

Appendix 3

Evaluation of Draft EIS content against requirements of the EPBC ACT (Commonwealth)

1 PURPOSE AND SCOPE

The *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act) is designed to protect “matters of national environmental significance” in Australia. Projects that have the potential to negatively affect matters of national environmental significance must be referred to the Commonwealth’s Department of the Environment, Water, Heritage and the Arts (DEWHA) to determine whether formal assessment under the EPBC Act is required.

INPEX Browse, Ltd. (INPEX) referred its proposal to develop the Ichthys Field to the DEWHA in May 2008, and the Commonwealth minister responsible for environmental matters determined that the Project should be formally assessed at the environmental impact statement (EIS) level, due to potential impacts on three matters of national environmental significance:

- threatened species
- migratory species
- the Commonwealth marine environment.

The Draft EIS therefore provides the information required to assess the Project under the EPBC Act and regulations. This document provides a guide to the Draft EIS content to readers with an interest in Commonwealth matters, as follows:

- Section 2 provides a cross-reference of the Draft EIS chapters against the general information required to be provided in such a document, under Schedule 4 of the *Environment Protection and Biodiversity Conservation Regulations 2000* (Cwlth)
- Section 3 provides an evaluation of the Project with respect to the EPBC Act significant impacts criteria, and provides cross-references to relevant chapters of the Draft EIS in which the various matters of national environmental significance are discussed.

2 MATTERS TO BE ADDRESSED IN AN ENVIRONMENTAL IMPACT STATEMENT

The Draft EIS for the Project has been prepared with consideration for Schedule 4 of the *Environment Protection and Biodiversity Conservation Regulations 2000* (Cwlth).

The Schedule contains a list of matters that must be addressed in an environmental impact statement, including general background on the proponent and project, a description of the existing environment in the development area, potential environmental impacts and proposed management controls. This list of requirements is cross-referenced to the relevant sections of the Draft EIS in Table 1, to guide interested members of government and the public through the document.

Table 1: Cross-reference of Schedule 4 of the Environment Protection and Biodiversity Conservation Regulations 2000 (Cwlth) against relevant sections of this Draft EIS

Guideline reference	Requirements to be addressed	Relevant Draft EIS section(s)
1 General information	The background of the action including: <ul style="list-style-type: none"> (a) the title of the action; (b) the full name and postal address of the designated proponent; (c) a clear outline of the objective of the action; (d) the location of the action; (e) the background to the development of the action; (f) how the action relates to any other actions (of which the proponent should reasonably be aware) that have been, or are being, taken or that have been approved in the region affected by the action; (g) the current status of the action; (h) the consequences of not proceeding with the action. 	Chapter 1, Section 1.1 Project proponent Chapter 1, Section 1.2 Environmental assessment process Chapter 3, Section 3.1.1 Development areas Chapter 4, Section 4.1.2 Site selection Chapter 4, Section 4.1.4 Consequences of adopting the “no development” option
2 Description	A description of the action, including: <ul style="list-style-type: none"> (a) all the components of the action; (b) the precise location of any works to be undertaken, structures to be built or elements of the action that may have relevant impacts; (c) how the works are to be undertaken and design parameters for those aspects of the structures or elements of the action that may have relevant impacts; (d) relevant impacts of the action; (e) proposed safeguards and mitigation measures to deal with relevant impacts of the action; (f) any other requirements for approval or conditions that apply, or that the proponent reasonably believes are likely to apply, to the proposed action; (g) to the extent reasonably practicable, any feasible alternatives to the action, including: <ul style="list-style-type: none"> (i) if relevant, the alternative of taking no action; (ii) a comparative description of the impacts of each alternative on the matters protected by the controlling provisions for the action; (iii) sufficient detail to make clear why any alternative is preferred to another; (h) identification of affected parties, including a statement mentioning any communities that may be affected and describing their views. 	Chapter 4 Project description Chapter 3, Section 3.1.1 Development areas Chapter 4 Project description Chapter 4 Project description Chapter 5 Emissions, discharges and wastes Chapter 7, Section 7.2 Offshore impacts and management Chapter 7, Section 7.3 Nearshore impacts and management Chapter 8, Section 8.3 (Onshore) Ecological disturbance Chapter 1, Section 1.2 Environmental assessment process Chapter 1, Section 1.3 Other government approvals Chapter 4, Section 4.1.2 Site selection Chapter 4, Section 4.1.3 Design alternatives Chapter 4, Section 4.1.4 Consequences of adopting the “no development” option Chapter 2 Stakeholder involvement Chapter 3, Section 3.6 Social and cultural environment
3 Relevant impacts	Information given on relevant impacts of the action must include: <ul style="list-style-type: none"> (a) a description of the relevant impacts of the action; (b) a detailed assessment of the nature and extent of the likely short term and long term relevant impacts; (c) a statement whether any relevant impacts are likely to be unknown, unpredictable or irreversible; (d) analysis of the significance of the relevant impacts; (e) any technical data and other information used or needed to make a detailed assessment of the relevant impacts. 	Chapter 7, Section 7.2 Offshore impacts and management Chapter 7, Section 7.3 Nearshore impacts and management Chapter 8, Section 8.3 (Onshore) Ecological disturbance Note: Limitations of impact assessment studies are discussed throughout the document, where relevant.
4 Proposed safeguards and mitigation measures	Information given on proposed safeguards and mitigation measures to deal with relevant impacts of the action must include: <ul style="list-style-type: none"> (a) a description, and an assessment of the expected or predicted effectiveness of, the mitigation measures; (b) any statutory or policy basis for the mitigation measures; 	Chapter 7, Section 7.2 Offshore impacts and management Chapter 7, Section 7.3 Nearshore impacts and management Chapter 8, Section 8.3 (Onshore) Ecological disturbance Chapter 11 Environmental management program (and Annexes, Provisional environmental management plans) Note: Residual risk assessments, which include consideration of safeguards and mitigation to be implemented during Project activities, are provided throughout Chapters 7, 8 and 10. Relevant legislation and permits are listed in Provisional environmental management plans, provided in Chapter 11 Environmental management program

Table 1: Cross-reference of Schedule 4 of the Environment Protection and Biodiversity Conservation Regulations 2000 (Cwlth) against relevant sections of this Draft EIS (continued)

