable timeframe.

The DPC has procured a new pilot boat to supplement the existing pilot boat. This boat will form part of DPCs increased spill response capability. DPC will continue to review its spill response capacity and capability and will apply available resources and/or acquire additional resources where necessary to meet its obligations to manage spills within the harbour.

4. PREVENTION AND MANAGEMENT OF INTRODUCED MARINE PESTS

4.1 Background

Introduced marine pests are exotic marine species that are introduced through activities such as shipping. Introduction of marine pests has been identified in the Draft Environmental Impact Statement as a potential hazard as a result of increased vessel activity associated with the EAW expansion. As demonstrated by pest species incursions into Australian waters such as the black striped mussel and the northern Pacific seastar, once a species becomes established in a new environment it can be extremely difficult to eradicate (DAFF, 2012). Therefore, management of introduced marine pests focuses primarily on prevention.

The two primary vectors of marine pests in commercial vessels, particularly international and interstate shipping vessels, are ballast water and bio-fouling. Research demonstrates that up to 75 % of new introductions arrive as biofouling on vessels (DAFF, 2011).

4.2 Conditional Requirements

The Approving Authority has determined that this PEPP must include:

Measures that minimise the risk of introduced marine pest species over the life of the project, including ballast water management and vessel inspections for non-domestic vessels.

This chapter details these measures.

4.3 Current Measures

The East Arm Wharf Environmental Management Plan (Coffey Environments, 2010; Section 5.10.3) acknowledges the risk posed by marine pests in the Darwin Port and references the Australian Quarantine Inspection Service (AQIS) requirements for preventative measures, and the Northern Territory Fisheries Regulations for treatment and eradication measures.

Under the Fisheries Act and Regulations Fisheries Officers may seize a vessel or direct a vessel to leave port if there is concern for the spread or introduction of marine pests.

4.3.1 Ballast Water Management

The DPC Access to Port Facilities Policy 2010 Section 4.4 stipulates that all visiting vessels must comply with Customs and AQIS requirements and DPC Environmental Management requirements. Section 6(d) of this policy states that DPC will assess permission for access based on compliance with AQIS requirements.

Existing management principles outlined in the EAW EMP include:

- Compliance with AQIS requirements to prevent and control introduced marine pests in ballast water. These requirements, as outlined in the Australian Ballast Water Management Requirements V5 (AQIS, 2011), include:
 - No discharge of high-risk ballast water in Australian ports or waters. AQIS deems all salt water from ports and coastal waters outside Australia's territorial sea to be of 'high risk' and capable of introducing exotic marine pests into Australia.

- Implementation and maintenance of a documented Ballast Water Management Plan on each vessel.
- Provision of an AQIS Ballast Water Management Summary (AQIS form 26) prior to arriving in an Australian port from international waters.

4.3.2 Bio-fouling Management and Vessel Inspections

Existing management strategies outlined in the EAW EMP include:

- Compliance with AQIS requirements to prevent and control introduced marine pests in bio-fouling. These requirements, as outlined in the National Biofouling Management Guidelines for Commercial Vessels (DAFF, 2009), include:
 - Regular cleaning and treatment of hulls with approved antifouling systems appropriate to the vessels' planned docking period, the ship's speed and activity, and any projected lay-up periods.
 - Vessel Masters must seek permission from the administering authority (i.e., DPC) before undertaking any in-water cleaning of the hull and hull appendages and niches, including propeller polishing.
- In Darwin, compulsory hull inspections of vessels currently only apply to vessels arriving from international ports or waters that wish to enter marinas. Such inspections are conducted by the Northern Territory Government Department of Primary Industry and Fisheries.

Additionally, hull inspections of non-domestic vessels have occurred in the past on vessels suspected of harbouring marine pests.

Fisheries Division of the Department of Primary Industries and Fisheries have conducted hull inspections of commercial vessels in the past in Darwin. Triggers for such inspections are almost exclusively coincidental, e.g., discovery of marine pests when investigating another issue. There currently are no established protocols or trigger events in place to prompt such inspections by Fisheries Division. The inspection of commercial vessels for marine pests remains voluntary on behalf of the vessel owner, however, opportunistic inspections are and will be applied in future on a risk assessment basis or as required.