Guideline reference	Requirements to be addressed	Relevant Draft EIS section(s)
4 Proposed safeguards and mitigation measures	<p>(c) the cost of the mitigation measures;</p> <p>(d) an outline of an environmental management plan that sets out the framework for continuing management, mitigation and monitoring programs for the relevant impacts of the action, including any provisions for independent environmental auditing;</p> <p>(e) the name of the agency responsible for endorsing or approving each mitigation measure or monitoring program;</p> <p>(f) a consolidated list of mitigation measures proposed to be undertaken to prevent, minimise or compensate for the relevant impacts of the action, including mitigation measures proposed to be taken by State governments, local governments or the proponent.</p>	<p>Costs for engineering controls and monitoring programs are not available at this early stage of the design phase.</p> <p>Chapter 11 Environmental management program (and annexes and provisional environmental management plans)</p> <p>Relevant authorities are listed in Provisional environmental management plans, provided in Chapter 11 Environmental management program</p> <p>Chapter 11 Environmental management program (and annexes and provisional environmental management plans) Chapter 12 Commitments register</p>
5 Other approvals and conditions	<p>Information given on any other requirements for approval of the proposed action must include:</p> <p>(a) details of any local or State government planning scheme, or plan or policy under any local or State/Territory government planning system that deals with the proposed action, including:</p> <ul style="list-style-type: none"> (i) what environmental assessment of the proposed action has been, or is being, carried out under the scheme, plan or policy; (ii) how the scheme provides for the prevention, minimisation and management of any relevant impacts; <p>(b) a description of any approval that has been obtained from a State, Territory or Commonwealth agency or authority (other than an approval under the Act), including any conditions that apply to the action;</p> <p>(c) a statement identifying any additional approval that is required;</p> <p>(d) a description of the monitoring, enforcement and review procedures that apply, or are proposed to apply, to the action.</p>	<p>Chapter 1, Section 1.2 Environmental assessment process Chapter 1, Section 1.3 Other government approvals Chapter 3, Section 3.6.2 Government policies and plans</p> <p>Chapter 1, Section 1.3 Other government approvals</p> <p>Chapter 1, Section 1.3 Other government approvals Chapter 11, Section 11.3 Environmental management plans Chapter 11, Section 11.4 Monitoring programs for the receiving environment Chapter 11 annexes (provisional environmental management plans)</p>
6 Environmental record of person proposing to take the action	<p>Details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against:</p> <ul style="list-style-type: none"> (a) the person proposing to take the action; and (b) for an action for which a person has applied for a permit, the person making the application. <p>If the person proposing to take the action is a corporation — details of the corporation's environmental policy and planning framework.</p>	<p>None apply.</p> <p>Chapter 11 Environmental management program</p>
7 Information sources	<p>For information given in a draft environmental impact statement, the draft must state:</p> <ul style="list-style-type: none"> (a) the source of the information; and (b) how recent the information is; and (c) how the reliability of the information was tested; and (d) what uncertainties (if any) are in the information. 	<p><i>Note:</i> A full list of references is provided at the end of each chapter. <i>Note:</i> Limitations of impact assessment studies, and any relevant validation exercises carried out as part of the assessments, are discussed throughout the document where relevant.</p>

3 MATTERS OF NATIONAL ENVIRONMENTAL SIGNIFICANCE

The EPBC Act provides for the protection of matters of national environmental significance. Three such matters could potentially be affected by the Ichthys Project, as follows:

- listed threatened species, which may occur in the offshore, nearshore and onshore development areas
- migratory, marine and cetacean species protected under international agreements, which may occur in the offshore, nearshore and onshore development areas
- the Commonwealth marine area, in which the offshore development area is located.

Criteria used to identify activities that could cause negative impacts to matters of national environmental significance are defined in the *EPBC Act Policy Statement 1.1: Significant Impact Guidelines*. A summary assessment of the potential impacts of the Project in relation to these criteria is provided as follows:

- Table 2: endangered species
- Table 3: vulnerable species
- Table 4: migratory species
- Table 5: the Commonwealth marine environment.

Cells highlighted in green (i.e. in tables 3 and 4) indicate areas where a criterion may be applicable to the impacts of the Ichthys Project, even if at very low levels of probability. It is noted that there are very few criteria triggered in this evaluation, as the significance impact criteria generally deal with widespread, landscape-scale or population-scale effects on species and ecology. In comparison, the environmental impacts of the Project will be localised and do not correspond with critical conservation areas.

Table 2: Applying EPBC Act significant impacts criteria for Endangered Species to potential impacts from the Ichthys Project

	Blue whale	Loggerhead turtle	Leatherback turtle	Pacific/Olive ridley turtle	Northern quoll	Red-tailed black cockatoo	Gouldian finch
Main context:	Pygmy blue whales occur in offshore WA waters, probably during annual migration.	Species may occur in offshore waters along pipeline route. Species forages rarely in Darwin Harbour.	Species may occur in offshore waters along pipeline route. Species does not occur in Darwin Harbour.	Species may occur in offshore waters along pipeline route. Species forages rarely in Darwin Harbour.	Species may occur in the onshore area.	Species may occur in the onshore area.	Species may occur in the onshore area.
Significant impacts criteria. Potential for the Project to:-							
Lead to a long-term decrease in the size of a population.	Highly unlikely, as Project activities do not correspond with key threatening processes for this species: 1) Commercial whaling – not related to the Project. 2) Habitat degradation – the Project is not located near critical habitat for the species, and offshore facilities will affect very small portion of potential migratory areas for the species.	Highly unlikely, as Project activities do not correspond with key threatening processes for this species: 1) Bycatch in commercial fisheries – not related to the Project. 2) Indigenous harvest – not related to the Project. 3) Marine debris – waste management controls will be implemented for the Project, with no solid wastes disposed of to the ocean. 4) Shark control activities – not related to the Project. 5) Boat strike – Project vessels will not be operating in critical habitat for this species, any injury to loggerhead turtles would be very rare and would not constitute an impact to the regional population. 6) Pearl farming and aquaculture – not related to the Project. 7) Defence activities – not related to the Project.	Highly unlikely, as Project activities do not correspond with key threatening processes for this species: 1) Bycatch in commercial fisheries – not related to the Project. 2) Indigenous harvest – not related to the Project. 3) Marine debris – waste management controls will be implemented for the Project, with no solid wastes disposed of to the ocean. 4) Shark control activities – not related to the Project. 5) Boat strike – Project vessels will not be operating in critical habitat for this species, any injury to leatherback turtles would be very rare and would not constitute an impact to the regional population. 6) Pearl farming and aquaculture – not related to the Project. 7) Defence activities – not related to the Project.	Highly unlikely, as Project activities do not correspond with key threatening processes for this species: 1) Bycatch in commercial fisheries – not related to the Project. 2) Indigenous harvest – not related to the Project. 3) Marine debris – waste management controls will be implemented for the Project, with no solid wastes disposed of to the ocean. 4) Shark control activities – not related to the Project. 5) Boat strike – Project vessels will not be operating in critical habitat for this species, any injury to Pacific/olive ridley turtles would be very rare and would not constitute an impact to the regional population. 6) Pearl farming and aquaculture – not related to the Project. 7) Defence activities – not related to the Project.	Highly unlikely, as Project activities do not correspond with key threatening processes for this species: 1) Inappropriate fire regimes – not related to the Project. 2) Predation following fire – not related to the Project. 3) Lethal toxic ingestion of cane toads – not related to the Project.	While the south-eastern subspecies of the red-tailed black cockatoo (<i>Calyptorhynchus banksii graptogyne</i>) is endangered, the two subspecies found in the Northern Territory are not considered threatened; <i>Calyptorhynchus banksii samueli</i> (central Australian subspecies) is listed as “near threatened”, and <i>Calyptorhynchus banksii macrorhynchus</i> (northern subspecies) is listed as “least concern” under Northern Territory conservation legislation. Significant threatening processes to these subspecies do not occur in the Darwin Coastal Bioregion. Removal of woodland habitat by the Project does not constitute a new threat to local populations of the species.	Highly unlikely, as Project activities do not correspond with key threatening processes for this species: 1) Inappropriate fire regimes – not related to the Project. 2) Competition for food by grazing animals – not related to the Project. 3) Disease (air sac mites) – not related to the Project.
Reduce the area of occupancy of the species.	Highly unlikely, as Project area is very small within northern migration area for the population, and will cause negligible reduction in area of occupancy.	Highly unlikely, as Project area does not correspond with important aggregation areas for the species.	Highly unlikely, as Project area does not correspond with important aggregation areas for the species.	Highly unlikely, as Project area does not correspond with important aggregation areas for the species.	Highly unlikely, as habitat availability will not be significantly reduced by landclearing for the Project.	Highly unlikely, as habitat availability will not be significantly reduced by landclearing for the Project.	Highly unlikely, as Project area does not provide ideal habitat for the species, and does not correspond with known areas of current distribution.

Table 2: Applying EPBC Act significant impacts criteria for Endangered Species to potential impacts from the Ichthys Project (continued)

	Blue whale	Loggerhead turtle	Leatherback turtle	Pacific/Olive ridley turtle	Northern quoll	Red-tailed black cockatoo	Gouldian finch
Fragment an existing population into two or more populations.	Highly unlikely, as the Project will not create a dividing barrier that could split population groups.	Highly unlikely, as the Project will not create a dividing barrier that could split population groups.	Highly unlikely, as the Project will not create a dividing barrier that could split population groups.	Highly unlikely, as the Project will not create a dividing barrier that could split population groups.	Highly unlikely, as the Project will not create a dividing barrier that could split population groups.	Highly unlikely, as the Project will not create a dividing barrier that could split population groups.	Highly unlikely, as the Project area does not correspond with known areas of current distribution.
Adversely affect habitat critical to the survival of a species; (that is, areas that are necessary: <ul style="list-style-type: none"> for activities such as foraging, breeding, roosting, or dispersal; for the long-term maintenance of the species or ecological community (including the maintenance of species essential to the survival of the species or ecological community, such as pollinators); to maintain genetic diversity and long term evolutionary development; or for the reintroduction of populations or recovery of the species or ecological community. Such habitat may be, but is not limited to: habitat identified in a recovery plan for the species; and/or habitat listed on the Register of Critical Habitat maintained by the Minister under the EPBC Act).	Recovery Plan indicates that the Project area is distant from known aggregation areas for the species (e.g. Perth Canyon). Surveys of the Project area recorded the species at very low frequencies. Species and habitats concerned are not listed on Register of Critical Habitat.	Recovery Plan indicates that the Project area is distant from known critical nesting habitat (Pilbara region, WA). Species was not recorded in surveys of the Project area, and was observed at low frequencies in nearshore waters of the Kimberley coast. Species and habitats concerned are not listed on Register of Critical Habitat.	Recovery Plan indicates that there is no critical nesting habitat for this species in Australian waters. The species was not recorded in surveys of the Project area. Species and habitats concerned are not listed on Register of Critical Habitat.	Recovery Plan indicates that there is no critical nesting habitat identified in Australian waters. Other sources suggest nesting occurs on Tiwi Islands, and other islands in Anson-Beagle Bioregion – these areas are distant from the Project area. The species was not recorded in surveys of the Project area. Species and habitats concerned are not listed on Register of Critical Habitat	Literature indicates that the species occurs in open forest or woodland across the northern and western Top End, Northern Territory. This habitat is extensive and land clearing for the Project will remove a very small portion. The species was not recorded in surveys of the onshore development area. (A Recovery Plan has not yet been developed for this species). Species and habitats concerned are not listed on Register of Critical Habitat	This species utilises a wide variety of habitats, particularly where large eucalypt trees are found. This habitat occurs widely throughout the Darwin Coastal Bioregion, and landclearing for the Project will affect a very small portion. The species is not endangered in the Northern Territory and was recorded a number of times in two surveys of the onshore development area. Species and habitats concerned are not listed on Register of Critical Habitat	Recovery Plan indicates that Darwin Harbour and surrounds do not contain areas of habitat that are currently used by the species, and are assumed to be critical to its long-term survival. The species was not recorded in surveys of the onshore development area. Species and habitats concerned are not listed on Register of Critical Habitat
Disrupt the breeding cycle of a population.	Highly unlikely, as Project area does not contain known breeding/calving areas for this species.	Highly unlikely, as Project area does not contain nesting areas for this species.	Highly unlikely, as Project area does not contain nesting areas for this species.	Highly unlikely, as Project area does not contain nesting areas for this species.	Highly unlikely, as habitat availability (including breeding habitat) will not be significantly reduced by landclearing for the Project.	Highly unlikely, as habitat availability (including breeding habitat) will not be significantly reduced by landclearing for the Project.	Highly unlikely, as Project area does not contain habitat (including breeding habitat) for this species.

Table 2: Applying EPBC Act significant impacts criteria for Endangered Species to potential impacts from the Ichthys Project (continued)

	Blue whale	Loggerhead turtle	Leatherback turtle	Pacific/Olive ridley turtle	Northern quoll	Red-tailed black cockatoo	Gouldian finch
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.	Highly unlikely, as Project will affect very small part of extensive area of similar offshore habitat. Area does not correspond with critical processes – breeding, calving.	Highly unlikely, as Project will affect very small part of extensive area of similar offshore habitat. Area does not correspond with critical processes – nesting, foraging.	Highly unlikely, as Project will affect very small part of extensive area of similar offshore habitat. Area does not correspond with critical processes – nesting, foraging.	Highly unlikely, as Project will affect very small part of extensive area of similar offshore habitat. Area does not correspond with critical processes – nesting, foraging.	Highly unlikely, as Project will affect a very small part of extensive area of similar open forest/woodland habitat.	Highly unlikely, as Project will affect a very small part of extensive area of similar open forest/woodland habitat.	Highly unlikely, as Project area does not provide ideal habitat for the species, and does not correspond with known areas of current distribution.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat.	Project is highly unlikely to introduce a species to offshore waters that would impact blue whales.	Project is unlikely to introduce a species to offshore or nearshore waters that would impact marine turtles. Marine pest management controls will be applied, in consultation with AQIS and Northern Territory Government.	Project is unlikely to introduce a species to offshore or nearshore waters that would impact marine turtles. Marine pest management controls will be applied, in consultation with AQIS and Northern Territory Government.	Project is unlikely to introduce a species to offshore or nearshore waters that would impact marine turtles. Marine pest management controls will be applied, in consultation with AQIS and Northern Territory Government.	Project is unlikely to introduce a species to the onshore area that would impact northern quolls. Quarantine management controls will be applied, in consultation with AQIS and Northern Territory Government.	Project is unlikely to introduce a species to the onshore area that would impact red-tailed black cockatoos. Quarantine management controls will be applied, in consultation with AQIS and Northern Territory Government.	Project is unlikely to introduce a species to the onshore area that would impact gouldian finches. Quarantine management controls will be applied, in consultation with AQIS and Northern Territory Government.
Introduce disease that may cause the species to decline.	Project is highly unlikely to introduce a disease to offshore waters that would impact blue whales.	Project is highly unlikely to introduce a disease to offshore waters that would impact marine turtles.	Project is highly unlikely to introduce a disease to offshore waters that would impact marine turtles.	Project is highly unlikely to introduce a disease to offshore waters that would impact marine turtles.	Project is highly unlikely to introduce a disease to the onshore area that would impact northern quolls.	Project is highly unlikely to introduce a disease to the onshore area that would impact red-tailed black cockatoos.	Project is highly unlikely to introduce a disease to the onshore area that would impact gouldian finches.
Interfere with the recovery of the species.	Highly unlikely, as Project does not correspond with key threatening processes for the species.	Highly unlikely, as Project does not correspond with key threatening processes for the species.	Highly unlikely, as Project does not correspond with key threatening processes for the species.	Highly unlikely, as Project does not correspond with key threatening processes for the species.	Highly unlikely, as Project does not correspond with key threatening processes for the species.	Highly unlikely, as Project does not correspond with key threatening processes for the species.	Highly unlikely, as Project does not correspond with key threatening processes for the species.
Index to relevant discussions provided in the Draft EIS:	Chapter 3, Section 3.2.8 <i>Protected species (offshore)</i> Chapter 7, Section 7.2.4 <i>Accidental hydrocarbon spills (offshore)</i> Chapter 7, Section 7.2.6 <i>Underwater noise emissions (offshore)</i> Chapter 7, Section 7.2.9 <i>Marine megafauna (offshore)</i> Chapter 11, Annexe 4— <i>Provisional Cetaceans Management Plan</i>	Chapter 3, Section 3.2.8 <i>Protected species (offshore)</i> Chapter 3, Section 3.3.8 <i>Protected species (nearshore)</i> Chapter 7, Section 7.2.4 <i>Accidental hydrocarbon spills (offshore)</i> Chapter 7, Section 7.2.6 <i>Underwater noise emissions (offshore)</i> Chapter 7, Section 7.2.7 <i>Light emissions (offshore)</i> Chapter 7, Section 7.3.2 <i>Dredging</i> Chapter 7, Section 7.3.7 <i>Underwater noise and blast emissions (nearshore)</i> Chapter 7, Section 7.3.8 <i>Light emissions (nearshore)</i> Chapter 11, Annexe 12— <i>Provisional Piledriving and Blasting Management Plan</i>	Chapter 3, Section 3.2.8 <i>Protected species (offshore)</i> Chapter 3, Section 3.3.8 <i>Protected species (nearshore)</i> Chapter 7, Section 7.2.4 <i>Accidental hydrocarbon spills (offshore)</i> Chapter 7, Section 7.2.6 <i>Underwater noise emissions (offshore)</i> Chapter 7, Section 7.2.7 <i>Light emissions (offshore)</i> Chapter 7, Section 7.3.2 <i>Dredging</i> Chapter 7, Section 7.3.7 <i>Underwater noise and blast emissions (nearshore)</i> Chapter 7, Section 7.3.8 <i>Light emissions (nearshore)</i> Chapter 11, Annexe 12— <i>Provisional Piledriving and Blasting Management Plan</i>	Chapter 3, Section 3.2.8 <i>Protected species (offshore)</i> Chapter 3, Section 3.3.8 <i>Protected species (nearshore)</i> Chapter 7, Section 7.2.4 <i>Accidental hydrocarbon spills (offshore)</i> Chapter 7, Section 7.2.6 <i>Underwater noise emissions (offshore)</i> Chapter 7, Section 7.2.7 <i>Light emissions (offshore)</i> Chapter 7, Section 7.3.2 <i>Dredging</i> Chapter 7, Section 7.3.7 <i>Underwater noise and blast emissions (nearshore)</i> Chapter 7, Section 7.3.8 <i>Light emissions (nearshore)</i> Chapter 11, Annexe 12— <i>Provisional Piledriving and Blasting Management Plan</i>	Chapter 3, Section 3.4.11 <i>Terrestrial animals</i> Chapter 3, Section 3.4.12 <i>Protected species</i> Chapter 8, Section 8.3.2 <i>Alteration of habitat</i>	Chapter 3, Section 3.4.11 <i>Terrestrial animals</i> Chapter 3, Section 3.4.12 <i>Protected species</i>	Chapter 3, Section 3.4.12 <i>Protected species</i>