The federal Department of Agriculture Fisheries and Forestry (DAFF) is currently developing an Australian Biofouling Management Strategy that was due for release in 2012.

Discussion with Fisheries Division indicates that the Department of Primary Industries and Fisheries is aware of the risk posed by marine pests and the increased vessel movement within Darwin harbour. Should the national strategy be excessively delayed or deemed to ineffectively address the risk of marine pests in Darwin harbour the Department will review its own processes to attempt to address the identified risk.

4.3.3 Monitoring and Review

The Northern Territory Government Department of Primary Industry and Fisheries conducts monitoring of Darwin Harbour for introduced pests. The EAW EMP stipulates that DPC will:

- Support marine pest surveys conducted by the Aquatic Biosecurity section of the Department of Primary Industries and Fisheries. The locations for monitoring across Darwin Harbour are detailed in Monitoring for Marine Pests – Darwin Harbour 2010-2011 Report (Maher et al,

2011). DPC also assists Aquatic Biosecurity in a monitoring program specific to EAW, the results of which are reported directly back to DPC (Beatty et al, 2011).

- Ensure the use of the results from these surveys in review and improvement of marine pest management strategies in the DPC precinct.
- Encourage and monitor reporting of all environmental incidents, including pest incursions.

4.4 Proposed Measures

4.4.1 Ballast Water Management

Further to the existing management measures outlined above, to minimise the risk of the introduction of introduced marine pest species as a result of the EAW expansion, the DPC will:

- Prior to commencement of the Marine Supply Base operations, modify the DPC Handbook and make this readily available to Ship Masters, port operators, and the general public. The DPC Handbook will be reviewed annually. The modifications will include a section titled 'Prevention of Introduced Marine Pests' detailing:
 - All international vessels arriving at Port of Darwin shall be required to manage ballast water in accordance with the IMO Ballast Water Management Convention (IMO, 2004) and the Australian Ballast Water Management Requirements V5.
 - For domestic shipping, the approval of the Harbour Master must be obtained prior to ballast water being discharged within port waters. Such approval may be granted if acceptable to the Department of Primary Industries and Fisheries (Fisheries).

4.4.2 Bio-fouling Management and Vessel Inspections

Further to the existing management measures outlined above, to minimise the risk of the introduction of introduced marine pest species as a result of the EAW expansion, the DPC will:

- Prior to commencement of the Marine Supply Base operations, modify the DPC Handbook and make this readily available to Ship Masters, port operators, and the general public. The DPC Handbook will be reviewed annually. The modifications will include a section titled 'Prevention of Introduced Marine Pests' detailing:
 - Vessels within port limits shall manage bio-fouling in accordance with the National Bio-fouling Management Guidelines 2009 or similar guideline/standard as applicable (Commercial trading vessels; Non-trading vessels; Petroleum Vessels).
 - Vessels within port limits shall manage bio-fouling in accordance with the Marine Environment Protection Committee Guideline for the Control and Management of Ships Biofouling to Minimize the Transfer of Invasive Aquatic Species (MEPC, 2011), once these guidelines come into effect.
 - A DPC requirement for verification of a vessel's recent locations of activity, since last anti-fouling (with reference to known areas where exotic species have become established). This will be achieved by modification of the Berthage Application Form or similar existing administrative documents.
- Continue to support vessel inspection and regulatory compliance programs implemented by Australian Quarantine Inspection Service and/or Department of Primary Industry and Fisheries aimed at the control and management of bio-fouling and transfer of invasive aquatic species.

4.4.3 Monitoring and Review

Further to the existing management measures outlined above and prior to commencement of the Marine Supply Base operations DPC will:

- In conjunction with the Northern Territory Government Department of Lands, Planning and Environment, Environment Protection Authority and the Department of Primary Industry and Fisheries, determine whether the existing Darwin Harbour marine pests monitoring program sufficiently covers EAW or if the program requires expansion to incorporate the EAW expansion.