Table 3: Applying EPBC Act significant impacts criteria for Vulnerable Species to potential impacts from the Ichthys Project

	Humpback whale	Green turtle	Hawksbill turtle	Flatback turtle	Whale shark	Freshwater sawfish	Green sawfish	Water mouse	Red goshawk	Partridge pigeon
Main context:	Species occurs in offshore WA waters during annual migration.	Species nests on Browse Island may occur in offshore waters, including pipeline route. Species forages in Darwin Harbour.	Species may occur in offshore waters along pipeline route. Species forages in Darwin Harbour.	Species may occur in offshore waters along pipeline route. Species forages rarely in Darwin Harbour.	Species occurs seasonally in offshore WA waters and along pipeline route.	Species could occur in Darwin Harbour.	Species could occur in Darwin Harbour.	Species could occur in onshore development area.	Species could occur in onshore development area.	Species could occur in onshore development area.
Significant impacts criteria										
Potential for the Project to:-										
Reduce the area of occupancy of an important population.	Project area is very small within northern migration area of the population, and will cause negligible reduction in area of occupancy.	Project area corresponds with only a small part of the available offshore habitats for green turtles in the region, and will cause negligible reduction in area of occupancy.	Project area corresponds with only a small part of the available nearshore habitats for hawksbill turtles in the region, and will cause negligible reduction in area of occupancy.	Project area corresponds with only a small part of the available nearshore habitats for flatback turtles in the region, and will cause negligible reduction in area of occupancy.	Project area is very small within northern migration area of the population, and will cause negligible reduction in area of occupancy.	Little is known of the species' population distribution, and Darwin Harbour has not been identified as important habitat. Dredging for the Project will affect a portion of the Harbour, representing a negligible reduction in available habitat on a regional scale.	The species is believed to inhabit a wide range of nearshore habitats, although little is known of the population size or distribution. Darwin Harbour is not identified as important habitat. Dredging for the Project will affect a portion of the Harbour, representing a negligible reduction in available habitat on a regional scale.	No important populations have been identified in the Darwin Coastal Bioregion. Land clearing for the Project will remove a very small portion of the mangrove habitat available regionally.	Highly unlikely, as the Project area is not considered to be high-quality potential habitat for this species. The species has not been recorded in the area during historical or recent surveys.	Highly unlikely, as the Project area is not considered to be high-quality potential habitat for this species. The species has not been recorded in the area during historical or recent surveys.
Fragment an existing important population into two or more populations.	Highly unlikely, as the Project will not create a dividing barrier that could split population groups.	Highly unlikely, as the Project will not create a dividing barrier that could split population groups.	Highly unlikely, as the Project will not create a dividing barrier that could split population groups.	Highly unlikely, as the Project will not create a dividing barrier that could split population groups.	Highly unlikely, as the Project will not create a dividing barrier that could split population groups.	Highly unlikely, as the Project will not create a dividing barrier that could split population groups.	Highly unlikely, as the Project will not create a dividing barrier that could split population groups.	Highly unlikely, as the Project will not create a dividing barrier that could split population groups.	Highly unlikely, as the Project will not create a dividing barrier that could split population groups.	Highly unlikely, as the Project will not create a dividing barrier that could split population groups.

Table 3: Applying EPBC Act significant impacts criteria for Vulnerable Species to potential impacts from the Ichthyus Project (continued)