Australian and state/territory governments, along with marine industries and marine scientists, are developing and implementing a National System for the Prevention and Management of Marine Pest Incursions to prevent the introduction of new marine pests and minimise the spread of existing marine pests in Australian waters. DPC will:

- Ensure EAW EMP procedures allow for incorporation of the National System for the Prevention and Management of Marine Pest Incursions and the International Convention for the Control and Management of Ship's Ballast Water and Sediments (2005), once ratified.

5. ENVIRONMENTAL AWARENESS TRAINING

5.1 Background

The EAW expansion is expected to have an impact on the habitats of EPBC Act-listed species. In particular, the dredge spoil ponds at East Arm support a large concentration of EPBC Act-listed wetland and marine birds and represent a significant high tide roost site. (EMS, 2011).

Seventeen threatened species and 49 migratory species listed under the EPBC Act are known to occur in, or occur in habitat related to, the EAW area. The threatened species include endangered and/or vulnerable birds, marine mammals, reptiles and sharks.

5.2 Conditional Requirements

The Approving Authority has determined that this PEPP must include:

An educational campaign for all port personnel including the provision of information that fosters a culture of awareness of the environmental values, including EPBC Act listed species that may occur within the project area, and the related responsibilities of the port personnel.

This chapter details these measures.

5.3 Current Measures

As part of DPCs Environmental Management System, Procedure 4: Training, Awareness and Competence states:

All DPC employees and contractors are to be given environmental awareness training as part of the induction process by the Environmental Manager. Targeted training packages will be provided as required.

5.4 Proposed Measures

5.4.1 Education Campaign

Prior to commencement of the Marine Supply Base operations DPC will develop and introduce an education campaign that will be used to educate all DPC employees and contractors as to the environmental values, policies and issues relating to Darwin Harbour, and particularly EPBC Act-listed matters (Attachment B).

This education campaign will comprise three levels:

- All existing employees of the DPC.
- EAW tenants/contractors.
- All new employees during their induction process.

The educational campaign will include:

- Awareness of environmental values module comprising:
 - DPCs environmental policy statement and the measures in place to achieve environmental performance consistent with the policy.
 - Identifying environmental impacts.

- Methods to minimise environmental impacts.
- A module specific to EPBC Act-listed species outlining the species likely to be found in the project area and their known habitats (e.g., coastal waters, mangroves, dredge spoil ponds). This module will include methods to identify species and reporting requirements.
- Reporting requirements, including the reporting of environmental incidents such as vessel strikes, and fauna sightings.

In accordance with EPBC Act Approval condition 33e the Indigenous Rangers program developed under the Biodiversity Impact Mitigation and Offsets Strategy (BIMOS) will assist with the implementation of the above education campaign, particularly in habitat awareness, environmental and cultural values, and species identification.

Information sheets/posters will be created, and placed in suitable areas of high foot traffic, to provide information on:

- EPBC Act-listed species (including photographs of each species).
- DPCs environmental responsibilities.

5.4.2 Responsibilities

The environmental awareness education package will be developed by, and be the responsibility of, the DPC Environment Manager.

6. REVIEW AND REVISION

This PEPP shall be reviewed in accordance with the DPC EMS and in conjunction with the biennial review of the EAW EMP. The DPC Environment Manager is responsible for the review and revision.

This PEPP will be maintained by having a single electronic controlled copy. All hard copies are considered to be uncontrolled and users of uncontrolled documents are accountable for ensuring that they are using the current revision.

7. REFERENCES

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- URS. 2011. East Arm Wharf Expansion Project, Draft Environmental Impact Statement, Volume 2 of 4. May. Report prepared for Department of Lands and Planning, Darwin, Northern Territory.

ATTACHMENT A



ANIMAL NEAR MISS/STRIKE FORM

Vessel Name: _____ Date: _____
Vessel Type: _____ Time: _____
Vessel Bearing: _____ Degrees Latitude: _____
Vessel Speed: _____ Knots Longitude: _____

Animal Type		Species (if known)	Numbers
Whale	<input type="checkbox"/>	_____	_____
Dolphin	<input type="checkbox"/>	_____	_____
Turtle	<input type="checkbox"/>	_____	_____
Dugong	<input type="checkbox"/>	_____	_____





Did a vessel strike occur? YES NO

Distance from vessel: _____





Animal behaviour (e.g., avoiding vessel, ignoring vessel, feeding) _____

ATTACHMENT B





EPBC Matters of Environmental Significance identified as potentially related to the project area.