	Humpback whale	Green turtle	Hawksbill turtle	Flatback turtle	Whale shark	Freshwater sawfish	Green sawfish	Water mouse	Red goshawk	Partridge pigeon
Lead to a long-term decrease in the size of an important population of a species.	<p>Highly unlikely, as Project activities do not correspond with key threatening processes for this species:</p> <ol style="list-style-type: none"> 1) Commercial whaling – not related to the Project, 2) Habitat degradation – the Project is not located near critical habitat for the species, and offshore facilities will affect very small portion of migratory areas for the species. <p>Project will not interfere with species recovery in Australian offshore waters.</p>	<p>Highly unlikely, as Project activities do not correspond with key threatening processes for this species:</p> <ol style="list-style-type: none"> 1) Bycatch in commercial fisheries – not related to the Project. 2) Indigenous harvest – not related to the Project. 3) Marine debris – waste management controls will be implemented for the Project, with no solid wastes disposed of to the ocean. 4) Shark control activities – not related to the Project. 5) Boat strike – Project vessels will not be operating in critical habitat for this species, any injury to green turtles would be very rare and would not constitute an impact to the regional population. 6) Pearl farming and aquaculture – not related to the Project. 7) Defence activities – not related to the Project. <p>Project will not interfere with species recovery in Australian offshore or nearshore waters.</p>	<p>Highly unlikely, as Project activities do not correspond with key threatening processes for this species:</p> <ol style="list-style-type: none"> 1) Bycatch in commercial fisheries – not related to the Project. 2) Indigenous harvest – not related to the Project. 3) Marine debris – waste management controls will be implemented for the Project, with no solid wastes disposed of to the ocean. 4) Shark control activities – not related to the Project. 5) Boat strike – Project vessels will not be operating in critical habitat for this species, any injury to hawksbill turtles would be very rare and would not constitute an impact to the regional population. 6) Pearl farming and aquaculture – not related to the Project. 7) Defence activities – not related to the Project. <p>Project will not interfere with species recovery in Australian offshore or nearshore waters.</p>	<p>Highly unlikely, as Project activities do not correspond with key threatening processes for this species:</p> <ol style="list-style-type: none"> 1) Bycatch in commercial fisheries – not related to the Project. 2) Indigenous harvest – not related to the Project. 3) Marine debris – waste management controls will be implemented for the Project, with no solid wastes disposed of to the ocean. 4) Shark control activities – not related to the Project. 5) Boat strike – Project vessels will not be operating in critical habitat for this species, any injury to flatback turtles would be very rare and would not constitute an impact to the regional population. 6) Pearl farming and aquaculture – not related to the Project. 7) Defence activities – not related to the Project. <p>Project will not interfere with species recovery in Australian offshore or nearshore waters.</p>	<p>Highly unlikely, as Project activities do not correspond with the key threatening process for this species; commercial fishing outside Australian waters.</p>	<p>Highly unlikely, as Project activities do not correspond with key threatening processes for this species:</p> <ol style="list-style-type: none"> 1) Gillnet fishing, over-fishing, bycatch – not related to the Project. 2) Degradation of riverine/ estuarine habitat – while construction for the Project will involve a large dredging program in Darwin Harbour, the area is not identified as important habitat or as a 'population centre' for this species. Little is known of the species' distribution, and the species is believed to be generally uncommon. 	<p>Highly unlikely, as Project activities do not correspond with key threatening processes for this species:</p> <ol style="list-style-type: none"> 1) Gillnet fishing, over-fishing, bycatch – not related to the Project. 2) Degradation of riverine/ estuarine habitat – while construction for the Project will involve a large dredging program in Darwin Harbour, the area is not identified as important habitat or as a 'population centre' for this species. 	<p>Highly unlikely, as land clearing for the Project will remove a very small portion of the mangrove habitat available regionally. Very little is known about the ecology and distribution of this species, so threatening processes have not been identified.</p>	<p>Highly unlikely, as land clearing for the Project will remove only a small portion of available open forest/woodland habitat available in the region.</p>	<p>Highly unlikely, as Project activities do not correspond with key threatening processes for this species:</p> <ol style="list-style-type: none"> 1) Inappropriate fire regimes – not related to the Project. 2) Invasion of weed grasses – not related to the Project.

Table 3: Applying EPBC Act significant impacts criteria for Vulnerable Species to potential impacts from the Ichthys Project (continued)

	Humpback whale	Green turtle	Hawksbill turtle	Flatback turtle	Whale shark	Freshwater sawfish	Green sawfish	Water mouse	Red goshawk	Partridge pigeon
<p>Adversely affect habitat critical to the survival of a species; (that is, areas that are necessary:</p> <ul style="list-style-type: none"> for activities such as foraging, breeding, roosting, or dispersal; for the long-term maintenance of the species or ecological community (including the maintenance of species essential to the survival of the species or ecological community, such as pollinators); to maintain genetic diversity and long term evolutionary development; or for the reintroduction of populations or recovery of the species or ecological community. <p>Such habitat may be, but is not limited to: habitat identified in a recovery plan for the species; and/ or habitat listed on the Register of Critical Habitat maintained by the Minister under the EPBC Act).</p>	<p>Recovery Plan indicates that the Project area does not correspond with known calving or resting places on the WA coast, nor with narrow bottlenecks known to occur along migration routes. Species was recorded in low numbers in the offshore development area, and in higher numbers in nearshore waters of the Kimberley coast. Species and habitats concerned are not listed on Register of Critical Habitat.</p>	<p>Recovery Plan indicates that the Project area does not correspond with known critical nesting habitats (nearest is Ashmore Reef – 200 km north of Ichthys Field). Species was recorded in low numbers in offshore waters around the Project area, and in high numbers in Kimberley coastal waters. Species is known to nest on Browse Is, 30 km from the Project offshore facilities. Key risk to Browse Is green turtle population from the Project relates to pollution from accidental oil spills. Risk is very slight due to extensive management controls, and the rapid evaporation and weathering processes that the hydrocarbons would undergo if containment were temporarily lost. Other emissions from the offshore facilities (wastewater, noise, light) will remain distant from Browse Is and will not cause degradation of critical green turtle habitat. Species and habitats concerned are not listed on Register of Critical Habitat.</p>	<p>Recovery Plan indicates that the Project area is distant from known critical nesting habitat (Pilbara region, WA). Project area is also distant from foraging sites in Fog Bay, Northern Territory, and the species was not recorded in surveys of the offshore development area. Species and habitats concerned are not listed on Register of Critical Habitat</p>	<p>Recovery Plan indicates that the Project area is distant from known critical nesting habitat (islands of western Northern Territory, and Pilbara region, WA). Species was recorded in nearshore waters of the Kimberley coast, but not in surveys of the offshore development area. Pipeline construction vessels may interact temporarily with flatback turtles that nest on beaches of Cox Peninsula, Northern Territory (6 km from pipeline route), though this is not considered critical habitat in the region. Species and habitats concerned are not listed on Register of Critical Habitat</p>	<p>Recovery Plan indicates that the Project area does not correspond with known aggregation areas in northern Australia (i.e. Ningaloo Reef, Christmas Island, Coral Sea). Species was recorded at low frequency in surveys of the offshore development area. Species and habitats concerned are not listed on Register of Critical Habitat</p>	<p>Little is known of the species' population distribution, and Darwin Harbour has not been identified as important habitat. Dredging for the Project will affect a portion of the Harbour, in an area of existing marine-based industry. Species was not recorded in marine surveys for the nearshore development area, although no targeted surveys were undertaken. (A Recovery Plan for this species has not been completed). Species and habitats concerned are not listed on Register of Critical Habitat</p>	<p>Little is known of the species' population distribution, and Darwin Harbour has not been identified as important habitat. Dredging for the Project will affect a portion of the Harbour, in an area of existing marine-based industry. Species was not recorded in marine surveys for the nearshore development area, although no targeted surveys were undertaken. (A Recovery Plan for this species has not been completed). Species and habitats concerned are not listed on Register of Critical Habitat</p>	<p>Critical habitat has not been identified for this species. Land clearing for the Project will remove a very small portion of the mangrove habitat available regionally. The species was not recorded in surveys of the onshore development area. (A Recovery Plan for this species has not been completed). Species and habitats concerned are not listed on Register of Critical Habitat</p>	<p>Highly unlikely, as the Project area is not considered to be high-quality potential habitat for this species. The species has not been recorded in the area during historical or recent surveys. (A Recovery Plan for this species has not been completed). Species and habitats concerned are not listed on Register of Critical Habitat</p>	<p>Recovery Plan indicates that the Project area is distant from areas of important habitat (Tiwi Islands, Kakadu National Park). The Project area is not considered to be high-quality potential habitat for this species. The species has not been recorded in the area during historical or recent surveys. Species and habitats concerned are not listed on Register of Critical Habitat</p>

Table 3: Applying EPBC Act significant impacts criteria for Vulnerable Species to potential impacts from the Ichthy Project (continued)

	Humpback whale	Green turtle	Hawksbill turtle	Flatback turtle	Whale shark	Freshwater sawfish	Green sawfish	Water mouse	Red goshawk	Partridge pigeon
Disrupt the breeding cycle of an important population.	Highly unlikely, as the Project area does not correspond with known calving places in north Western Australian nearshore waters.	Unlikely, as the Project area does not correspond with known nesting areas on the Kimberley coast and offshore islands. Browse Is nesting area may be affected in the unlikely event of a large oil spill.	Highly unlikely, as the Project area does not correspond with known nesting places in Pilbara nearshore waters.	Highly unlikely, as the Project area does not correspond with known nesting places in Fog Bay, Northern Territory, and Pilbara nearshore waters.	Breeding cycles and locations are unknown for this species.	Highly unlikely, as the Project area does not correspond with breeding areas for the species, which are believed to be in freshwaters (upstream in rivers).	Highly unlikely, as Darwin Harbour is not identified as a 'population centre' or regionally important habitat for the species.	No important populations have been identified in the Darwin Coastal Bioregion.	Highly unlikely, as Project area does not contain habitat suitable for nesting by this species.	Highly unlikely, as Project area does not contain habitat suitable for nesting by this species.
Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.	Highly unlikely, as Project will affect very small part of extensive area of similar offshore habitat. Area does not correspond with critical processes – aggregation, calving, breeding.	Highly unlikely, as Project will affect very small part of extensive area of similar offshore habitat. Area does not correspond with critical processes – aggregation, nesting, foraging.	Highly unlikely, as Project will affect very small part of extensive area of similar offshore habitat. Area does not correspond with critical processes – aggregation, nesting, foraging.	Highly unlikely, as Project will affect very small part of extensive area of similar offshore habitat. Area does not correspond with critical processes – aggregation, nesting, foraging.	Highly unlikely, as Project will affect very small part of extensive area of similar offshore habitat. Area does not correspond with known aggregation areas thought to support seasonal feeding.	Little is known of the species' population distribution, although available habitats are believed to be widespread. Darwin Harbour has not been identified as important habitat. Dredging for the Project will affect a portion of the Harbour, representing a negligible reduction in habitat on a regional scale.	Little is known of the species' population distribution, although available habitats are believed to be widespread. Darwin Harbour has not been identified as important habitat. Dredging for the Project will affect a portion of the Harbour, representing a negligible reduction in habitat on a regional scale.	Highly unlikely, as land clearing for the Project will remove a very small portion of the mangrove habitat available regionally. Very little is known about the ecology and distribution of this species, so threatening processes have not been identified.	Highly unlikely, as the Project area is not considered to be high-quality potential habitat for this species. The species has not been recorded in the area during historical or recent surveys.	Highly unlikely, as the Project area is not considered to be high-quality potential habitat for this species. The species has not been recorded in the area during historical or recent surveys.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat.	Project is highly unlikely to introduce a species to offshore waters that would impact humpback whales.	Project is highly unlikely to introduce a species to offshore waters that would impact green turtles.	Project is highly unlikely to introduce a species to offshore waters that would impact hawksbill turtles.	Project is highly unlikely to introduce a species to offshore waters that would impact flatback turtles.	Project is highly unlikely to introduce a species to offshore waters that would impact whale sharks.	Project is highly unlikely to introduce a species to nearshore waters that would impact freshwater sawfish. Marine pest management controls will be applied, in consultation with AQIS and Northern Territory Government.	Project is highly unlikely to introduce a species to nearshore waters that would impact green sawfish. Marine pest management controls will be applied, in consultation with AQIS and Northern Territory Government.	Project is unlikely to introduce a species to the onshore area that would impact water mice. Quarantine management controls will be applied, in consultation with AQIS and Northern Territory Government.	Project is unlikely to introduce a species to the onshore area that would impact red goshawks. Quarantine management controls will be applied, in consultation with AQIS and Northern Territory Government.	Project is unlikely to introduce a species to the onshore area that would impact partridge pigeons. Quarantine management controls will be applied, in consultation with AQIS and Northern Territory Government.
Introduce disease that may cause the species to decline.	Project is highly unlikely to introduce a disease to offshore waters that would impact humpback whales.	Project is highly unlikely to introduce a disease to offshore waters that would impact green turtles.	Project is highly unlikely to introduce a disease to offshore waters that would impact hawksbill turtles.	Project is highly unlikely to introduce a disease to offshore waters that would impact flatback turtles.	Project is highly unlikely to introduce a disease to offshore waters that would impact whale sharks.	Project is highly unlikely to introduce a disease to nearshore waters that would impact freshwater sawfish.	Project is highly unlikely to introduce a disease to nearshore waters that would impact green sawfish.	Project is highly unlikely to introduce a disease to nearshore waters that would impact water mice.	Project is highly unlikely to introduce a disease to nearshore waters that would impact red goshawks.	Project is highly unlikely to introduce a disease to nearshore waters that would impact partridge pigeons.

Table 3: Applying EPBC Act significant impacts criteria for Vulnerable Species to potential impacts from the Ichthys Project (continued)

	Humpback whale	Green turtle	Hawksbill turtle	Flatback turtle	Whale shark	Freshwater sawfish	Green sawfish	Water mouse	Red goshawk	Partridge pigeon
Interfere substantially with the recovery of the species.	Highly unlikely, as Project does not correspond with key threatening processes for the species.	Highly unlikely, as Project does not correspond with key threatening processes for the species.	Highly unlikely, as Project does not correspond with key threatening processes for the species.	Highly unlikely, as Project does not correspond with key threatening processes for the species.	Highly unlikely, as Project does not correspond with key threatening process for the species.	Highly unlikely, as Project does not correspond with key threatening process for the species.	Highly unlikely, as Project does not correspond with key threatening process for the species.	Highly unlikely, as land clearing for the Project will remove a very small portion of the mangrove habitat available regionally. Very little is known about the ecology and distribution of this species, so threatening processes have not been identified.	Highly unlikely, as the Project area is not considered to be high-quality potential habitat for this species.	Highly unlikely, as the Project area is not considered to be high-quality potential habitat for this species.
Index to relevant discussions provided in the Draft EIS:	Chapter 3, Section 3.2.8 <i>Protected species (offshore)</i> Chapter 7, Section 7.2.4 <i>Accidental hydrocarbon spills (offshore)</i> Chapter 7, Section 7.2.6 <i>Underwater noise emissions (offshore)</i> Chapter 7, Section 7.2.9 <i>Marine megafauna (offshore)</i> Chapter 11, Annexe 4— <i>Provisional Cetaceans Management Plan</i>	Chapter 3, Section 3.2.8 <i>Protected species (offshore)</i> Chapter 3, Section 3.3.8 <i>Protected species (nearshore)</i> Chapter 7, Section 7.2.4 <i>Accidental hydrocarbon spills (offshore)</i> Chapter 7, Section 7.2.6 <i>Underwater noise emissions (offshore)</i> Chapter 7, Section 7.2.7 <i>Light emissions (offshore)</i> Chapter 7, Section 7.3.2 <i>Dredging, trenching and earthworks</i> Chapter 7, Section 7.3.7 <i>Underwater noise and blast emissions (nearshore)</i> Chapter 7, Section 7.3.8 <i>Light emissions (nearshore)</i> Chapter 11, Annexe 12— <i>Provisional Piledriving and Blasting Management Plan</i>	Chapter 3, Section 3.2.8 <i>Protected species (offshore)</i> Chapter 3, Section 3.3.8 <i>Protected species (nearshore)</i> Chapter 7, Section 7.2.4 <i>Accidental hydrocarbon spills (offshore)</i> Chapter 7, Section 7.2.6 <i>Underwater noise emissions (offshore)</i> Chapter 7, Section 7.2.7 <i>Light emissions (offshore)</i> Chapter 7, Section 7.3.2 <i>Dredging, trenching and earthworks</i> Chapter 7, Section 7.3.7 <i>Underwater noise and blast emissions (nearshore)</i> Chapter 7, Section 7.3.8 <i>Light emissions (nearshore)</i> Chapter 11, Annexe 12— <i>Provisional Piledriving and Blasting Management Plan</i>	Chapter 3, Section 3.2.8 <i>Protected species (offshore)</i> Chapter 3, Section 3.3.8 <i>Protected species (nearshore)</i> Chapter 7, Section 7.2.4 <i>Accidental hydrocarbon spills (offshore)</i> Chapter 7, Section 7.2.6 <i>Underwater noise emissions (offshore)</i> Chapter 7, Section 7.2.7 <i>Light emissions (offshore)</i> Chapter 7, Section 7.3.2 <i>Dredging, trenching and earthworks</i> Chapter 7, Section 7.3.7 <i>Underwater noise and blast emissions (nearshore)</i> Chapter 7, Section 7.3.8 <i>Light emissions (nearshore)</i> Chapter 11, Annexe 12— <i>Provisional Piledriving and Blasting Management Plan</i>	Chapter 3, Section 3.2.8 <i>Protected species (offshore)</i>	Chapter 3, Section 3.3.8 <i>Protected species (nearshore)</i> Chapter 7, Section 7.3.2 <i>Dredging</i>	Chapter 3, Section 3.3.8 <i>Protected species (nearshore)</i> Chapter 7, Section 7.3.2 <i>Dredging</i>	Chapter 3, Section 3.4.12 <i>Protected species (onshore)</i>	Chapter 3, Section 3.4.12 <i>Protected species (onshore)</i>	Chapter 3, Section 3.4.12 <i>Protected species (onshore)</i>