Species Type	Species	Common Name	Status	Type of Presence	Image
Birds	Erythrura gouldiae	Gouldian Finch	Endangered	Species or species habitat likely to occur within the area.	
	Geophaps smithii smithii	Partridge Pigeon (eastern)	Vulnerable	Species or species habitat likely to occur within the area.	
Mammals	Dugong dugon	Dugong	Listed migratory marine species.	Species or species habitat known to occur within the area.	
	Megaptera novaeangliae	Humpback Whale	Vulnerable Listed migratory marine species.	Species or species habitat likely to occur within the area.	






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	Balaenoptera edeni	Bryde's Whale	Listed migratory marine species.	Species or species habitat may occur in the area.	
	Sousa chinensis	Indo-Pacific Humpback Dolphin	Vulnerable Listed migratory marine species.	Breeding known to occur within the area.	
	Tursiops aduncus	Spotted Bottlenose Dolphin	Vulnerable Listed migratory marine species.	Species or species habitat likely to occur within the area.	
	Orcaella brevirostris	Irrawaddy Dolphin	Listed migratory marine species.	Species or species habitat may occur in the area.	
Reptiles	Caretta caretta	Loggerhead Turtle	Endangered Listed migratory marine species.	Foraging, feeding or related behaviour known to occur within the area.	





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	<i>Chelonia mydas</i>	Green Turtle	Vulnerable Listed migratory marine species.	Species or species habitat may occur within the area.	
	<i>Dermochelys coriacea</i>	Leatherback Turtle,	Endangered Listed migratory marine species.	Species or species habitat may occur within the area.	
Reptiles	<i>Crocodylus porosus</i>	Salt-water Crocodile, Estuarine Crocodile	Listed migratory marine species.	Species or species habitat likely to occur within the area.	
	<i>Eretmochelys imbricata</i>	Hawksbill Turtle	Vulnerable Listed migratory marine species.	Species or species habitat may occur within the area.	





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	Lepidochelys olivacea	Olive Ridley Turtle, Pacific Ridley Turtle	Endangered Listed migratory marine species.	Species or species habitat may occur within the area.	
	Natator depressus	Flatback Turtle	Vulnerable Listed migratory marine species.	Species or habitat likely to occur within the area.	
Sharks	Pristis clavata	Dwarf Sawfish, Queensland Sawfish	Vulnerable	Species or habitat likely to occur within the area.	
	Pristis microdon	Freshwater Sawfish	Vulnerable	Species or habitat likely to occur within the area.	
	Pristis zijsron	Green Sawfish,	Vulnerable	Species or species habitat may occur within the area.	


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Migratory Marine Birds	Apus pacificus	Fork-tailed Swift	Vulnerable	Species or habitat likely to occur within the area.	
	Ardea alba	Great Egret, White Egret	Vulnerable	Species or species habitat may occur within the area.	
	Ardea ibis	Cattle Egret	Vulnerable	Species or species habitat may occur within the area.	
	Sterna albifrons	Little Tern	Vulnerable	Species or species habitat may occur within the area.	

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Migratory Wetlands Species	Actitis hypoleucos	Common Sandpiper		Foraging, feeding or related behaviour known to occur within the area.	
	Calidris acuminata	Sharp-tailed Sandpiper		Foraging, feeding or related behaviour known to occur within the area.	
	Charadrius leschenaultii	Greater Sand Plover, Large Sand Plover		Foraging, feeding or related behaviour known to occur within the area.	
	Charadrius mongolus	Lesser Sand Plover, Mongolian Plover		Foraging, feeding or related behaviour known to occur within the area.	

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	Numenius madagascariensis	Eastern Curlew, Far Eastern Curlew.		Foraging, feeding or related behaviour known to occur within the area.	
	Xenus cinereus	Terek Sandpiper		Foraging, feeding or related behaviour known to occur within the area.	