Cells highlighted in green indicate areas where a criterion may be applicable to the impacts of the Ichthys Project, even if at very low levels of probability.

Table 4: Applying EPBC Act significant impacts criteria for Migratory Species* to potential impacts from the Ichthys Project

	Snubfin dolphin	Indo-Pacific humpback dolphin	Spotted (Indo-Pacific) bottlenose dolphin	Dugong	Estuarine crocodile	Little tern	Streaked shearwater
Main context:	Species occurs in Darwin Harbour	Species occurs in Darwin Harbour	Species occurs in Darwin Harbour	Species occurs in Darwin Harbour	Species occurs in Darwin Harbour	Species could occur in offshore development area and Darwin Harbour	Species could occur in offshore development area and Darwin Harbour
Significant impacts criteria. Potential for the Project to:-							
Substantially modify (including by fragmenting, altering fire regimes, altering nutrient cycles or altering hydrological cycles), destroy or isolate an area of important habitat for a migratory species; ("important habitat" is: a) habitat utilised by a migratory species occasionally or periodically within a region that supports an ecologically significant proportion of the population of the species; and/or b) habitat that is of critical importance to the species at particular life-cycle stages; and/or c) habitat utilised by a migratory species which is at the limit of the species range; and/or d) habitat within an area where the species is declining).	Highly unlikely, as the Project will disturb only a small portion of nearshore habitat while extensive areas within and outside Darwin Harbour remain undisturbed. The Project area has not been identified as important habitat for this species, although the species is known to occur within the Harbour.	Highly unlikely, as the Project will disturb only a small portion of nearshore habitat while extensive areas within and outside Darwin Harbour remain undisturbed. The Project area has not been identified as important habitat for this species, although the species is known to occur within the Harbour.	Highly unlikely, as the Project will disturb only a small portion of nearshore habitat while extensive areas within and outside Darwin Harbour remain undisturbed. The Project area has not been identified as important habitat for this species, although the species is known to occur within the Harbour.	Highly unlikely, as unique rocky reef habitats in Darwin Harbour will not be disturbed by the Project. The Project area has not been identified as important habitat for this species, although the species is known to occur within the Harbour.	Highly unlikely, as the Project will disturb only a small portion of nearshore habitat while extensive areas within and outside Darwin Harbour remain undisturbed. The Project area has not been identified as important habitat for this species, although the species is known to occur within the Harbour.	Highly unlikely, as land clearing for the Project will remove only a small portion of coastal habitat while extensive areas remain intact. The Project area has not been identified as important habitat for this species, which has been recorded once in the onshore development area, but was not recorded in recent surveys.	Highly unlikely, as land clearing for the Project will remove only a small portion of coastal habitat while extensive areas remain intact. The Project area has not been identified as important habitat for this species, which has not been recorded in the area historically nor in recent surveys.
Result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species.	Project is unlikely to introduce a species to nearshore waters that would impact dolphins. Marine pest management controls will be applied, in consultation with AQIS and Northern Territory Government.	Project is unlikely to introduce a species to nearshore waters that would impact dolphins. Marine pest management controls will be applied, in consultation with AQIS and Northern Territory Government.	Project is unlikely to introduce a species to nearshore waters that would impact dolphins. Marine pest management controls will be applied, in consultation with AQIS and Northern Territory Government.	Project is unlikely to introduce a species to nearshore waters that would impact dugongs. Marine pest management controls will be applied, in consultation with AQIS and Northern Territory Government.	Project is unlikely to introduce a species to nearshore waters that would impact estuarine crocodiles. Marine pest management controls will be applied, in consultation with AQIS and Northern Territory Government.	Project is unlikely to introduce a species to onshore areas that would impact little terns. Quarantine controls will be applied, in consultation with AQIS and Northern Territory Government.	Project is unlikely to introduce a species to onshore areas that would impact streaked shearwaters. Quarantine controls will be applied, in consultation with AQIS and Northern Territory Government.

Table 4: Applying EPBC Act significant impacts criteria for Migratory Species* to potential impacts from the Ichthys Project (continued)

	Snubfin dolphin	Indo-Pacific humpback dolphin	Spotted (Indo-Pacific) bottlenose dolphin	Dugong	Estuarine crocodile	Little tern	Streaked shearwater
Seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species.	Unlikely, as this species is thought to be widespread across Western Australia, Northern Territory and Queensland. However, little is known of the species' ecology, and while the Project area has not yet been identified as a key habitat for the species, it is known to occur in Darwin Harbour.	Highly unlikely, as this species is widespread across Western Australia and the Northern Territory, and through south-east Asia. The Project area has not been identified as a key habitat for the species, although the species is known to occur in Darwin Harbour.	Highly unlikely, as this species is widespread across Western Australia, Northern Territory and Queensland, and through south-east Asia. The Project area has not been identified as a key habitat for the species, although the species is known to occur in Darwin Harbour.	Highly unlikely, as the density of dugongs within Darwin Harbour is low and no important habitat areas occur in the nearshore or offshore Project areas.	Highly unlikely, as this species is widespread throughout the Northern Territory, Western Australia and Queensland. The species is known to occur in Darwin Harbour, but is also removed in a targeted trapping program for public safety (not related to the Project).	Highly unlikely, as the species is widespread across northern Australia. No breeding sites are known to occur in the Project area, although many breeding sites have been identified along the Northern Territory coast and nearshore islands.	Highly unlikely, as species is broadly distributed internationally during migration and breeds only in Japan. The Project area is not identified as important habitat for this species.
Index to relevant discussions provided in the Draft EIS:	Chapter 3, Section 3.2.8 <i>Protected species (offshore)</i> Chapter 3, Section 3.3.8 <i>Protected species (nearshore)</i> Chapter 7, Section 7.2.4 <i>Accidental hydrocarbon spills (offshore)</i> Chapter 7, Section 7.2.6 <i>Underwater noise emissions (offshore)</i> Chapter 7, Section 7.2.9 <i>Marine megafauna (offshore)</i> Chapter 7, Section 7.3.2 <i>Dredging, trenching and earthworks</i> Chapter 7, Section 7.3.7 <i>Underwater noise and blast emissions (nearshore)</i> Chapter 7, Section 7.3.8 <i>Light emissions (nearshore)</i> Chapter 7, Section 7.3.10 <i>Marine megafauna (nearshore)</i> Chapter 11, Annexe 4— <i>Provisional Cetaceans Management Plan</i> Chapter 11, Annexe 12— <i>Provisional Piledriving and Blasting Management Plan</i>	Chapter 3, Section 3.2.8 <i>Protected species (offshore)</i> Chapter 3, Section 3.3.8 <i>Protected species (nearshore)</i> Chapter 7, Section 7.2.4 <i>Accidental hydrocarbon spills (offshore)</i> Chapter 7, Section 7.2.6 <i>Underwater noise emissions (offshore)</i> Chapter 7, Section 7.2.9 <i>Marine megafauna (offshore)</i> Chapter 7, Section 7.3.2 <i>Dredging, trenching and earthworks</i> Chapter 7, Section 7.3.7 <i>Underwater noise and blast emissions (nearshore)</i> Chapter 7, Section 7.3.8 <i>Light emissions (nearshore)</i> Chapter 7, Section 7.3.10 <i>Marine megafauna (nearshore)</i> Chapter 11, Annexe 4— <i>Provisional Cetaceans Management Plan</i> Chapter 11, Annexe 12— <i>Provisional Piledriving and Blasting Management Plan</i>	Chapter 3, Section 3.2.8 <i>Protected species (offshore)</i> Chapter 3, Section 3.3.8 <i>Protected species (nearshore)</i> Chapter 7, Section 7.2.4 <i>Accidental hydrocarbon spills (offshore)</i> Chapter 7, Section 7.2.6 <i>Underwater noise emissions (offshore)</i> Chapter 7, Section 7.2.9 <i>Marine megafauna (offshore)</i> Chapter 7, Section 7.3.2 <i>Dredging, trenching and earthworks</i> Chapter 7, Section 7.3.7 <i>Underwater noise and blast emissions (nearshore)</i> Chapter 7, Section 7.3.8 <i>Light emissions (nearshore)</i> Chapter 7, Section 7.3.10 <i>Marine megafauna (nearshore)</i> Chapter 11, Annexe 4— <i>Provisional Cetaceans Management Plan</i> Chapter 11, Annexe 12— <i>Provisional Piledriving and Blasting Management Plan</i>	Chapter 3, Section 3.2.2 <i>Biogeographical setting (offshore)</i> Chapter 3, Section 3.2.8 <i>Protected species (offshore)</i> Chapter 3, Section 3.3.8 <i>Protected species (nearshore)</i> Chapter 7, Section 7.2.6 <i>Underwater noise emissions (offshore)</i> Chapter 7, Section 7.3.2 <i>Dredging, trenching and earthworks</i> Chapter 7, Section 7.3.7 <i>Underwater noise and blast emissions (nearshore)</i> Chapter 7, Section 7.3.8 <i>Light emissions (nearshore)</i> Chapter 7, Section 7.3.10 <i>Marine megafauna (nearshore)</i> Chapter 11, Annexe 12— <i>Provisional Piledriving and Blasting Management Plan</i>	Chapter 3, Section 3.3.8 <i>Protected species (nearshore)</i> Chapter 3, Section 3.4.11 <i>Terrestrial fauna</i> Chapter 7, Section 7.3.2 <i>Dredging, trenching and earthworks</i> Chapter 7, Section 7.3.7 <i>Underwater noise and blast emissions (nearshore)</i> Chapter 7, Section 7.3.2 <i>Dredging, trenching and earthworks</i> Chapter 11, Annexe 12— <i>Provisional Piledriving and Blasting Management Plan</i>	Chapter 3, Section 3.2.8 <i>Protected species (offshore)</i> Chapter 3, Section 3.4.12 <i>Protected species (onshore)</i>	Chapter 3, Section 3.2.8 <i>Protected species (offshore)</i> Chapter 3, Section 3.4.12 <i>Protected species (onshore)</i>

* Note: The species included in this table have been selected due to local conservation interest. The table does not include an exhaustive list of all migratory species that, according to public databases, may occur within or near the Project area. Many of these migratory species have vast habitat ranges, in which the Project area represents a very small portion.

Cells highlighted in green indicate areas where a criterion may be applicable to the impacts of the Ichthys Project, even if at very low levels of probability.

Table 5: Applying EPBC Act significant impacts criteria for the Commonwealth Marine Environment to potential impacts from the Ichthys Project

	Evaluation of the Project
Main context:	Ichthys Field offshore production and export facilities, and most of the subsea pipeline, will be developed in Commonwealth marine waters
Significant impacts criteria. Potential for the Project to:-	
Result in a known or potential pest species becoming established in the Commonwealth marine area.	Project is highly unlikely to introduce an invasive species to offshore waters. Marine pest management controls will be implemented, in consultation with AQIS.
Modify, destroy, fragment, isolate or disturb an important or substantial area of habitat such that an adverse impact on marine ecosystem functioning or integrity in a Commonwealth marine area results.	Offshore disturbance area is very small in the context of the marine habitats concerned, which are extensive in the North West Shelf and Anson-Beagle Bioregions. Development of offshore facilities and pipeline will not fragment or isolate important habitats. Disturbances to the marine environment will be transitory (e.g. drilling discharges, construction noise) or will dissipate within small mixing zones (e.g. routine produced water discharge, noise from production vessels). No solid wastes will be disposed into the offshore marine environment. Oil spill risks are slight and are subject to extensive management controls.
Have a substantial adverse effect on a population of a marine species or cetacean including its life cycle (e.g. breeding, feeding, migration behaviour, life expectancy) and spatial distribution.	Highly unlikely, as offshore Project area does not correspond with critical or important habitat for any protected marine or cetacean species.
Result in a substantial change in air quality or water quality (including temperature) which may adversely impact on biodiversity, ecological integrity; social amenity or human health.	Highly unlikely, as emissions and discharges from the offshore facilities will disperse to background levels within a small mixing zone, distant from any areas of high biodiversity or social amenity.
Result in persistent organic chemicals, heavy metals, or other potentially harmful chemicals accumulating in the marine environment such that biodiversity, ecological integrity, social amenity or human health may be adversely affected.	Highly unlikely, as emissions and discharges from the offshore facilities will disperse to background levels within a small mixing zone, distant from any areas of high biodiversity or social amenity. Hazardous wastes will not be disposed into the offshore marine environment. Low-toxicity drilling fluids will be used during well construction.
Have a substantial adverse impact on heritage values of the Commonwealth marine area, including damage or destruction of an historic shipwreck.	The offshore Project area does not correspond with any heritage sites (including shipwrecks).
Index to discussions provided in the Draft EIS:	Chapter 3, Section 3.2 <i>Offshore marine environment</i> Chapter 7, Section 7.2 <i>Offshore impacts and management</i> Chapter 11, Section 11.3 <i>Environmental management plans</i> Chapter 11, Section 11.4 <i>Monitoring programs for the receiving environment</i> Chapter 11, Annexe 5— <i>Provisional Decommissioning Management Plan</i> Chapter 11, Annexe 10— <i>Provisional Liquid Discharges, Surface Water Runoff and Drainage Management Plan</i> Chapter 11, Annexe 16— <i>Provisional Waste Management Plan</i>